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A Critical Evaluation of the Ethical Elements in Managerial Training that Impact Ethical Intentions in Decision-making in the Chinese Automotive Industry

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"Let us plant a seed of intrinsic goodness into the inner heart of practitioners and managers in the Chinese Automotive Industry (CAI) and cultivate it through managerial training to essentially resolve ethical issues and enhance ethical intentions in decision-making."

---Libin Xiao(2018)

汽车伦理文化犹如一剂隐形的秒药和一枚无声的利器，能有效化解一切现实的困惑，助力于汽车行业的勇士们博弈于科技、利益、责任、环境、安全与正义之林。

---Libin Xiao(2018)

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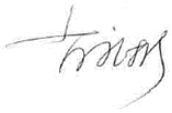

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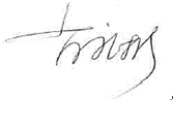

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List of Acronyms & Abbreviations

AI	Artificial Intelligence
AMC	American Motors Corporation
BAIHC	Beijing Automotive Industry Holding Co., Ltd.
CAAM	China Association of Automobile Manufacturers
CAI/CAMI	Chinese Automotive/Manufacturing Industry
CASSN	Chinese Academy of Social Sciences NET
CATARC	China Automotive Technology & Research Centre
CATTC	China Automotive Technology Training Centre
CERNET	China Education and Research Network
CCPS	Central Committee Party School
CH4	Methane, greenhouse gas with GWP-100 = 25 under AR4
CO2	Carbon Dioxide
CO2eq	CO_2 equivalent (using the GWP-100 metric of AR4)
CCP	Chinese Communist Party
CNKI	Chinese National Knowledge Infrastructure
CSR	Corporate Social Responsibility
CPC	Communist Party of China
DFG	Dongfeng Motor Corporation
DFL/Dongfeng	Dongfeng Motor Co., Ltd.
DPCA	Dongfeng Peugeot-Citroën Automobile Co., Ltd.
DPWF	Dongfeng Public Welfare Foundation
ED	Ethical Decision-making
EDA	Exploratory Data Analysis
EDGAR	Emissions Inventory for Global Atmospheric Research
EI	Ethical Intentions in Ethical Decision-making
ESMMR	Exploratory Sequential Multi-phase Mixed Research Method
ESD	Exploratory Sequential Design
EPE	Ethical Principle for Engineers
EVs	Electric Vehicles
FAW	First Auto Works/ China FAW Co., Ltd.
GAC	Guangzhou Automobile Group
GACC	GAC Component Co., Ltd.
GAIG	Guangzhou Automobile Industry Group Co., Ltd.
GHG	Greenhouse Gas Emission
GM	General Motors
HR	Human Resources
HAI	Human-Centred Artificial Intelligence Institute
IATF	International Automotive Task Force
IEEE	Institute of Electrical and Electronic Engineers
ISO	International Standardisation Organisation
KXT	Kongxuetang
R&D	Research and Development Centres
TS/16949	Technical Specification//16949
JMC	Jiangling Motors Co., Ltd.
MED	Multistage Evaluation Design
MSD	A Multi-phase Sequential Design
NEVs	New Energy Vehicles
NSPE	National Society of Professional Engineers

OECD	Organisation for Economic Cooperation and Development
PPAP	Production Part Approval Process
PRC	The People's Republic of China
SAIC	Shanghai Automotive Industry Corporation
SGMW	SAIC-GM-Wuling Automobile Company Limited
SPSS	Statistic Package for Social Science
TA	Thematic Analysis
TBL	Triple Bottom Line
WNE	Western Normative Ethics
WTO	World Trade Organisation
WUT	Wuhan University of Technology

Abstract

The Chinese Automotive Industry (CAI), along with a dominance of joint ventures, has demonstrated unprecedented challenges for managers to uphold ethical intentions (EI) in their decision-making to be able to address ethical issues with internal altruistic motives, whilst prioritising moral values in complex situations. Managerial training has proven effective in the cultivation of ethical decision-making; yet in the CAI, ethical elements in training tend to be coercive and fragmented, with limited awareness of the concept of EI identified. There also appears to be a lack of ethics from the West and a lack of rationalised knowledge to facilitate effective and ethical training. Moreover, the current literature neglects moral values and dimension concepts in terms of managerial training and limits to the intellectual context in engineering ethics education. Consequently, this work critically evaluated ethical elements in managerial training that would be non-coercive, systematic, and aligned to the moral values in the CAI and its engineering ethics education feature.

The research implemented an adapted exploratory sequential multi-phase mixed-research method design with facilitation mechanisms to evaluate this multi-disciplinary and ethics-sensitive subject. The phases run included: 1) Scoping review with an initial assessment of ethical issues and elements in training related to EI in the CAI; 2) A focused theoretical conceptualising narrowing-down process followed by dual perspective quantitative surveys for managers and trainers; 3) Further clarification for inconsistencies in the form of communication. Results indicated high responses to the four ethical elements that were compatibly interwoven for managerial EI in the CAI. In order of importance, they were: Ethical Principles for Engineers (EPE), Communism, Confucianism and Western normative ethics (WNE). Management level had no noticeable influence on EI, but a correlation with EI was identified from managers' perspectives, thereby impacting their ethical awareness, judgment, intentions and training. Evaluations of trainers' responses indicated a more functional and ideological ethical engagement.

Contributions were made on innovations in theoretical conceptualisation by upholding the concept of EI and in methodological adaptation for rigorous research. Under the key approaches and conceptual themes, this work innovatively examined ethics and diagnosed moral values in the CAI, resulting in contributions on four non-coercive ethical elements, particularly the neglected WNE in its dimension and rationalised knowledge of EPE for its transformative impacts from Chinese moral learning. Pedagogical contributions were suggested to improve training internally, by importing the concept of EI and embedding the four elements, accompanied by ethics-sensitive mechanisms with ED processes and industry-led vignettes. These contributions will inform future related research in the fields of humanities and ethics.

Chapter 1 Introduction

1.1 Research background and rationale

Ethics sets standards of code and value for a person or group in conduct and decision-making (Trevino, 1986; Treviño et al., 2003; Vitell et al., 2013). Its importance is widely recognised in management such that 'ethics is attracting increasing attention in management circles' (Yusoff et al., 2012, p.261) and ethical decision-making is regarded as the core of management (Melé, 2012). The concept of ethical intentions in ethical decision-making (EI) is particularly acknowledged for being able to address ethics with depth and breadth that focuses on moral values from a complete dimension in a context (Elango et al., 2010; Craft, 2013), which is more effective than intellectual ethics and coercive ethics (Aristotle 1925). Accordingly, this EI concept has been applied in the pedagogic field, and its embedding in management training has proven feasible and effective for enhancing managers' EI in their decision-making (Kohlberg, 1985; Trevino, 1992; Ferrell and Fraedrich, 2013; Mullins and Christy, 2013).

Currently, managers in the Chinese Automotive Industry (CAI), the largest in the global automotive sector and the pillar of the Chinese economy (Nieuwenhuis and Lin, 2015), are challenged by ever-complex ethical issues and moral values, which have resulted in a number of unethical managerial decisions (Huang, 2015; Xinhuanet, 2015b). Consequently, this section introduces both the background information necessary for consideration of managerial EI in the CAI, as well as the pedagogic vitality of applying this concept of EI in CAI managerial training. The information in this section, together with the identification of a gap in existing research in Section 1.2, leads to a rationale for this research.

1.1.1 Ethical challenges for management

The concept of ethics as a tool of management became more commonplace in the late 1980s and 1990s (Sudhir and Murthy, 2001; Trevino and Brown, 2004; Bowie and Werhane, 2005; Melé, 2012), and now managerial decisions are challenged to be both legally and morally acceptable to the larger community (Jones, 1991; Ferrell and Fraedrich, 2014; Crane and Matten, 2016). This significance is now recognised globally, with the literature indicating that excellent corporate social performance is, to some extent, dependent on ethical

managerial decision-making, while socially responsible leaders are perceived to be more ethical (De Hoogh and Den Hartog, 2008).

Ethical issues can be exceedingly complex, posing dilemmas for managers regarding the most ethically appropriate or inappropriate actions related to a situation (Jones, 1991; Crane and Matten, 2016). As moral agents of the organisation, they constantly face ethical challenges and uncertainties, which increase their difficulty in making ethical decisions within codified norms and regulations (Nash, 1990; De George, 2011). Moreover, managers shoulder the executive function of the organisation and are responsible for building and coordinating an entire system (Draft et al., 2010; Ferrell et al., 2019). However, sometimes ethical issues go far beyond codified laws and regulations and fall into 'grey areas' of ethics, where many decisions are ethically correct but might be morally wrong or vice versa (Crane and Matten, 2016).

Other factors also add to this complexity. For example, ethical dilemmas are unique in intricacy, varying between different professions (Hajmohammad et al., 2013), and between various stages of organisational development (White and Wooten, 1983; White and Rhodeback, 1992). Moreover, global markets are more likely to generate ethical dilemmas (Sudhir and Murthy, 2001; Mihelcic and Zimmerman, 2014), resulting in a particularly complex situation in cross-cultural organisations with their potentially conflicting internal priorities (White and Rhodeback, 1992; Vitell et al., 1993; Craft, 2013).

Statistics indicate the improvement of global corporate ethical behaviour, but challenges remain (Carufe, 2017). For example, in a recent Deloitte poll, more than half (52.4 per cent) of C-suite and other executives indicated that global corporate ethical behaviours have improved, yet only 41.3 per cent of them considered their organisations' global ethics culture to be strong. This phenomenon is also noted by Don Fancher, a Deloitte Risk and Financial Advisory principal, who states that '*As we have seen for decades, no organisation is immune to unethical behaviour, but the field of ethics compliance is evolving*' (ibid).

Recently, unethical managerial decisions suggest there is still a high potential for managers' ethical lapses (Lopez et al., 2005), revealing their challenges in making morally right and socially responsible decisions (Ferrell and Faeidrich, 2013). This can be exemplified by many well-known, high profile unethical executive decisions, including cases in the West, such as Enron, WorldCom, K-Mart, Tyco and Tyson (Groves et al., 2008; Weber, 2010) and

the Volkswagen Dieselgate Emission Scandal (Riehm and Lindner, 2017); and cases in China, like the Sanlu Milk Powder Incident (Beshears and Gino, 2015) and Faulty Baby Vaccines (Kuo, 2018). Consequently, their unethical, immoral and illegal decisions along with their lack of moral integrity have been increasingly scrutinised, challenged and led to mistrust, proving very costly to the firms, their employees, their investors and the wider society (Yusoff et al., 2011; Beshears and Gino, 2015; Riehm and Lindner, 2017).

Therefore, the prevalence of the number of managerial ethical lapses, despite coercive laws imposed from external drivers, suggests the ineffectiveness of these coercive ethics in ethical decision-making (Snellman, 2015). Alternatively, managerial ethical decisions should not only rely on coercive ethics, such as codified rules and legislation, or on a narrow scope of sustainability in considering Corporate Social Responsibility (CSR) and a limited perception of sticking to Triple Bottom Line (TBL) in corporate governance practices (Elkington, 2004; Kalshoven et al., 2011; Henriques and Richardson, 2013; Köhler et al., 2019). Global management should encompass both efficiency and morality that would be effective in addressing complex ethical issues (Cullen et al., 1989; Dickson et al., 2001).

1.1.2 Managerial ethical challenges in the Global Automotive Industry

There is extraordinary complexity to the handling of ethical issues within the automotive industry, which is arguably larger, and more diverse and influential than any other industry (OECD, 2011; SNECI, 2015). Ethical challenges exist across its whole product life cycle, from emissions that contribute to global warming (Orsato and Wells, 2007a; Wells, 2013), to low product liability or inappropriate treatment of scrapped vehicles (Marucheck and Robbins, 1988). Moreover, for a sustainable automotive industry, research highlights the importance of ethical considerations, which should fully consider economic, social and environmental pressures confronting the industry (Orsato and Wells, 2007b; Wells, 2013; Nieuwenhuis and Wells, 2015; Vaz et al., 2017; Köhler et al., 2019).

Consequently, many ethical concepts and techniques are employed to date that address ethical issues in this industry. Under the banner of sustainability (Elkington and Rowlands, 1999; Elkington, 2004), electric vehicles (EVs) were developed specifically to replace the traditional combustion engine, and expected to produce ‘zero’ emissions, thereby reducing greenhouse gas (GHG) emissions (Kumar and Revankar, 2017). However, a more farsighted

perspective of their product life cycle assessment could challenge this 'zero' environmental impact on the basis of the emissions released producing clean energy to store in lithium-ion batteries, and on taking into account the pollution caused by the disposal of this type of battery (Nordelöf et al., 2014; Sharma and Strezov, 2017). This example highlights the demand for more effective ethics that can consider existing and potential ethical issues more broadly and comprehensively (Nieuwenhuis and Wells, 2015).

Emerging technologies and innovations are reshaping the traditional automotive industry, however, in increasingly rapid, complex and unpredictable ways, which creates potential ethical risks and uncertainties and further challenges its practitioners' inner ethics (Vallor, 2016; Xiao, 2018). One of these challenges is that these unforeseen ethical issues require internally virtuous ethics which involves a kind of humane spirit, the highest form of virtue ethics that respects life and takes the initiative to avoid any obvious and potential harm to human beings (Ip, 2004, 2009; Rothlin and McCann, 2015; Vallor, 2016; Xiao et al., 2018; Zhao, 2018). This challenge can be exemplified by the classic philosophical thought experiment 'Trolley Problem' (Frison et al., 2016; Greene, 2016), and the current technique-based ethical dilemma of artificial intelligence (AI) in automotive car design (Thornton et al., 2017). In the dilemma of the 'Trolley Problem', the driver is pondering upon his options, to decide which tramline should be diverted to avoid a collision with one person or a group of people (see Appendix 1.1). However, either way, there is still a violation of morality resulting in at least one person losing his life. This dilemma can be likened to the use of AI in the design of autonomous vehicles, where engineers have to make a decision when encountering a similar dilemma: to divert to the group with less people, to protect pedestrians outside the car, to kill the driver in the car, or to protect both (Thornton et al., 2017).

In addition, practitioners in this industry are also challenged to be innately and non-coercively ethical to avoid deliberate abuse of high technology. This frequently observed phenomenon is the industry-wide corporate fraud committed under climate mitigation pressures in line with ever-increasing environmental standards and regulation enforcement (Li et al., 2018). This pressure has even driven the car manufacturing giant, Volkswagen, to cheat on the emission tests of diesel cars to fall within the U.S. Environmental Protection Agency standards (Burki, 2015; Krall and Peng, 2015; Lane, 2016; Siano, 2017). In the light of the Volkswagen Scandal, Mitsubishi Motors was revealed to have been using the wrong fuel consumption tests, thereby breaking Japanese industry rules for the past 25 years (BBC NEWS, 2016; Li et al., 2018). These disclosed high-tech greenwash cases are just the tip of

the iceberg. However, the extent of the secrecy played out by the management in these high-tech greenwash companies highlights further complexities to ethical issues and also exposes the frailty of managers' inner ethics and corresponding imperatives for them to master such ethics (Lane, 2016; Siano, 2017).

In this industry, another ethical issue that has created adverse consequences is the deliberate misuse of the concept of utilitarianism, wrongly replaced by sheer cost-benefit economic calculations (Crane and Matten, 2016; Xiao, 2018). One such case is the Ford Pinto Memo Scandal with purposeful violation of product liability for higher profits, in which its managerial decision not to repair a known oil-tank defect, despite the insistence of their engineers, has resulted in deaths due to fires that occurred in car crashes (Lee, 1998; Fleddermann, 2014) (detailed in Section 4.2.1). Similarly, cost-benefit scandals occurred such as in General Motors (Baken, 2012) (detailed in Section 4.2.1).

Therefore, the complexities of ethical issues and the extent of the unethical managerial decisions in the auto industry reveal its practitioners, particularly managers, are confronting severe challenges and such lapses of their competence. To address these challenges more effectively, literature indicates a necessity for managers in the industry to uphold a type of ethics that could empower them to non-coercively respect human life, uphold honesty and integrity, and maximise the public good (The Engineering Council, 2017; Xiao et al., 2018).

1.1.3. Unique ethical challenges for managers in the CAI

The ethical situation is even more severe in the Chinese Automotive Industry (CAI). As a pillar of China's economy, the CAI with its supporting supply chain, is encountering what is conceivably its largest growth to date, being now the world's largest automotive market and manufacturing industry (CAAM, 2018a). Therefore, this situation generates more ethical issues than its global counterparts. However, currently, the CAI is believed to be '*still on an unsustainable automotive trajectory*' (Nieuwenhuis and Lin, 2015, p.109).

Moreover, unique ethical dilemmas exist in this unprecedented, complex and transforming ethical environment in the CAI (Xiao, 2018). This feature is mainly reflected to be a diverse and transforming moral value context in its managerial decisions. Statistics indicate a high percentage of joint ventures in the CAI, with approximately 55 per cent foreign investment (China Statistical Yearbook, 2015). These foreign partners have brought with them their

diverse values and ownership relationships into the CAI, which adds to the challenges it faces when balancing and prioritising these values in managerial decisions (detailed in Sections 3.2.1, 3.2.2 and 3.2.3). The ownership relationship is also transforming due to the ongoing lifting of foreign ownership restrictions (Xinhuanet, 2018). This transforming relationship might result in new ownership structures and consequently demonstrate different weighing of values in decisions, further complicating the situation, such as the new whole-ownership of Tesla in Shanghai (The Economic Times, 2018) (detailed in Section 3.2.1).

Globalisation also adds to the challenge for the CAI in dealing with values from different cultures (Hollensen, 2016). Under a government initiative, and alongside its entry into the World Trade Organisation (WTO) since 2001 (Harwit, 2001), the CAI has increased its pace of globalisation. In turn, this has created more opportunities for managers to interact with varying global partners representing different cultural values. This negative impact can be highlighted by unethical issues in the industry (Liu, 2018) such as bribery and corruption among its senior management (BBC NEWS, 2015; Huang, 2015; KPMG, 2017), which reveal its lapses in making ethical decision (detailed in Section 3.5.3). Therefore, compared with the global automotive sector, these unique contexts in the CAI further necessitate its managers to be empowered with effective ethics or concepts that can address its complex thics and moral values.

1.1.4 Effectiveness of non-coercive ethics and the concept of EI for the CAI

Due to its having one of the largest scales of production, high percentages of foreign-domestic joint ventures, the extended global macro environment and a transforming moral value context, the complex ethics and moral values in the CAI require managers' ethical decision-making competence to be of a certain depth and breadth. Non-coercive ethics, consisting of moral values from culture, philosophy and ideology, is recognised widely to be able to address the complexities in depth.

Non-coercive ethics differs from coercive ethics in many ways. Two prominent weaknesses of coercive ethics are the limited sphere they cover and coercive motives in decision-making. First, coercive ethics is dependent upon the following of laws and regulations as the minimum requirement for morality. However, laws cannot codify all ethical behaviours

(Crane and Matten, 2016). In addition, coercive ethics lacks the concept of intrinsic motivation in ethical decision-making; thus, it is ineffective in dealing with complex ethics and moral value situations.

Compared with coercive ethics, non-coercive ethics is more advantageous due to its unlimited sphere in guiding decisions with altruistic motives (Snellman, 2015; Crane and Matten, 2016). Many ethics and values across cultures and ideology carry this non-coercive nature. For example, Western normative ethics such as virtue ethics and deontology embrace intrinsic goodness ethics and can help people intuitively deal with ethics unconditionally. Ethical principles, based on these normative ethics in the engineering sector, such as in the *UK Statements of Ethical Principles* (The Engineering Council, 2018), are also widely recognised due to embedding these features. In Asia, Confucianism is regarded as virtue ethics with these traits (Ip, 2009b; Vallor, 2016) (detailed in Section 4.5.3).

Also, the literature indicates that non-coercive ethics is effective in management decision-making (Ferrell and Fraedrich, 2014; Snellman, 2015). Many values from culture and ideology with intrinsic goodness and non-coercive nature are widely practised in global management for ethical decision enhancement (Crane and Matten, 2016). For example, in the East, Confucianism as a virtuous ethics influencing behaviour, with its core values such as *Ren* (benevolence), *Yi* (righteousness) and *Li* (rite), is widely practised in management by moral leaders, *Jun Zi* being the moral exemplar (Feng, 2004; Ip, 2009b). In the West, normative ethics such as deontology, virtue ethics or justice have constituted the basis of ethical managerial decision-making (Ferrell and Fraedrich, 2014).

Due to these advantages, non-coercive ethics is also advocated for use in the engineering sector (Vallor, 2016; The Engineering Council, 2017) (expanded in Chapter 4). For example, the competence to empower non-coercive ethics is recognised as one of the characteristics of an effective engineering manager, '*Who behaves like a trained professional with regard to ethics, fairness and honour*' (Zhang, 2005, p.11). For its intrinsic goodness nature, the benefit of virtue features is discussed in technology such as literature in IEEE (Harris Jr, 2008) and the term 'technomoral' is coined to reflect this unification of virtue and technology (Vallor, 2016). The effectiveness of the nature of non-coercive ethics is detailed in Sections 4.2, 4.3, 4.4 and 4.5.

The concept of ethical intentions (EI) in ethical decision-making (ED) contains both

dimension consideration and characteristics of non-coercive ethics. The complexities of ethics stated (Sections 1.1.1, 1.1.2 and 1.1.3) require managers to consider ethics comprehensively, in a complete dimension in decisions. According to Craft (2013), within the four stages in the process of ethical decisions (awareness, judgment, intention and decision), the third stage of EI, defined as '*The ability to prioritise moral values over other values*' (Craft, 2013, p.221), can consider values in the breadth of a certain moral value context and therefore fits this research (Its significance is expanded in Section 4.2.1). This dimension concept is also consistent with fundamental models of managerial ethical decision-making. For example, Hunt and Vitell (1986) developed the concept of dimensions consisting of '*norms and values*', and '*personal*', '*cultural*', '*professional*', '*industry*' and '*organisational norms*'; Carroll and Buchholtz (2014, p.224) proposed a five-level dimension model, namely, '*the individual or personal level, the organisational level, the industry level, the societal level and the global level*'; Leung et al. (2005) conceived a five-level cultural layer-construct model for international companies, similar to Carroll and Buchholtz's (2014) model (detailed in Section 4.3.1).

The EI concept by Craft (2013) also indicates a focus on moral values to achieve higher EI, which, as stated, belongs to a type of non-coercive ethics and carries intrinsic nature. Aristotle (1925) defined the effective nature of moral values in his *Nichomachean Ethics*, which divides virtue into intellectual and moral classes. The intellectual aspect includes '*deliberative excellence and contemplative wisdom*', while the moral class consists of virtues like '*courage, temperateness, liberality and justice*' (Murphy, 1999, p.108). According to Aristotle's definition, this moral value retains the nature of virtues such as justice, which can enable managers to behave and make decisions non-coercively, intrinsically and intuitively. This intuitive feature of ethics and morality is also important in engineering education. Harris et al. (2014) term this kind of sensemaking of moral decisions '*immediate intuitive appeal*'; Zhu and Jesiek (2017, p.671) believe this intuitive feature is an effective approach to ethical decision-making in engineering practice for it is inherently practical in that it is, '*conducive to a process of self-realization, moral intelligence liberation, and character-building*'. Therefore, this in-depth ethics of moral values in the concept of EI is precisely what this research explores.

The concept of EI in considering a dimension is also recognised in the most recent literature on ethical decision-making (Craft, 2013) (expanded in Section 4.2). This consideration includes its appropriateness to the context of China. Research about EI has the most findings

in the most recent review by Craft (2013) on ethical decision-making. In addition, scholars call for the need to consider duel dimensions at both domestic and international levels to address ethical issues in China, such as the advocation by Ip (2009b) *'to integrate Chinese culture and universally shared hyper-norms in decisions*' (p.211). This dimension concept is also highlighted in engineering ethical decision-making. For example, Zhu and Jesiek (2017, p.670) argue that contexulalisation is effective in moral actions, which can '*compel engineers to look more broadly at social and organisational dynamics in their working environment and employ them as practical tools for generating creative solutions that benefit multiple parties*'. Recent research has also proposed that '*Practitioners in the CAI need to consider the complete dimension for more ethical decisions, such as the indigenous culture and ideology in China, ethical issues in its development stage, and international hyper-norms*' (Xiao, 2018, p.202).

Based on the effectiveness of non-coercive ethics and the advantageous concept of EI in management and the engineering sector, this research will identify non-coercive moral values and contextulalising dimensions underpinning ethical intentions (EI) in decision-making in the CAI. This concept of EI would be appropriate to empower managers to address ethics, and moral value challenges specific to the CAI.

1.1.5 Approaches in managerial training underpinning EI in the CAI

As stated, the recent scandals in the CAI denote managers' lapses in ethical decisions when confronting complex ethical challenges and multiple responsibilities (Huang, 2015; Liu, 2018). This phenomenon of a lack of moral character is recognised as the 'bad apple' effect attributed to unethical behaviour in the organisation (Trevino, 1986). It is particularly severe if the 'bad apple' is the top management because their behaviour will directly result incorporate business failure and will affect the professional growth of the staff with the ethical environment they create (Hernández Palomino and Rincones Delgado, 2007). Therefore, to effectively address the ethical issues in the CAI, appropriate management measures are sought to help managers uphold these concepts to enhance their ethical intentions (EI) in decision-making, with consideration of dimensions in context, as well as the inner nature of non-coercive ethics.

Research indicates that management training is an effective way of improving managers'

overall competence and ethical elements can offer concrete management guidance (Snellman, 2015; Armstrong and Taylor, 2017). It has also been proven feasible to train and educate people to enhance their ethical awareness and boost their cognitive moral development (Kohlberg, 1985; Treviño, 1992). For example, Treviño (1992) found a positive correlation between ethical behaviour and level of education in his longitudinal study. Similarly, Rest (1986) found a strong correlation between education level and scores in the Defining Issue Test (DIT).

The pedagogic feasibility and effectiveness of training managers in the CAI are supported by its related fields. This can be seen in the cognitive moral development models used, both for managers (such as the model developed by Ferrell and Fraedrich (2013), see Figure 4.14 in Section 4.7.5) and for engineers (such as the model developed by Vesilind and Gunn (2016), see Figure 4.15 in Section 4.7.5). Literature also indicates the pedagogic feasibility of values related to this research, such as the wide practice of training managers or cadres with the Chinese cultural and ideological values of Confucianism and Communism and Western normative ethics (detailed in Section 4.7.5).

Training to improve ethics is also widely acknowledged in the engineering sector, and ethical education and training have become essential in modern engineering worldwide. It is believed training can improve ethical behaviours in technology and engineering design under the guidance of philosophy of technology (Cao, 2015). In addition, training with applied ethics is recognised as a pragmatic approach to ethical decision-making in engineering practice (Harris et al. 2014; Zhu and Jesiek, 2017). There is ethics training in the automotive industry. There is also the establishment of ethics training institutes in Stanford and other renowned universities for engineering ethics to regulate the utilisation of AI (Stanford HAI, 2018).

However, it is apparent that in most management training programmes, there is limited consideration of a complete ethical dimension specific to the moral value context of the CAI (expanded in Section 4.3). There is also limited consideration of the nature of ethical elements and their fitness or appropriateness for the ethical issues in the industry (expanded in Chapter 4). These reflected ethical elements are superficial and more functional (China Auto, 2001; Fang et al., 2007; Mayas et al., 2012; CATARC, 2018). Even though some cultural issues begin to emerge in managerial training, such as Confucianism (Economy Management Training Centre, 2012; Wuhan University, 2018), most are fragmented, without

effective interpretation or association with ethics in the CAI. This gap is also reflected by the paucity of such research, as touched on in Section 1.2 and expanded in Section 4.8.

1.2. Identified research gap

This thesis implemented a sequential literature review approach; scoping reviews were initiated in the preliminary stage due to its broad scope and multidisciplinary approach (for details see Section 2.3), followed by systematic and focused reviews. For brevity, this section only demonstrates key literature from focused reviews to indicate the research gap regarding the two prominent features in the concept of ethical intentions (EI) in decision-making in the CAI management training: its non-coercive features and dimension consideration.

There is limited direct research related to EI in management training. Literature from the three main reviews on ethical decision-making indicates this gap in research. The most notable example is from the latest review by Craft (2013), indicating that within the 84 studies reviewed (2004-2011), concerning the organisational factor of EI, there is no individual finding on EI (refer to Table 4.16 in Section 4.8).

Recently, this phenomenon has been improved, and there has been more research linked to ethical dimensions of the CAI in the last decade. However, it is dominated by engineering education perspectives, interpreting engineering ethics according to the historical-cultural context in China. For example, the work of Zhu and Jesiek (2015) illuminates the understanding of engineering ethics in the CAI. Their work, in the intellectual contexts of engineering education in China, identified three ethical elements: 'Confucianism', 'Marxism' and 'Pragmatism' from cultural, ideological and economic dimensions, all of which are interwoven and co-produced, thereby shaping China's unique engineering education. Zhu and Jesiek's (2015) work is valuable for a general understanding of ethics in the CAI. Zhu and Jesiek's (2017) research has also realised the significance of applied ethics and their traits in moral decisions such as 'immediate intuitive appeal'.

However, Zhu and Jesiek's (2015; 2017) work upholds a pragmatic approach and focuses on intellectual virtues from the intellectual context derived from the two virtue divisions (intellectual virtue and moral virtue) as set by Aristotle (See Section 1.1.4). Although 'Pragmatism' in this research means '*Good application of technology that can generate practical efficacy and social prosperity (national economy and people's likelihood)*' (Zhu

and Jesiek, 2015, p.156), it is still driven by practical economic interest. Another deficiency of Zhu and Jesiek's (2015) work for this research is that their dimensions rest on the Chinese indigenous level; on elements that are exclusively historically and culturally specific to China, with no consideration of elements from the West, which is important to the high-percentage of joint ventures in the CAI (China Statistical Yearbook, 2015). Zhu and Jesiek's (2015; 2017) work is not directly related to the concept of ethical intentions (EI) and management training in the CAI. However, the CAI is part of the Chinese engineering community, and training or engineering education, in general, can inform management training. Therefore their approach can offer valuable implications for this research.

Other work offers an understanding of dimensions that can inform this research on ethical intentions (EI), yet cannot satisfy the moral context consideration of the CAI. One of the examples is that of Cao (2015), who has identified two dimensions impacting engineering ethics in China, '*Tao and Continental Marxism*' (p.1632). However, this work is limited to the Chinese indigenous level as 'Taoism' and 'Continental Marxism' both belong to the Chinese cultural and ideological legacy.

Regarding the above drawback of resting on the domestic context, some literature is more advantageous in considering managerial decision-making dimensions in China, not only from indigenous cultural and ideological forces but also from the influence of the West. For example, Yang (2012) identified three cultural forces in ideological systems and cultural values, beliefs in managerial philosophies and practices in China: 'Confucianism', 'Socialism' and 'Capitalism'. Compared with findings by Zhu and Jesiek (2015) and Cao (2015), this view is complete in dimension as it includes the Western-originated element of 'Capitalism'.

However, there are still limitations to the inner nature of the elements in these studies in dealing with complex issues pertinent to the CAI posed to these managers. For example, the concept of 'Pragmatism' as discussed by Zhu and Jesiek (2015; 2017) might be profit-driven: a major challenge for contemporary Chinese business ethics (Ip, 2009a). Likewise, the concept of 'Capitalism' in Yang's (2012) research may incorporate a money-driven intention that resembles 'Pragmatism'. Within these works, ideological elements are mentioned, such as 'Marxism' or 'Continental Marxism', which fit the current ideological regime in China (Shambaugh, 2008b; Xinhuanet, 2017a). However, decontextualisation is needed to avoid any political bias and to consider only the pure non-coercive ethics nature.

Another phenomenon is that some literature has also realised the 'physical absence' of engineering ethics in the Chinese engineering sector, by comparing it with the West. This phenomenon is exemplified by the study of Zhu and Jesiek (2015). However, it fails to go deeper in exploring the differences between the West and China and their respective philosophical origins and impact on this 'absence' phenomenon. In this aspect, Cao (2015) made advancement by comparing the differences between Chinese and American engineering ethics, indicating, through philosophical and cultural origins, that Chinese ethics in the engineering industry are influenced by China's moral learning style and its cultural and ideological ethics. In contrast, in the West, ethics in the engineering sector is mainly influenced by the philosophical origin of *Logos* (Zhao, 2011), resulting in the West's concept of rationality in technology, with the common practice of codifying rules and principles as ethical guidelines for professionals.

Such achievements are valuable as they can identify the impact on the engineering sector in China with cultural and philosophical viewpoints and dimension concepts (Li and Wei, 2008) and thus have implications on training practices in the CAI. This achievement might be able to not only justify the phenomenon embedding such elements in the current training programmes but also offer underpinning theory supporting the design of effective training programmes, thus encouraging more such elements in the future.

These studies are important when understanding the unique features of ethics that are related to the CAI and relevant dimensions. However, the intellectual context and the ideological-cultural system are not the same as the moral value context that is to be addressed in this research. As discussed (Section 1.1), it is the moral value virtue, not the intellectual virtue that this research pursues, being more internally related to morality and its intrinsic and intuitive nature. Therefore, it is to be made clear that the features of general ethics in the global engineering sector or even in China are not the same as those in the CAI. In this research, these existing dimensions and ethical elements need further consideration from the cultural and philosophical origins and moral value context that are specific to the CAI, if they are to resolve managerial ethical issues specific to this industry.

1.3 Aim and objectives

Based on its background and rationale, this research aims to critically evaluate the ethical elements in management training that effectively influence ethical intentions (EI) in

decision-making in the Chinese Automotive Industry (CAI).

To achieve this aim, the objectives are formulated as follows:

1) To investigate the features of ethics in the CAI and current approaches to enhance ethical intentions (EI) in decision-making in managerial training in the CAI.

2) To identify the moral value dimensions underpinning ethical intentions (EI) in decision-making in the CAI.

3) To assess the effectiveness of non-coercive ethics underpinning ethical intentions (EI) in decision-making in the CAI.

4) To critically evaluate effective, ethical elements within managerial training, appropriate to empower managers to address the ethics and value challenges specific to the CAI.

5) To offer recommendations for EI enhancement in managerial training in the CAI and suggest implications for potential future related studies.

1.4 An overview of the thesis structure

The thesis chapters are as follows:

Chapter 1 (Introduction) introduces the background of this work, identifying the research rationale for considering the ethical elements that impact EI in managerial training in the CAI, unveiling gaps in research, and leading to the research aim and objectives.

Chapter 2 (Evaluations and Implications of the Scoping Reviews and Preliminary Research) justifies the sequential research methods to accommodate the nature of the research and the specific process. The research activities in the preliminary research based on the scoping reviews are shown to inform the formal literature review and quantitative surveys.

Chapter 3 (Focused Conceptulisation - Issues Related to Moral Values in the CAI and Ethical Elements in Managerial Training) introduces issues related to EI in the CAI, and

ethical elements in managerial training, presenting data from both the preliminary research and the public domain.

Chapter 4 (Focused Literature Review) reviews underpinning theories related to EI and the nature of effective ethics, where theoretical conceptualisation focuses and considers moral values and derivation of four non-coercive ethical elements. These four moral value elements from the modified dimension are also further validated by consideration of ethical issues confronting managers in the CAI and mutual compatibility from related disciplines.

Chapter 5 (Research Methodology) describes the development of a tailored research method with mechanisms to accommodate this multi-disciplinary and ethics-sensitive subject.

Chapter 6 (Findings and Analysis: Managers) and **Chapter 7 (Findings and Analysis: Trainers)** present data from both managers and trainers, followed by a comparison and further clarification of the findings in **Chapter 8 (Comparisons and Evaluations: Managers and Trainers)**.

Chapter 9 (Discussion) incorporates previous chapters into the discussion.

Chapter 10 (Conclusions and Recommendations) summarises the thesis and suggests future work and training practice, setting out the value of the research and its contributions.

Chapter 2 Evaluations and Implications of the Scoping Reviews and Preliminary Research

2.1 Introduction

This thesis demonstrates the challenges of its multidisciplinary research and difficulties in getting its focus and obtaining natural and spontaneous in-depth data. Accordingly, this chapter justifies a sequential research methodology, proceeding with scoping reviews and informal qualitative preliminary research activities, due to their benefits. This chapter's discussion also informs the formal quantitative research activities and the result of this thesis.

2.2 Challenges for rigorous research

This research was challenging due to the need for rigour within a broad research scope and the difficulties of obtaining authentic data, which called for a corresponding research method. The challenges are specified as follows:

1) This research on managerial ethical decision-making in the CAI was challenging in narrowing its focus out of its multidisciplinary nature and broad scope. It had to bring together consideration of philosophy, as well as training and industry, and include values from culture, ideology and philosophy from both Western and Chinese contexts. For such broad research, it was important to get the focus on the nature of effective ethics pertinent to address ethical issues in the CAI.

2) Moreover, the sensitive nature of ethics and the targeting of management staff in the pillar industry in China added to the difficulties of obtaining genuine and spontaneous in-depth data. Due to censorship and government control on decisions and values in China, people from management and the pillar industry might be reluctant to speak freely (Brown, 2012). In addition, some ethical elements, such as Western normative ethics, are sensitive in China due to the suspicion of it being considered contradictory to Chinese socialist ideology (ibid).

Therefore, a tailored research process and methodology was needed to help to mitigate these challenges in exploring the focus and obtaining spontaneous, authentic data. For ethics-

sensitive research, it was also imperative to embed ethics-specific projective mechanisms to maximise the research effect (Crouch and Housden, 2012; Saunders et al., 2016).

2.3 Justification of a sequential review approach initiated by scoping reviews

To address the two prominent challenges of this thesis stated in Section 2.2 and to understand contextual knowledge in this area, a sequential research process was justified and conducted (detailed in Chapter 5). The resulting Exploratory Sequential Multi-phase Mixed Research Method [ESMMRM] consists of an informal exploratory qualitative stage, the main quantitative stage and qualitative refinement activities, which accommodate a multidisciplinary scope and ethics-sensitive features. During the preliminary stage of context and scope exploration, due to the broad scope and complex context, this work was particularly challenging in having to narrow down its focus. Therefore, this work sought an appropriate approach to address this issue, and it was considered advantageous to proceed with a scoping review for its corresponding strengths.

As an innovative approach, scoping reviews emerged around 2005 (Arksey and O'Malley, 2005; Levac et al., 2010; Pham et al., 2014). Their main purpose is to provide an overview of a broad topic (Moher et al., 2009; Moher et al., 2015a; Moher et al., 2015b; Tricco et al., 2015). This approach has more flexibility and accountability/suitability to explore within a diversity of relevant literature and studies, which is not feasible in a traditional review (Arksey and O'Malley, 2005; Levac et al., 2010; Pham et al., 2014).

This approach is also beneficial to identify research gaps, as described in Section 1.2. It is acknowledged that scoping reviews can map key concepts that underpin a research area and identify any gaps (Peterson et al., 2017), due to the fact that a synthesised report of current research, especially if a gap in knowledge is identified, provides an excellent foundation for developing additional research or related projects (ibid).

The positioning of a scoping review also fits this thesis. In order to ensure its effectiveness, this approach is suggested to be the first step in a larger endeavour. Therefore, this approach was organically embedded as the first step in the preliminary stage in this work. It is also reinforced by paying attention to the quality of the evidence (Daudt et al., 2013; Colquhoun, 2014), which can enhance the resulting outcome.

There are four main stages of scoping reviews (Arksey and O'Malley, 2005; Peterson et al., 2017): to provide a quick overview of a field of research, examining the extent of research done on a particular topic or area; to determine the feasibility, relevance, and/or costs of conducting a full systematic review; to provide focused synthesis; and to draw conclusions and identify gaps in the existing literature. This work followed these patterns.

Based on the outcome from the scoping reviews and understanding of current areas, the outline of informal qualitative activities was developed and conducted in the preliminary stage. The key results are summarised in Sections 2.4, 2.5 and 2.6; these help narrow down the scope, as well as inform the subsequent focused, systematic reviews and formal quantitative research in the second stage.

2.4 Summary of the scoping review results and implications for the focused reviews

Following the justification outlined in Sections 2.2 and 2.3, scoping reviews were carried out to help explore effective ethics in the managerial training in the CAI for EI enhancement. This section summarises key areas and limitations identified, with a justification for the exclusion of limitations and retaining of key areas to inform the focused literature reviews and the narrowing down process.

There were reflected limitations in its levels, nature, motives, dimensions and perspectives. Ethical issues not obvious in the CAI in current literature and training practices were also identified:

1) Current literature in the scoping reviews indicated ethical concepts were mostly limited to coercive ethics at operational and strategic levels, and were ineffective in complex ethical decisions. These levels of ethics concepts are deemed to be coercive and within the corporate governance domain. Rather than being driven from their inner heart, these ethical concepts or values are enforced externally, meaning that their effectiveness is unlikely to address complex ethical issues, such as the ethical challenges of CAI stated in Section 1.1. This ineffectiveness can be evidenced by managerial financial scandals and frauds such as Enron (Sims and Brinkmann, 2003) and Lehman Brothers (Browne, 2018), in which managers exploited their expertise, resulting in financial collapse. Similar scandals also happened specifically in the automotive sector, such as Mitsubishi

(BBC NEWS, 2016; Li et al., 2018) and Ford Pinto (Lee, 1998; Fleddermann, 2014). This limitation exists in both global and Chinese corporations and the automotive engineering sector, as these ethics concepts are taken as their main strategies for corporate governance and sustainable development. The typical concepts identified are corporate social responsibility (CSR) (Carroll, 1987; Freeman et al., 2010; Crane et al., 2013; Ferrell et al., 2019), triple bottom line (TBL) (Elkington, 1994; Elkington, 2004; Sneddon et al., 2006; Crane et al., 2013), green supply chain management (GSCM) (Gan, 2003; Orsato and Wells, 2007; Zhu et al., 2007; Wells, 2013; Nieuwenhuis and Wells, 2015), life cycle thinking/assessment (LCT/LCA) (Mascle and Zhao, 2008; Badurdeen et al., 2009), EMS/ISO standards (Hoyle, 2005; ISO, 2005; 2006), total quality control (TQC) (Marucheck and Robbins, 1990) or concepts like lean or agile management (Azevedo et al., 2012; Hajmohammad et al., 2013).

2) A general awareness of the value of culture in organisations and its impact on business ethics was reflected, but the nature and motive of some elements are not appropriate for the goodness ethics-centered focus of this thesis. For example, the culturalist Hofstede (1994) recognises '*The business of international business is culture*', and his cultural dimension concepts are widely utilised in business ethics and organisation ethics discussions (Hofstede et al., 2010; Mora, 2013). In addition, culture is widely utilised in organisations and influences an individual's attitudes towards ethics (Hunt and Vitell, 2006). Among the cultural values, Chinese culture is widely acknowledged and regarded as one of the elements that contribute to the rise of the Asian economy (Hofstede, 1988). Within Chinese culture, Confucianism is believed to be a virtue ethics (Angle and Slote, 2013; Panza, 2015); its five cardinal values of *Ren* (benevolence), *Yi* (righteousness), *Li* （propriety）, *Zhi* (wisdom) and *Xin* (trustworthiness), are believed to carry an intrinsic goodness nature, effective in cultivating people's moral values (Huang, 2013; Rothlin and McCann, 2015; Vallor, 2016; Cheng, 2018).

However, in many business cases, instead of focusing on intrinsic goodness values, culture is utilised more at the functional level and focuses on economic contributions. This does not fit the topic of this thesis, which focuses on intrinsic goodness ethics with non-coercive and altruistic motives (Snellman, 2015; Crane and Matten, 2016) (expanded in Chapter 4). For example, some cultural elements in Chinese business ethics have limitations, such as *Guanxi*, one of the ancient concepts embedded in the Confucian concept of life (Zhang, 2006). However, different from the five cardinal

virtues of Confucianism, *Guanxi* has its focus and thus limitations for training enhancement. This offers implications in the focused reviews and formal surveys:

- There is a limitation in *Guanxi*'s narrow motives and focus on relationship consideration. *Guanxi* originally reinforces the relationship between the five cardinal relationships, between wife and husband, friends and relatives '君臣有义，父子有亲，夫妇有别，长幼有序，朋友有信' (Tang and Wang, 2010, p.138). This relationship consideration is 'driven by human needs, which motivates the establishment of significant interpersonal relationships and frequent contacts with other people' (Ho and Redfern, 2018, p.208). Although *Guanxi* can also refer to 'social connection', a reciprocity based on mutual interest (Arnesen and Foster, 2018), it stems from a dyadic relationship (Chen et al., 2004), regarded as the 'relationship' between two people (Fan, 2002) or 'personal relationships' (Hwang et al., 2008). Therefore, *Guanxi* fails to offer a kind of intrinsic nature like the five cardinal values, which is essential in training to internally enhance managers' altruistic, non-coercive, ethical intentions.

- Moreover, in the modern context, *Guanxi* has additional interpretations associated with power, social status and resource transmission (Hung et al., 2008), which does not suit managers' EI enhancement. When used inappropriately, it may result in negative organisational practices (Chen and Chen, 2009). The particularly high collectivist culture cultivated by *Guanxi,* whereinwhich people act in the interests of the group, has limitations, as it encourages trust and loyalty toward members of the *Guanxi* circle; however, it also might result in corruption if abused (Lee and Dawes, 2005; Hofstede, 2016). In addition, the concept of *Guanxi*, stemming from Confucianism, has resulted in a hierarchical management style and complex social connections, which have also engendered bribery and corruption in management (Chen and Chen, 2009).

- Due to its wide interpretations and associations, *Guanxi* can be easily misused and may not be appropriate for direct use in training. Despite the stated benefit of reciprocity based on mutual interest (Arnesen and Foster, 2018), many people, including Western scholars, also hold a negative attitude towards this concept by 'wrongly mixing it with unethical behaviours such as corruption and favouritism, undermining the principle of fairness and justice' (Ho and Redfern, 2018, p.208).

3) There was reflected dimension limitation in that the current cultural consideration focuses on domestic cultures when discussing business ethics in China and ethical decisions in the CAI. For example, in terms of business ethics in China, only Chinese cultures, such as Confucianism and Taoism, are widely discussed and advocated to be incorporated to improve decision-making (Ip, 2009a; Lu and Enderle, 2013). Currently, for the context of globalisation, the expansion of the domestic cultural dimension is widely recognised and therefore, this domestic dimension is proposed to embed international hyper norms into Chinese business ethics (Ip, 2009a; Lu and Enderle, 2013). However, there is no follow-up consideration of other cultures or of the compatibility discussion between Chinese values and other co-existing values, particularly ethics from the West, which is popular in a high percentage of foreign domestic joint ventures in the CAI (China Statistical Yearbook, 2015). This dimension consideration gap in the CAI was presented in Section 1.2.

4) There was also reflected a perspective limitation in dimension considerations for ethical managerial decisions, where the current literature considers more from Western perspectives. These were identified in the scoping stage and critically discussed in revised Section 4.3. For example, in the fundamental ethical decision-making models (e.g. Hunt and Vitell, 1986; Groves et al., 2008), the dimension perspectives and ethical elements are Western-originated (Crane and Matten, 2016) (expanded in Section 4.3). Some ethical elements at these dimensions, such as codes of ethics for engineers from the industrial level, are different from those in China (Zhu and Jesiek, 2015). The literature also noticed the 'unwritten' phenomenon of codes of ethics in the engineering sector in China (David, 2009, p.334), but conducted no further research about its applicability. Therefore, the direct borrowing of these dimensions was not appropriate for the perspective in the CAI.

5) The scoping reviews also identified ethics that were not obvious in the CAI and ethical issues not directly relevant to it (e.g. discussed in revised Section 3.5). This is because in order to resolve ethical issues in the CAI; it is better to identify ethics unique both in this industry and in China. Among the literature, issues like the environmental crisis, labour rights and product safety were perceived as prominent challenges in business ethics in China (Ip, 2009a). Some of these are also reflected in the automotive industry, such as environmental issues and product safety, exemplified by the Volkswagen

Emission Scandal (Burki, 2015). However, as the CAI is the pillar industry in China, most companies are either state-owned or joint ventures under strict legal supervision from both China and global partners. The majority of CAI staff is from China, with very few from foreign countries. Therefore, issues of human rights, racism, sexism or diversity in the workplace, together with other irrelevant ethical issues, are not obvious and were not in the main discussion (e.g. discussed in revised Section 3.5).

In addition to limitations identified, scoping reviews also identified ethical issues pertinent in the CAI. The literature indicated that the unprecedented large scale of the CAI and its high percentage of joint ventures increased the pressure of environmental consideration and opportunities for bribery and corruption. These two key ethical issues contributed to the main discussion, such as in revised Sections 3.5.1 and 3.5.3. In addition, different from other industries, CAI's products (vehicles) can cause direct harm to people's health or even life, and the high demand increases risks of danger. Therefore, its product liability is regarded as one of its major ethical issues (Van Gorp, 2007), which contributed to the discussion in revised Section 3.5.2. All these have also contributed to the discussion in Section 4.6.

Scoping reviews also indicated ethics features in the current management training programmes in the CAI (expanded in Section 3.3). These achievements of the scoping reviews have narrowed the scope to intrinsic goodness ethics with altruistic motives. They have also further highlighted the need for preliminary and focused research to fill in the research gap. Consequently, informal exploratory qualitative research activities were conducted and are summarised in Section 2.5.

2.5 Exploratory qualitative research activities

Based on the results from the scoping reviews, outlines for preliminary qualitative research were developed and carefully validated with experts from related areas. Subsequently, research activities ran from February 2014 to May 2016. These rich activities in the preliminary stage have allowed for the successful exploration and understanding of issues related to EI in the CAI, facilitating the scope narrowing-down process. Furthermore, the outcome has also supported the conceptualisation and formal quantitative survey in the second stage, aiding final clarification in the refinement stage.

A condensed overview of the research activities engaged is presented in Tables 2.1, 2.2 and

2.3. Table 2.1 outlines the whole research journey, including exploratory research activities, and information gathered from 2014 to 2016. Table 2.2 maps the refining of research scope through the exploratory research activities. Table 2.3 summarises the focus and activities in the preliminary stage instrumental for structuring the research project.

Table 2-1: An overview of the research activities (2014-2016)

No.	Time	Companies	Research Activities	Sampling	Purpose
1	04/2014	· Company A · Company B · Company D · Company F · Company G · Company H · University A	· Unstructured and semi-structured interviews · Information from the public domain · Managerial training programmes from Company D and F · Managerial training schedule from University A · Documents and CSR reports from Company H	Convenience, random and purposeful sampling	To understand the research background in the CAI and gather information related to training programmes.
2	07/2014	· Government Auto Organisation A	· Unstructured and semi-structured interviews · Information from the public domain, e.g. policy documents and training programmes in the CAI	Convenience and purposeful sampling	To understand key external drivers of ethical decisions: government policies and training programmes.
3	08/2014	· Company D	· Unstructured and semi-structured interviews · Company visits · Documents from the public domain · Information through email communication	Convenience and purposeful sampling	To understand the practice of automotive companies and managers' perception of ethical decisions.
4	12/2014	· Company B · Company I	· Semi-structured questionnaire · Unstructured interviews	Convenience and random sampling	To get managerial training information and managers' perception of ethical decisions.
5	01/2015	· Company C · Company J · Company E	· Semi-structured questionnaire · Unstructured interviews · Documents · Email communication	Convenience, random and purposeful sampling	As above
6	08/2015	· Company B	· Company documents · Company visits	Convenience and purposeful sampling	To focus on the training situation and explore relevant training programmes for this research.
7	12/2015	· Company D · Company F	· Semi-structured interviews · Company visits	Focus group	To validate ethical dimensions in the CAI, preparing for the formal quantitative data collection.
8	01/2016	· Auto Association A	· Email communication	Convenience and purposeful sampling	To understand the training situation in the auto association.
9	05/2016	· Party school A	· Unstructured and semi-structured online	Convenience, random and	To understand the party school

			interviews · Email communication	purposeful sampling	training situation.
10	05/2016	· Company D · Company J	· Unstructured online interviews · Comprehensive analysis of data from the above research activities	Convenience and purposeful sampling	To help narrow the scope and locate research focus.
11	06/2016-07/2016	· Experts in the UK · Experts in the CAI · Training experts in different party schools · Experts in university auto Dept.	· Validation meetings in the UK · Unstructured web communication with experts in China · The pilot of a questionnaire survey	Convenience and snowball sampling	To validate the questionnaire design.
12	2014-2016	· Literature Review	· Content analysis of literature		Theoretical conceptualisation
13	07/2016	· 19 auto companies, one university training centre, and one party school	· Delivery and collection of questionnaires	Convenience and snowball sampling	To gather formal quantified qualitative data from the dual perspective surveys.

Source: Author (2019)

N.B: Individual reports were prepared following these research activities (see appendices for Chapter 2)

Table 2-2: The exploratory research activities for refinement of the research scope

Time	Contents	Appendix
Note: The initial exploratory research activities offered the researcher opportunities to gather background information and establish personal contact with managers in the CAI, informing the conceptualisation, the formal quantitative survey and data analysis. Research scopes evolved from being broad to specific, which can be seen in the appended research questions and outlines. The following research activities were also accompanied by internet-mediated communications and follow-up research, such as using the links or materials they provided.		
04/2014	Six auto companies and one university were visited. As this was the first round of research activities, the interview outline started quite broad, such as issues of GSCM and ISO standards in the whole life-cycle of its product as discussed in the scoping review in Section 2.4. Before the visit, appropriate arrangements were made regarding the approval of the interview outline, including the supply of consent letters. During the visit, the heads of relevant departments were interviewed using a structured interview design. However, topics often expanded or shifted according to the participants' working department and different companies. These activities aided the understanding of issues related to EI and dimensions in the CAI, through which the researcher also obtained information about existing managerial training programmes related to EI.	Interview Outline -Appendix 2.1 Report of Company F - Appendix 2.2 Report of University A - Appendix2.3
07/2014	A research study was carried out in Government Auto Research Centre A, which is the policy and state regulation-issuing centre for the automotive industry. These policies and regulations such as ISO, environment and emission standards are external drivers of ED, and therefore, are essential background information.	Interview Outline in Government Auto Research Centre A - Appendix 2.4
08/2014	Based on the previous research, more formal and focused research study was carried out in Company D and Company F, which gathered information on the managerial decision-making dimensions and managers' opinions on ethical elements discussed in scoping reviews.	Interview Outline in Company D/ F -Appendix 2.5
12/2014	A more formal and focused research study was carried out in Company B and Company I. Building on the previously run exploratory research, a semi-structured questionnaire was developed to gather information on managers' ethical decision-making and management training.	Questionnaire Outline of Company B and Company I – Appendix 2.6
01/2015	A research study was carried out in Company C, Company J and Company E, similar to the aim in 12/ 2014.	Questionnaire Outline of Company C/J/E -Appendix 2.6
08/2015	A research study was carried out in Company B, with a focus on training situation and government policy regarding ethics and regulations.	Interview Outline of Company B -Appendix 2.7
12/2015	A focus group meeting was carried out in Company D, and Company F. These participants were from different departments and responded to relevant questions. The meeting was a milestone and allowed for the narrowing of final research scope, to explore the validity of the five levels of ethical dimensions in the company, examining the perception of ethics. This research was key to the design of the subsequent survey and formal quantitative data collection in July 2016.	Interview Outline of Company D/F -Appendix 2.7

Source: Author (2019)

By carrying out rich preliminary research based on scoping reviews, through communicating informally and genuinely with these managers and people in the CAI, this research was able to obtain in-depth and spontaneous data. These activities made apparent the limitations of existing literature, which focuses on ethical elements that are coercive, superficial and fragmented, with only a short-term and narrow focus on concepts like sustainability. The

outcome drove the author to focus on the most pertinent areas for this ethics research that would be non-coercive in nature and systematic in dimensions and aligned to the CAI context and its engineering ethics features. The summary of preliminary stage activities and findings are outlined in Table 2.3 with approaches utilised.

Table 2-3: Summary of the preliminary research stage, focus and activities

Main stages	Focus and finding	Key approaches/activities
Stage 1 Preliminary background research	Exploration of the value context and ethical background in the CAI. The findings indicated that most ethical elements are superficial and coercive and are considered from functional and operational aspects. This has also been reflected in training practice. There was a limited embedding of moral elements such as culture and ideology, in managerial training. There was incomplete consideration of ethical dimensions, lacking ethical elements from the West and the compatibility consideration of other co-existing values such as Communism, Confucianism and codes.	• Company visits; • Semi-structured and un-structured interviews; • Questionnaire surveys; • Textual interpretation on documents; • Data acquisition in public domain.

Source: Author (2019)

An anecdote is provided to further illustrate the summary and show how these activities informed the following focused research. When questioned '*What ethics is important in the auto companies?*' one of the senior-management level interviewees responded '*I hate bullying. It is not allowed in my company.*' Regarding this unusual answer, this interviewee told a story:

> *I spent my childhood in a remote village where people were not rich. However, they knew how to help each other intuitively. A typical example is when people passed away and the families could not afford a proper funeral ceremony. Then any family with proper tables and benches and bowls would intuitively take these together to help hold the funeral and show respect for the dead. If any family that had these items of furniture did not do this, they would be severely criticised and regarded as having committed a kind of offense to the local custom and shown disrespect to the dead.*

It goes without saying that the spirit of care for others demonstrated by the poor villagers is far beyond any external enforcement or coersion. This story indicated that this spirit of care

for others was deeply rooted in the heart of this manager and had influenced his ethical perceptions in his work. He had internalised the values from the village where he grew up, which had not been imposed by the corporation. Therefore, this story made the author ponder what is the force that had driven these poor people to help each other and regard it as a custom without any external coercion or legislation.

2.6 Exclusion of key areas through the scoping reviews and preliminary research

Based on the identified limitations from the scoping reviews and many in-depth interviews like those mentioned above in the preliminary research, key areas in the existing literature that were ineffective for this thesis, as stated in Section 2.4, were excluded from this thesis. To be specific:

- This thesis would not be focusing on coercive ethics from external drivers at operational and strategic levels, such as from the corporate governance domain;
- Some cultural elements that might engender negative results for the management, like *Guanxi*, would be excluded from the main discussion;
- The Chinese-centered dimension and Western-originated perspective would not be borrowed directly;
- And ethics not unique in or directly related to the CAI would not be included in the main discussion.

However, some of these areas still appeared in the discussion of the following chapters. For example, for critical discussions, limitations identified appeared in revised Section 3.4 and 4.4 and 4.5, to indicate the key ethical issues and for discussion on adaptability. Some ethical situations such as the financial fraud of Enron and product liability of Sanlu Milk Powder are identical in management, therefore were utilised in the background discussion in revised Section 1.1.

In summary, following the preliminary activities, research areas were identified. These narrowed from broad ethics areas, and superficial and coercive areas such as functional and governance domain, to focus on the non-coercive, intrinsic goodness, and systematic ethics, appropriate for the dimension and perspectives of the CAI and its unique ethical features in environment, product liability and management corruptions. It is due to the fact that these

approaches, which focused only on coercive ethics, would not be able to resolve the complexities of ethics and moral values in the CAI as initially discussed in Chapter 1 and detailed in revised Chapter 4. This information is beneficial for a focused literature review pertinent to this thesis.

2.7 Summary

This chapter justified a sequential research method with scoping reviews and follow-up research activities to explore and narrow the research focus and identify the unique ethical features in the CAI. The results of the research activities indicated the ineffectiveness of considering only coercive and superficial ethics from the functional and corporate governance domain, and thus, though considered, was not the focus in the subsequent literature review and analysis of training programmes. The focus of this became non-coercive moral values that would be discussed in focused reviews and formal surveys outlined in Chapters 3 and 4. This information is also beneficial in informing the design of the formal quantitative surveys, which is discussed in Chapter 5.

Chapter 3 Focused Conceptualisation - Issues Related to Moral Values in the CAI and Ethical Elements in Managerial Training

3.1 Introduction

Based on scoping reviews and preliminary research activities, as stated in Chapter 2, this chapter brings together contextual information and data from public domain research, setting out the context of the study. The information in this chapter is as a result of the reviews and research activities at different stages, thus demonstrating how the reviews had been driving from broad areas to focus on the current literature and laying a basis for the upcoming analysis and discussion. Section 3.2 presents broad contextual information regarding ethics in the CAI, based on which the remaining sections focus on discussions of moral values relating to managerial training and the key ethical issues in the CAI justified in Chapter 2, structured as follows:

- Section 3.2: Industry contextual information related to moral values in the CAI;
- Section 3.3: Existing ethical elements within managerial trainining in the CAI;
- Section 3.4: The limitations of existing ethical elements in training regarding EI;
- Section 3.5: Key ethical issues in the CAI.

Within this chapter, information from the public domain is sourced directly. Measures have been taken to protect the identity of contributing companies.

3.2 Industry background

Based on the narrowed scope of the scoping literature on the effectiveness of non-coercive moral values, this section focuses on moral values in the CAI; therefore, the early sections (Sections 3.2.1, 3.2.2, 3.2.3, 3.2.4 and 3.2.5) are related to moral value issues. The later sections (Sections 3.2.6, 3.2.7 and 3.2.8) provide background information for the industry in terms of its staff profiles and distribution of auto companies.

3.2.1 Moral value complexities in the CAI

The CAI was founded in 1952, then limited to two large makes of cars aimed at senior party

officials: the Shanghai and the Red Flag (Nieuwenhuis and Lin, 2015). In 1988, the government proposed a strategy to support six state‐owned companies: First Auto Works (FAW), SAW, SAIC, Beijing Jeep, Tianjin FAW Xiali (TJFAW), and Guangzhou Peugeot (ibid). At this early stage, as a purely domestic industry, the values in the CAI were dominated by the indigenous ideologies of Communism and Marxism (Marketline, 2017).

The moral values within the CAI have been transforming since 1986 when the state began pursuing an 'open door' economic policy (Jing, 2017). During this time, with the CPC promoting reforms, the CAI was developing under a favourable government policy to obtain foreign technology, resulting in unique joint ventures (JVs) (Zhao, 2006; Marketline, 2017). Currently, foreign investment in this industry is approximately 55% (China Statistical Yearbook, 2017). The relationship between global automakers and their Chinese joint-venture partners is both cooperative and competitive (Jian, 2017). However, due to the existence of a share cap for foreign companies, and some of the protective policies implemented by the Chinese government, overall, the Chinese companies have held the upper hand in terms of power in decision-making (Gao, 2004).

Currently, these already-complex relationships are becoming more complicated due to the establishment of separate JVs to produce EVs. Many foreign and domestic automotive companies are establishing new partnerships, such as the Volkswagen Group with Jianghuai Automobile Co.; Ford Motor Co. with Zotye Auto Co.; VW with SAIC Motor Corp. and China FAW Group Corp (Jing, 2017). Ford has a passenger vehicle partnership with Changan Automobile Co. and a truck joint venture with Jiangling Motors Corp. (ibid).

Recently, the on-going lifting of foreign ownership restrictions has generated new ownership structures and led to a new weighting of moral values in decision-making. For example, Tesla (Hong Kong) has registered and set up its whole-ownership registered factory in Shanghai (The Economic Times, 2018; Xinhuanet, 2018). This change is due to a policy from the CPC, which can be confirmed by a speech by President Xi that '*Current controls on ownership of businesses building vehicles in China would be eased*' (Tovey, 2018). This is aligned with the Chinese government's initiative of 'Westward Ho', to 'make China strong and powerful again', such as the 'One Belt, One Road' Initiative (NDRC, 2015; Ferdinand, 2016; PwC China's Automotive Bluebook, 2017), and the 13th 5-Year Plan (CPC NEWS, 2016; MMTA, 2017).

3.2.2 Joint venture growth

The impact of so many JVs in the CAI is significant. In the CAI in 2011, 44.3% of the total number of automobiles was produced by local firms, including Geely, Chery, Hafei, Jianghuai, Great Wall, and Roewe, while the rest of the vehicles came from international companies including JVs (MMTA, 2017). In 2014, the indicated Registration Status of Foreign-Funded Enterprises by Sector at year-end was approximately 55.6% (China Statistical Yearbook, 2015).

Several multinational manufacturers have partnerships with domestic manufacturers and have constituted JVs (Harwit, 2001). The origin countries in the early joint-venture companies were the US, Germany and France (ibid) (Table 3.1).

Table 3-1: Early JVs in the CAI

Year	Joint ventures	Origin country
1983	American Motors Corporation (AMC), later acquired by Chrysler Corporation, signed a 20-year contract to produce their Jeep-model vehicles in Beijing	America
1984	Germany's Volkswagen signed a 25-year contract to make passenger cars in Shanghai	German (Europe)
1984	France's Peugeot agreed to another passenger car project to make vehicles in the prosperous southern city of Guangzhou	France (Europe)

Source: Author (2019), based on Harwit (2001)

Currently, more foreign manufacturers are establishing JVs. The majority of their origin countries are from Europe, North America, Japan, and Korea (CAMM, 2017) (Table 3.2). Some companies from Hong Kong, Taiwan, and Macao in China have also established cooperative partnerships (Table 3.2).

Table 3-2：2017 top 10 auto companies in China

Companies	Joint ventures	Ownership
SAIC (上汽) and SAIC-GM (上汽通用)	With US-owned General Motors (GM)	State-owned
Dongfeng Motor Corporation (东风)	Cummins, Dana, Honda, Nissan, Infiniti, PSA Peugeot, Citroën, Renault, Kia and Yulon	State-owned
FAW Group Corporation (一汽)	Audi, GM, Mazda, Toyota and Volkswagen.	State-owned
Chang'an Automobile Group (长安)	Suzuki, Ford, Mazda and PSA Peugeot Citroën	State-owned
BAIC Group, also known as Beiqi (北汽)	Hyundai and Mercedes-Benz	State-owned

GAC (广汽)	Fiat, Honda, Isuzu, Mitsubishi, and Toyota	State-owned
Geely (吉利)	Volvo Cars, and Lynk & Co.	Biggest privately-owned
Chery （奇瑞）	Jaguar and Land Rover	State-owned
Brilliance Auto (华晨)	BMW	State-owned

Source: CAAM (2017)

According to CAAM (2017), carmakers in China delivered 28,226,616 passenger and light commercial vehicles in 2017. Table 3.3 indicates the dominance of these JVs (CAAM, 2017).

Table 3-3：2017 Top 10 brands by passenger car sales

Rank	Brand	Manufacturer(s)	Sales in 2017	Ownership
1	Volkswagen	FAW, SAIC	3,135,236	JV
2	Honda	GAC, Dongfeng	1,405,021	JV
3	Geely Auto	Geely	1,248,004	Self-owned brand
4	Buick	SAIC, GM	1,223,429	JV
5	Toyota	FAW, GAC	1,131,616	JV
6	Nissan	Dongfeng	1,116,709	JV
7	Chang'an	Chang'an	1,062,716	Self-owned brand
8	Baojun	SAIC-GM-Wuling	1,016,224	Self-owned brand
9	Haval	Great Wall	851,855	Self-owned brand
10	Ford	Chang'an	840,946	JV

Source: CAAM (2017)

3.2.3 Diversified ownership

These foreign brands and sub-brands under JVs and local Chinese brands demonstrate a hybrid mixture of ownership (Tables 3.2 and 3.3). Additionally, due to government policies, each foreign company can have two local car enterprise partners, while Chinese car companies can have more than one partner. Because of this, many Chinese car companies have a mixed ownership structure (CAAM, 2018a). The complex ownership structure created by the merging of China and the West under one company has led to a complex moral value set influenced by both sides. Figure 3.1 shows the scales and ownership in China in the first half of 2013.

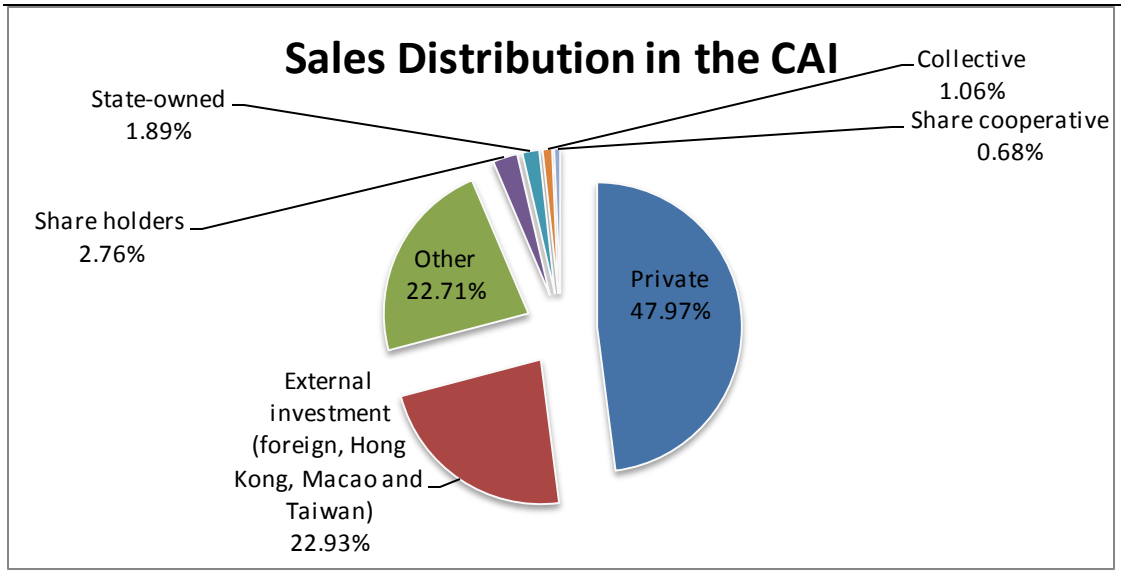


Figure 3-1: Sales and ownership distribution in the CAI in the first half of 2013
Source: ASKCI (2013)

Figure 3.1 shows six main ownership or collaborations altogether: state-owned, collective, shareholders, private, external investment, and others (ASKCI, 2013). Among them, sales through external investment are significant. Hong Kong, Macao and Taiwan from China also occupy certain percentages. This figure has further confirmed the diversity of ownership in the CAI.

Some companies or subsidiary companies have one or more cooperative partners from various countries, and these partners and expatriates in China bring to the table their cultures and values into decision-making. This complex situation can be exemplified by the Dongfeng Motor Corporation (DFG, 2016) and the Guangzhou Automobile Group (GAC, 2016; GACC, 2016), that have JVs, or mixed ownership subsidiaries (ibid). Figure 3.2 displays the ownership in the Dongfeng Motor Corporation (DFG) and its two JVs of Dongfeng Motor Co., Ltd (DFL) and Dongfeng Peugeot-Citroën Automobile Co., Ltd. (DPCA). Figure 3.3 demonstrates the situation in FAW. More examples are listed in Appendix 3.1 (Sohu Auto, 2017).

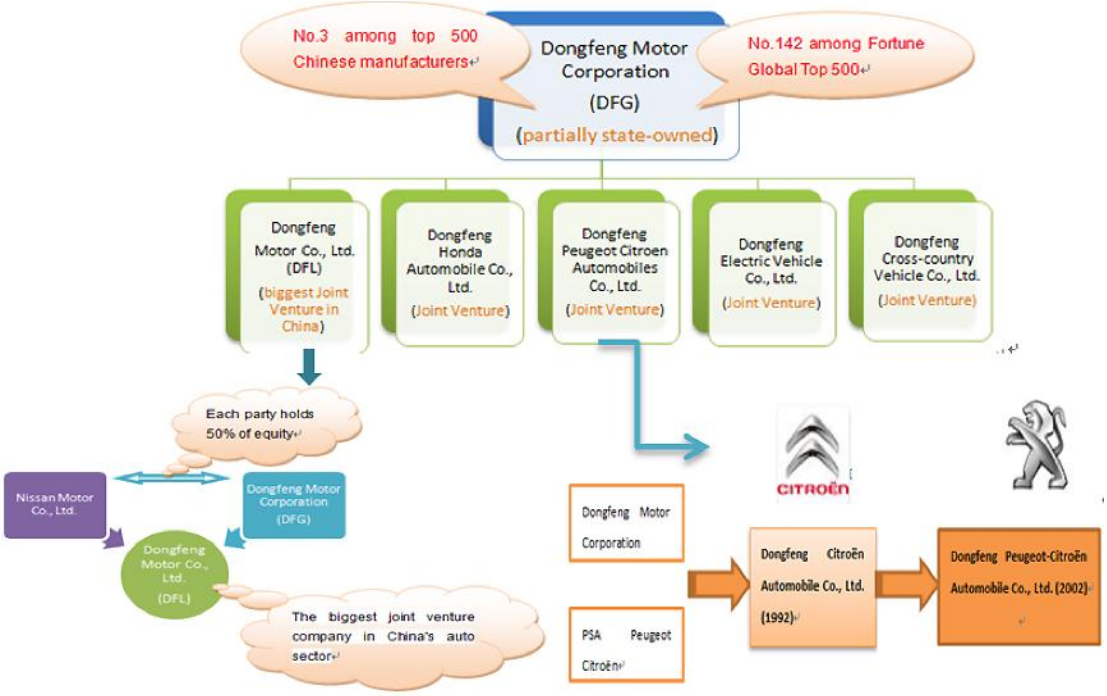


Figure 3-2: The ownership structure of DFG, DFL and DPCA
Source: Author (2019), based on data in DFL (2016)

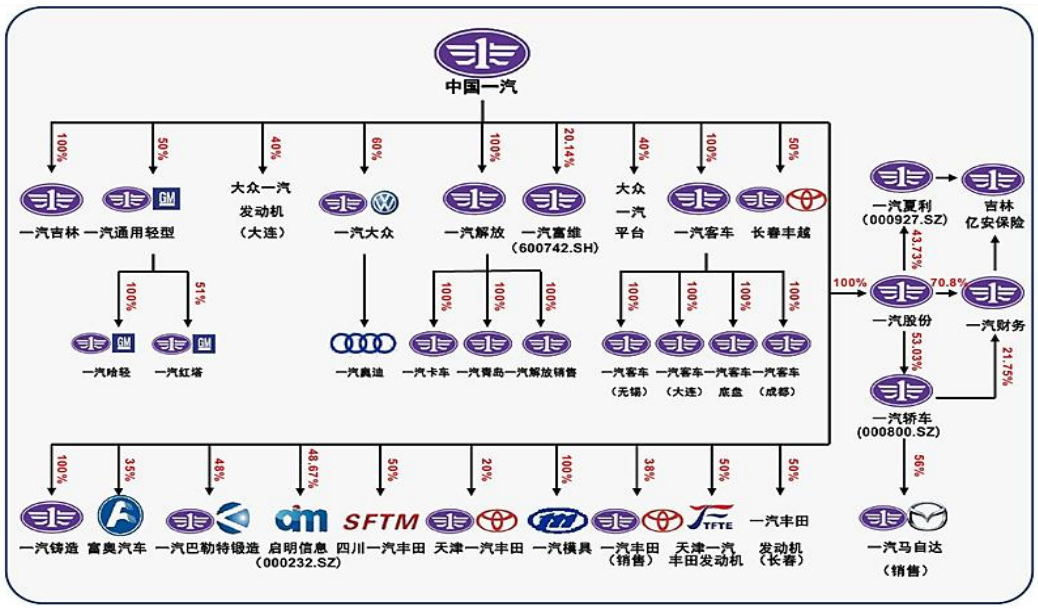


Figure 3-3: The ownership structure of FAW
Source: Sohu Auto (2017)

3.2.4 Government impact on ED and managerial training

By the end of 1949, the Communist Party of China (CPC) was '*the founding and major ruling political party of the People's Republic of China (PRC)*' (Hunt, 2015, p.118). China has been under its leadership for more than 60 years now (Marketline, 2017). With over 80 million members, the CPC is present in every part of the government and controls the formulation of government policies and decisions right down to the provincial level (Xinhua,

2016a). Therefore, in all forms of decision-making, the CPC has a formidable influence over the entire process, from the policy framework right through to implementation (Marketline, 2017).

This influence of CPC is particularly important for the CAI, which is one of the industry pillars in China (CAAM, 2018a). Most car companies are state-owned (indicated in Table 3.2). The impact of the CPC is obvious in the decision-making process of the CAI, permeated systematically by the party organisation, particularly on the managers/cadres, which is a Chinese way of naming management and administrative staff (Lee, 2010). Scholars outside China recognise this phenomenon:

> '*It was the policy decisions made by personnel at the top system'* and *'leadership from above was reinforced by the Chinese Communist Party (CCP) infiltration of all political and administrative sectors, giving the party an effective monopoly of policy-making on major issues*' (Harwit, 2016, p.5).

China adopts Marxism and Communism as its dominant ideologies (Lee, 2010; CCPS, 2012; Pieke, 2015), and this is reflected in the decision-making of the Chinese automotive companies. The Party Committee ensures it is responsible for all major decisions, which can be illustrated by the organisation decision chart of a state-owned car company (Company A) (Figure 3.4).

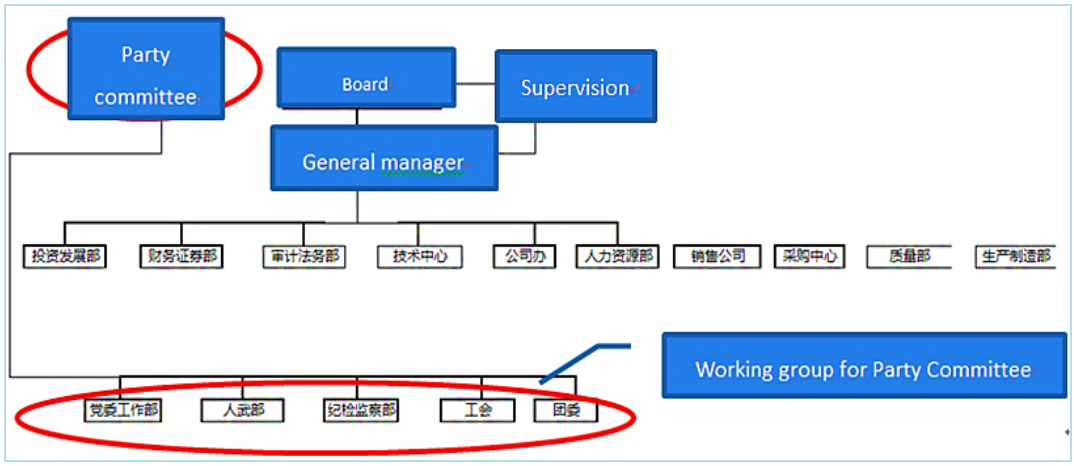


Figure 3-4: Organisation decision-making chart in Company A
Source: Company A documentation (2018)

This dominance can be further perceived in the first-tier management structure of another joint venture (Company B). In the state-owned enterprises or organisations, a special position of '党委' (translation: Party Secretary) with its offices '党委工作部' (translation:

Party group for Party Committee) supervises and ensures the decisions are on the right track, even in the JVs. Figure 3.5 indicates that the party secretary is an independable section and is authoritative in decisions.

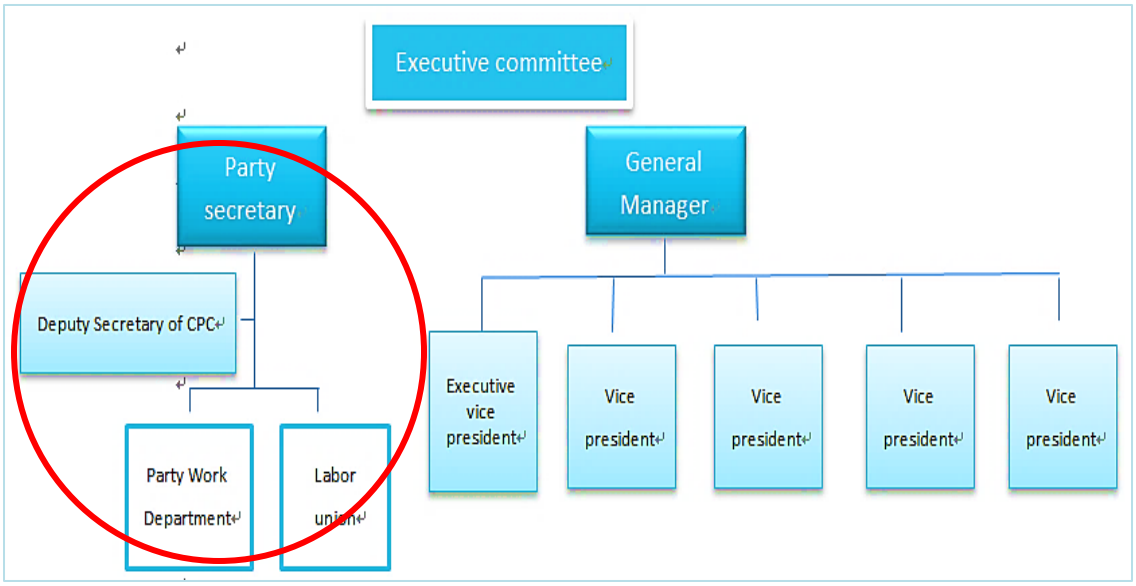


Figure 3-5: First-tier decision-making structure in Company B
Source: Company B documentation (2018)

This authoritative role of the CPC in decision-making can also be mirrored from the statement by '紫光阁' (Chinese pinyin: *Zi Guang Ge*, abbreviated to ZGG), which is the '*State organs working committee of the CPC Central Committee*'. Figure 3.6 indicates its important role in decision-making. According to CCP ZGG (2010), the important decisions are known as '三重一大' (translation: *Triple important decisions and one large fund operation decision*); the upshot is that '凡属重大决策、重要人事任免、重大项目安排和大额度资金运作事项必须由领导班子集体做出决定的要求' (translation: *Any major decision, important personnel appointment and removal, major project arrangement and a large amount of fund operation must be made by the collective decisions of the leadership*).

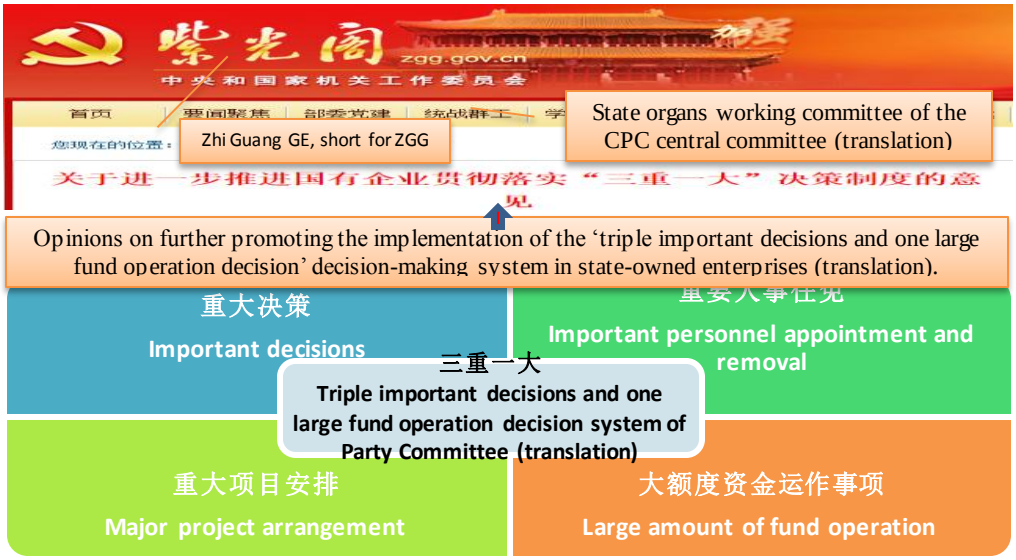


Figure 3-6: Decision-making system of Party Committee
Source: Reproduced from CCP ZGG (2010)

Managers in China, including those in the CAI, feel this ideological impact profoundly. Managers are also cadres (Party administrative staff in Chinese), recruited to fit the requirement of the CPC. Communist ethics also has a profound influence on their behaviour and decision-making, e.g. there is a nationwide requirement for Chinese civil officials above county level (Xinhuanet, 2015b). CPC Central Committee calls for cadres to ‘*Adhere to Correct Direction on Personnel Election and Appointment*’ (translated from 《坚持正确选人用人导向》) (abbreviated to *The Direction* thereafter). *The Direction* explicitly states the standards and benchmarks for a good cadre, as specified in the Party Constitution (Chen, 2016). One of the standards is the cadres’ governance norms proposed by Xi Jinping, ‘*Three Stricts and Three Steadies*’ (三严三实) (Appendix 3.2) and some of the norms are related to morality, such as ‘*To be strict in cultivating one's moral character and Communist ethics, and to be faithful to Marxism, while enhancing moral character…*’ (translated from: ‘严以修身，就是要加强党性修养，坚定理想信念，提升道德境界…’) (CPC NEWS, 2015).

Currently, the newly released regulations on cadre governance indicate the continued dominance of the party. In March 2019, the CPC officially released a regulation to upgrade with the old regulations in *The Direction*. In the new *Regulations on the Selection and Appointment of the Party and Government Cadres* (translated from:《党政领导干部选拔任用工作条例》), the first regulation is ‘党管干部’ (translation: *Cadres are under the supervision of the Party*) (Xinhua News, 2019).

As an ideological concept, Communism has permeated through each decision-making process, and thus reflected in training programmes, mainly through its internal party school, which is recognised as Chinese characteristics to reinforce its ideology and moral governance (Shambaugh, 2008a; Lee, 2010). To be more specific, the party policies and ideology are regularly reinforced through training at the party school for Communist members; while for non-Communists, there are other forms of training to implement, such as the '*Theoretical Learning Group*'. In addition to the ideologies and party principles, such as the '*Eight Honours and Eight Shames*' (People, 2005) (Appendix 3.3) and the '*Three Strict and Three Steadies*' (CPC NEWS, 2015a) (Appendix 3.2), within training, there is also a discussion to associate Communism with specific forms of work to improve staff morale or integrity of their work.

The impact of the party branch in the CAI and success in transforming morality and enhancing efficiency in work can be seen in a report by the *Organisation Department of the CPC Central Committee* on the success of the Chang'an Automotive Company, a top-ten seller in China (CPC NEWS, 2015b). This report claimed that the quintessential value of Communism has been influential and that socialist cadres are taking a leading role contributing to its development (Table 3.4).

Table 3-4: The backbone benefit of cadres in Chang'an joint venture

Excerpt from CPC News	Translation
党员都是优秀员工和骨干人才，党员的唯一特权就是在岗位上带好头、多做贡献。	Party members are all outstanding employees and backbone talents. The only privilege of party members is to lead a good team and make more contributions to their posts.
落实"双培养"——建设骨干队伍，凝聚优秀人才。	Implement 'dual cultivation' -- build backbone team and pool outstanding talents.
"双培养"的实施，使党员队伍真正成为企业发展的中坚力量，让外方充分感受到了"哪里有党员，哪里就干得好"、"哪里有党组织，哪里就有优秀业绩"。	The implementation of 'dual cultivation' makes the party members become the backbone force of the enterprise development, and makes foreign parties fully feel that 'where there are party members, there will be good work' and 'where there are party organisations, there will be excellent performance'.

Source: Author (2019), compiled from data in CPC NEWS (2015b)

Currently, the dominant and positive impact of Communism has also been reflected in the diversified cultural environment in JVs. For example, in Chang'an, it is reported that '*in the face of the complex situation of coexistence of diverse cultures and interwoven ideologies, party organisations can better pool the thoughts of their employees and synergise their positive energy*' (translated from: '在多元文化中发挥核心引领作用,面对多元文化并存、

各种意识形态交织的复杂情况，党组织能更好地凝聚广大员工思想，汇聚大家的正能量') (People, 2015). The Party Committee of Chang'an proposed to create a '*Sunshine Party Building', creating effective carriers in various forms and dimensions, and building up party synergy so that the party organisation can keep close contact with Chinese and foreign employees and foreign executives'* (translated from: '长安汽车党委提出打造 '阳光党建'，以多种形式、在多种维度创设有效载体、搭建党建阵地，使党组织与中外员工和外方高管实时亲密接触') (ibid). This efficiency and the leading role of the party branch were also recognised by the vice CEO of Chang'an (Ferrari Louis Anthony), an American, who credited these principles as being an influential power and the secret of the rapid development seen in China (ibid).

The recent release of the share cap in the JVs (The Economic Times, 2018) might bring some change of values and impact the dominance of Communism in decision-making. However, under the current regime, this impact still exists, with policies in place to reinforce it. This can be evidenced by news from the CPC that all JVs including the whole ownership foreign-funded enterprises should establish local party branches (CPC NEWS, 2012) (Figure 3.7).

Figure 3-7: The policy to set up a party branch in JVs in China
Source: Author (2019), based on data in CPC News (2012)

3.2.5 Indigenous cultural impact

Most of the staff working in the CAI are Chinese (Marketline, 2017). As members of the industry, managers are no exception. The data gathered from two automotive companies gathered in the preliminary research reflects that foreign staff/expatriates make up less than 1% (Table 3.5).

Table 3-5: Staff nationality percentage in auto JVs

Company	Chinese staff (%)	Expatriates (Foreign /Taiwan or Hong Kong) (%)
A Sino-French Joint Venture (Company C)	99.75%	0.25% (French)
A Sino-Taiwan Joint Venture (Company D)	99.18%	0.82% (Taiwan)

Sources: Company C and Company D documentation (2017)

The dominance of domestic staff has also brought a corresponding dominating impact from the indigenous culture. Currently, the impact of Confucian ethics on managers is also evidenced by a speech given by President Xi that '*The cultural legacy has become part of Chinese people's gene, deeply rooted in the inner heart of Chinese people, intrinsically and unconsciously impacting Chinese people's thinking style and behaviour*' (translated from: '中华优秀传统文化已成为中华民族基因, 植根在中国人内心,潜移默化影响着中国人的思想方式和行为方式今天') (Xi, 2017).

More impact and activities will be detailed in the rest of this Chapter. These include promotion from the government for cadres to study '*Guo Xue*' and its unconscious impact in daily life, as well as the domestic cultural environment (Xinhuanet, 2017b; Xinhuanet, 2017c;Chinakongzi, 2018).

3.2.6 Demographic profile

Staff in various companies within the CAI have slightly different profiles, but what is noticeable is the predominance of male staff. This is in accordance with the social phenomenon of a highly skewed gender ratio in favour of males in Chinese society. This imbalance is reflected in the CAI (Marketline, 2017).

According to the Telegraph (2015), '*Male-dominated engineering has an 87 % gender gap*'. Although recently the gender gap between male and female engineers has narrowed, research still shows, '*There are still eight times as many men as women in the industry*' (The Telegraph, 2015). Table 3.6 indicates the gender percentage of two sampling companies for CAI, in which the majority of the employees (approximately 84%) are male. This information is consistent with the Telegraph's report.

Table 3-6: Employee imbalanced gender

Company	Gender Percentage	
	Male	Female
Company C	83.4%	16.6%
Company D	81.30%	18.70%
Average	82.35%	17.65%

Source: Company C and Company D documentation (2017)

As managers are also cadres, their appointment and promotion should also comply with government policies, such as age. The government has regulations for cadres' or leaders' promotion by age. According to the *National Personnel Department*, this policy started in 1979 with the idea of rejuvenating cadres. In the 1980s, after the third CCP (Chinese Communist Party) *Plenary Conference* in 1980, Deng Xiaoping proposed that the cadres should be '*more revolutionary, younger in average age, better educated and professionally more competent*' (translated from: 干部队伍的'革命化、年轻化、知识化、专业化') (Han, 2010). Since then, there have been many policies based on this proposal.

One of the current policies related to age is that any new cadres over 40 years old cannot be promoted to lower-level officials (*Ke Ji Gan Bu*). Those that are above 50 years old cannot be promoted to middle-level officials (*Chu Ji Gan Bu*); those above 55 years old cannot be promoted to higher-level officials in the Department Bureau (*Ju Ji Gan Bu*). At the age of 50, the lower and middle-level officials sometimes need to resign from the important positions and become consultants (Hezewh, 2016). However, for very high-level positions, the officials have lax age policies. In addition to the policies on cadres, the average age throughout the CAI also tends to be relatively young. Table 3.7 reveals the age group in a sample company (Company D). The table shows that most of the employees (85.5 per cent) are under 40 years of age.

Table 3-7: Employee age groups

Age groups in Company D	Below 20 yrs	21-30yrs	31-40 yrs	41-50 yrs	51-60 yrs
Percentage	2.6 %	43.0%	39.9%	11.4%	3.1%

Source: Company D documentation (2017)

3.2.7 The layout of main auto corporations in the CAI

In 1953, China established the first automobile factory in Changchun and began to explore the development of the domestic automobile industry (Marletline, 2017). In 1956, China produced its first Jiefang truck; in1958, the first Dongfeng car was produced. Since China's

entry into the WTO in 2000, the car industry in China has gradually integrated into the global automobile manufacturing system (ibid). Now the auto industry is expanding continuously, having gradually formed six major automobile industrial clusters: the Yangtze River Delta, the Pearl River Delta, surrounding Bohai Sea Area (Beijing-Tianjin-Hebei Region), Northeast China, Central China and Southwest China (Chen, 2016; He et al., 2018). There are six vehicle manufacturing cities/areas: Jilin, Shandong, Shanghai, Hubei, Chongqing and Guangdong (Figure 3.8).

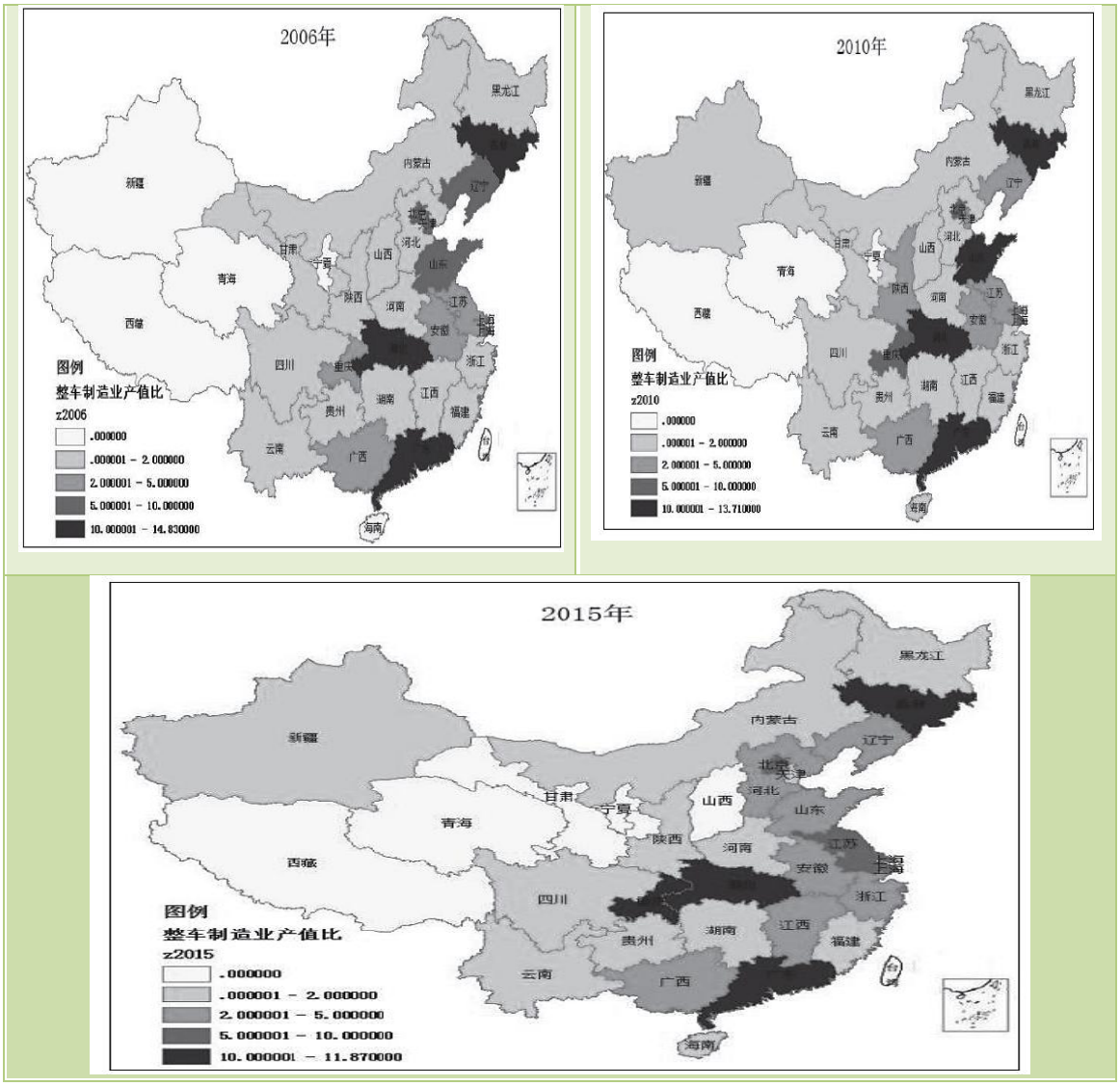


Figure 3-8: Evolution map of the regional distribution of vehicle manufacturing industry in provinces and cities of China from 2006 to 2015

Source: Chen (2016)

According to CAAM (2018), within these clusters, in the CAI, there are six major automotive corporations, and each corporation is based in a city or an area, which radiates to other parts of China (SIC, 2014) (Table 3.8). According to the data in CAAM (2018), in the past four years, the number of automobile manufacturing enterprises has increased year

by year, with an average increase of nearly 1,000 enterprises registered annually. By the end of 2015, there were around 14,149 automotive manufacturing enterprises in China, an increase of 14.04% compared with the previous year (He et al., 2018). These enterprises are mainly under these six automotive corporations in the form of either subsidiaries or JVs.

The State Information Centre, abbreviated to SIC, is a public institution and a national-level decision-making advisory body. It also serves as a public service platform of the e-government network, focusing upon advanced information technologies, and core information resources, which supports scientific decisions. According to SIC (2014), the six automotive corporations and their impact are shown in Table 3.8.

Table 3-8: Six major automotive corporations and their impact in China

Six major auto corps in China	The impact of manufacturing and selling in China	Industrial clusters
FAW	Based in Changchun, the hinterland of Northeast China, extending to the rest of China, except Northwest China.	Northeast China
BAIHC	Based in Beijing, extending to other parts of China, except Northeast and Northwest China.	Beijing-Tianjin-Hebei Region
SAIC	Based in Shanghai, spreading to all parts of China, except North China.	The Yangtze River Delta
Dongfeng	Based in Hubei, extending to the other parts of China, except North China and Northwest China.	Central China
Chang'an	Based in Chongqing, extending to other parts of China, except Northwest China.	Southwest China
GAGC / GAC	Based in Guangzhou, spreading to other parts of China, focusing in South China, Central China and East China.	The Pearl River Delta

Source: Author (2019), compiled from data in SIC (2014)

The layout of the CAI can be demonstrated in the *China Industry Information Network*, abbreviated to Chyxx in Figure 3.9 (Chyxx, 2016). The translation of development features of industrial clusters highlighted in the circles in Figure 3.9 and a representative company are listed in Table 3.9.

Figure 3-9: The layout of China's automobile industry chain
Source: Reproduced from Chyxx (2016)

Table 3-9: The features of China's automobile industry chain with representatives

Industrial cluster	Features in development and management (Translation for contents in the circle areas in Figure 2.9)	Representative corporations
Northeast China	Long history, weak in management and development.	FAW
Beijing-Tianjin-Hebei Region	With good development and market.	BAIHC
The Yangtze River Delta	Stable and good development, high concentration, the biggest car manufacturing centre.	SAIC
Central China	High level, with great potential for development.	Dongfeng
Southwest China	The pillar industry for Chongqing.	Chang'an
The Pearl River Delta	Highly developed, complete automobile industry layout, high potential to attract investment, good development in EVs.	GAGC / GAC

Source: Author (2019), based on SIC (2014) and Chyxx (2016)

The dominance and impact of the six automotive corporations in the CAI can also be reflected in Figure 3.10, in terms of their sales in 2012 and plan for 2015.

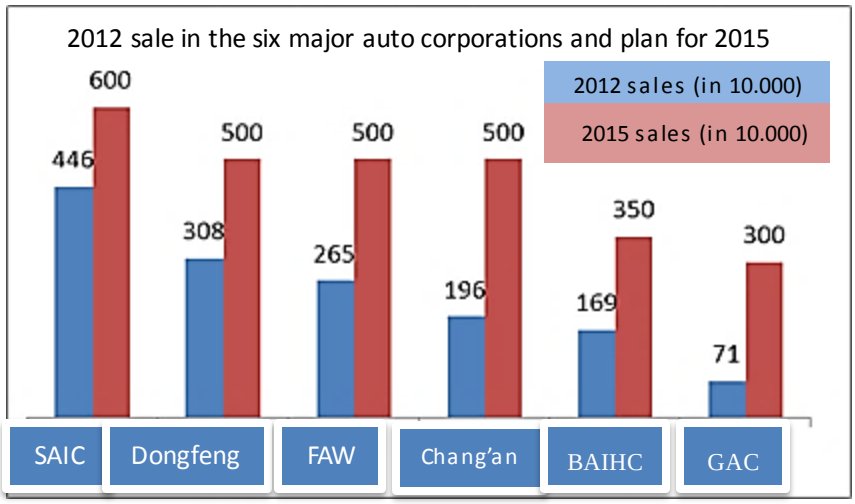


Figure 3-10: 2012 sale in the six major auto corporations and plan for 2015
Source: CAAM (2014)

3.2.8 Determinants of industrial distribution in the CAI

As indicated in Section 3.2.7, each of the six major automobile corporations is focused on certain areas, but distributes across China. The regional layout in the CAI is impacted by a number of factors, a key one being the manufacturing type. Altogether there are six types: automobile complete vehicle manufacturing, modified automobile manufacturing, low-speed truck manufacturing, tram manufacturing, automobile body and trailer manufacturing, and automobile components and accessories manufacturing (He et al., 2018). Among these six factors, automobile parts and accessories manufacturing, along with automobile complete vehicle manufacturing, account for a large portion of the whole automobile manufacturing industry (ibid), suggesting they have a great impact on industry distribution, as shown in Table 3.10.

Table 3-10: Major operating data of China's automobile manufacturing industry segment (2015 January-June)

Impact of auto companies distribution	Companies	Revenue (in 100 million Yuan)	Profit in total (in 100 million Yuan)
Automobile complete vehicle manufacturing	383	16553.87	1774.42
Modified automobile manufacturing	552	1024.61	24.69
Low-speed truck manufacturing	21	112.18	3.87
Tram manufacturing	92	60.98	4.70
Automobile body, trailer manufacturing	283	520.93	24.05
Automobile components	11882	15049.48	1088.25

and manufacturing	accessories

Source: Author (2019), compiled from data in China Industry Information Network (2015); the National Bureau of Statistics (2015);

The rapid development and strong impact of automobile parts and accessories manufacturing is evidenced by their proposed slogan of '*Strong independent parts enterprises are essential for a strong Chinese brand car, which is the Chinese dream to own the Chinese-made car*' (translated from: '自主零部件企业强，中国品牌汽车才能强，这是每位中国汽车人的中国梦') (Auto.China, 2017). Figure 3.11 displays its motto indicating the auto parts enterprise is important for the Chinese brand and is evidenced in Table 3.11, indicating its healthy revenue and rapid development from 2012 to 2016 (CAAM, 2017). Since '*The 18th National Congress of the Communist Party of China*', Chinese auto parts enterprises have grown rapidly, focusing on improving their independent research and development capabilities and breaking the monopolising position of foreign enterprises in key auto parts fields (He et al., 2018).

Figure 3-11: The impact of the auto parts industry in the CAI
Source: Auto China (2017)

Table 3-11: Major financial data for auto parts enterprises with certain operating scales (unit: 100 million)

	Number of auto part enterprises	Gross operating income	Year-on-year growth	Revenue in total	Year-on-year growth	Total assets	Year-on-year growth
2012	9341	22267	11.97%	1524	7.74%	16172	13.01%
2013	10333	27097	18.15%	1886	21.60%	19739	17.58%
2014	1110	29074	13.06%	2150	16.12%	21858	14.12%
2015	12090	43117	8.29%	2465	13.41%	24974	11.87%
2016	12757	37203	14.23%	2858	17.12%	29281	14.10%

Source: CAAM (2017)

Since 2015, the major auto parts manufacturing areas are Jiangsu, Shanghai, Zhejiang, Anhui,

and Guangdong (Chen, 2016). Guangdong plays an important role in auto parts manufacturing (Figure 3.12). GACC (GAC Component Co., Ltd.) is the major auto parts enterprise in Guangdong, and was ranked fifth among the top 100 in the auto parts industry in 2007, 44th in top 500 competitive machinery industry in 2008 and 40th in 2009 (GACC, 2016). GACC is the automotive parts division of the Guangzhou Automobile Group Co., Ltd., which is a subsidiary of Guangzhou Automobile Industry Group Co., Ltd. (GAIG), indicated in Figure 3.13. GACC is involved with Honda, Nissan, and Toyota's expansion projects in Guangzhou, and formed business alliances with a number of Japanese auto parts suppliers. It has also established collaborations with other suppliers and has constituted different ownership JVs, which is evidenced by its 51% ownership (Figure 3.13).

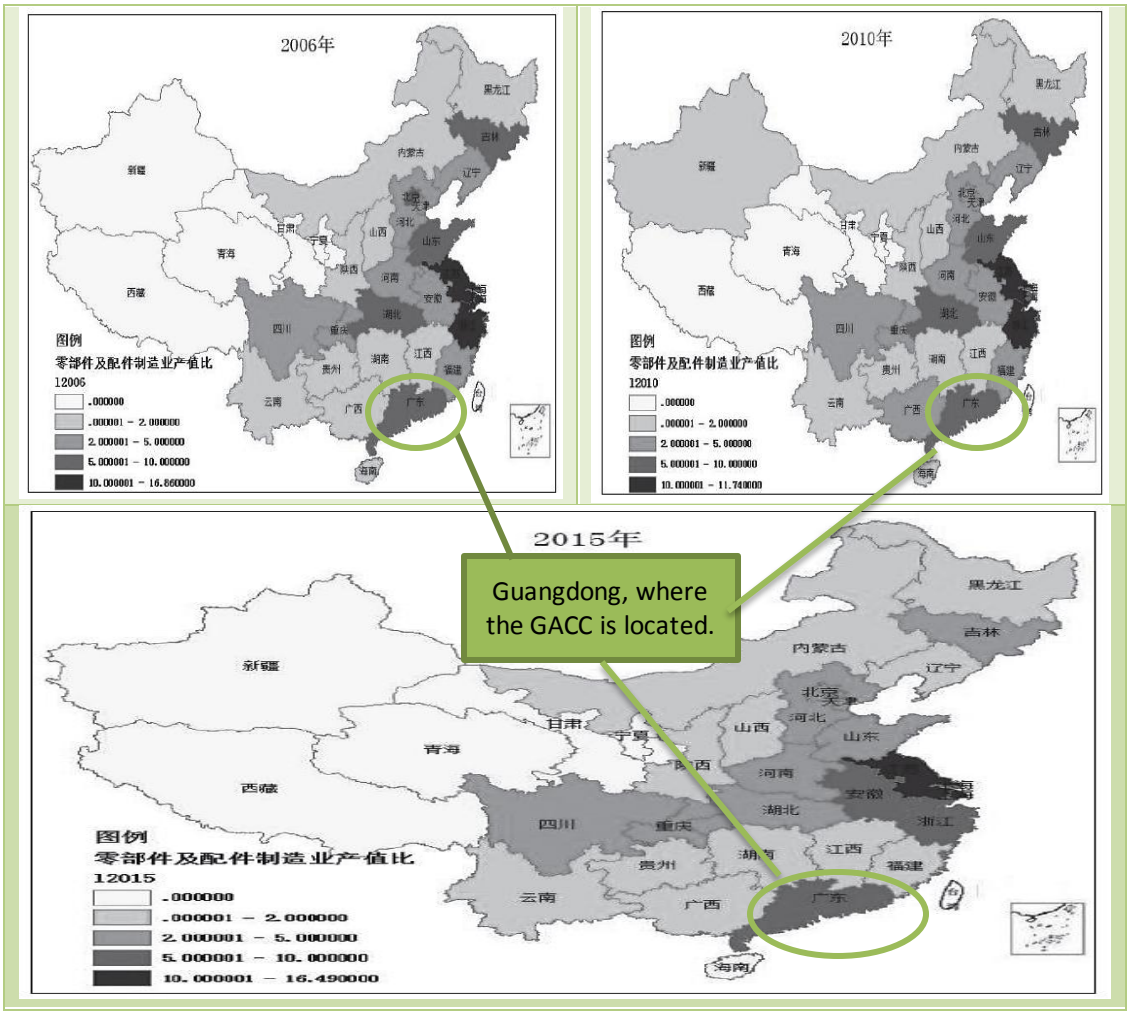


Figure 3-12: 2006-2015 Regional distribution evolution map of auto parts and accessory manufacturing industry in China

Source: Chen (2016)

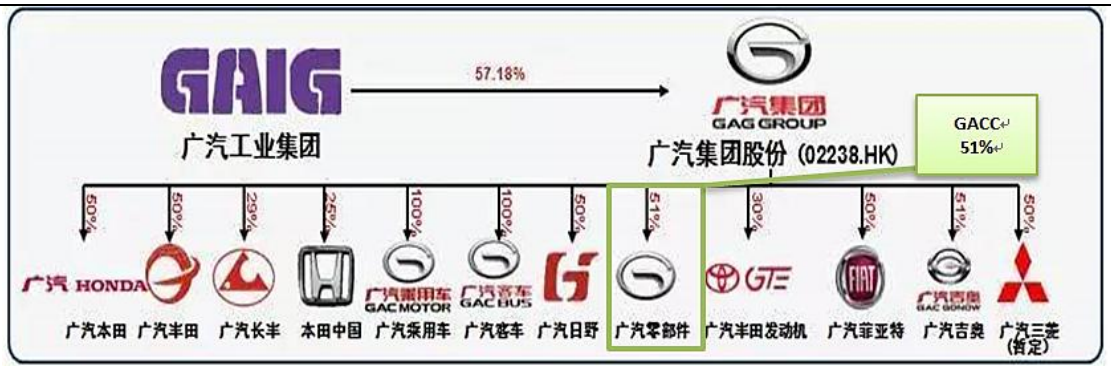


Figure 3-13: The relation between GAC and GACC
Source: Sohu Auto (2017)

3.3 The ethical elements in the CAI managerial training

3.3.1 General situation

Literature gathered in the scoping reviews and research at the preliminary stage has revealed a mixture of ethical elements in the CAI's internal and external management training programmes. Under the company internal training and outside training centres, each training provider focuses on a different aspect. This situation is illustrated by a training summary gathered by a middle-level manager called '*Zhu Ren*' (主任) in an auto company (Company E) (Table 3.12).

Table 3-12: A summary of middle-level management training

A training summary for middle-level managers (2008-2014)					
No	Time	Organiser	Mode (Internal/External)	Content	Venue
1	2008	Company E	Internal	Entry	In-house
2	2008	Company E	Internal	Auto standard	In-house
3	2009	Shanghai	External	DYNA Software	External Software company
4	2010	Company E	Internal	Auto design	In-house
5	2011	Company E	Internal	PPAP for manufacturing	In-house
6	2013	Company E	Internal	TAS for office	In-house
7	2014	Company E	Internal	Finance	In-house
8	2014	Company E	Internal	Human management	In-house
9	2014	Company E	Internal	Team building	In-house
Note: There is regular ideological training in the company					

Source: Author (2015), based on first-hand data in the preliminary research

It is evident that within the six years, the majority of training programmes received was internal (in-house) training, which included ideology. The only external training found had been organised by a specialist software company that offered car-related DYNA software training. All of the training included knowledge for a new manager/director, namely company codes, technique related knowledge about cars (standard, software, design, PPAP for manufacturing), skills (TAS office, finance, HR management and team building) and ideology.

An overview of the training situation, a summary of managerial programmes based on preliminary research across different training providers is presented in Figure 3.14. The internal training takes the leading role in four main modes: HR, Departmental, Internal Training Centres and Internal Party Schools. A variety of generic managerial elements in the CAI are involved, including management skills, labourer issues, technique and safety issues, government policies (e.g. environment initiatives of Corporate Social Responsibility [CSR], sustainability and circular economy), technique standards (e.g., International Standardization Organisation [ISO] standards), and ideology. Each training mode has a priority focus.

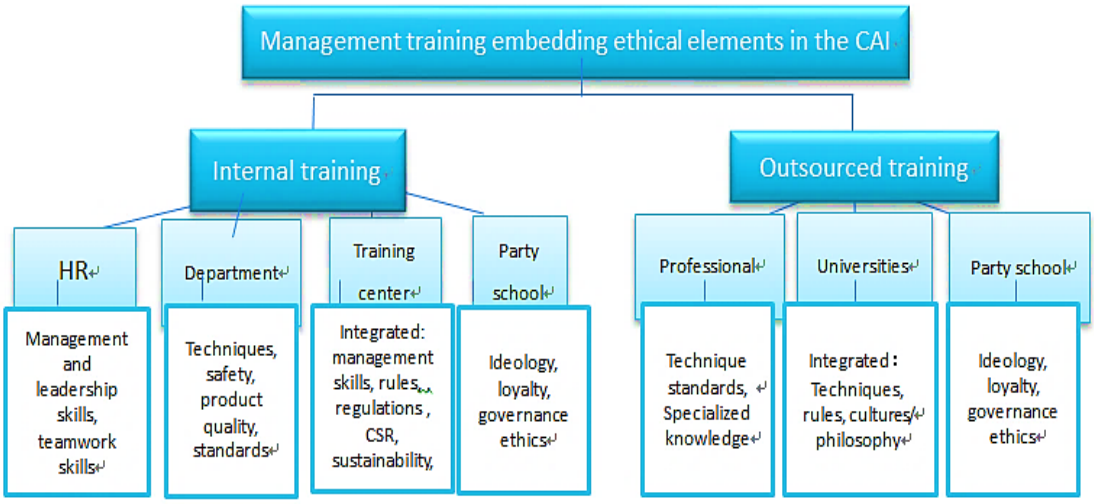


Figure 3-14: Management training embedding ethical elements in the CAI
Source: Author (2019), based on managerial training programmes across auto companies

Specifically, the HR departments and training centres offer regular training with comprehensive ethical elements, and cultural elements '*Guo Xue*' are occasionally embedded in them (Company C documentation, 2018). The departmental training focuses more on technique-related safety and environmental issues, such as ISO/TS16949 (Technical specification) for quality control in the auto industry and its new standard IATF 16949:2016,

standards of UNECE R100 and ISO 26262 for new energy vehicles (NEVs). In the department, many auto companies have a team that is responsible for new ISO policy interpretation and retraining for the department. The internal party school stresses cadres' morality and ideological governance and adherence.

3.3.2 Internal training

In internal training, environmentally related ethical elements are popular. These policies and requirements come directly from the government; auto companies must comply with them as a minimum requirement. Managers need to interpret and transform these policies and standards into their working practice through training and carry out retraining in their department. Some elements such as EVs and the circular economy are stated in the 12th and 13th 5-Year Plan, with clear instructions for the car companies (Lehne, 2017), which are regarded as long-term development strategies and are practised in their daily operation and functioning. Another example is the concept of CSR, with one piece of evidence being the CSR Office, and the '*Dongfeng Public Welfare Foundation*' office (DPWF) (translated from: 东风公益基金会) in Dongfeng (Dongfeng, 2018) (Figure 3.15), with CSR reports on its company homepage since 2008 (Appendix 3.4). Sustainability is also an important concept. For example, the FAW publicised sustainability reports, which have been available since 2012, on its company homepage (FAW, 2018) (Appendix 3.5).

Figure 3-15: CSR and DPWF in the institutional framework of Dongfeng
Source: DFG (2016)

Other popular ethical themes in managerial training include ideological morality and

integrity at the company party school. The representative of this is the nationwide cadre governance norms: '*Eight Honours and Eight Shames*' (People, 2005) (Appendix 3.3) and the '*Three Strict and Three Steadies*' (CPC NEWS, 2015a) (Appendix 3.2). Some norms such as 'Honesty', 'Uprightness' and 'Integrity' carry similar spirits and values to traditional culture (People, 2005; CPC News, 2015). These norms are conveyed through training in specific professions, to be integrated into working morality and integrity, also identified in the engineering sector (Cao, 2015). Figure 3.16 is a training excerpt in an auto company (Company E), reflecting integrity and morals in technology work.

.

Technology centre enterprise spirit
Integrity, innovation, synergy, hard work

Integrity: Integrity is the criterion and quality of scientific and technological research and development activities. Reflected in the academic aspect, style of study, thinking, technology, design, management and other aspects, to form a rigorous work style, rigorous and self-disciplined work attitude, rigorous and realistic work spirit.

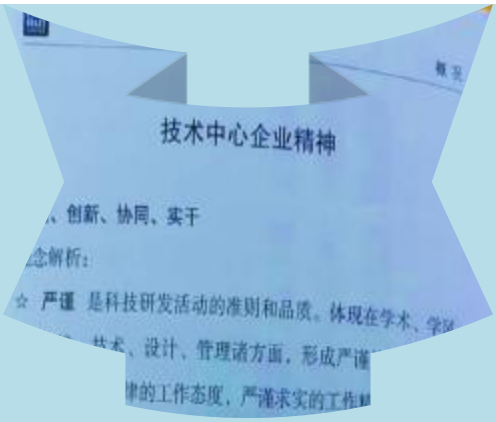


Figure 3-16: Integrity and morals in the technology centre
Source: Company E documentation (2015)

A new trend is the embedding of cultural and philosophical elements into the industry. For example, in the internal training of Company C, traditional Chinese culture, such as Confucianism, Taoism and Western philosophy, are embedded (Figure 3.17). This training programme also includes a business philosopher from Japan and his Kyocera Philosophy, which retains a similar ethical spirit to Chinese culture including humanity, altruism, and harmonious coexistence. The full programme is available in Appendix 3.6.

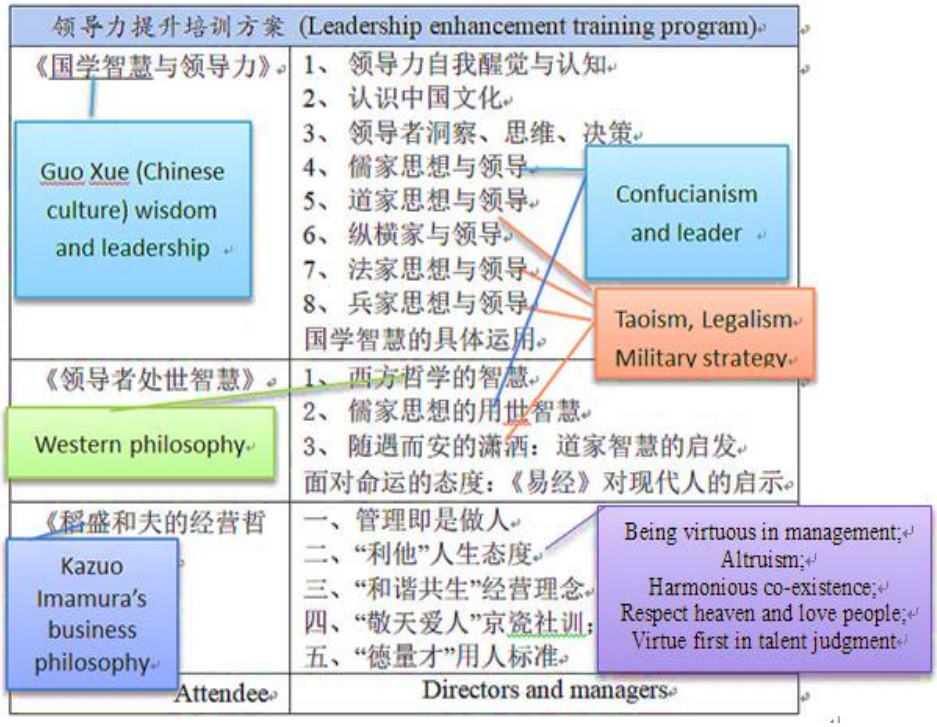


Figure 3-17: Excerpts of a managerial training programme
Source: Company C documentation (2015)

3.3.3 External training

Within the external training providers, ethical content is more specialised. Currently, there are three main providers: professional training centres, universities and other levels of party schools. The contents of the professional training centres are closely related to the industry and coercive in design. For example, in the *China Automotive Technology and Research Centre* (abbreviated to CATARC), technical standards and national policies are 'enforced' (Figure 3.18). These forced elements include the key compulsory regulations of energy conservation, safety, environmental protection, or other standards such as ISO/TS 16949:2002, ISO/TCSS for specific quality management in the automotive industry (CATARC, 2018).

Figure 3-18: Functions of CATARC
Source: CATARC (2018)

Other professional training centres also focus on technical aspects. For example, the *China Association of Automobile Manufacturers* (CAAM) provides training with the focus on technical standards and policies (CAAM, 2018b). In CAAM, one of its main functions is '*Industry Services and Professional Training*', that:

> '*Covers a series of professional activities including the Member's Representative Assembly, Auto Parts Annual Meeting and so on to strengthen its services for the auto industry and its members as well as the organisation of employees' training, technical training, professional training and industrial safety training, for technology research and policy suggestion*' (CAAM, 2018b).

The *China Automotive Technology Training Centre* (abbreviated to CATTC) also offers training for many auto companies such as FAW, and its contents are exclusively related to technology. The duties of the CATTC can be found in the '*About us*' tab on its homepage (Figure 3.19), i.e. '*Improving the R&D, manufacturing and management technologies of Chinese auto manufacturing*' (CATTC, 2018). CATTC also holds training for auto companies, such as for Company E. Similar elements are also reflected in the training programmes gathered from Company E (2013 -2014) (Appendix 3.7).

Figure 3-19: Introduction to CATTC
Source: CATTC (2018)

Recently, university training has also played an important role in enhancing managerial ethics in the industry, with the inclusion of cultural elements. Some universities focus on cultural and philosophical elements, but mainly at the indigenous level, which can be shown in Table 3.13 from two universities (Peking University, 2013; Wuhan University, 2018). This situation is also reflected in the training programmes and data gathered in the preliminary stage. For example, Wuhan University is one of the outsourced training centres for Company H and its JVs such as Company C. The training programmes provided to them focus on '*Eastern traditional philosophical wisdom*' such as '*Confucianism, Buddhism and Taoism*' and aims to '*Utilise the quintessence of eastern culture to enhance the overall development of management competence*' (Wuhan University, 2018) (Figure 3.20).

Table 3-13: Outsourced management training from Universities

University	Training programme	Aim	Trainee
(Wuhan University, 2018)	Training programme on Chinese traditional culture and the wisdom of leadership (国学与领导智慧领袖班)	Cultivate Confucian business leaders (致力于弘扬中国传统文化的儒商型总裁)	Management staff from organisations and enterprises
(Peking University, 2013)	Advanced training programme for chairmen on management philosophy and corporate culture (北京大学管理哲学与企业文化董事长高级研修班)	Integrate Eastern and Western philosophy and culture to understand the essence of modern management (融东西哲学文化，解现代管理精髓)	

Source: Author (2019), based on Wuhan University (2018); Peking University (2013)

Figure 3-20: Leadership training programme at Wuhan University
Source: Author (2019) based on Wuhan University (2018)

Some of the cultural points are captured in Figure 3.21, including traditional cultural aspects, such as Taoism, Buddhism, Confucianism, and the Art of War as well as input from other cultures and religions civilisations such as Judaism. More information is available in Appendix 3.8.

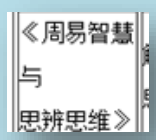
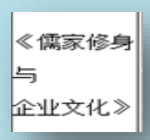
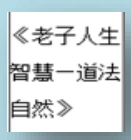
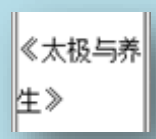
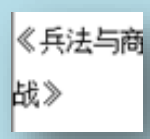
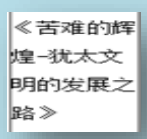
Excerpts of Key Cultural Points				
Key cultural points				
Translation	The wisdom of 'Yin and Yang'	Confucian self-cultivation and entrepreneur spirit	Daoism wisdom-to follow nature	Zen Buddhism and human life
Key cultural points				
Translation	Tai chi and health	Art of War and business strategy	Zen Buddhism site tour	The Jewish civilisation

Figure 3-21: Cultural points in the leadership training programme at Wuhan University
Source: Author (2019), based on Wuhan University (2018)

Another phenomenon is that there are more elements from religion, culture and philosophy for higher-level management, particularly for senior management than other levels. The training providers have also expanded to other institutions, i.e., Qinghua University, Peking University, the University of Hong Kong, the Religious Centre and the CPC publicity department. Figure 3.22 shows a training summary for senior management in Company B, where Buddhism (*Fuo Xue*), traditional culture (*Guo Xue*), Taoism, and management philosophies are also involved.

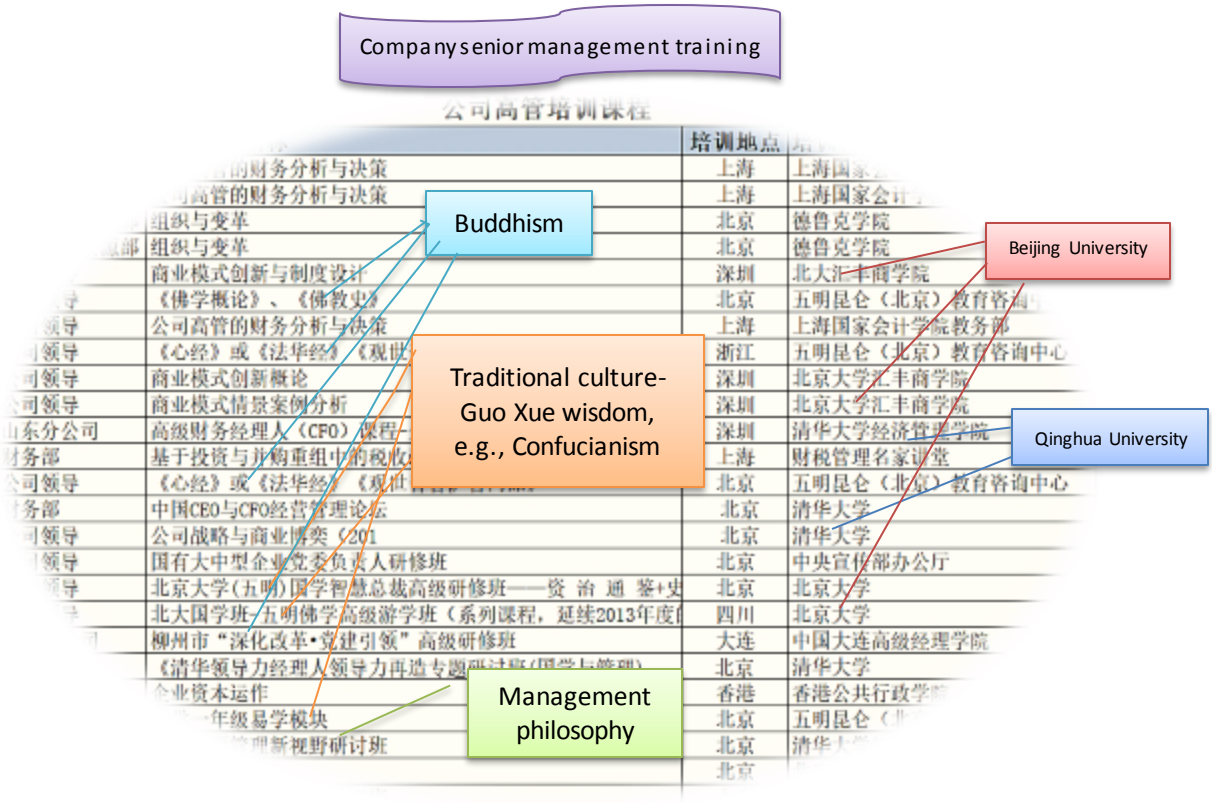


Figure 3-22: A training programme for senior management
Source: Company B documentation (2017)

Some universities mix these ethical elements with technology into working practice, which is more advanced than mono technology or regulation-focused training programmes. This improvement can be traced in the training programme for automobile Company F organised by University A. In the teaching curriculum, CSR and Business Ethics courses were embedded, and the fundamental ethical decision-making principles were also mentioned (Figure 3.23).

Original curriculum (in Chinese)	English translation
大学A — 汽车集团 F 一、课程安排及描述 （1）汽车理论基础 （2）汽车电子控制技术 （3）汽车质量与安全检测 （4）组织行为学 （5）技术经济学 （6）公司财务管理 （7）供应链与物流管理 （8）风险与危机管理 （9）企业社会责任与商业伦理 【课程简介】本课程是一门关于商业与伦理学的交叉学科，是商业与社会关系的基础。本课程集中讨论以下内容：处理商业伦理中的宏观问题，包括影响企业运营的外部政治、经济、法律、环境和技术因素，企业的社会责任、企业与社会的关系、企业的跨文化责任、利润与伦理，及市场与道德等；集中讨论微观伦理问题，包括企业进行伦理决策所依据的基本原理，企业内营销、研发、人力资源等部门的伦理等问题；以案例分析的形式讨论商业领域里的道德行为问题，运用正式的案例帮助学生了解那些重大商业过失的形成因素及其影响和后果。	University A - Training programme for auto Company F （1）Auto theory basics （2）Automotive electronic control technology （3）Vehicle quality and safety testing （4）Organisational behaviour （5）Technological economics （6）Company financial management （7）Supply chain and logistics management （8）Risk and crisis management （9）CSR and business ethics [Course description] This course is an interdisciplinary subject about business and ethics. This course focuses on the following contents: dealing with macro issues in business ethics, including external political, economic, legal, environmental and technical factors affecting business, operations, SCR, relationship between business and society, corporate cross-cultural responsibility, profit and ethics, and market and morality, etc. The focus in on the micro ethical issues, including the basic principles on which enterprises make ethical decisions and the ethics of internal marketing, R&D, human resources and other departments. Discuss ethical behaviour issues in the business world in the form of case studies. Use formal cases to help students understand the factors that contribute to major business failures, their impacts and consequences.

Figure 3-23: A management training programme at University A with business ethics
Source: University A documentation (2008)

The external party schools at different levels also offer ideological and moral training for cadres in the CAI. This phenomenon is due to the dominance of Communism in China as stated in Section 3.2.4 (Hunt, 2015). The PRC was founded on Marxist–Leninist principles or more precisely, the Sinification of Marxism–Leninism (officially known as *Mao Zedong Thought*) (Deng, 1984). China is believed to have formulated ideological, political and organisational lines that adhere to Marxism and which can be integrated into Chinese everyday life. Therefore, the Chinese people must adhere to both Marxism and Socialism (ibid).

The influence of Communism is particularly profound for cadres. This impact is because many members of the Communist Party are '*Managerial, professional and technical staff in enterprises and public institutions*', making up 12.5 million, a further 9 million identified as working in administration and 7.4 million describing themselves as party cadres (South China Morning Post, 2015). They all adhere to Communist ideology. Therefore, in order to strengthen Communism, there is a wide-ranging scheme to embed it into all kinds of training programmes; and the party school has been persistently training all levels of cadres and senior management from all areas.

This socialist phenomenon is acknowledged by scholars worldwide. For example, the influence of cadre training is called '*The Good Communist Elite Training and State Building in Today's China*' (Lee, 2010; Pieke, 2015). The function of elite training at party schools is also attracting people's attention, for example, Shambaugh (2008a, p.2) elaborates that:

> *'One of the most important, but under-researched and least well understood, instruments of the Chinese Communist Party (CCP) is the extensive national network of Party schools (approximately 2,700). They serve as the key institution of mid-career training and indoctrination for all Party cadres, many government cadres, some military officers and selected businessmen. ...with some being involved in corruption scandals, but on the whole, they have come to play an increasingly important role in the CCP's rebuilding efforts in recent years.'*

Shambaugh (2008b, p.147) carried out empirical and field research in a provincial level party school the 'Yunnan Party School', and indicated the importance of the Party School training that:

> *'...the party school system is often the first post-secondary education many local cadres receive. It thus provides some basic training in key administrative skills, as well as ideological indoctrination and adherence to party directives...'*

Figure 3.24 indicates the role that different levels of party schools play in cadre training identified in Shambaugh's research:

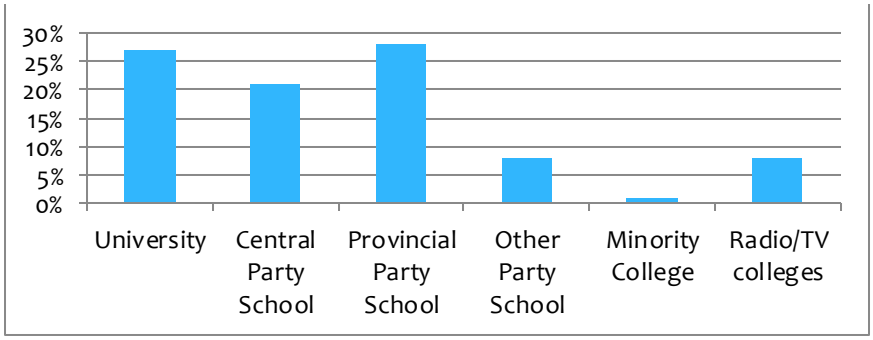


Figure 3-24: Country-level cadre postsecondary education
Source: Shambaugh (2008b)

The contents in the party schools mainly embed compulsory governance ethics, and the Central Committee Party School (abbreviated to CCPS) is the most influential. Its coercive function can be perceived from its title, the 'Chinese Academy of Governance', and its function introduced on its homepage (Figure 3.25):


中共中央党校（国家行政学院）

Party School of the Central Committee of C.P.C　Chinese Academy of Governance

Introduction to the Party School

of the Central Committee of the CPC

The Party School of the Central Committee of the CPC (The Central Party School) is the highest institution of learning charged with the task of training senior and middle-ranking leading cadres of the Party and fostering Marxist theoretical cadres. As an important organ directly under the Central Committee of the CPC, it is an important bastion for studying and publicizing Marxism, Mao Zedong Thought and the System of Theories of Socialism with Chinese Characteristics and a furnace for tempering the Party spirit. It is also a research institute of philosophy and other social sciences of the CPC.

Figure 3-25: Introduction to CCPS
Source: Reproduced from CCPS (2017)

Since 2013, there has been a new form of training for cadres in the Confucian Academy (Kongxuetang, abbreviated to KXT) called '*Traditional Culture and Official Ethics*'. It is based in Guiyang, the capital city of Guizhou province and offers public training on Chinese traditional culture and moral spirit (Page, 2015). Since its opening, 550 lectures have been organised with a total of 22,000 people attending (Xinhuanet, 2017d). The contents are filed under the *Report Spirit of the 19th CPC National Congress* (ibid). However, currently, the training is focused locally, and the overall impact of the CAI is limited, as indicated in Figure 3.26.

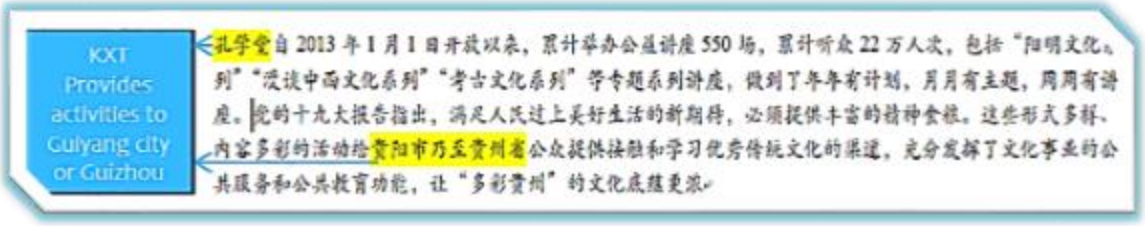


Figure 3-26: Cultural training at KXT
Source: Reproduced from Xinhuanet (2017d)

3.4 The limitations of existing ethical elements in training

Section 3.4 demonstrates the features of managerial training in the CAI, exposing a number of limitations. Combining the rationale stated in Section 1.1 (the concept of EI, the ethical

issue complexities in the CAI, the global car industry and the global ethical environment), five key limitations are identified as follows.

3.4.1 Lack of awareness of non-coercive moral value ethics

Limited awareness of non-coercive moral value ethics is revealed by details of the programmes gathered in the preliminary stage. The contents of these programmes exclusively embed compulsory rules and standards related to technology and governance ideology. This situation is exemplified in Section 3.3, which shows that most ethical elements are forceful and related to enforced working practices, such as laws, regulations and ISO standards. This situation is also revealed in the scoping reviews and preliminary research activities (Sections 2.4, 2.5 and 2.6). However, these rules and regulations represent the minimum standard of ethics for people in the industry to comply with to avoid falling foul of the law or attracting penalties (Marucheck and Robbins, 1990). Instead, as managers, the industry should work to further cultivate their moral values, and improve internal integrity so that they can address ethical issues non-coercively.

The low level of awareness is also reflected in the short-term and narrow understanding of ethical concepts such as CSR or sustainability in the CAI. Some ethical elements such as CSR, sustainability or the circular economy seem to be more ethical than codified rules and legislation. However, in practice, they are still considered as an external pressure that is forced on the industry from the government or international community. Consequently, to avoid sanctions or penalties, these concepts are utilised at the operational or strategic level in the CAI. Therefore, these concepts need to be interpreted more broadly from a long-term, sustainable development perspective, and these actions need to be driven by an intrinsic and non-coercive motive, considering the broader concept of economic, social and environmental sustainability (Crane and Matten, 2016; Köhler et al., 2019), whereby the CAI also needs to consider them in their decisions.

The low level of awareness is also reflected in the fragmented embedding of the cultural elements or fundamental Western ethical decision-making principles. These cultural or ethical elements appear in university training or company training, but tend to remain at a personal appreciation level. Due to their unpopularity, they are limited to some internal training centres or for only a small number of higher-level managers in the outsourced training (see Section 3.3).

There is regular ethics training about Communist loyalty, political integrity or cadres' ideological governance. Through a series of Communist integrity and moral training programmes such as the company 'Party School', ideological, moral values are strongly and systematically impacting the industry. However, most people regard these elements as government-posed which people have to comply with as coercive.

These training contents also lack the awareness to associate these ethical elements from culture and ideology with the engineering sector and its ethics. Such awareness is essential so that trainees can successfully transform these elements from their culture and ideology into work efficiency. Literature on philosophy and technology such as by Cao (2015) and Zhu and Jesiek (2015) describe this transformative impact as a unique feature of engineering ethics in China.

3.4.2 Fragmented cultural elements

Currently, there is some advancement in managerial training in the CAI, in that moral values in the form of cultural elements have begun to enter this industry. In the preliminary survey, some interviewees from the companies indicated they attended cultural training '*Guo Xue*'. The cultural elements have also been identified in some managerial training programmes, as indicated in Section 3.3, such as in auto Company C (Figure 3.17). The CPC is also promoting Confucianism nationwide and has been integrating it with cadres' governance norms (Xi, 2017).

However, no data indicate that this element is prevalent in this industry. The embedding of these elements is still in its infancy, being both arbitrary and fragmented. When cultural elements are embedded in programmes in universities or society, they mainly stay at the level to enhance participants' appreciation of these elements, without an in-depth and systematic analysis of their inner nature and the association with the ethical features and moral value dimensions of the industry. Therefore, the programmes designed cannot effectively resolve complex ethical issues in a specific industry, such as the CAI and cannot internally improve trainees' ethical decision-making competence.

3.4.3 Lack of Western ethical elements

Due to the dominant impact of Communism and the socialist regime in China, whether it is

in the state-owned companies or the JVs, there is an obvious absence of an ethical element from the West. Some training programmes do contain this element, such as the programmes in an auto company (Company C) (Figure 3.17) and Wuhan University (Figures 3.20 and 3.21). However, they are not prevalent in the industry, so the impact is limited. The concept of modern management is originated from the West; therefore, management training in the CAI is reflected to retain features of this element but generally lack depth.

However, according to the concept of EI (Elango, 2010; Craft, 2013), which is defined as '*The ability to prioritise moral values over other values*' (Craft, 2013, p.221), the whole dimension needs to be considered for better prioritisation. In addition, as stated in the introductory chapter and Section 3.2, the CAI has a high percentage of JVs (China Statistical Yearbook, 2015). More recently, the lifting of the share cap, will result in more whole-ownership foreign enterprises (Time Economic Times, 2018), so more values might be introduced from the West. Therefore, it is necessary to consider these Western values in future decisions in the CAI.

3.4.4 Lack of awareness of engineering ethics and impacts in the CAI

It is necessary to understand the unique industrial features of engineering ethics in the CAI to achieve an ideal effect in ethical decision-making in the engineering sector. The existing training programmes in the industry exclusively rely on techniques and engineering-related rules and regulations, without sufficient inclusions of philosophy or cultural elements. However, engineering and ethics are interwoven (Li, 2006) as can be evidenced by extensive literature.

It is recognised that with the progress of engineering, '*The previously hidden ethical lens on engineering has been enlarged*' (Cao, 2015, p.1610). Therefore, modern engineering has become more complicated, integrated and socialised (Cao, 2004). Additionally, due to globalisation, the scope of traditional engineering education and training has been extended, interacting with more diverse participants and confronting more risks (ibid).

Modern engineering, therefore, needs a kind of inherent ethical quality, such as virtue ethics to confront and deal with these ethics. For example, virtue ethics is needed in human-centred design, which can explain the phenomenon that the *Human-Centred Artificial Intelligence*

Institute (HAI) in Stanford in 2018 established in order to educate and train people to convert the technology of AI into being a force for good (Stanford, 2018) - a kind of intrinsic goodness level of ethics like virtue ethics. In addition, the *Institute of Electrical And Electronics Engineers* (IEEE) is committed to '*the highest ethical and professional conduct'* and expects its members to *'accept responsibility in making decisions consistent with the safety, health, and welfare of the public*' (IEEE, 2017). Similarly, the *National Society of Professional Engineers* (NSPE, 2017) states in the codes of engineers' ethics that '*Engineers should be educated to exhibit the highest standards of honesty and integrity*'.

Currently, there is low awareness of engineering ethics to combine knowledge of technology and humanities philosophy. Engineering ethics is driven by the Western philosophy of technology and guides engineers with a broader ethical dimension embracing technology philosophy and humanities philosophy (Cao, 2015). Therefore, according to an engineering ethics perspective, engineers need knowledge and philosophy from both the technology and humanities fields. The lack of knowledge of humanities philosophy, whether it is from a Western or Chinese cultural perspective, will result in low ethical awareness and capability to deal with the enlarged and integrated ethics.

It is also necessary to be aware that there is a difference between the West and China in engineering ethics and the philosophy of technology. The Western philosophy of technology stemmed from *Logos* as the universal principle of order and knowledge, and therefore, emphasises rationality (Cao, 2015); whereas, the Chinese philosophy of technology emphasises moral reasoning, which is impacted by its traditional culture and its reasoning style (ibid). Due to the above-mentioned philosophy in Chinese engineering ethics, more ethical elements from Chinese traditional culture and ideology can be introduced in the CAI and its managerial training. A comparison of engineering ethics in the US and China are indicated in Table 3.14.

Table 3-14: A comparison of engineering ethics in the US and China

Comparison	Similarities	Differences	
		US	China
Disciplinary statuses	Acknowledged significances of engineering ethics education	An independent discipline with accreditation criteria	A dependent discipline as the subordinate of "Two Courses"
Educational goals	The enhancements of ethical knowledge and abilities	Ethicization, professionalization, individualization, internationalization	Moralization, specialization, massification, harmonization
Instructional contents	Honesty, loyalty and innovation	Professional virtues and trainings in specific engineering ethics behaviors	General moral spirits and a systematic grasp of engineering ethics history
Didactic models	Concerned teaching and studying between teachers and engineering students	Studying-oriented and student-centered model in natural critical learning environment	Teaching-oriented and teacher-centered model using cramming method of teaching
Teaching methods	Some general teaching methods and formal classroom instruction	More bottom-up approach	More top-down method
Edificatory effects	In progress	Rich achievements, some controversy in engineering ethics	Lack of codes of engineering ethics, appropriate ethical behaviors criteria required
Engineering ethics		Applied ethics	Practical moral

Source: Cao (2015)

Due to the philosophy of *Logos* and rationality, codified codes of ethics are used widely in the West, and due to the Chinese moral learning and education style, there are no codified codes of ethics, which results in a 'physical absence' as indicated in Table 3.15. Currently, in China, the traditional and ideological legacy has a more profound impact on people's ethics. However, for systematic training and education in the CAI, a nationally unified ethical principle pertinent to the technology and engineering sector and rationalised knowledge on these transformed impacts from moral learning, are still needed.

3.4.5 Restriction of moral values in the training

The ethics training programmes so far have also demonstrated a restriction, in that specialised training on moral values is confined to very few senior management staff. This limitation can be evidenced in training by Wuhan University (2018), which is explicitly targeted at '总裁' or '董事长', alternatively 'president level senior management' (Figure 3.20). In addition, the new *KXT* cultural training centre is focused on traditional culture, however, as indicated currently only confined to local areas (Figure 3.26 in Section 3.3.3).This restriction of ethical elements to be confined to certain levels or areas has impacted the training effect as a whole.

In sumary, the information in Section 3.4 demonstrates the limitation of ethical elements in

the existing managerial training and failures to satisfy fundamental requirements proposed in the rationale regarding the depth and breadth of ethics for managerial ethical decisions in the CAI (Section 1.1). On the other hand, it also indicates the necessity to improve this situation by offering well-designed training programmes. Therefore, this information will be used as the basis for the discussion on non-coercive ethics elements in Chapters 4 and 9 and suggestions in Chapter 10. This discussion of the limitations of ethical elements in managerial training in the CAI is expanded in Section 4.4.1.

3.5 Key ethical issues in the CAI

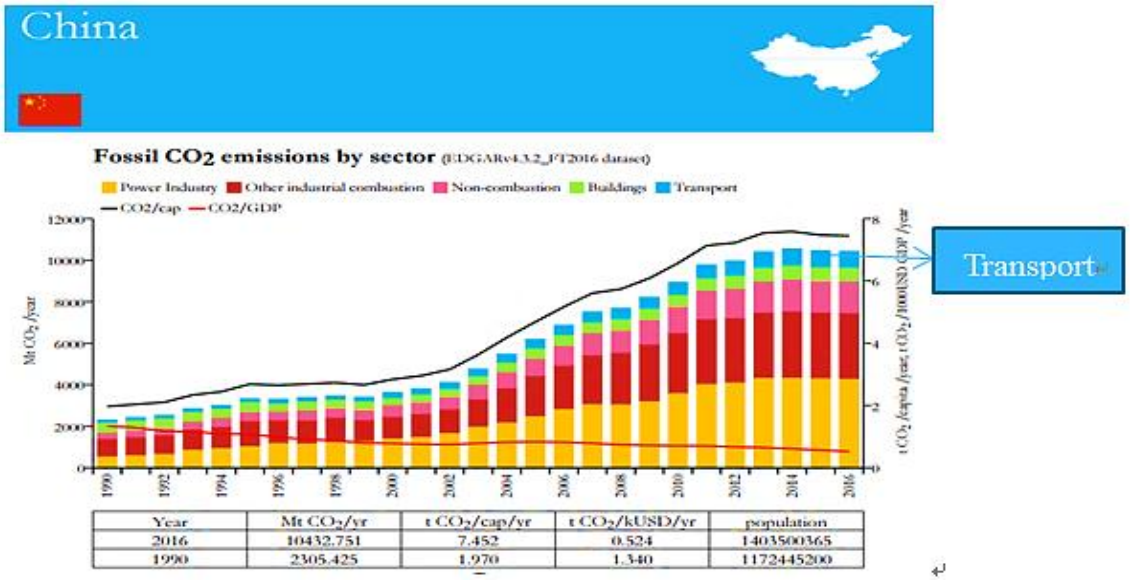
The scoping review and preliminary research outlined in Chapter 2 narrowed the scope and justified three key ethical issues unique to the CAI, based on which, this section focuses on the discussion of the three aspects. To be specific, the complex ethical challenges and the inefficiencies in the CAI managerial training system have resulted in three key ethical issues at the CAI. The first two ethical issues are environmental and product safety issues (Liu, 2018), which are also major moral issues created by businesses and industries in China (Ip, 2009b). The third key issue is the high level of managerial corruption resulting from the unique Chinese characteristics in the industry, such as the impact of Confucian 'Guanxi', globalisation and large levels of foreign cooperations (Huang, 2015). The understanding of these key ethical issues will help identify the pertinent ethical elements that can help address them.

3.5.1 Environment

China is currently suffering from heavy environmental problems due to energy consumption and increased emissions in its economic growth and social transformation. China is considered to be the top SO_2 emitter in the world (Zhu et al., 2007). China's GHG emissions increased almost six-fold in the last few decades from 2,063 MtonCO_2eq/yr in 1970 to 12,102 Mton CO_2eq/yr in 2012 (JRC Science for Policy Report, 2017).

As the largest manufacturing industry, the auto industry creates significant emissions during the whole lifecycle of its products, from material extraction to the waste recycling and disposal process (Mihelcic and Zimmerman, 2014). The increasing trend of GHG emission from transportation, including the auto industry, can be seen from the database, *The Emissions Inventory for Global Atmospheric Research* (EDGAR) (EDGAR, 2017) (see

Figure 3.27). Data from EDGAR shows that China's total energy consumption is also increasing dramatically, which can also be viewed in the China Statistical Yearbook (2017) (Appendix 3.9).



Year	Mt CO_2/yr	t CO_2/cap/yr	t CO_2/kUSD/yr	population
2016	10432.751	7.452	0.524	1403500365
1990	2305.425	1.970	1.340	1172445200

Figure 3-27: China fossil CO2 emissions by sector
Source: Reproduced from EDGAR (2017)

3.5.2 Product safety/liability

Product safety is a key issue prevalent in the automotive industry, mainly in the form of product integrity or liability (Marucheck and Robbins, 1988). The significance is also due to the fact that they are directly related to health, safety and even people's lives on a large scale (Evans and Evans, 2011). Such an issue is also believed to be a major hurdle impacting the development of Chinese business ethics (Ip, 2009a).

In the auto industry, product safety issues might arise during the whole lifecycle of its products and the manufacturing process (Davis and Cornwell, 2012; Mihelcic and Zimmerman, 2014). These can be observed in different forms and can be due to various reasons such as defective products, failure to adequately warn consumers of the risks associated with product use, and defects that arise during the manufacturing process (Evans and Evans, 2011). Other problems might also result in a violation of product liability. These include satisfying the standards of a product's design specifications set by the manufacturer but failing to meet the standards set by the industry. Toxic materials might release formaldehyde that can harm people's health, or there may be a failure to notify users of possible misuse under foreseeable conditions in design (ibid).

Some issues might result from low awareness, but more are reported to be deliberate with unethical intentions. Some issues are high-tech frauds similar to the Volkswagen Emission Scandal (Oldenkamp et al., 2016) or the Pinto Memo Oil Tank Accident which came about due to unethical decisions on relentless cost-benefit considerations while neglecting people's safety (De George, 1981; Lee, 1998; California Baptist University, 2017).

In the CAI, similar issues also arise, and due to its colossal standing in the world (CAAM, 2018a), the impact is more severe. These issues can be mirrored in the recent frauds reviewed by *China Automotive News* at *3.15 Fraud Disclosure Event* (Liu, 2018) (see Table 3.15). This nationwide annual official event exposes any prominent illegal actions or law violations in China, including foreign subsidiaries and JVs operating in China.

Table 3-15: A review of fraud scandals in the CAI (2017-2018)

Frauds	3.15 News
Emission fraud 2018	Violation of emission standards by Shandong Kaima Automobile Manufacturing Co. LTD and Shandong Tangjun Ouling Automobile Manufacturing Co. LTD. Eight light diesel trucks manufactured by Kaima Automobile emit excess hydrocarbons, nitrogen oxides and carbon monoxide; The OBD system of 318 heavy diesel trucks did not pass the functional test, and the pollution control device was falsified, posing as a qualified product for emission inspection. One hundred nine light diesel truck produced by Tangjun Ouling emit excess hydrocarbon, nitrogen oxides and carbon monoxide.
New energy vehicles driving mileage fraud 2017	Many owners of new energy passenger vehicles reported that the actual driving distance of new energy vehicles they purchased was far from what the manufacturers promised, even only 50% of the theoretical value.
Unqualified fuel limit 2017	553 different modes of cars failed to reach the GB19578-2014 fuel limit for passenger cars
Tail gas detection fraud 2017	Cheating existed in the vehicle exhaust testing field.
The adverse impact of the *Takata Airbag Incident* 2017	The adverse impact from the *Takata Airbag Incident* has resulted in a huge recall since 2008, which continues to ferment in 38 auto companies in China.

Source: Liu (2018)

3.5.3 Bribery and corruption in the management

Bribery and corruption at the management level in the CAI are believed to have hindered the development of this industry (Huang, 2015). For example, the corruption was revealed by the central government in the senior management in Dong Feng (BBC NEWS, 2014) in its deputy secretary and in FAW in its Chairman Xu (Xinhuanet, 2015a). These behaviours

included conflicts of interest, inappropriate gifts to corporate personnel, unauthorised payments, customer dealings, evaluation of personnel, or pressure to compromise personal standards (ibid). Three main triggering risks are indicated and can help explore the related reasons:

Firstly, the large scale of the CAI has resulted in a high interaction with government and international suppliers, and third parties have also brought in fierce competitions. Thus, this competition increases the risk of kickbacks, inflated invoices, improper gifts, and favours, such as hospitality payments to government officials in business practices (Marucheck and Robbins, 1990). However, these behaviours are believed to violate the broader concept of economic sustainability, because *'These activities undermine the long-term functioning of markets*' and '*If corporations attempt to avoid paying corporate taxes through subtle accounting tricks, this might be said to be behaving in an unsustainable way*' (Crane and Matten, 2016, p.35).

Secondly, the hierarchical Chinese style governance dominated by government and state-owned authorities increases the risk. On the one hand, impacted by Confucianism, the power distance is very high, which resulted in very hierarchical management (Hofstede, 2016b). On the other hand, in order to be successful in business, the auto companies might use 'unusual' measures to comply with requirements, such as to escape security and environment emissions control from the government, or to take 'special' measures in customs clearance, which is important for the overseas delivery of auto parts and sales (KPMG, 2017).

Thirdly, the high percentage of JVs also increases this risk. The wider business sphere with both local, foreign companies and governments has bestowed more authority on middle and lower level managers, creating more bribery opportunities such as shareholding by officials as a favour (ibid).

3.6 Summary

Based on scoping reviews and preliminary research, this chapter provided focused background information about the CAI concerning the moral values and ethical elements found in its management training programmes. Limitations of ethics of inclusion in ethics in these training programmes were identified in the scoping review and further discussed in

this chapter to be a lack of due awareness of non-coercive moral values ethics, fragmented cultural elements, a paucity of coverage of Western elements, and a lack of awareness of unique features of engineering ethics in the CAI. Key ethical issues in the CAI were also detailed in this chapter based on their identification in the scoping view and preliminary research, which were environmental protection, product liability and management corruption in the industry. The information is original, coming from a combination of both public domain research and first-hand data gathered in the scoping review and preliminary stage. This information will be beneficial in discussions in Chapter 4 of dimension modification and effective ethical elements justification in the CAI. The information will also be incorporated in subsequent chapters for data discussion and analysis.

Chapter 4 Focused Literature Review

4.1 Introduction

This chapter details the focused reviews based on the narrowed areas from previous research activities such as scoping reviews, preliminary research and contextualisation research in previous chapters. As discussed in Chapter 2, the narrowed areas are altruistic intrinsic goodness ethics from moral values, rather than ethics from external forces or intellectual ethics - driven by certain interests or egoist motives. This, has, therefore, become the focus in this literature view and formal survey discussion. Irrelevant or indirect literature is either excluded or permeated in critical discussions, such as the limitation discussion in Sections 4.3.1, 4.3.2 and 4.4.1.

A literature review is '*The analysis, critical evaluation and synthesis of existing knowledge relevant to the research problem*' (Hart, 2018, p.3). '*No research project is ever the same as another*' (ibid); therefore, the method of review in each thesis is unique, and it is the same for this research. In addition, in the literature, there are diversified possibilities and routes to achieve the same aim and resolve research problems (ibid). Therefore, it is imperative to analyse the key research problems and their inner relations to explore an effective mode to evaluate related existing knowledge critically.

This research aims to critically evaluate the ethical elements in management training that effectively influence managers' ethical intentions (EI) in decision-making in the Chinese Automotive Industry (CAI). To achieve this aim, this review will analyse related existing knowledge based on the five research questions (RQ), which are formulated according to the objectives presented in Section 1.3:

RQ 1 What are the issues related to EI in the CAI, and what is the contextual situation of existing ethical elements in its managerial training?

RQ 2 What are the moral value dimensions specific to managerial EI in the CAI?

RQ 3 What is the nature of effective ethics for managers to be empowered to address ethics in the CAI?

RQ 4 Which non-coercive ethical elements within managerial training can empower managers to effectively address ethics and value challenges specific to the CAI?

RQ 5 What are the recommendations for approaches in managers' EI enhancement in managerial training in the CAI?

To answer these research questions, this review consists of four logically sequenced theoretical conceptualising narrowing-down and justifying processes (Figure 4.1).

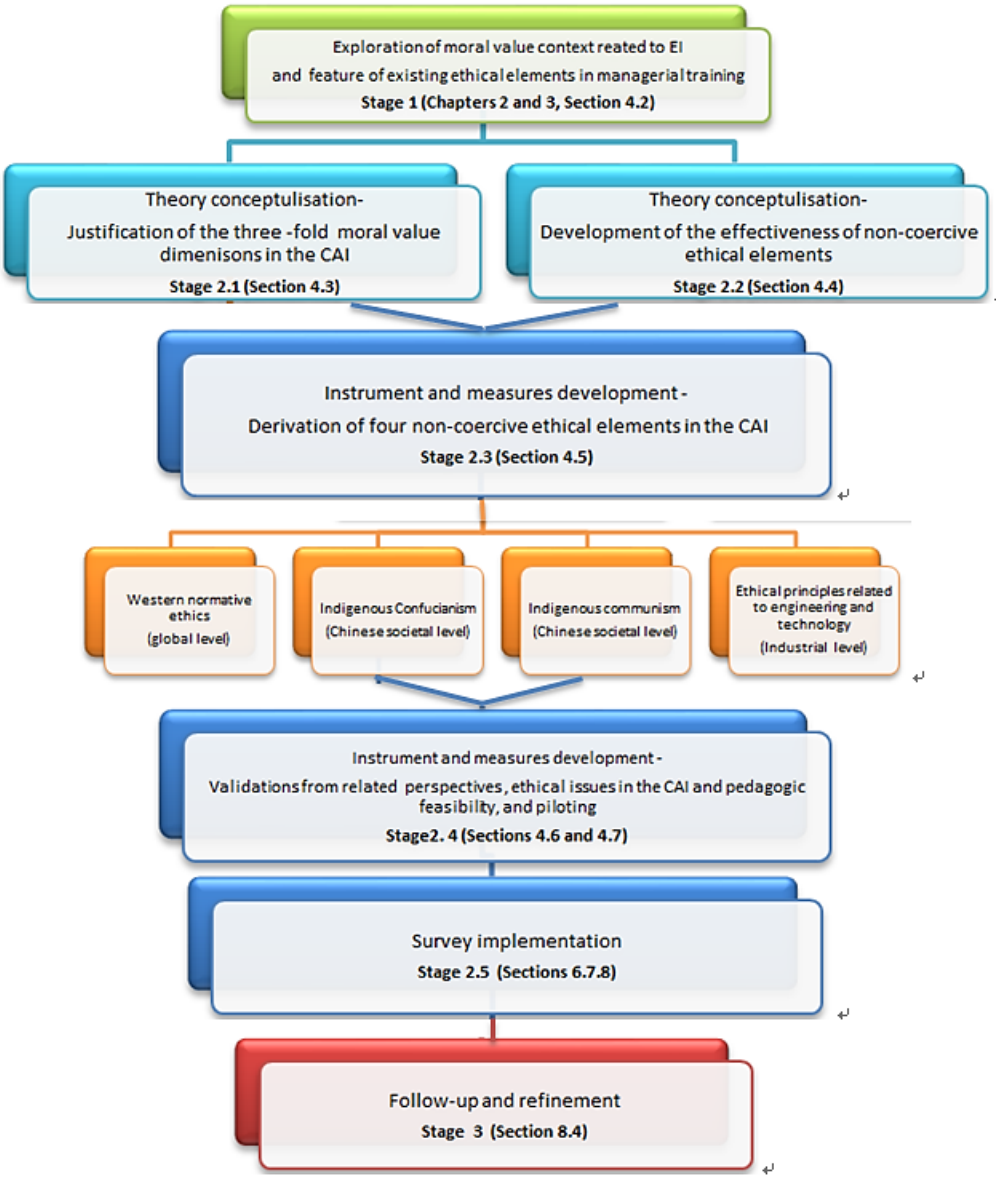


Figure 4-1: A theoretical conceptualisation framework for managers' EI in the CAI
Source: Author (2019)

4.2 Theories of ED and EI

4.2.1 EI related concepts and the significance of considering moral value dimensions

Ethical intention (EI) is one of the stages in the decision-making (ED) process (Rest, 1986). An ethical decision is concerned with a judgment about right and wrong (Ferrell and Fraedrich, 2013). Therefore, in order to properly understand the concept of EI, it is critical to understand the concept of ED and its criteria in judging what is right and wrong. This section first reviews the literature on criteria in judging ED, followed by the key concepts and significance underpinning EI.

1) Many criteria help identify ethical decisions from other decisions and concisely clarify related core concepts. One of them is the three-factor criteria developed by Crane and Matten (2016).

   - The first factor is that the decision is likely to have significant effects on others. This effect is reflected in the two most critical aspects that morality is concerned with, namely, harms and benefits in terms of social good. For example, the Volkswagen Dieselgate Emission Scandal was widely criticised as an unethical decision due to the fact that it might benefit the limited number of shareholders of the company while harming human health and social interest at large, by degrading the social environment and devaluing the auto products that customers purchased (Kasperkevic, 2016; Oldenkamp et al., 2016).

   - The second factor is that the decision is likely to be characterised by choices, with open alternative courses of action. These open courses of choices are also called ‘ethical dilemmas’, a great challenge to people’s inner ethics. To achieve a moral decision, decision-makers need to recognise and make a choice upon specific ethical dilemmas. This ‘ethical dilemma’ approach is widely utilised in decision-making models and business decisions, and the initial recognition of ethical issues has become the first stage in these models (please refer to models in Section 4.2.2). By identifying these dilemmas, people can improve their ethical awareness and judgment and eventually enhance their EI.

Managers in the automotive industry are confronted by ethical dilemmas both from management and technical aspects (stated in Section 1.1), and their choices have resulted in significant impacts on others. For example, in the Ford's 'Pinto' Memo Scandal (Figure 4.2), the 1973 memorandum written for and circulated amongst senior management at the Ford Motor Company, recorded the cost-benefit analysis of retrofitting or altering production of autos and light trucks susceptible to fires from leaking gas tanks after roll-over (De George, 1981; Lee, 1998). In this case, managers in Ford were confronted with choices between cost-benefits and the sacrifice of people's lives by failing to fix this default.

Fatalities Associated with Roll-Over-Induced Fuel Leakage and Fires

Expected Costs of producing all US cars and light trucks *with* fuel tank modifications:

- Expected unit sales: 12.5 million vehicles (includes 11 million cars and 1.5 million light utility vehicles built on same chassis)
- Modification costs per unit: $11.00
- **Total Cost: $137.5 million**
  (= 12,500,000 vehicles x $11.00 per unit)

Expected Costs of producing vehicles *without* fuel tank modifications:

- Expected accident results (assuming 2100 accidents):
  180 burn deaths
  180 serious burn injuries
  2100 burned out vehicles
- Unit costs of accident results (assuming out of court settlements):
  $200,000 per burn death**
  $67,000 per serious injury
  $700 per burned out vehicle
- **Total Costs: $49.53 million**
  (= (180 deaths x $200k) + (180 injuries x $67k) + (2100 vehicles x $700 per vehicle))

Thus, the costs for fixing the roll-over problem was $137 million, while the computed cost of cases where injuries occur was only $50 million

Figure 4-2: Ford's 'Pinto' Memo
Source: California Baptist University (2017)

A similar cost-benefit and fatality calculation choice happened at General Motors (GM) (Bakan, 2012). With a design problem in the fuel tank of its Chevrolet Malibu model, GM still decided to reposition the fuel tank on the car, which would increase the possibility of passengers being harmed in fuel-fed fires in a rear collision. A 1970s report by a GM engineer indicated how they calculated fatalities and saved cost: $6.19 (cost saved for each car) = $ 8.59 (the cost to prevent such fires) - $ 2.40 (cost for each fatality if it allows people to die). This unethical equation is shown below.

$$\frac{500\ estimated\ fatalities\ each\ year \times \$200{,}000/fatality}{41{,}000{,}000\ automobiles\ on\ the\ road} = \$2.40/\text{automobile}$$

Currently, the widely discussed Trolley Problem that '*Would you kill one person to save many others*' (Frison et al., 2016; Greene, 2016; Goodall, 2017) is another type of ethical dilemma confronting professionals in the automotive industry (Appendix 1.1). During these cases, auto designers are confronted with open choices between a utilitarianism stance to save many and deontology or virtue ethics stances to respect human life regardless of any conditions (Crockett, 2016).

- The third factor is that the decision is ethically relevant to one or more parties. As long as action is taken, the decision immediately incurs some degree of ethicality regardless of whether the decision-maker sees a decision as being ethical or not. The three cases of Volkswagen, Ford and GM have indicated their unethical relevance to the people involved, resulting in health damage or even loss of life for others.

Due to the features of having '*significant effects on others*', '*open courses of action*' and '*relevance to other parties*', unethical decisions in the auto industry have also indicated the necessity for an approach in this industry. This approach is required to be able to empower people to address these ethical issues internally, fully considering impacts from a wider perspective.

2) The definition of EI and its role in the fundamental ED models indicate its significance.

- Rest's (1986) four-component ED model is usually used as the foundation for individual ED, with four successive stages (Figure 4.3): 1) recognising the moral issue, 2) making a moral judgment, 3) establishing moral intent and 4) engaging in moral behaviour.

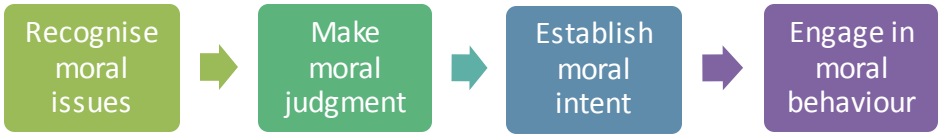


Figure 4-3: Rest's four-component ED model
Source: Rest (1986)

Concerning Rest's process model, scholars such as Elango et al. (2010) and Craft (2013) attempted to define or make further explanations for each stage. Craft (2013)

added a compacted name for each stage for more clarity, namely, 'awareness', 'judgment', 'intent' and 'behaviour'; Elango et al. (2010) used the abbreviations of 'ED' for ethical decision-making and 'EI' for ethical intentions (see Table 4.1). For consistency, this research adopts compact names for the four stages and the abbreviations of 'ED' and 'EI'.

Table 4-1: Definitions of Rest's four-component ED stages

Stage	Description by Rest (1986)	Definition by Craft (2013) and Elango et al. (2010)	Compacted named by Craft (2013)	Abbreviations by Elango et al. (2010)
1	Recognise a moral issue	The ability to interpret a situation as being moral	Awareness	
2	Make a moral judgment	The ability of the decision-maker to decide which course of action is morally correct	Judgment	
3	Establish moral intent/ resolve to place moral concerns ahead of other concerns	The ability to prioritise moral values over other values	Intent	EI
4	Engage in moral behaviour/ act on the moral concern	The application of the moral intent to the situation	Behaviour	ED

Source: Author (2019), based on Elango et al. (2010); Craft (2013)

EI is the third stage in ED, as shown in Figure 4.3. One of the definitions of EI is by Craft (2013, p.221) that it is '*The ability to prioritise moral values over other values*', a point which is also echoed by other scholars such as Elango et al. (2010). This definition implies the necessity to diagnose a specific moral value context for alternative courses of action and for better prioritisation choices, which fits well with Crane and Mattern's three-factor criteria in judging ED. The literature indicates this EI concept is underpinned by moral values, which are also recognised by Aristotle (1925) as one of the value classes, with intrinsic goodness nature compared with intellectual values (stated in Section 1.1).

These benefits are important for managers' understanding in addressing the complexities of ethics and moral values in the CAI. The two concepts of EI in focusing on moral values and diagnosing a complete moral value dimension would be effective to improve their EI to address these ethics.

- The importance of EI is widely acknowledged. For example, Dubinsky and Loken

(1989) regard intentions as an important component in ethical behaviour, and define intentions as '*the individual's subjective probability that he or she will engage in the behaviour*' (p.85). Ferrell and Gresham (1985) and Laczniak and Murphy (1983) believe intentions denote the underlying purposes for engaging in ethical/unethical behaviour. Hunt and Vitell (1986) describe intention as the likelihood that any particular alternative will be chosen.

These definitions of EI do not completely agree with Craft's (2013). However, they congruously point out the importance of the EI concept and the alternative courses to engage in ethical behaviour. Compared with them, Craft stresses the identification of the existing objective values in the specific moral value context. This research aims to evaluate the EI from the managerial perspective and consider managers' EI from the company level, which highlights managers' objective prioritisation of the values. Therefore, Craft's (2013) definition fits more with this research.

- Craft's (2013) definition of EI in considering the moral value context also fits the concept of applied ethics which stresses the importance of considering specific context and ethical dimensions in decisions. This advantage can be evidenced in the statement that,

  > *Applied ethics looks into the ways in which moral value can be applied to particular areas of concern such as the business*', and '*when it comes to practice, the ethical dimension is a fundamental part of all judgments and decisions* (Govindarajan et al., 2017, p.5).

  This multidisciplinary research is based on the EI concept and is also applied in the specific value context of the CAI; the encompassed business ethics, managerial ethics and engineering ethics all belong to applied ethics (Crane and Matten, 2016; Standford Encyclopedia of Philosophy, 2016, 2019; The Engineering Council, 2018). The congruence of the EI concept with applied ethics has further underpinned the concept of EI and the necessity to consider moral value dimensions for better ethical decisions in the CAI.

- The significance of EI can also be evidenced by the four key reviews of ethical

decision-making. According to these reviews (1978-2011), the research of EI has been increasing (see Appendix 4.1). This research reviewed by Craft (2013) was based on key journals, such as the *Journal of Business Ethics* (JBE) (Appendix 4.2). The scale of empirical research examining the direct effects on the dependent variable 'intent' also indicates its significance (Appendix 4.3).

4.2.2 Implications from fundamental ED models

The recognition of EI by its concepts to focus on moral values and systematically evaluate the moral value dimensions for prioritisation can also be validated in fundamental ED models. Most ED models are developed on Rest's four-component model or are similar to it; they draw extensively on each other, with common features and similar implications for this research. Table 4.2 includes five prominent ED models and Jones' (1991) synthesis model. The following elaborates their features concerning the nature of ethics and value dimensions.

Table 4-2: Fundamental ED models

No	Sources	Year	ED Model
Model 1	Trevino	1986	A Person-Situational Interactionist Model
Model 2	Hunt-Vitell	1986	A Model of Ethical Behaviour
Model 3	Ferrell and Gresham	1985	Contingency Model of Ethical Decision Making in a Marketing Organisation
Model 4	Dubinsky and Loken	1989	Model of analysing ethical decision making in marketing
Model 5	Jones	1991	Synthesis of Ethical Decision-Making Models An Issue-contingent Model of Ethical Decision Making in Organisations
Model 6	Groves et al.	2008	Thinking Style and Managerial Ethical Decision-making Model

Source: Author (2019), based on data in Ferrell and Gresham (1985); Trevino (1986); Hunt-Vitell (1986); Dubinsky and Loken (1989); Jones (1991); Craft (2013)

Trevino's (1986) *A Person-Situational Interactionist Model* is based on Rest's four stages (Figure 4.4). The factors impacting 'moral intentions' in terms of dimensions are indicated as 'Individual Moderators', 'Organisational Culture' and 'Situational Moderators'. The dotted box added by the author indicates the invisible existence of the third stage of 'moral intent'.

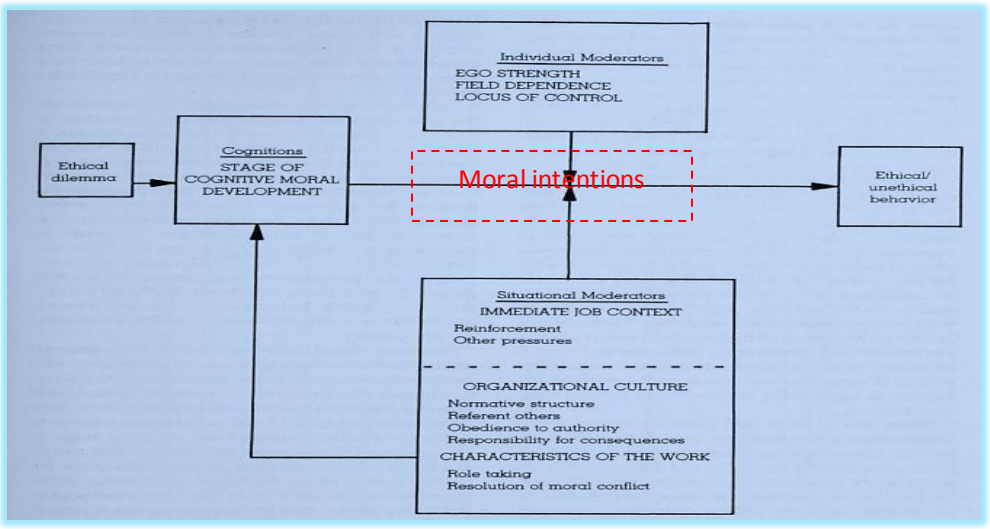


Figure 4-4: A Person-situational interactionist model
Source: Reproduced from Trevino (1986)

Hunt-Vitell's (1986) *Model of Ethical Behaviour* indicates more complete dimensions than Trevino's model (Figure 4.5). Compared with Trevino's (1986) dimensions, the information in Figure 4.5 demonstrates impacting factors from wider levels, including 'norms and values', and 'personal', 'cultural', 'professional', 'industry' and 'organisational norms', highlighted. Western normative ethics were embedded (deontological and teleological processing).

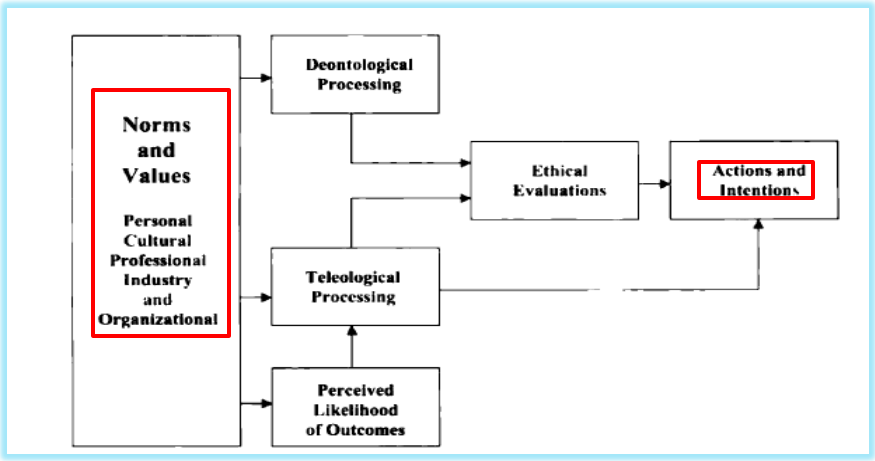


Figure 4-5: Model of Ethical Behaviour
Source: Reproduced from Hunt and Vitell (1986)

Another two fundamental ED models are applied in marketing and indicate ethical issues specific to marketing practice. One is by Dubinsky and Loken's (1989) *Model of Analysing Ethical Decision Making in Marketing*, where intention is engaged (Appendix 4.4). The other is Ferrell and Gresham's (1985) *Contingency Model of Ethical Decision-Making in a*

Marketing Organisation. The unique feature of this model is that it not only demonstrates the EI concept; considering impacting factors from wide dimensions, it has also demonstrated the application into specific marketing practice by considering 'Ethical issues or dilemmas' related to marketing practice. This phenomenon is also reflected in ethical elements such as 'Professional codes' in 'Opportunity'. The 'professional code' is industry-specific, and is a common practice in the engineering sector (Ryan, 2015). In addition, these factors listed in Figure 4.6, such as 'Social and cultural environment', 'Individual factors', 'Significant others' and 'Opportunity', are consistent with Crane and Matten's (2016) three standards in judging ethical decisions (Section 4.2.1).

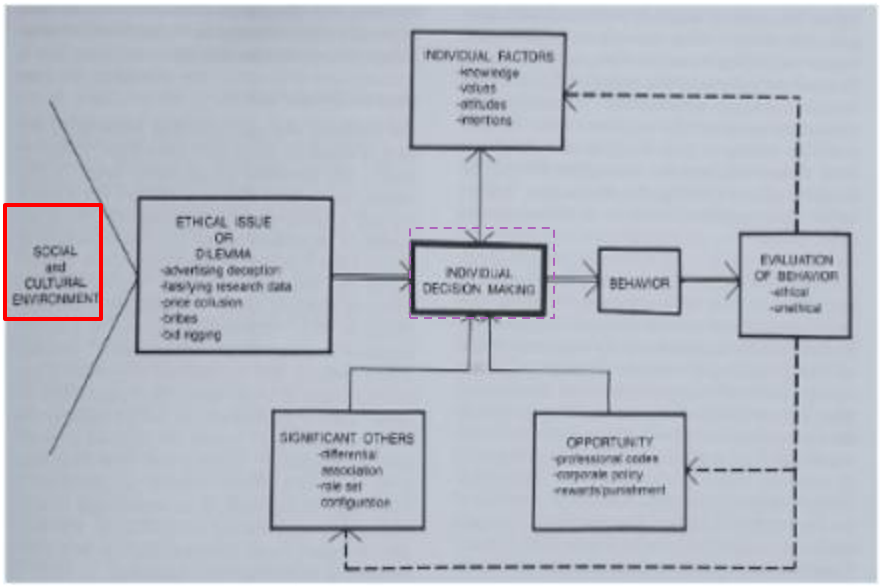


Figure 4-6: Contingency model of ED in a marketing organisation
Source: Reproduced from Ferrell and Gresham (1985)

Figure 4.7 indicates the model of *An Issue-contingent Model of Ethical Decision Making in Organisations* by Jones (1991). Different from models by Trevino (1986) and Hunt and Vitell (1986), which focus on individual behaviours, this model focuses on the organisational level, showing the impacts from 'Moral Intensity' and 'Organisational Factors'. Jones (1991) also synthesises the previously mentioned four ED models by using this model. The summary in Figure 4.8 has congruously indicated the importance of EI (highlighted) with broad dimension impacts.

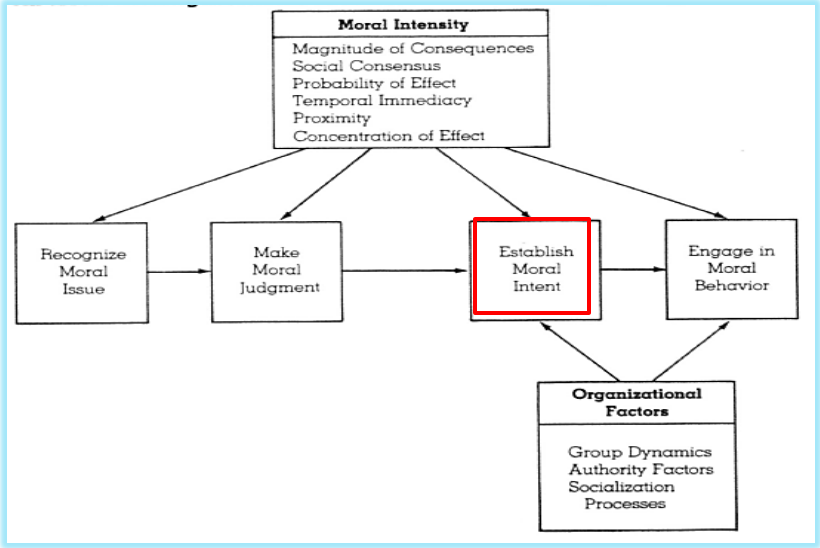


Figure 4-7: An issue-contingent model of ED in organisations
Source: Reproduced from Jones (1991)

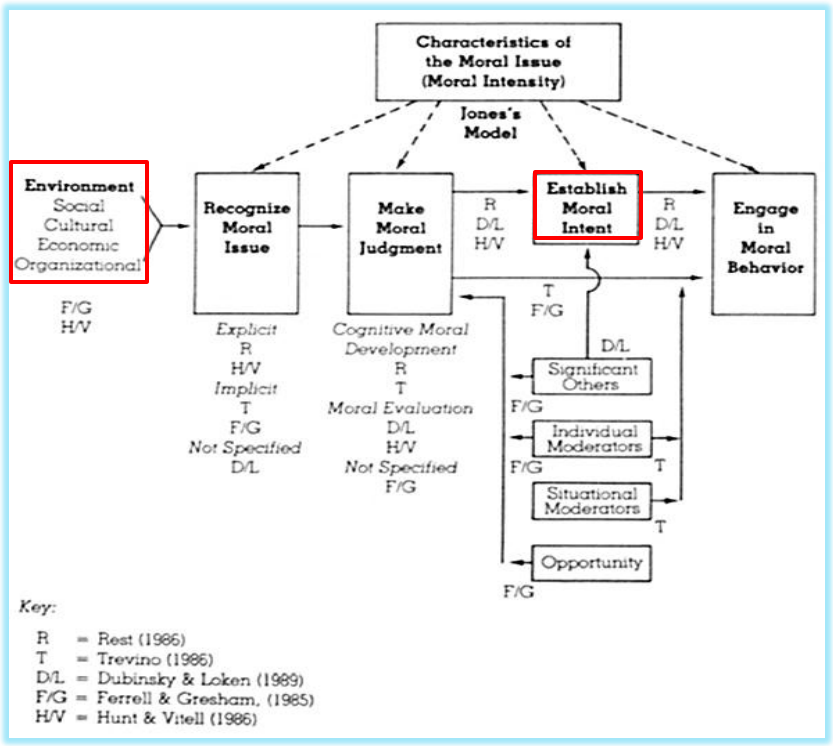


Figure 4-8: Synthesis of ED models
Source: Reproduced from Jones (1991)

Another model in Craft's (2013) review is Groves et al.'s (2008) model, similar to Hunt and Vitell's (1986), which specifies a complete value dimension and embeds Western normative ethics (WNE) in evaluation before judgment and intent. Groves et al.'s (2008) model is specifically designed for managerial ED, recognising the significance of EI and wide impacting factors for managers. As indicated in Figure 4.9, these factors include the external environment (cultural, social, economics, organisational, professional and industrial

dimensions), and personal characteristics, which fit managers' dual functions both as an individual and a manager (Ferrell and Fraedrich, 2013). This model also indicates the utilisation of two WNE in the form of 'Deontological evaluation' and 'Teleological evaluation', similar to Hunt and Vitell's (1986) *Model of Ethical Behaviour*. Moreover, Grove et al.'s (2008) model includes three types of thinking style preferring a balanced thinking style, in accordance with literature in engineering ethics that suggests that the use of WNE can help engineers make more balanced and ethical decisions (Vesilind and Gunn, 2016).

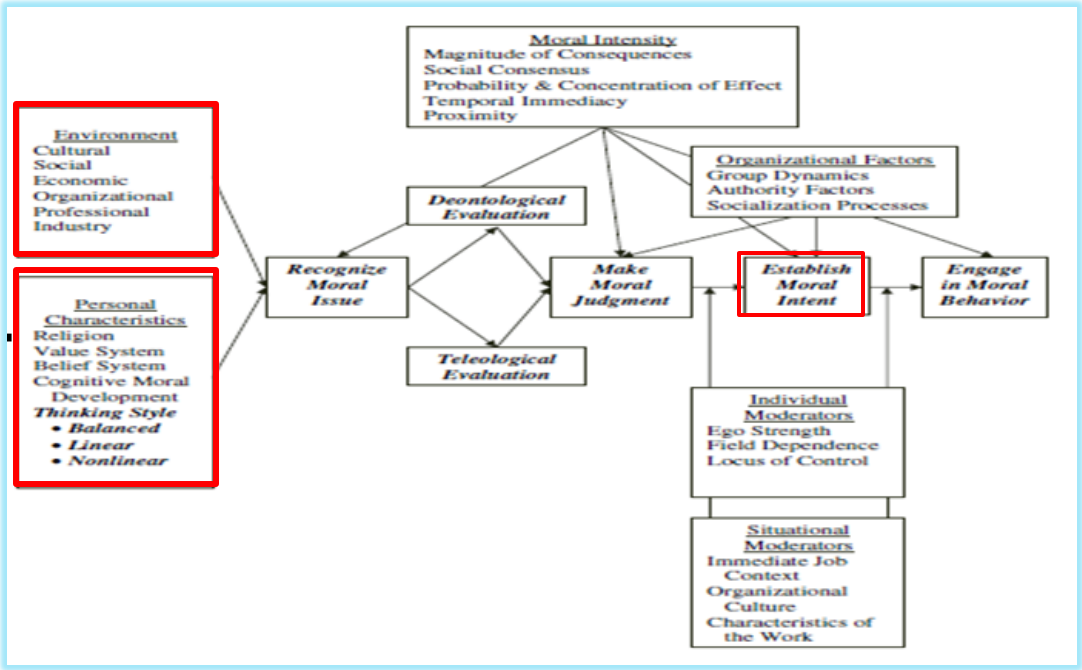


Figure 4-9: Thinking style and managerial ED model
Source: Reproduced from Groves et al. (2008)

The strengths of the model by Groves et al. (2008) are summarised in Tables 4.3 and 4.4. The concept of Vesilind and Gunn (2016) in recognising the benefit of WNE for balanced decisions among engineers is also embedded in Table 4.3. Table 4.4 compares the five fundamental ED models outlined in this section, indicating their contribution to EI research in terms of dimensions, contexts and influencing factors.

Table 4-3: Strengths of Groves et al.'s ED model

Similarity to	Rest (1986)	Jones (1991)	Ferrell and Gresham (1985)	Hunt and Vitell (1986)	Vesilind and Gunn (2016)	Groves et al. (2008)
EI	Four Stages	Four Stages	Four Stages	Four Stages		Four Stages
Dimensions			The social and cultural environment	Personal, cultural, professional, industry and organisational		Cultural, economic, social, organisational, industrial and professional
Western normative ethics				Deontological and teleological Processing	The use of WNE can help engineers make more balanced and ethical decisions	Deontological and teleological evaluations
Balanced thinking style						Thinking styles: linear, nonlinear

Source: Author (2019), based on Rest (1986); Hunt and Vitell (1986); Jones (1991); Groves et al. (2008); Vesilind and Gunn (2016)

Table 4-4: Contributions of the five fundamental ED models on EI

	Dimensions/thinking philosophy/context								Style/cognitive			Moral Development/	Decision-making stages			
	Macro dimensions		Micro dimensions						Impacting factors				S1-S4			
	I	O	C	S	In	P	E	SC	TS	CM	DT	PC	S1	S2	S3	S4
M1	√	√						√		√			√	√	√	√
M2	√	√	√	√	√	√					√		√	√	√	√
M3	√	√	√	√			√	√				√	√		√	√
M4	√	√		√				√					√	√	√	√
M5	√	√	√	√	√	√	√	√	√		√		√	√	√	√

Source: Author (2019), based on Ferrell and Gresham (1985); Hunt and Vitell (1986); Trevino (1986); Jones (1991) and Grove et al. (2008)

Note:
Models: M1 (Trevino, 1986), M2 (Hunt and Vitell, 1986), M3 (Ferrell and Gresham, 1985), M4 (Jones, 1991), M5 (Grove et al., 2008)
Macro dimensions: Individual (I), Organisational (O)
Micro dimensions: Cultural (C), Social and norms and values (S), Industry (In), Professional (P), Economic (E), Situational context (SC)
Impacting factors: Thinking style (TS); Cognitive moral development (CM); Deontology and teleology (DT); Professional codes (PC)
ED stages: S1 (Awareness), S2 (Judgment), S3 (Intent), S4 (Behaviour)

In addition to ED models, Table 4.5 displays two recent fundamental ED frameworks in business and management by Crane and Matten (2016) (Figure 4.10) and Ferrell and Fraedrich (2013) (Figure 4.11). The two frameworks also validate the importance of the concept of EI and show similar impacting factors, such as the four stages in Figure 4.10 and elements of 'individual factors' and 'organisational factors' and ethical issues in Figure 4.11.

Table 4-5: Fundamental ED frameworks

No	Sources	Framework
Framework 1	Ferrell and Fraedrich (2013)	Framework for understanding ED in business
Framework 2	Crane and Matten (2016)	Framework for understanding ED

Source: Author (2019), based on Crane and Matten (2016); Ferrell and Fraedrich (2013)

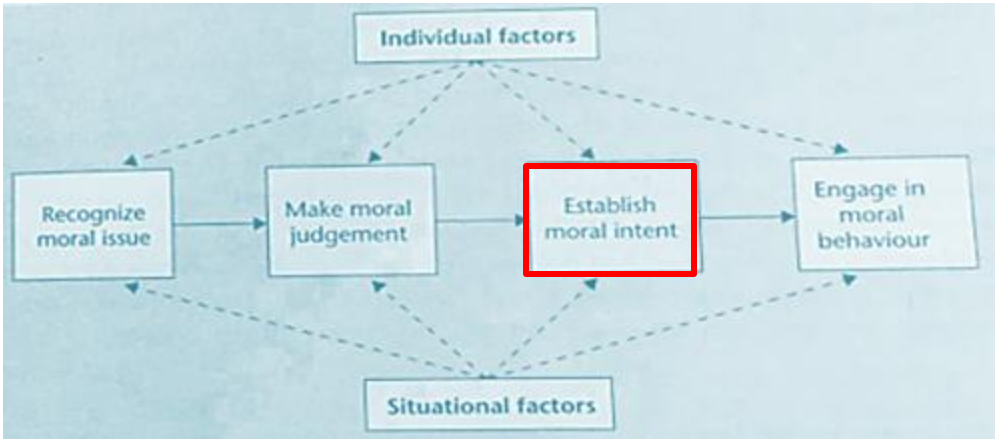


Figure 4-10: Framework of ethical decision-making
Source: Reproduced from Crane and Matten (2016)

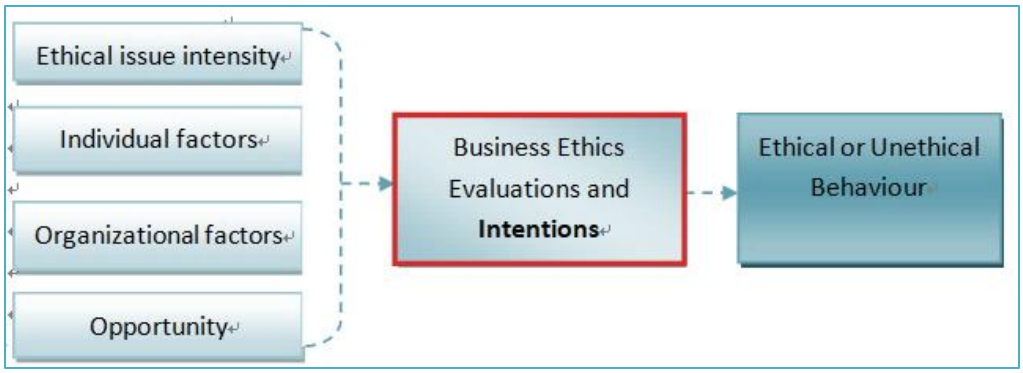


Figure 4-11: Framework of ethical decision-making in business
Source: Reproduced from Ferrell and Fraedrich (2013)

There are limitations in applying these models and frameworks for this research. These models are invented/developed only as a relatively simple way to represent complex ED processes, but not a definitive mode for every situation (Crane et al., 2019). Therefore, the modification is possible in order to fit a specific context. At the same time, these models have largely originated in the US, which might result in a national or cultural bias to the types of issues or perspective bias (ibid). For this research, this perspective bias might result in a clash of dimensions or neglect of Western values from the Chinese perspective. Therefore, when using this model in the Chinese context, the bias needs to be rectified. The benefits and potential limitations of these models lay the basis for the further modification of ethical dimensions for this research in Section 4.3.

4.2.3 Particular strength of normative ethics in ED

In reviewing the fundamental ED models, in addition to the identification of the concept of the dimension, the recognition for Western normative ethics is a benefit. Two models of them (models by Hunt and Vitell, 1986; Groves et al., 2008) embed the ethics of deontology and teleology. The following will further discuss the nature of normative ethics with relation to ED, preparing for the justification of effective ethics in Section 4.4.

There are two types of business ethics in decision-making: Descriptive ethics and normative ethics (Crane et al., 2010). It is believed that '*Descriptive business ethics seek to describe how ethical decisions are made in business and what influences the process and outcomes of those decisions*' (ibid, p.140). However, descriptive ethics has a defect in that the prevailing practice might not be ethical. A danger might exist that due to its focus on the prevailing set of ethical standards in the business community, there might be acceptance of unethical but prevailing behaviour or decisions (De George, 2011). It is irrational to make it an appropriate practice just because many are participating in questionable activities (ibid).

Normative ethics carries the strength that can resolve the dilemmas of descriptive ethics; it tells '*what business people should do*'. It is widely used in ED as hyper norms and guiding principles (Crane et al., 2010). Normative ethics deals with 'what ought to be' or 'what should be' in terms of business practices (Carroll and Buchholtz, 2014). To be specific, normative ethics seeks to uncover, develop, and justify basic moral principles that are intended to guide behaviours, actions, and decisions (De George, 2011). In business, this ethics is beneficial, for it seeks to propose principles for distinguishing what is ethical from what is unethical.

Normative ethics also has the benefit of focusing on the nature of human beings and the morality of issues regardless of any consequences. For example, one of the normative ethics, deontological theories (the Greek word for 'duty'), deduces a 'duty' to an action based on the situation, but not necessarily for the desirability of any consequences (Crane and Mattern, 2010).

As hypernorms and guiding principles, normative ethics is widely applied in business and regarded as the basis of business ethics. It is due to the feature concerned with establishing norms or standards by which business practices might be guided or judged. Business ethics

is considered as a normative enterprise, which is like many areas of applied ethics, drawing from a variety of normative disciplines, including ethics, political philosophy, economics, psychology, law, or public policy (Standford Encyclopedia of Philosophy, 2016, 2019). Doing business ethics well means being familiar with these normative ethics and disciplines, or at least being aware of gaps in one's knowledge (ibid).

Managerial ED and business ethics are both underpinned by normative ethics. According to Stanford Philosophy Dictionary (2016), business ethics is a branch of applied ethics, populated by both social scientists and normative theorists and can be understood as '*the study of the ethical dimensions of productive organisations and commercial activities*'. Business ethicists seek to understand the ethical contours of and devise principles of right action for, business activity, where they choose a normative framework and tease out its implications for a range of issues in business (ibid). These normative theorists, normative frameworks and diverse principles are all based on normative ethics.

Gaining these benefits of normative ethics in ED in both business and management would be necessary for managers in the CAI to become more empowered in their decision-making. Due to the two-fold concepts of EI, which focuses on moral values and the moral value dimensions (Section 4.2.1); the following two sections are structured accordingly.

4.3 Development of managerial ED dimensions for the CAI

4.3.1 Existing dimensions and evaluations

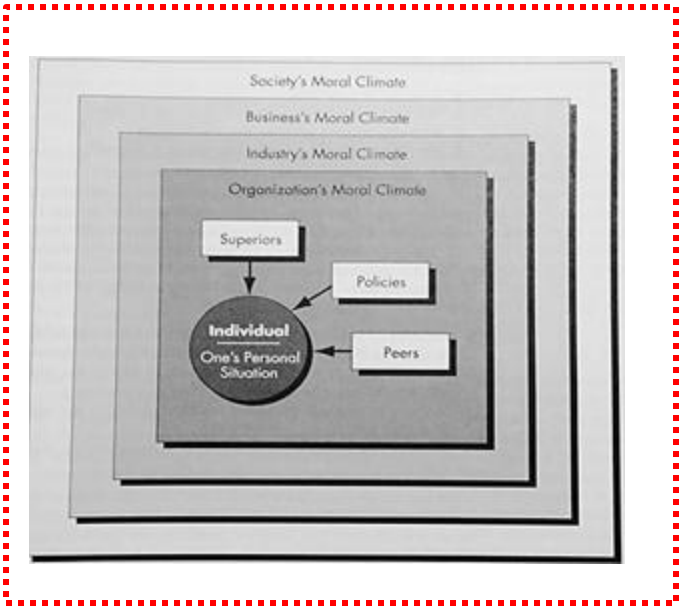
Literature in the fundamental ED models discussed in Section 4.2 demonstrates the significance of EI in focusing on moral values and moral value dimensions. Section 1.1 also covers managerial moral value dimensions but reveals there is a gap in research due to the neglect of a complete dimension, such as the ethical element from the West for the CAI. This section demonstrates dimensions from other perspectives and evaluates their fitness to this research.

These fundamental ED models in Section 4.2.2 offer general dimensions. As indicated in Tables 4.3 and 4.4, Groves et al.'s model (2008) is proven relatively more complete with seven levels of ethical dimensions: '*Individual, cultural, social, economic, organisational,*

and professional and industry'. This model is specifically designed for '*Managerial Ethical Decision-making*' and therefore, is particularly valuable for this research due to its similarity in exploring the managerial ED and EI. However, due to cultural perspective bias (Crane and Matten, 2016) (stated in Section 4.2.2), there is a perspective clash such as for ethics at the 'societal' and 'global' dimension, where from their perspective, the two dimensions refer to the Western society dimension and the dimension outside the Western society. However, for the CAI, the two dimensions need to change to fit the Chinese perspective. The appropriate positioning of the 'global' dimension is particularly important for the CAI due to its high engagement of Western collaborations and JVs (Sections 3.2 and 3.3).

Other theories and literature reflect similar dimensions and with some improved features, particularly with the inclusion of ethics 'at global/international level'. The following will review models and concepts with wide moral value dimensions, including the global dimension.

- The ethical issue levels confronting managers underpin some ED models with the dimension concept and the inclusion of ethics at the global level. The rationale for such dimension division is that individuals and managers experience ethical pressures or dilemmas in a variety of settings (Ferrell and Fraedrich, 2014). For example, Carroll and Buchholtz (2014) propose a five-level dimension model, namely, '*The individual or personal level, the organisational level, the industry level, the societal level and the global level* (p.224)' (Figure 4.12) (The global level is highlighted in red dotted line). Likewise, Carroll (1978) proposes that ethical and moral issues in business can be examined on at least five levels; the 'International level' is at the outer circle (Figure 4.13).



Global moral climate

Figure 4-12: Ethical factors affecting the morality of managers and employees
Source: Reproduced from Carroll and Buchholtz (2014)

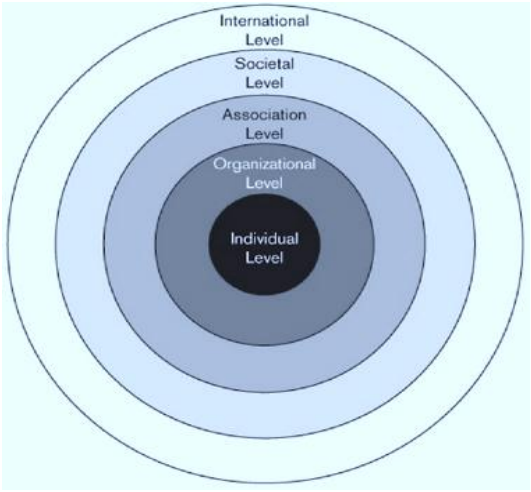


Figure 4-13: Linking business ethics to behaviour in organisations
Source: Carroll (1978)

The global-level dimension is important for the CAI in its internal and external environments. The wide interaction with Western countries such as America and Germany has been stated in Sections 1.1 and 3.2, resulting in its high-percentage of JVs (China Statistical Yearbook, 2015). This strong global impact has also been reflected by government policies, such as the ongoing emerging whole foreign ownership policy (Xinhuanet, 2018) and the Chinese government's initiative to promote this industry to go outside in its 'One Belt and One Road Initiative' (Barbosa et al., 2010). The CAI is also impacted by globalisation. As the largest global scale in the industry, it needs to comply with global hyper norms (Jian, 2017). Therefore, for the CAI, the impact from the global domain is unavoidable, and this global

level dimension is indispensable.

- Carroll and Buchholtz's (2014) five-level dimension model can also be validated from a stakeholder's perspective, which is important for management. The stakeholder concept is originally narrowly specified by Milton Friedman that '*business should only be run in the interests of their own*' (Crane and Matten, 2016, p.62). Later, R. Edward Freeman (1983) expands it to '*any group or individual who can affect or is affected by the achievement of a corporation's purpose*' (p.46). It is also believed that "*Managers are no longer 'agents' of shareholders only; they find themselves in a role of assessing and balancing the interests of all stakeholders in running the firm*" (Crane et al., 2013, p.135). As such, the stakeholder analysis is deemed as '*a strategic management tool*' (Weiss, 2014, p.153). Crane et al. (2013, p.134) also point out the moral obligation of a manager, stating '*the corporations are not only strategically rational but arguably also morally obliged, to consider the interests of the individuals or groups they affect and are affected by*'. The advantages to consider ethics from a stakeholder's perspective are further indicated through the differences between the general managerial model and the stakeholder model (Table 4.6).

Table 4-6: Managerial model versus the stakeholder model of the firm

	Managerial model of the firm	Stakeholder model of the firm
Main interest group	Owners (shareholders)	All groups that are affected by the firm's pursuit of its goals
Legitimacy of stake	Property rights	A broad set of all the rights of those groups which are affected by the firm
Role of stakeholders	Apart from owners, stakeholders are a means to maximise the firm's goal	All stakeholders are an end in themselves with legitimate interests in the firm
Goal of management	Maximising value and return for the owners of the firm	Maximising value for all groups that have a stake in the firm
Role of Management	The agent of the owners	Balancing all interests of the firm's stakeholders
Social responsibility	Individual (owners)	Organisational

Source: Crane et al. (2013)

Other scholars echo the benefit of the stakeholder perspective, enabling managers to consider ethics or value from a broad dimension concept. Weiss (2014) asserts that '*The moral dimensions of managerial roles also have a stakeholder perspective*' and '*Ethical issues can also be analysed relative to the stakeholder management approach*' (p.153). Based on the stakeholder perspective, Weiss (2014) proposes a six-level dimension

model, related to moral issues, ethical reasoning and moral decision-making, namely, '*the Personal level, the Company or Organisational level, the Industry level, and the Societal, International, and Global levels*' (p.75), which is similar to the ethical levels specified by Carroll and Buchholtz (2014).

- These ethical dimensions, similar to that of Carroll and Buchholtz (2014) can also be validated from a cultural perspective. Culture is closely related to ethics as culture is the root of ethics (Hofstede and Bond, 1988; Hofstede, 1994; Vitell et al., 2013; Hofstede, 2015b). Vitell et al. (2013) also apply the culturist Hofstede's typology and recognise the profound effects of culture on ED. The intrinsic and non-coercive impact of culture on business can be evidenced by the famous economist Li (2014) who claims that culture is an ethical factor and that its impact on the economy is beyond market and government.

Culture is considered to be particularly important in international business due to its diversity and multiple impacts on the decisions; this is particularly important for the CAI as an international industry (CAAM, 2018). The influential culturist Hofstede reinforces that '*the business of international business is culture*' (Hofstede, 1994). Leung et al. (2005) also propose a five-level cultural layer-construct model for international companies, similar to Carroll and Buchholtz's (2014) model (Figure 4.14).

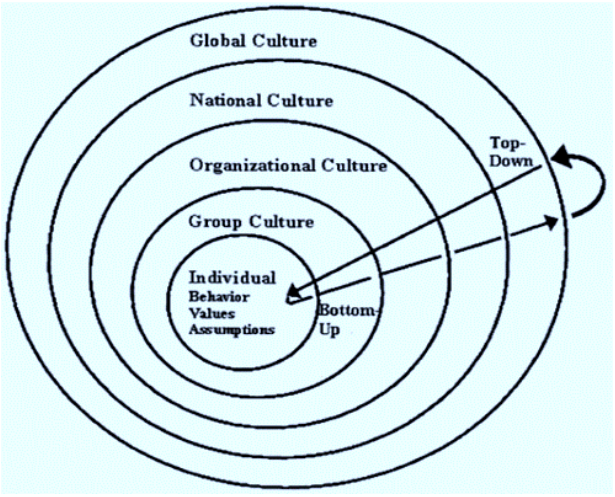


Figure 4-14: The dynamic of top-down-bottom-up processes across levels of culture
Source: Leung et al. (2005)

Moreover, culture is important in ethical decisions. For example, Hollensen (2012, 2014, 2016) points out that '*Culture is a fundamental determinant of ethical decision-making*' and '*It directly affects how an individual perceives ethical problems, alternatives and consequences*' (p.164). In order to succeed in today's international markets, '*managers*

must recognise and understand how ideas, values and moral standards differ across cultures, and how these in turn influence decision making' (Hollensen, 2012, p.164). He further puts forward similar cultural dimensions as Carroll and Buchholtz's (2014), that,

> *Every culture - national, industry, organisational or professional - establishes a set of moral standards for business behaviour, that is, a code of business ethics. This set of standards influences all decisions and actions in a company* (ibid, p.164).

In addition to these five-level generic managerial dimensions, the literature also indicates specific dimensions related to the CAI. However, these dimensions discussed in Section 1.2 are not as complete as these five-level generic dimensions. For example, Zhu and Jesiek (2015) indicate three elements from the indigenous Chinese societal dimension, including culture, ideology and the economic dimensions, neglecting the global dimension. Yang (2012) indicates the Western dimension by the inclusion of capitalism, but it is from an intellectual value dimension instead of a moral value dimension. The information in this section offers implications for the critical development of a moral value dimension framework for the CAI as set out in Section 4.3.3.

4.3.2 Issues of applying existing models to the CAI context

Section 4.3.1 critically demonstrates ED models and particularly evaluates the five-level dimension ED model by Carroll and Buchholtz (2014). These dimensions include individual, organisational, industry, societal and global levels, from related perspectives, such as decision-making, management, stakeholder and culture.

However, conflict occurs when directly importing these Western-origin models into the Chinese environment. This phenomenon is particularly prominent for ethics at the societal and global levels. The main reason is due to the perspective bias in these fundamental ED models. As stated in Section 4.2.2, these models have largely originated in the US, which might result in a national or cultural bias to the types of issues or perspectives (Crane and Matten, 2016). An obvious clash of the 'global' and 'societal' dimension is observed in the fundamental ED models from the CAI perspective.

To be specific, using the Western perspective, ethics at this 'social'/'societal' level in these models only refers to elements in such a society. This bias can be evidenced by the exclusive

use of the Western philosophies of 'teleology' and 'deontology' in these models (Hunt and Vitell, 1986; Groves et al., 2008). However, when applied in the CAI that is based in China, from the Chinese perspective, these Western ethics are regarded as global/international. If there is no modification, ethical elements at the 'societal' level will have to appear again at the 'global' level in this research, thus causing duplications. Vice versa, the same conflict and duplication happen when importing the 'global' dimension directly in the CAI context, where the original meaning refers to elements outside this Western society, including Chinese values. However, from the perspective of the CAI, ethics from the global level might only refer to those from the West. Therefore, when perspectives change, the direct importing of the two Western perspective dimensions for ethics at 'societal' and 'global' levels might result in confusion and duplication in the CAI context.

The conflict also occurs for ethics at the 'individual' and 'organisational' levels by importing ethics directly from the Western models. From the Western perspective, ethics such as deontology or teleology are individual moral value stances at the individual level (Crane and Matten, 2016), while theories such as stakeholders or CSR belong to the organisational level. However, from the Chinese perspective, these elements also belong to the global level due to their Western origin. Therefore, if there is no modification, some theories such as deontology will appear at both individual and global levels, causing confusion and duplication.

4.3.3 Development of dimensions pertinent to the CAI

Based on the discussions in Section 4.3.1 and 4.3.2, a modification is needed to deal with these potential conflicts in duplications and inappropriateness. The modification is based on the critical review of existing dimensions and the concept of EI with its benefits and significance in business ED.

Due to the main conflicts stated, the first step is to redefine 'societal' and 'global' dimensions to fit the perspective of the CAI. The CAI operates in China, and is governed and impacted by the Chinese government in decisions, and influenced by Chinese traditional culture. Consequently, the ED model needs to be designed from the Chinese perspective. Therefore, the generic 'societal' level is thus confined to the 'Chinese societal' level to avoid confusion, differentiating it from the Western perspective for models used in the Western context.

Likewise, the term 'global' level needs to be confined to the 'Western global' level, to distinguish from the general Chinese perspective. Two factors determine the term 'Western'. One reason is that the CAI has many foreign cooperative partners; however, they are exclusively from the West, including North America and Europe (CAAM, 2017) (demonstrated in Section 3.2.1). These countries are impacted by Western norms and values, so they also bring their Western values to decisions in the CAI. The other reason is that in terms of moral values, WNE is dominant in the West and regarded as global hypernorms in business and management (Crane and Matten, 2016) (reviewed in Section 4.2.3).

In addition, the 'industrial' dimension is redefined to the 'Chinese industrial' dimension. The reason is that the values in Chinese and Western industries are not the same; they retain and are impacted by their dominant culture and ideology (Cao, 2015). Although they are similar in intellectual values to some extent, such as pragmatism and capitalism, they differ in moral values. One of the typical examples is codes of ethics or ethical principles for engineers (EPE) in the Western and Chinese engineering world (Section 3.4.4). In the West, they are impacted by the Western philosophical rationality origin of technology *Logos* and thus exists in the rational form of codified ethics (Cao, 2015). Conversely, ethics in this industry in China is more in the form of morality or moral values and is impacted by morality transformed from its culture and ideology, which might result in a physical absence of a rationalised form (ibid). Thus, the direct importing of these Western-perspective ethics at the industry level into the CAI will result in inappropriateness. Figure 4.15 depicts their differences (Cao, 2015, p.1632):

> *'Both convergences and divergences of China-US engineering ethics (practical morality and applied ethics) are hidden in the traditions of Sino-Western philosophies of technology (Tao and Continental-Marxism, Logos and European-American style)*'.

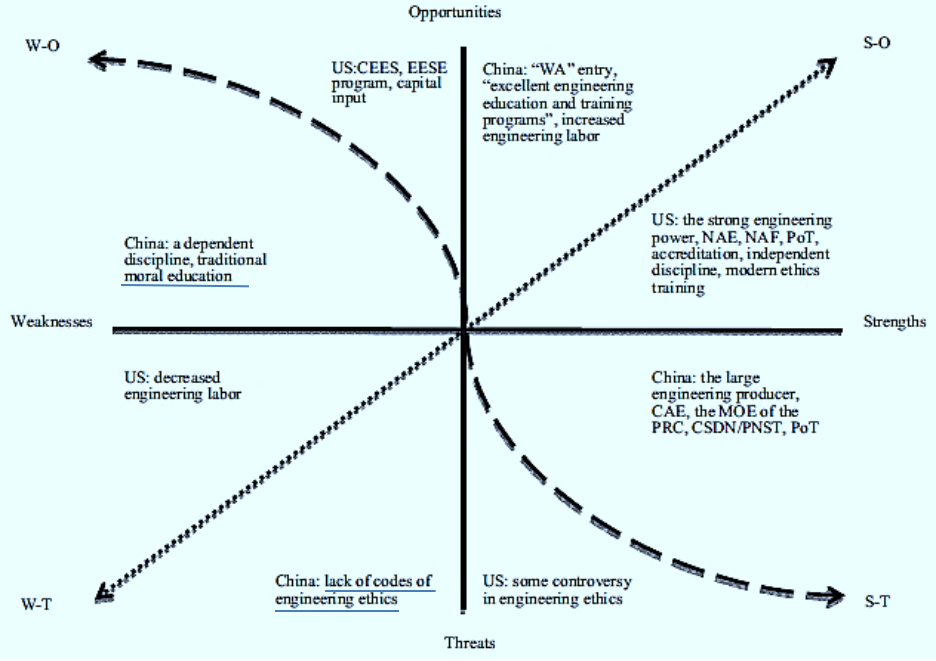


Figure 4-15: SWOT Matrix of Sino-US engineering ethics
Source: Cao (2015)

These modifications have resolved issues at global, societal and industrial levels. However, ethics at 'individual' and 'organisational' levels can both belong to the 'Chinese societal' and 'Western global' dimensions. For example, both the moral values of Confucianism and deontology belong to the individual level, but the value of Confucianism can also belong to the 'Chinese societal' dimension. Similarly, deontology can belong to the 'Western societal' dimension. In order to avoid this duplication, the two dimensions will be regarded as micro levels, considered under each macro dimension but not equally listed as the first-tier macro dimensions. In this research, there is no necessity to differentiate macro and micro dimensions.

Therefore, the final three-fold dimensions are Chinese societal, Western global and Chinese industry levels. For short, it is used as 'Societal, Global and Industrial' levels in the thesis. Based on this dimension mode, the identified limitations in the existing models and training practices related to the CAI can be rectified. For example, Section 1.2 identifies the lack of the Western perspective and a corresponding dimension (Cao, 2015; Zhu and Jesiek, 2015), and Section 3.4 identifies the lack of Western ethical elements.

Section 4.4 further narrows down and derives the effective, ethical elements from this modified three-fold dimension mode.

4.4 Ethics effective in the CAI managerial training for EI enhancement

This section identifies limitations of ethical elements in existing managerial training in the CAI, expanding on Section 3.4. Based on the previous discussion on the effective ethics in Section 4.2, and the limitation discussions in Section 4.4.1, Section 4.4.2 critically evaluates effective ethics for the CAI context.

4.4.1 Limitations of ethical elements in the CAI managerial training

The information in Section 3.4 evaluated the limitations of ethical elements in managerial training in the CAI. This section develops critical discussions of these limitations.

1) The information about ethical elements in managerial training in the CAI indicates a lack of non-coercive moral values, with limited ethical guidance (Sections 3.4.1 and 3.4.2). There is a reliance on codified rules and legislation. However, these codified rules and ethical concepts cannot cover all ethical issues, and obeying the law does not guarantee ethical behaviours (Crane and Matten, 2016). New ethical issues constantly arise and with complexity and for some issues '*there is no definite consensus on whether something is right or wrong*' (ibid, 2010, p.7). In addition, there is a 'grey area' between ethics and the law (Figure 4.16). In some instances, decisions that comply with the legislation might not be ethically right. One of the examples is the collapse of Enron, in which experts had abused their knowledge to escape the law and committed crimes in the grey area (Petrick and Scherer, 2003). These ethical issues have also been reflected in the CAI, and particularly for managers (Section 3.5.3). Therefore, regarding the complex situation of ethics in the CAI, as indicated in the rationale (Section 1.1), these coercive ethical elements with their limited sphere do not fit the research.

Figure 4-16: The relationship between Ethics and the Law
Source: Crane and Matten (2016)

2) The information about ethical elements in managerial training in the CAI also indicates a generic and superficial inclusion of rules and regulations, with limited effectiveness regarding the complex ethics and moral value situation in the CAI (Sections 3.4.1, 3.4.2 and 3.4.5). These elements are superficial, related to the compulsory satisfaction of ethics in management, product safety and quality, technique issues, or government/industrial policies (Section 3.3). However, laws only impose a minimum standard for ethical conduct, defining only actions that are strictly prohibited (Lawton, 2005). These ethical elements cannot empower managers' knowledge to intuitively and comprehensively deal with ethical issues.

3) These coercive ethical elements in training are not only limited in sphere and depth but also are lacking an altruistic motive to drive people to non-coercively and intrinsically conduct ethical behaviours and make decisions. Ethics imposed from outside might result in a lack of non-coercive motive in ethical actions. Although some ethical elements in training are not as 'hard' as these codified rules and regulations, such as the concept of sustainability, CSR, and cadres' governance ethics, they are still imposed from the outside. However, for the complexities and uncertainties in the CAI (Section 1.1), many ethical issues need to be dealt with by a non-coercive impetus/motive (Evans and Evans, 2011). Managers in this industry need the initiative and intuition to resolve any obvious and potential ethical issues, such as to have more prospective thinking about human life in using AI, which is an ethical challenge confronting autonomous car design. The information also reflects managers' unethical behaviours in the CAI (indicated in Section 3.5, particularly in Section 3.5.3), betraying their lack of inner altruistic motives in ethics (Liu, 2018).

   In terms of being non-coercive, currently, some auto companies have gone forward to demonstrate their contribution to philanthropic events. Some examples are 'Dongfeng Public Welfare Foundation' (DPWF) (DFL, 2016) (Figure 3.15) and the health service support by SGMW (SAIC-GM-Wuling Automobile) in its local areas in Guangxi (SGMW, 2016) (see Appendix 4.5). However, it is important to pay attention to the internal motives and differentiate 'greenwash' motives; the latter might only be a temporary strategy for economic interest. These ethical actions need to be consistent with all practices to show their non-coercive motive. For example, if corporations like SMGW invest in improving the social environment, sponsoring ambulance cars for the local health service (SGMW, 2016) or implement green supply chain management (SGMW,

2012), then, their other behaviours should also be consistently ethical. Otherwise, these inconsistencies might result in ineffectiveness and a suspect of 'enlightened egoism' or 'greenwash' due to 'enlightened self-interest' motives (Crane and Matten, 2016).

One of the easiest ways to understand ethical motives can be via comparisons, such as compareing public news and the ethical images, set on the company's homepage. For example, Table 3.16 (Section 3.5.2) officially listes the auto companies in the CAI that committed ethical fraud in 2017; no ethical issue is reported on SMGW. However, other companies, such as FAW-VOLKSWAGEN produced '12 modes of Audi brand whose fuel consumption is below standard' (Liu, 2018), which is a sharp contrast to its image stressing CSR and sustainability (Figure 4.17). This comparison might betray its 'enlightened self-interest' motive.

Figure 4-17: The betrayed 'enlightened self-interest' motive of FAW-VOLKSWAGEN
Source: Author (2019), based on FAW-VLKSWAGEN (2018); Liu (2018)

4) The information as summarised in Section 3.4.4 indicates a lack of professional and rationalised knowledge of the difference in engineering ethics between China and the West. The West philosophy of *Logos* has resulted in its rationality concepts (Zhao, 2011; Cao, 2015), reflected as codified rules and legislation for engineering decisions (National Society of Professional Engineers, 2007). However, in China, ethics are cultivated through moral learning and education, such as *Analects Saying* in Confucianism, this style has also been reflected in its engineering sector (Cao, 2015) (Table 3.14 in Section

3.4.4). This difference is consistent with management decision styles in business ethics; Table 4.7 indicates that the key guideline for top management ethical behaviour is '*Managerial discretion*' in Asia and '*Corporate codes of ethics*' or '*Legal framework in North America and Europe'* (Crane and Matten, 2016, p.26).

Table 4-7: Regional differences from a business ethics perspective: Examples of Europe, North America, and Asia

	Europe	North America	Asia
Who is responsible for the conduct in business?	Social control by the collective	The individual	Top management
Who is the key actor in business ethics?	The government, trade unions, corporate associations	The corporation	Government, corporations
What are the key guidelines for ethical behaviour?	The negotiated legal framework of business	Corporate codes of ethics	Managerial discretion

Source: Crane and Matten (2016)

Limited boundary, depth, motive and professional knowledge of engineering ethics in managerial training in the CAI reflects the ineffectiveness of ethical intentions in decision-making. These limitations might result in unethical decisions or scandals, and the current approach might suggest that managers are less capable of dealing with 'ethical dilemmas' in the 'open courses of action'. This situation calls for more effective approaches to ethics in training practice in the CAI.

4.4.2 Effective ethics for the CAI managerial ED

Regarding the complex situation of ethics and moral values in the CAI (Sections 1.1 and 3.2.1-3.2.3) and the limitations of existing ethical elements in the CAI (Sections 3.4 and 4.4.1), this section expands on the effectiveness of normative ethics (Section 4.2.3) and critically evaluates the nature of approaches to promoting effective ethics in the CAI.

In addition to the benefit of normative ethics being a hypernorm to tell people 'what ought to be', they are also beneficial in management. It is believed that normative ethical theories provide practical knowledge in guiding managerial ethical conduct when confronting ethical problems (Snellman, 2015). It is also suggested that these theories be placed at the core of good management (Melé, 2011).

In order to be pertinent, the following discussion considers of four corresponding benefits

against the limitations demonstrated in Section 4.4.1.

1) Regarding the limitation of being confined in codified laws and regulations, these normative ethical theories offer unlimited guidance to enable managers to flexibly deal with new uncertainties, without being confined by codified regulations and laws. This wide sphere of ethics has been illustrated in Figure 4.16 (Section 4.4.1) which shows that ethics go far beyond laws in guiding people's behaviours (Crane and Matten, 2016). The benefit of ethics is also further highlighted in Figure 4.18 in that ethics and morality can be used to produce an ethical theory that can be applied to any situation (ibid). This resilience and unlimited boundary could be used to rectify the drawbacks of existing codified rules and regulations in managerial decisions in the CAI, which will be effective to empower managers' knowledge to address the complexities and uncertainties of ethical issues in the CAI (stated in Section 1.1).

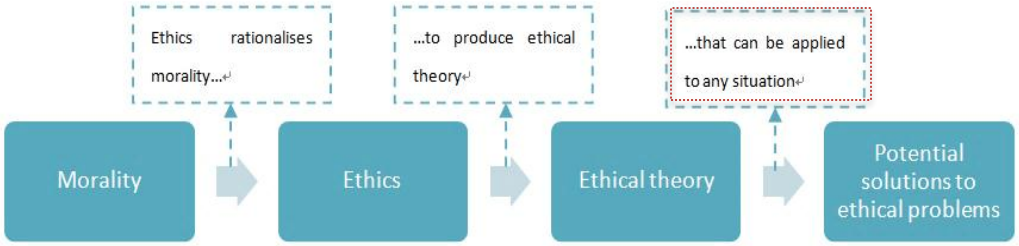


Figure 4-18: The relationship between morality, ethics, and ethical theories
Source: Crane and Matten (2016)

2) Regarding the deficiency of these coercive ethics that are superficial and cannot address complex ethical issues, normative ethics has the advantage of guiding on universal hypernorms, and furthermore influences a managerial adoption of EI, leading to ethical decisions. This benefit has been stated in Section 4.2.3 that normative ethics can tell what is 'right' and 'good', and they focus on the nature of human beings and the morality of the issue regardless of any consequences (Crane and Matten, 2019). As such, this non-coercive feature can apply to any ethical issues, including the 'grey area'. In addition to the complexities of ethics (Section 1.1), the CAI is operating in China and has established wide global collaborations in the form of JVs and subsidiaries all over the world; therefore, concerning the situation that no laws or rules can fit all situations these normative ethics based on universal hpyernorms are the best fit for the CAI.

These normative ethics are also fundamental theories in business decisions. This significance is identified by Ferrell and Fraedrich (2013):

The concept of goodness and several types of moral philosophy: teleology, deontology, the relativist perspective, virtue virtues, and justice are the most basic concepts needed to help understand the ethical decision-making process in business (p.155).

The nature of normative ethics that can reflect their non-coercive intrinsic nature and relevance to this research are illustrated in Table 4.8.

Table 4-8: Fundamental concepts in business decisions

Theories	Description	Relevance to this research
Teleology	Stipulates that acts are morally right or acceptable if they produce some desirable result, e.g. self-interest or utility.	Yes
Egoism	Defines right or acceptable actions as those that maximise a particular person's self-interest.	No/Altruism instead
Utilitarianism	Defines right or acceptable actions as those that maximise total utility or the greatest good for the greatest number of people.	Yes
Deontology	Focuses on the preservation of individual rights and the intentions associated with particular behaviour rather than consequences.	Yes
Virtue ethics	Assumes that what is moral in a given situation is not only what conventional morality requires but also what the mature person with a 'good' moral character would deem appropriate.	Yes
Justice	Evaluates ethicalness on the basis of fairness: distributive, procedural, and interactional.	Yes

Source: Reproduced from Ferrell and Fraedrich (2013)

3) Regarding the reflected low inner ethical motives in existing coercive elements, the most important benefit is that these normative ethics retain the inner nature of intrinsic goodness and obligations out of any coercive motive. These beneficent motives in actions have traditionally occupied a central place in morality (Stanford Encyclopedia of Philosophy, 2008). This nature and benefit can be evidenced from both philosophical and cultural perspectives, for sometimes philosophies come in the form of culture, such as Confucianism in China (Feng, 2004), and culture is believed to be the root of ethics (Hofstede and Bond, 1988).

From the philosophical perspective, the benefit of normative ethics is that they are closely connected with or based on philosophies which '*have the nature of instrumental and intrinsic goodness*' (Ferrell and Fraedrich, 2013, p.155). Therefore, these ethics can intrinsically improve people's ethical integrity, guiding people only to do 'good' and 'right' things regardless of other conditions (Ferrell et al., 2019). This trait can be

evidenced in Western normative ethics, which carry the common feature of intrinsic goodness nature and altruistic motive (Crane and Matten, 2016), and their virtuous benefit can be perceived from Table 4.8 and their philosophical origin classification can be captured in Figure 4.19.

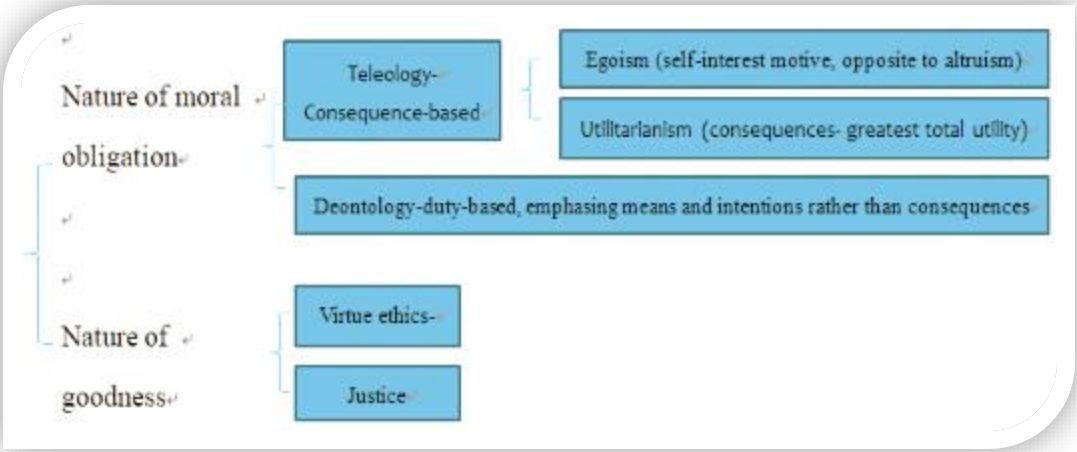


Figure 4-19: The major Western normative ethics classification
Source: Author (2019), based on Ferrell and Fraedrich (2013)

To be specific, this classification surrounds moral obligation and the nature of goodness; justice is also regarded as goodness ethics similar to virtue ethics (Ferrell and Fraedrich, 2013). These ethics all indicate non-coercive ethical motives. The benefit of obligation theories is that they emphasise the means and motives by which actions are justified, while the benefit of goodness theories is that they typically focus on the goodness or happiness created by them (ibid). For example, virtue ethics are believed to be acquired human qualities that enable persons to achieve the 'good' in their chosen profession, and all ethics are believed to be virtue ethics (Crane and Matten, 2016). Justice is believed to retain this feature, and Kohlberg, the famous psychologist and inventor of cognitive moral stages, prefers justice principles and argues that justice is the only master virtue and the only principle for resolving moral conflict (Kohlberg, 1931; 1981; Plant, 2001).

Some are sceptical about the application of virtue ethics to a business context, for they doubt motive and believe acting virtuously is its own reward (MacIntyre, 2007). However, this view does not reduce the effectiveness in applying virtue ethics or any ethics in business; instead, if a business implements this intrinsic ethics, in the long run, it is the due reward they deserve (ibid).

The benefit of these intrinsic goodness ethics and their non-coercive motives can also

be perceived from the perspective of culture. As is the basis of ethics and universal hypernorms (Hofstede and Bond, 1988), culture has the benefit of resilience such as Confucianism (Low, 2012) and is regarded to be as an invisible hand, non-coercively governing people's behaviours (Li, 2014). Some typical examples can be found among the early immigrants of America or Southern immigrants in China, where there was a lack of government mechanism; however, people lived a harmonious life by using culture as a principle to internally and non-coercively govern their behaviours (ibid).

The power of invisible culture is also regarded as 'soft' impact on people's behaviour compared with forceful and 'hard' laws, effective in people's self-regulation and self-cultivation motives. One prominent example is Confucianism, regarded as virtue ethics (Rothlin and McCann, 2015; Vallor, 2016). Due to its innate nature of self-governance, five cardinal virtues of '*Ren*' (compassion), '*Yi*' (righteousness), '*Li*' (rites), '*Zhi*' (wisdom), '*Xin*' (trustworthiness) and non-coercive resilient nature (Low, 2012). Confucianism has been effective in self-regulating people's behaviours for several thousand years (Ip, 2009b). This cultural benefit and impact have extended to East Asia, where Confucianism is believed to be a major contributor to its economic rise (Hofstede and Bond, 1988). At the same time, Confucianism is recognised by the current government and regarded as China's soft power due to its intrinsic goodness natures such as self-governance, self-cultivation and inner virtues (Lahtinen, 2015).

Due to the invisible moral force, culture is applied in ancient business and also effective in governing modern business and economics on an ethical orbit. Confucian values and norms served as ancient ethical codes of commerce. For example, the merchant groups of *Jin* (today's Shanxi Province) and of *Hui* (today's Anhui Province and Jiangxi Province) extensively practised these norms in their business dealings in the Ming-Qing dynasties (Ip, 2009b). This benefit is still effective in modern business which can be evidenced by the statement from Li Yining from *Peking University Guanghua Management School* at an event on 18th January, 2015, at the '*2nd Financial Annual Meeting 2014*', held by Xinhua News Agency (Finance.Sina, 2015):

> *In economic activities, government coordination needs moral force. Otherwise, the coordination would be in vain, and therefore, it is obvious, the function of moral coordination is important. The market is an invisible hand, the government is a visible hand, but moral force coordination is between them*.

The inner nature of culture is also regarded as important in organisation decisions as a core strategy. For example, culture is a software of the organisation (Hofstede et al., 2010) and helps cultivate the climate in the organisation in making decisions. The exemplary moral model '*Jun Zi*' and '*Ru Shang*' (including *Jin* and *Hui* as stated above) from Chinese Confucianism with self-discipline and virtuous ethics offer incentives for modern managers (Ip, 2009a). Confucian virtues together with Aristotelian virtue are important leadership concepts (Hackett and Wang, 2012). Howard Schultz, CEO of Starbucks claimed '*In this ever-changing society, the most powerful and enduring brands are built from the heart*' (Brown, 2015) (Figure 4.20).

Figure 4-20: The most powerful and enduring brands are built from the heart
Source: Brown (2015)

4) The mixture of normative ethics with culture has proved to be effective in engineering decisions. For example, as discussed in Section 4.3.3, Chinese engineering ethics is impacted by its indigenous culture and ideology (Cao, 2015; Zhu and Jesiek, 2015). Vesilind and Gunn (2016) also propose that understanding and knowledge of these normative ethics will offer consistent ethical knowledge for engineers to rely on in decisions. Among normative ethics, virtue ethics is widely advocated by practitioners and ethicists in the technology and engineering field. For example, Vallor (2016) believes in the effectiveness of virtues in the technology field that can internally guide and improve ethical decisions, which is described by a coined term for this combined value, 'technomoral'; Harris (2008) advocates that virtues are important in engineering ethics and good engineers should master the knowledge of virtues.

The impact in the engineering sector can also be perceived from the increasing interest in IEEE in the discussion of ethics. IEEE (*Institute of Electrical and Electronics Engineers*) is the world's largest technical professional organisation advancing

technology for the benefit of humanity (IEEE, 2018). Recently, it held several ethics conferences (e.g. from 2014 to 2018) (Table 4.9). Each conference or forum addresses a particular ethical theme with relation to technology, such as the '*Ethical Innovations in AI*' in 2017, which both indicate the significance for potential ethical issues and display their due attention and broad stakeholder perspective. These can be perceived in the highlighted keywords of '*ethics, culture, social impact, sustainability and philosopher*'.

Table 4-9: IEEE ethics conferences/forums (2014-2018)

Year	IEEE Ethics Conference /Forum	Contents
2014	IEEE 2014 International Symposium on Ethics in Engineering, Science, and Technology (Ethics)	The theme is "Ethics – A Challenge to the Scientific and Engineering Community."
	https://www.ieee.org/conferences_events/conferences/conferencedetails/index.html?Conf_ID=31211	
2015	2015 IEEE International Symposium on Technology and Society (ISTAS 2015)	Culture, Ethics, and the Knowledge Society
	http://www.istas2015.org/home/	
2016	IEEE International Symposium on Ethics in Engineering, Science, and Technology, ETHICS 2016	Concerned with identification and resolution of ethical issues in science, technology, and engineering, explored from a scientific point of view, a social or individual aspect, including global and multicultural perspectives
	http://sites.ieee.org/ethics-conference/	
2017	The 2017 IEEE International Conference on Robotics and Automation (ICRA)	Ethical issues raised in the development of robotics technologies and their permeation in our lives in recent years.
	http://www.icra2017.org/conference/forums/ethics-forum	
2017	3rd IEEE International Symposium on Ethics in Engineering, Science, and Technology (IEEE ETHICS 2017)	The theme for IEEE ETHICS 2017 is Ethical Innovations in AI/AS
	http://ieeessit.org/event/3rd-ieee-international-symposium-ethics-engineering-science-technology-ieee-ethics-2017/	
2017	5th IEEE Conference on Technologies for Sustainability (IEEE SusTech 2017)	Designed to explore the development and application of science, engineering and technology to promote sustainability.
	http://ieeessit.org/event/5th-ieee-conference-technologies-sustainability-ieee-sustech-2017/	
2018	2018 IEEE International Symposium on Technology and Society (ISTAS)	ISTAS is a multi-disciplinary forum for engineers, policymakers, entrepreneurs, philosophers, researchers, social scientists, technologists, and polymaths to collaborate, exchange experiences, and discuss the social implications of technology.
	http://technologyandsociety.org/event/2018-ieee-international-symposium-technology-society-istas/	

Source: Author (2019), based on IEEE (2014, 2015, 2016, 2017, 2018)

This research focuses on decontextualised ethics and morality and utilises their strength and effectiveness within managerial ED in the CAI, excluding any biases from political, historical or ideological context. This pure motive fits the non-coercive spirit and the

research itself, which will be eternally fruitful and applicable in any profession. For example, in using the benefit of Rawls' justice, this research will focus on the virtuous motives without leading to endless debates of what is the real reciprocity (Rawls, 1971a). In interpreting the concept of utilitarianism, one should be cautious not to wrongly regard it as a purely economic term of cost-benefit to replace utility (Crane and Matten, 2016; Xiao, 2018). Similarly, Gramsci's writings and thoughts on culture have been hugely influential for Westerners during the last fifty years (Forgacs et al., 2012). The benefit of considering the culture has also been acknowledged as Gramscianism theory is effective in origination initiatives to mitigate class struggles (Harris, 2013), however, this research only focuses on the nature of culture itself without class bias. Likewise, this research focuses on the original trait of integrity but not political integrity or loyalty.

4.5 Narrowing down to four dominant non-coercive ethical elements

This section derives ethical elements that would be effective in management training for managers' EI enhancement. Based on the discussions in Sections 4.3 and 4.4, and the proposed nature in the rationale (Section 1.1), the key criteria for these ethical elements are summarised as:

- Specific to the CAI perspective
- Dominant in the three-fold managerial moral value dimensions
- Non-coercive with intrinsic goodness nature and altruistic motive
- Effective in engineering ethical decisions

4.5.1 WNE from the global dimension

From the perspective of the CAI, within its global dimension, WNE is proven to be dominant in the West. For example, it is held that among the seven or eight major civilisations in the world, there are two major variants of European and North American civilisation, which is called Western civilization; business ethics is largely dominated by Western ethics (Huntington, 1993). Likewise, it is believed '*business ethics is largely dominated by thinking originating in Europe and North America, ……by an Anglo-American view*' (Crane and Matten, 2016, p.94). The origin of their representatives can also evidence the dominance of

Western normative ethics in European and North America (Table 4.10). Although other ethics or religions in the West such as Christianity have belief in an intrinsic underlying truth, they are not directly embedded in modern management, while Chinese CPC believes in atheism and godlessness (Starr, 2015), and therefore, is not considered.

Table 4-10: Origin of Western ethics

Western ethics	Representatives and origin
utilitarianism and liberty	19th century English philosopher John Stuart Mill (Mill, 1863),
deontology	German philosopher Kant (Dewey, 1915)
virtue ethics	Greek philosophers Plato and Aristotle (Dover, 1994)
justice	American philosopher Rawls (Rawls, 1971b).
fundamental ED models, CSR concept and stakeholder theories	American scholars Rest (1986), Carroll (1991); Freeman et al. (2010); and

Source: Author (2019), based on Mill (1863); Dewey (1915); Rawls (1971b); Rest (1986); Carroll (1991); Dover (1994); Freeman et al. (2010)

The origin of WNE fits the origin of the joint venture partners of the CAI. The above discussion indicates WNE is popular in Europe and North America (Crane and Matten, 2016). Similarly, most of the joint venture partners of the CAI come from European and North American countries, such as France, Germany or America (Tables 3.1 and 3.2 in Section 3.2.2).

Moreover, these ethical principles retain features of non-coercive nature and are effective to address unique ethics in the CAI. Their effectiveness has been discussed in previous sections (Sections 4.2.3 and 4.4.2). To expand, ethics such as deontology, virtue ethics and justice, carry non-coercive ethics with different focuses, but are similarly beneficial for addressing ethical issues in the CAI. For example, deontology focuses on the rights of individuals and the intentions associated with a particular behaviour rather than its consequences (Ferrell et al., 2019). Its fundamental theory is that equal respect must be given to all persons, and some things cannot be done even for maximising utility, which is '*a system of ethics based on respect for persons*' (Ferrell and Fraedrich, 2013, p.159). By using this principle, issues like the Volkswagen Scandal can be avoided, for the intention behind this scandal was to sacrifice consumers' money and health for their benefit.

Goodness theories of virtue ethics believe that ethical behaviour not only adheres to conventional moral standards but also considers a mature person with a 'good' moral character in a given situation. The most important elements of virtue to business transactions are believed to be '*trust, self-control, empathy, fairness, and truthfulness with contrast to*

unvirtuous characteristics include lying, cheating, fraud, and corruption' (ibid, 2015, p.164). Table 4.11 summarises the virtue ethics approach to business. This trait is also widely accepted in engineering, such as IEEE (Table 4.9 in Section 4.4.2). These internal virtues in the transaction and the 'good' moral character are particularly beneficial for a manager, for issues like product liability violation and corruptions are due to a violation of integrity and inner ethics.

Table 4-11: The virtue ethics approach to business

No	Description
1	Good corporate ethics programmes encourage individual virtue and integrity.
2	By the employee's role in the community (organisation), these virtues form a good person.
3	An individual's ultimate purpose is to serve society's demands and the public good and to be rewarded in his or her career.
4	The well-being of the community goes hand in hand with individual excellence (Solomon, 2003).

Source: Author (2019), based on Solomon (2003); Ferrell and Fraedrich (2013)

Altruism is a kind of traditional virtue ethics and has been proven effective as opposed to egoism (Ferrell and Fraedrich, 2014). This theory is not independently listed for its pure commitment nature has already been permeated through other theories. However, in practice, this concept is effective to help managers differentiate 'enlightened' and 'greenwash' motives from real philanthropy practice, which will help managers to be purely altruistic (Stecker, 2016). Therefore, it is beneficial for managers to understand and avoid cases like the secrecy of Volkswagen Emission High-tech Greenwash (Lane, 2016).

Justice has an inner nature similar to virtue ethics and is a kind of goodness ethics. For example, it is believed in *Nichomachean Ethics* (Aristotle, 1926) that justice has features with virtue ethics in the moral class. Murphy (1999, p.108) echoes that '*Justice is another type of virtue ethics*'. In addition, justice is believed to be a '*fair treatment and due reward in accordance with ethical or legal standards, including the disposition to deal with perceived injustices of others*' (Ferrell and Fraedrich, 2013, p.164). It is also believed that the justice of a situation is based on the perceived rights of individuals and on the intentions of the people involved in a business interaction. Therefore, similar to the above ethical principles, this type of virtue ethics can help improve managers' EI in decision-making competence.

To sum up, WNE is dominant at the global dimension from the CAI perspective and retains intrinsic goodness nature, effective in the engineering sector for EI enhancement.

4.5.2 Indigenous ideology of Communism from the Chinese societal dimension

Since 1949, the CPC is '*The founding and major ruling political party of the People's Republic of China (PRC)*' (Hunt, 2015, p.118). The PRC was founded on Marxist–Leninist principles or more precisely, the Sinification of Marxism–Leninism (officially known as *Mao Zedong Thought*) (Deng, 1984). Therefore, the CPC is committed to Communist thought and ideology, and as the founding and ruling party in China, the ideology of Communism is dominant and impacting decisions in the whole nation. The dominance of cadres in management is evidence of this. According to the report in *the South China Morning Post* (2015), currently, CPC has the largest number of party members in the world who are,

> '*Managing professional and technical staff in enterprises and public institutions, making up 12.5 million, 9 million identified as working in administrative staff and 7.4 million described themselves as party cadres*'.

According to the party constitution, the CPC adheres to 'Marxism–Leninism', 'Mao Zedong Thought', 'Socialism with Chinese characteristics', 'Deng Xiaoping Theory', 'Three Represents' and 'the Scientific Outlook on Development' (Lothrop, 2012; Sullivan, 2012,). These all contain ethics of self-governance and inner nature. The CPC stresses Communist morality and cadres' moral governance. Their moral spirit can be reflected in the ideological and theoretical concepts proposed by the different generations of leadership (Table 4.12).

Table 4-12: Ideological and theoretical concepts of CPC leadership

Leadership	Ideological and theoretical concepts
Marxism–Leninism	*Marxism–Leninism* reveals the universal laws governing the development of the history of human society (People, 2012)
Chairman Mao	'*Serve the people heart and soul*' (全心全意为人民服务) (Li, 1964).
Deng Xiaoping	The concepts of '*socialism with Chinese characteristics*' was added to the party constitution at the 14th National Congress (Yao, 2013).
Jiang Zemin	Introduced '*The Three Represents*' (三个代表). Marxism adapted to Chinese conditions, adopted at the 16th National Congress (Kuhn, 2011): *'Represents advanced social productive forces', 'Represents the progressive course of China's advanced culture', 'Represents the fundamental interests of the majority*'.
Hu Jintao	The 3rd Plenary Session of the 16th Central Committee conceived and formulated the ideology of *the Scientific Outlook on Development* (Izuhara, 2013). To apply it to Chinese conditions, the CCP must adhere to *Building a Harmonious Socialist Society* (Guo and Guo, 2008).
	'Eight Honours and Eight Shames' (八荣八耻) (People, 2005), see Appendix 3.3.
Xi Jinping	The Organisation Department of the CPC Central Committee, stated explicitly the standard and benchmarks for a good cadre specified in the Party Constitution, in '*Adhere to Correct Direction on Personnel Election and Appointment,* (short for *The Direction*) (《坚持正确选人用人导向》), where General Secretary Xi Jinping proposed the Communist norms for a good cadre are '*faithful, to serve the people, diligent and pragmatic, dare to play, clean and honest*' (translated from: '信念坚定、为民服务、勤政务实、敢于担当、清正廉洁') (Chen, 2016) .
	'*Three Stricts and Three Steadies*' (三严三实) (CPC NEWS, 2015a), see Appendix 3.2.
	A new cadre election and appointment norm was issued in 2019 in '*Regulations on the selection and appointment of party and government cadres*'(《党政领导干部选拔任用工作条例》), some of the standards are '*Ability and political integrity, virtue first, all corners of the country, appoint people to be virtuous*' (德才兼备、以德为先，五湖四海、任人唯贤) (Xinhua News, 2019).

Source: Author (2019), based on Li (1964); People (2005); Guo and Guo (2008); Kuhn (2011); People (2012); Izuhara (2013); Yao (2013); CPC News (2015a);Chen (2016); Xinhua News (2019)

Communist ethics also share similar inner nature to the traditional culture and Western normative philosophies. For example, in '*Three Represents*' theory, '*Always representing the fundamental interests of the overwhelming majority of the Chinese people*' can be regarded as the core purpose, and it is argued that as the leading party, expressing and fulfilling public interest to the greatest extent is the fundamental issue for governmental ethics (Xian and Xiangwen, 2003). This moral concept is similar to Confucian *Ren and De,* which extend passion and love for fellow human beings (Ip, 2009b). '*Harmony*' as Confucian ethics is also popular in Communist ethical notions from different leadership, such as '*Building a Harmonious Socialist Society*' by Hu Jintao (Guo and Guo, 2008). The Communist ethical notion that '*Represents the fundamental interests of the majority*' is both similar to utilitarianism in doing good for the happiness of the greatest number of people (Crane and

Matten, 2016) (Table 4.8 in Section 4.4.2) and similar to Confucian '*Grand Union*' (Rothlin and McCann, 2015).

Modern Communist ideology is also adaptable to and impacted by traditional culture (Zheng, 2010; Jin, 2011; Xi, 2017). The impact of culture on the ideology can be exemplified:

> *From the time of the Han Dynasty Confucian thought has exerted a powerful influence on Chinese culture and the ideology of the Chinese state, though its classical form has been repeatedly altered over the centuries by interactions with other moral and political schools of thought, most notably Chinese legalism, Buddhism, Daoism, and Communism* (Vallor, 2016, p.852).

Its similarity with culture and the carrying of a similar nature can also be evidenced by its adaptation with the culture at different historical stages. For example, Lukes (1985) asserted that Marxism made some major moral claims and had different cultural implications at the different development stages of China. Before 1949 Marxism sought compatibility with Mohism and believed in impartial love and refuted wars. In the modern age, Marxism seeks compatibility with Confucianism and believes in benevolence, righteousness and harmony, which can be evidenced from the national wide slogan '*striving to build a harmonious socialist society*' (Team, 2005) or '*building a harmonious society and achieving individual harmony*' (Guo and Guo, 2008; Han, 2008), indicated in Table 4.12 in this section.

Communist ethics has greatly improved moral levels, and their transforming impact on engineering has enhanced working efficiency. This is evidenced in Table 3.4 (Section 3.2.4), indicating that in the joint venture of Chang'an, these cadres have been the backbone of the organisation (CPC NEWS, 2015b).

In order to strengthen Communism, there is a national-wide scheme endeavoring to embed it into all kinds of training programmes. As stated in Section 3.3.3, the party school has been persistently training all levels of cadres and the senior management, including those from the industry (Pieke, 2015). These party schools are both external and internal, ranging from University, Central Party School to party school in the organisation (see Figure 3.24 in Section 3.3.3). The training role in fostering a Marxist theoretical basis and Post-Communist ideology (CCPS, 2012) can be viewed in Figure 3.25 (Section 3.3.3).

4.5.3 Traditional culture of Confucianism from the Chinese societal dimension

Culture is believed to be important in modern business, which is echoed by the words of culturist Hofstede (1994) '*the business of international business is culture*'. Moreover, cultural inheritance is proven to be effective to have constituted a competitive advantage for successful business activities (Vitell et al., 2013; Hofstede, 2015b). One example is the economic rise of East Asia, for which Hofstede and Bond (1988, p.6) suggest '*For the real explanation, we must turn to the domain of culture*'.

In China, Confucianism is one of the dominant traditional cultures and regarded as the ethical root of Chinese ethics and management ethics (Yan and Hafsi, 2015). Its benefits and dominance are noted in that '*It is unlikely for one to conduct business with China today and not experience its Confucian heritage*' (Miles and Goo, 2013, p.26). The value of Confucianism has been accepted by the ruling class since the Qin Dynasty and Han Dynasty and entered the imperial examination for official selections, which is believed to have exerted '*powerful influence on Chinese culture over 2.500 years and on its current state ideology*' (Vallor, 2016, p.852). Since the Han Dynasty, Confucianism's fundamental concept of governance and long-term public security has been chosen by Chinese history and widely accepted (Cao, 2015).

Confucianism is also indicated to fit more for business than other philosophies in China, as it carries transcendent nature, appropriate for human social life and business practice (Ip, 2009b). To be specific, Confucian ethics are humanistic, and concern '*transcendent issues in the human condition and is deeply this-world-oriented*' and concern about '*how they affect the well-being of human society*' (Ip, 2009b, p.464). However, Daoism concerns a life beyond the human being, and Buddhism concerns more about the next life (ibid). In addition, Confucianism is believed to have two dimensions, a unification of both virtues and norms (Liu, 2011a; Liu, 2011b). Alternatively, Confucianism can be transferred into norms to instruct human life; this is similar to normative ethics to rationalise morality that can be utilised to guide people and deal with ethical issues in human society (Crane and Matten, 2016).

Confucian ethics can offer guidance for management ethics and leadership; its related values

contribute to managerial ED. Confucianism along with Taoism, Mohism, Legalism, and Arts of War (a strategic philosophy) is one of the philosophical foundations of business management and leadership (Cheung and Chan, 2005), supported by its cardinal values (Appendix 4.6), such as '*Ren*' (benevolence), *'Yi*' (righteousness), '*Li*' (rituals), *'Zhi*' (wisdom) and '*Xin*' (trustworthiness), which work together to achieve '*Harmony'* and to be an exemplary moral leader of '*Jun zi'*, who symbolises the virtuous of the virtuous (Ip, 2009b). '*Jun zi'* possesses the five cardinal virtues and is ready and able to execute virtuous acts relentlessly and consistently in life, thus being emulated by people, particularly the ruling elites. Consequently, its attributes articulated in the *Analects* can help cultivate managers and enhance their non-coercive ethical decisions, such as '*Yi* ' (*righteousness*)– take virtues seriously, harbors goodwill toward others and *Zhong shu* – observe and exercise the *Golden Rule,* having a clear moral sense, being principled and consistent and compassionate' (Ip, 2009b, p.464). Table 4.13 and Figure 4.21 summarise Confucian core values and contributions to business/management ethics and Confucian leaders.

Table 4-13: Confucian core values and contributions to business/management ethics

Key values	Contributions
Ethical root	Confucianism is a dominant culture and is regarded as the ethical root of Chinese ethics and management ethics for over 2.500 years (Yan and Hafsi, 2015).
Emphasise social rituals and personal moral virtue	Confucius emphasised respect for elders, social ritual and personal moral virtue, including among leaders. His ideas formed the basis of Chinese schooling and entry exams for the imperial bureaucracy for two millennia; it is still central to the ideological pivot (Page, 2015).
Virtue-based, humanistic, obligation-based, and collectivistic	Confucianism is virtue-based because Confucian ethics is humanistic, obligation-based, and collectivistic. Therefore, it is widely used in ancient and modern corporations as a sound ethical basis (Chan, 2008b).
Resilience	Confucianism is resilient with its virtues strength. Therefore, it is beneficial for managers to flexibly resolve complex ethical issues or used as a sound basis of business practice and management model (Chan, 2008a).
Collectivism, teamwork, harmony	Confucianism and its management style have helped shape a managerial mindset emphasising 'collectivism, teamwork, family-staffed businesses, and harmony over conflict' (Rarick, 2009, p.61).
'Soft' in nature	The Western corporate governance mechanism is believed to be 'hard' in nature, whilst Confucian wisdom and its management style are regarded to be 'soft' in nature to cultivate people to be upright and behave ethically (Miles and Goo, 2013).

Sources: Author (2019), based on Chan (2008a, 2008b); Rarick (2009); Miles and Goo (2013); Page (2015); Yan and Hafsi (2015)

Figure 4-21: Core values of a Confucian leader
Source: Low and Ang (2012)

Upholding Confucian values enables leaders to cultivate themselves towards positive business dealings and harmonious relationships, contributing to good business management in supporting CSR (see Figure 4.22). In Confucius' mind, the *jun zi* (gentleman) has the proper virtue (*Analects of Confucius* IV: 16) and understands what is right when doing business. Like *jun zi*, leaders have an obligation to cultivate themselves morally; to demonstrate filial piety and loyalty; and to act with benevolence towards their fellow men (Low and Ang, 2012). Therefore, Confucian leadership emphasises correct moral and ethical behaviours of both the individual and the government, underscoring the importance of social relationships, justice and sincerity (ibid).

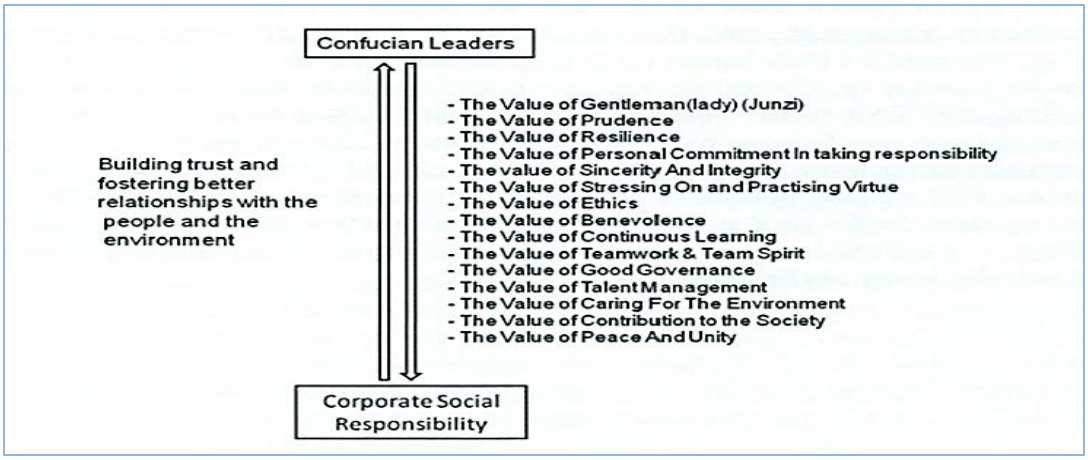


Figure 4-22: Confucian leadership and CSR
Source: Low and Ang (2012)

Among all the virtues, what makes Confucian ethics eternal and exceed others is its inner virtuous nature, *De*, which is believed to retain virtuous character, similar to Western virtues

ethics and Kant's deontology (Rothlin and McCann, 2015). This *De* refers to the Confucian virtue from which other virtues are derived; *Ren* is also regarded as *De*, a capacity of benevolence for fellow humans, its exercise results in *Ren* acts and conducts, which carry moral mindsets and sentiments (Ip, 2009b).

Since ancient times, Confucian culture has attached great importance to the moral character of *De*, stressing the cultivation of *De* to people and advocating them to uphold the most spiritual pursuit and the highest moral character *De* (Chen, 2018). Confucianism values the pursuit of truth and morality *De/Ren* more important than life and death. Mencius also advocates the cultivation of *De*, committed to transfer the forced *De* into the natural character of a human being (ibid). These all embody the firmest belief of morality *De/Ren* and the insistence of moral ideals, with the value not to be affected by material conditions (ibid). The excerpts from Confucius and his disciple Mencius in the *Analects* can bestow this spirit (Lau, 1979, p.73):

Excerpt 1:

> The Master said, 'He has not lived in vain who dies the day he is told about the *Way*'. (子曰：朝闻道，夕可死矣。) (Analects ·Liren)
>
> 孔子说：'早晨得知真理，要我当晚死去，都可以。' (Yang, 2016, p.40).

Excerpt 2:

> The Master said, 'For gentlemen of purpose and men of benevolence while it is inconceivable that they should seek to stay alive at the expense of benevolence, it may happen that they have to accept death in order to have benevolence accomplished' (Lau, 1979, p.133). (子曰：志士仁人，无求生以害仁，有杀身以成仁。) (Analects ·Weilinggong).
>
> 孔子说：志士仁人，不贪生怕死因而损害仁德，只勇于牺牲来成全仁德（Yang, 2016, p.184）.

Excerpt 3:

> Mencius said: 'Life is what I desire, and righteousness is what I desire. You cannot get both, but you can gain righteousness by giving up your life and righteousness by

sacrificing your body". (Mencius • Gaozishang • Yuwosuoyuye) (孟子曰：生，亦我所欲也，义，亦我所欲也。二者不可得兼，舍生而取义，舍身而取义。) (Zhu, 2018, p.311).

Currently, Confucian ethics is accepted and endorsed by the CPC. Its quintessence and cultural legacy are trained as official ethics, such as in *Kongxuetang* (Figure 3.26, in Section 3.4.3). Since its opening in 2013, it has been training local officials in traditional culture (Xinhuanet, 2017d). However, for its revival, people hold different views. It is believed the reason is due to an 'illness' resulting from pragmatism and relentless profit pursuit in China, so Confucian core values are incorporated to enable people to deal with each other through virtuous intent and action (Ip, 2009a). Reports from *Wall Street Journal* also hold that, due to ethical degradation, such as corruption or neglect of elders, since 2014 Confucian ethics has been widely endorsed by CPC, and Chinese President Xi Jinping has undertaken a series of actions to encourage its return to '*aid personality development*', '*encourage altruism*' and '*instil Chinese national moral thinking*' (Page, 2015). Appendix 4.7 summarises key activities in 2014 (Page, 2015), Figure 4.23 displays one of its revival activities.

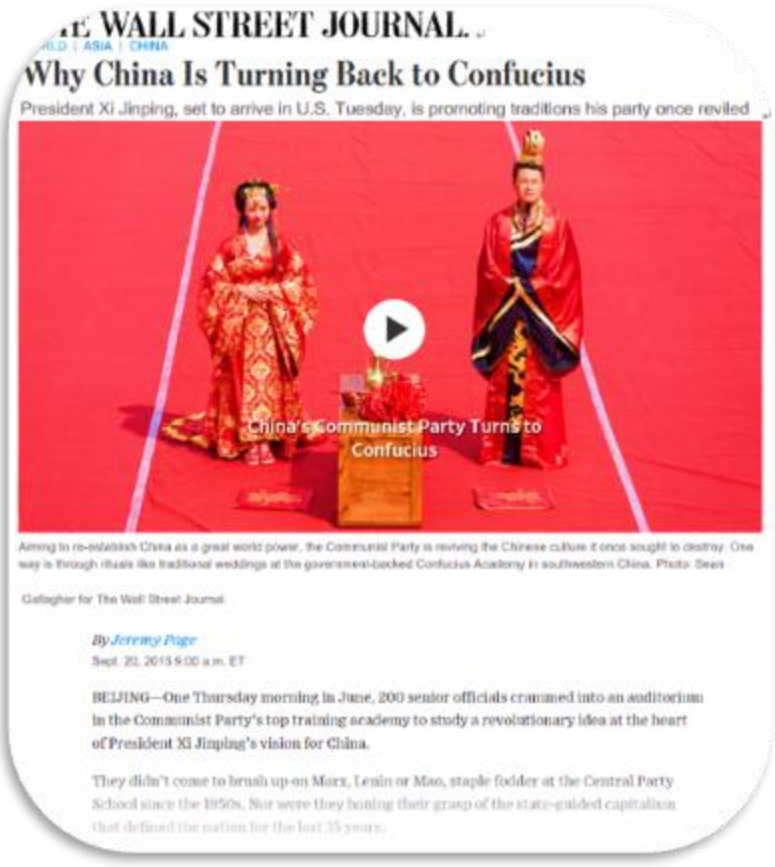


Figure 4-23: Why China is Turning Back to Confucius
Source: Page (2015)

To sum up, Confucian virtuous traits have helped in developing a harmonious environment that is conducive both to prosperity and peace for all humanity. In pursuing a life constrained and directed by virtues, a Confucian person maintains a nature of moral self- cultivation and perfecting the lives of others, and by undertaking virtuous acts, they achieve harmony. This virtue is also indicated as an important humane value in *Grand Union* and *Small Tranquil* (Rothlin and McCann, 2015).

Some Confucian concepts might be questioned to have an adverse impact on current society. For example, it is argued the five cardinal relationships might breed hierarchy, authoritarianism, bureaucracy and corruption, harmful to social structure and individual dignity and autonomy (Ip, 2009b). However, the hierarchy in a loving family relationship may be benign (ibid), and its drawback in current society can be rectified by adhering to internal virtues and motive.

4.5.4 EPE from the industrial dimension

For a specific industry, codes of ethics are widely practised in engineering in guiding practitioners' ethical behaviours and decisions (Bhyat, 2007; National Society of Professional Engineers, 2007). As codes of ethics stress duties, they are similar to the nature of deontology, thus are beneficial for focusing on motives of responsibility and duties (Crane and Matten, 2016). It is believed that '*In some circumstances, the codes of ethics can be very helpful when engineers have to make value-laden decisions*' (Vesilind and Gunn, 2016, p.15). In management, Snellman (2015) also acknowledges this effectiveness of codes of ethics.

However, with the advancement of technology, ethical issues have become complicated; therefore, in practice, precise codes are lengthy, rigid and cannot cover all ethical issues. This weakness has been summarized by the following quote:

> '*Codes of ethics is a misnomer. Ethics is the process of careful deliberation about the right and wrong thing to do in a given circumstance, and ethics cannot, therefore, to be reduced to a code*' (Vesilind and Gunn, 2016, p.15).

Ethical principles are based on universal hyper-norms from applied ethics and via consultation with different professionals (Engineering Council, 2014); therefore, they are more efficient in offering transformable and flexible guidance to address complex issues.

Ethical principles are also beneficial as they are '*capable of generating other reasonable norms and rules of human conduct'* and can be *'morally justifiable and hence has moral legitimacy*' (Ip, 2009a, p.129). The advantages of hypernorms have also been stated in Sections 4.2.3 and 4.4.2.

Therefore, recently, ethical principles in the engineering sector are developed as advancement in comparison with codes of ethics. For example, in 2005 the regulatory body for the UK engineering profession, the *Royal Academy of Engineering* and the *Engineering Council*, jointly created a *Statement of Ethical Principles* to guide engineering practices and behaviours, upgraded in 2017 (The Engineering Council, 2017) (Figure 4.24). This *Statement* is also utilised as important ethical guidance in professional training (ibid). As discussed in Section 4.4, ethics and philosophies have an intrinsic nature and can aid in resolving complicated ethical issues resiliently and internally; therefore, this *Statement* would be effective guidance in training and decisions.

Figure 4-24: Statement of Ethical Principles
Source: The Royal Academy of Engineering and the Engineering Council (2017)

These four ethical elements are further validated in Section 4.6 and utilised as variables to assess their effectiveness in EI and their pedagogic application situation in cultivating managers' EI in managerial training in the following chapters.

4.6 Validation of the dimensions and ethical elements

This section demonstrates the compatibility of the four derived non-coercive ethical

elements from the modified three-fold managerial ethical decision-making dimension framework. In order to be pertinent to the industry, these discussions incorporate key ethical issues in the CAI, which have been discussed in Section 3.5. To be effective, the compatibility is demonstrated in the form of an ethical principle framework specific to the CAI to comprehensively embed the four elements and demonstrate their compatibility in the CAI context. This ethical principle framework is based on the most recent trend of the *UK Statement of Ethical Principles for Engineers*, due to its benefits as stated in Section 4.5.4, but adapted to fit the auto industry (Xiao et al., 2018).

4.6.1 Respect for life

One of the most prominent problems in the car industry is understood to be risks for human safety and life, which is regarded as a major ethical issue (Van Gorp, 2007). Product integrity and safety directly endanger life both in and outside vehicles, as well as a centre on human life have been the core issue in this field, as exemplified in the safe use of AI in the Trolley problem (Crockett, 2016). Another example is the accidents and death that occurred due to a faulty oil tank in the Pinto Memo (De George, 1981; Lee, 1998; California Baptist University, 2017).

These risks have also been reflected in the CAI (Section 3.5). For example, the failure to recall the faulty airbag in the ferment of the Takata Airbag Incident in China have increased the rate of harm and death (Liu, 2018). The environmental impact with depleted resources, pollution and improperly disposed waste will eventually harm life on a large scale and might even extend to future generations (Zhu et al., 2007; Mihelcic and Zimmerman, 2014). Corruption might also generate potential risks and result in fraud products and environmental issues, such as the bribery in the material purchase (Marucheck and Robbins, 1990) and at the vehicle testing field (Liu, 2018).

Consequently, regarding these ethical issues, a paramount element which should take priority in the CAI is respect for human life, which is the basis to realise and develop other human interests and rights (Vesilind and Gunn, 2016; The Engineering Council, 2017). This concept is also consistent with the ethical principles and codes of ethics, such as in the statement by The Engineering Council (2017), '*To hold paramount the health and safety of others and draw attention to hazards*'.

This priority for respecting human life can be underpinned by the spirit of the four ethical elements. The concept of WNE respects people and their overall interests, where life is the basis. For example, non-consequentialism in WNE is described as '*a system of ethics based on respect for persons*' (Ferrell et al., 2013, p.159); Rawls' justice stresses an individual's self-cultivation and happiness, and proposes a just way for a social regime to safeguard people's interests at different levels (Rawls, 1971).

This concept is also reflected in the Chinese culture and ideology. The essential value of Confucianism is that its humaneness can reflect care and concern for human beings. For example, in the *Analects of Confucius*, humaneness is sometimes translated as '*Ren*', regarded as a core Confucian moral value, and equals 'compassion', 'goodness' or 'benevolence' (Ip, 2009). '*Ren*' can be more concretely interpreted as '*knowing and loving people*' (Rothlin and McCann, 2015, p.36). This humane spirit can also be reflected through '*Grand Union*' (大同), '*an ideal commonwealth*' which '*helps explain both the possibility and the necessity of becoming fully human*' (Rothlin and McCann, 2015, p.36). The care for others is also reflected in the excerpt from the Analects (De Bary and Lufrano, 2000):

> *Confucius said: '...The humane man, desiring to be established himself, seeks to establish others; desiring himself to succeed, he helps others to succeed. To judge others by what one knows of oneself is the method of achieving humanity...'* (Analects VI: 28).

Another excerpt can also reflect the Confucius prioritisation of human life over the others. 'Horse' was regarded as a precious treasure in the underdeveloped ancient time. However, in a fire, Confucius asked about the life of the servants first, but not the horse. This human spirit is recognised by Zhu Xi, stating in his *The Analects of Four Confucian Classics*:

> '非不爱马，然恐伤人之意多，故未暇问' (Zhu, 2018, p.115):
>
> *The stable being burned down, when he was at court, on his return he said, 'Has any man been hurt?' He did not ask about the horses*. (厩焚。子退朝，曰：伤人乎？不问马。) (Analects ·Xiangdang) V:10.

This humanity spirit to respect life is also stressed in Chinese ideological ethics. This spirit can be reflected in the notion proposed by different generations of leadership in CPC: '*To*

serve the people wholeheartedly' and the slogan '*To adhere to the principle of putting people first*'. Hu Jintao also proposed people-oriented thought '*Putting people first' and 'promoting all-round development of people*' (Feng, 2013). This notion is consistent with the ultimate aim of Communism held by Marx and Engles that is to promote human freedom and all-round development (ibid).

4.6.2 Maximising the public good

The products and services fcreated by the automotive industry are closely related to the public, both as a public transportation tool and private vehicles (Vesilind and Gunn, 2016), and sometimes as an entertainment tool in sports (Song, 2018). However, as a pillar industry in China, the ethical issues in terms of the environment, product liability and bribery in its whole life cycle and operation are impacting society as a whole and public good (Mihelcic and Zimmerman, 2014). Raw material depletion can even impact future generations (ibid). This is particularly prominent in the CAI, with its largest scale in both China and the world (CAAM, 2018a).

The notion of 'Respect for the public good' is also important; consistent with the ethical principles stated by The Engineering Council (2017): to '*Maximise the public good and minimise both actual and potential adverse effects for their own and succeeding generations*'. Western utilitarianism also contains this notion. This ethics '*defines right or acceptable actions as those that maximise total utility, or the greatest good for the greatest number of people*' (Ferrell and Fraedrich, 2013, p.156). This utilitarian value is also congruent with values in deontology in its fundamental theory that '*the idea that equal respect must be given to all persons*' (ibid, p.159), regarding certain behaviours as inherently right but not consequentially judged, alternatively, to ensure the real goodness to all persons without utility.

The Confucian ethical notion of '*Grand Union*' (大同) also holds this value. Confucian virtue '*contains a description of ordinary living within this ideal commonwealth-where not only is a sense of sharing spontaneous and universal but also public and common spirit ruled all under the sky*' (Rothlin and McCann, 2015, p.36). This public good can also be reflected in '*Small Tranquility*' (小康) in '*Li Yun*' (礼运), a state where there are sufficient orders to ensure that everyone is well-off. It is held that '*virtuous practices are not simply for self-cultivation in any narrow sense but are the means to a higher end, namely, the creation of a*

state where the people may flourish, by actively participating in the pursuit of the common good' (Rothlin and McCann, 2015, p.37).

This moral spirit 'for the public good' is also reflected in ethical norms raised by different generations of leadership in CPC. These include '*Serve the people wholeheartedly*' (by Chairman Mao) (Li, 1964; Zong, 2013); '*The Three Represents*' (by President Jiang), one of its Represents being '*Represents the fundamental interests of the greatest number of people*' (Yuan, 2004); '*power for the people, empathy for the people, profit for the people*' and '*to build a harmonious socialist society*' (by Hu Jintao) (Zhang, 2009; Lin et al., 2012); and '*serving the people, be diligent and pragmatic, clean and honest*' (by the current President Xi Jinping) (Xinhuanet, 2013). More details are displayed in Table 4.12 in Section 4.5.2.

4.6.3 Upholding honesty and integrity

The reflected three key ethical issues in the CAI (Section 3.5) carry a common feature that is to result in low honesty and integrity. For example, in unethical behaviours such as the Volkswagen Greenwash and prevalent corruption (Lane, 2016; Huang, 2015), the root was low honesty and integrity. Due to unforeseen and complex ethical situations in the engineering and manufacturing sector, and particularly in the CAI (Section 1.1), the awareness and competence to uphold honesty and integrity are crucial.

This feature is also embedded as an important principle in engineering society. It is stated that '*Engineering professionals have a duty to uphold the highest standards of professional conduct, including openness, fairness, honesty and integrity*' (The Engineering Council, 2017). The benefit of helping to prevent and resolve complicated ethical issues can be perceived in its amplifications: '*to act in a reliable and trustworthy manner, declare conflicts of interest, avoid deception and take steps to prevent or report corrupt, practices or professional misconduct or eject bribery and improper influence*' (ibid).

WNE and business ethics also stress honesty and integrity. These virtues have been regarded as basic to achieving intrinsic goodness and happiness in the prevailing philosophies of utilitarianism, deontology, virtue ethics and justice (Crane and Matten, 2016). For example, Aristotle argues '*Happiness is an intrinsically good end-in other words, its goodness is natural and universal, without relativity*' (Ferrell and Fraedrich, 2013, p.155). Virtue ethics stresses basic goods and virtues; this trait is closely related to integrity in its approach to

business, that '*Good corporate ethics programs encourage individual virtue and integrity*' (ibid, p.163).

In Confucianism, its two commonly used equivalent words are '*Sincerity*' (诚) and '*Trustworthiness*' (信). Confucianism resists any forms of cheating or dishonesty and stresses the personal-cultivation of the virtues Like Western virtues. The following Confucius remark can exemplify this:

> *Man's existence lies in his integrity. A man without integrity can exist merely through his luck' (Analects of Confucius, VI: 19). A person's integrity of being truthful and sincere to oneself and society is of great importance* (Low and Ang, 2012, p.93).

'*Trustworthiness*' is among its '*Five Ethical Norms*' (五常) (Ip, 2009). In Analects, Confucius's teachings are believed to be under the four headings: '*culture, moral conduct, doing one's best, and being trustworthy in what one says*' (7/25), and therefore, '*trust or, more precisely, being trustworthy, plays a central role in the Confucian ethic*' (Koehn, 2001, p.415). '*Virtue*' and '*sincerity*' are particularly mentioned in the notion of Grand Union: '*they chose men of talents, virtue, and ability; their words were sincere, and what they cultivated was harmony*' (Rothlin and McCann, 2015, p.36). '*Sincerity*' was regarded as a core trait in *Doctrine of the Mean* and *The Mencius*. For example, Mencius said: '*Therefore, sincerity is the way of Heaven. To think how to be sincere is the way of man.*' (是故诚者，天之道也；思诚者，人之道也) (Part 7, *Lilou Shang* (12)).

This trait of sincerity or trustworthiness is also reflected in the Communist ethics norms in China. This can be evidenced in Communist moral norms and cadres' governance morality '*The Eight Honours and Eight Shames*' (八荣八耻), which was developed by former General Secretary Hu Jintao, promulgated as the moral norm for all people and is also regarded as the '*new moral yardstick to measure the work, conduct and attitude of Communist Party officials*' (People, 2005) (see Appendix 3.3). Two sets of them are closely related to honesty and integrity: '*Honour to those who are trustworthy, and shame on those who trade integrity for profits*' and '*Honour to those who abide by law and discipline, and shame on those who break laws and discipline*' (ibid). This value can also be reflected in the recent moral norm '*Three Stricts and Three Honours*' (三严三实) developed in 2014 by Xi Jinping for cadres and also fits all citizens (Chen, 2016) in '*be strict in cultivating one's moral character*' and '*be strict in disciplining oneself*' (CPC NEWS, 2015; Xinhuanet 2015b)

(see Appendix 3.2). In March 2019, the CPC released new standards for caders and 'morality first' is listed as the second criteria, '德才兼备、以德为先，五湖四海、任人唯贤' (Translated as: *morality - first, ability and moral integrity are basic criteria for cadres*) (Xinhua News, 2019).

4.6.4 High standard moral leadership

A high level of competence and duty are called for in the CAI. Practitioners in the industry are required to be sensitive to potential and existing ethical issues and abide by and promote high standards of leadership and communication. This value standard would enable them to hold high ethical awareness and intrinsic goodness to intuitively resolve existing and potential ethical issues in the CAI.

This requirement for a high-level moral standard is due to the existing ethical issues in the industry and the CAI. These issues include the complex moral environment in the automotive industry sector and particularly in the CAI with uncertainties from new technology and the transformed moral value context (Sections 1.1 and 3.5). This high standard moral leadership also fits the *Ethical Statement* (The Engineering Council, 2018), which can be perceived in the duty amplification:

> *They should be aware of the issues that engineering and technology raise for society, concerns of others, promote equality, promote public awareness and understanding of the impact and benefits of engineering achievements, be objective and truthful in any statement made in their professional capacity, and challenge statements or policies that cause their professional concern*.

The high-standard moral leadership competence integrating both specialised talents and morality can be regarded as the combination of the previously discussed ethical principles. The unification of virtue and in-depth professional knowledge would guide managers in the CAI in ED and help them confront the complex ethical issues.

This competency is also reflected in Western originated decision-making models and Western philosophies. The dimension concept is perceived in the ED models (Section 4.2.2), indicating the combination of both individual ethical competence such as that of

deontological and teleological processing and evaluation; and of diversified dimensions from social, cultural, and industrial fields (Hunt, 1990; Groves et al., 2008).

Moreover, this benefit of philosophy, such as virtue ethics, has been implemented into engineering practice, such as in the Statement by the *UK Engineering Council*, to help practitioners lead the industry. This combination is paramount for engineers in making balanced, consistent and ethical decisions (Vesilind and Gunn, 2016). The newly-coined concept of '*techno-moral*' values which combines virtue ethics in technology to internally improve practitioners' ethical decisions (Vallor, 2016) is more evidence that shows its far-reaching impact in leading moral decisions.

Values in Confucianism and Communism also demonstrate this high standard moral leadership integrating professional knowledge and ethics. Confucius is concerned with stressing the power of good moral examples; the most representative is *Jun Zi*, who is '*the one destined to be a man in authority and would be educated and cultivated according to the highest standard of knowledge and ethics*' (Adair, 2013, p.12). Confucianism is also reflected to be the unification of virtues and norms (Liu, 2011b), whereas norms offer guidance in a specific profession, which means its strengths exist in both morality and the professional field.

Communist ethics have always emphasised the combination of morality and ability. One example is a moral norm proposed by Chairman Mao: '*Talents with professional competence and moral integrity*' (德才兼备). Recently, this norm was developed by Hu stating that '*Morality - first, ability and moral integrity are basic criteria by which society chooses, uses, and evaluates people*' (以德为先，德才兼备) (Li, 2008). As stated in Section 4.6.3, the current CPC government also reinforces morality as important criteria for cadres (Xinhua News, 2019).

These four compatible values fit all levels of practitioners in the global engineering community and the CAI. They are closely related to management in managerial ED and ethics in Confucian leadership or Communist cadres' moral governance. Therefore, the section has both validated the compatibility of the four derived ethical elements in general but also proven their feasibility enhancing managerial ethical decision-making.

4.7 Underpinning compatibility theories and feasibility in pedagogic training

This section provides compatibility theories to underpin the four derived ethical elements. This research is multidisciplinary; the four derived values are related to management, philosophy, culture, and the Chinese ideological context. Accordingly, theories from these areas are presented. As these values would be suggested to be utilised in management training, their pedagogic feasibility is also discussed.

4.7.1 Cultural equality and hypernorm-compatibility from cultural perspectives

From a cultural and international business perspective, it is imperative to hold a fair and equal attitude towards all cultures, values and philosophies. In dealing with diversified cultures in international business, the culturist Hollensen (2012) proposes '*it is better to regard the culture as a different from, rather than better or worse than, the home culture. In this way, the differences and similarities can be explored*' (p.163). More cultural notions from the international business domain can support this view, such as to hold a polycentric or geocentric attitude rather than an ethnocentric attitude or to promote convergence rather than divergence (ibid).

To avoid cultural or ethical relativism and any bias, Ip (2009a, p.220) proposed the concept of the value compatibility or hypernorm-compatibility specific for value co-existence in Chinese Business Ethics (CBE). The reason is that CBE has to be compatible with universal values and hypernorms as the world has become more integrated in terms of having a set of shared values or principles, which are accepted by the majority of members of the world community, such as integrity and justice, (Donaldson and Dunfee, 1999). Ethics that is compatible with hypernorms is also morally justifiable and hence has moral legitimacy. Furthermore, by virtue of hypernorm-compatibility, cultural or ethical relativism is able to be adopted, which will ensure the benefit that '*the rights and wrongs of a culture can only be judged by the cultural or ethical norms and criteria of that culture and avoid cross-cultural or trans-cultural moral judgments*' (Ip, 2009a, p.220).

Within the four ethical elements, Confucianism and WNE are the dominant culture and philosophy, this cultural equality and hypernorm-compatibility fit them. In addition, as

discussed, the other two are impacted or compatible with cultural and philosophical hypernorms. Therefore, the concept of hypernorm-compatibility fits them as well.

4.7.2 Pluralism from philosophical and decision-making perspectives

In philosophy, monism and pluralism are two basic concepts of goodness (Ferrell et al., 2019). For value co-existence, pluralism is proposed with the reason that '*Monists believe that only one thing is intrinsically good, and pluralists believe that two or more things are intrinsically good*' (Ferrell and Fraedrich, 2013, p.156).

In practical ethical decision-making, many philosophical views work together and are complementary rather than mutually exclusive (Crane and Matten, 2016). For example, instrumentalists believe ends (such as teleology) and means (such as deontology) are two opposing ethical views (Ferrell and Fraedrich, 2014). However, the philosopher John Dewey argued that '*the difference between ends and means is merely a matter of the individual's perspective; thus, almost any action can be an end or a means*' (ibid, 2013, p.156). According to a practical standpoint, an end is only a remote means, and the means are but a series of acts viewed from an earlier stage (ibid).

Synergy is demonstrated between a pluralistic perspective vs a single perspective on the value of ethical theories for solving ethical dilemmas in business (Figure 4.25). It indicates not only the compatibility but necessity for different philosophies to work together in one moral value environment and achieve synergy.

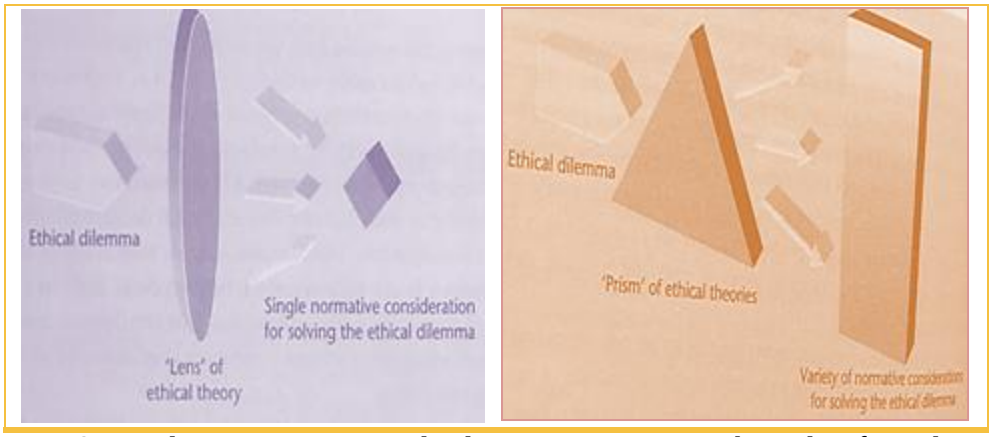


Figure 4-25: A singular perspective vs pluralistic perspective on the value for solving ethical dilemmas in business

Source: Crane and Matten (2016)

4.7.3 Glocalisation from international management and business perspectives

Recently, concept terms have been coined to define the converging of world values. Based on the adaptation theory, under the convergent theory, polycentric and geocentric notion, in global business, the theory of 'glocalisation' has been coined and is widely practised (Mowforth and Munt, 2015). This theory is particularly popular in global marketing which is evidenced by Philip Kotler's claim that '*All good marketing is local. Global companies know this and are going glocal*' (Hollensen, 2016). Thus, a slogan is proposed '*think globally but act locally*' (ibid, p.458).

This concept is widely utilised with slight variations. For example, in resolving its cultural issues in its global marketing-mix, McDonald proposed '*Think global, act local*' (Vignali, 2001). The company Asea Brown Boveri (ABB) (Belanger et al., 2000) put forward the slogan '*Being local worldwide*' to resolve value conflicts in all its merged companies. This notion is also utilised in management, such as '*Think globally, manage locally*' (Bakermans and Rodewald, 2009).

The theory of glocalisation in practice has many benefits. This global strategy can, with coordinated efforts, ensure local flexibility while exploiting the benefits of global integration and efficiencies (Desouza and Evaristo, 2003). To be specific, on the one hand, '*managers need to be based on local values*' (Hollensen, 2012, p.471), on the other hand, the manager also needs to incorporate universal hyper norms. This is due to the fact that '*the future role of an international manager is required to think, operate and communicate across cultures and geography*' (ibid, p.473).

This theory deals with diverse cultural interaction and thus also suits this research, as the CAI runs locally in China, but interacts globally. The approach of globalisation in management has offered implications for this research to help managers prioritise elements from the local ideology, culture and industry but also hold a global perspective to adopt Western hypernorms for more comprehensive and ethical decisions. However, in decisions, the weighting of each value needs to be carefully considered, particularly for the transforming moral value contexts in the CAI, where the changing ownership might impact the weighting of each value in decisions.

4.7.4 Adaptation from international business and ideological perspectives

In order to deal with values, there are two contrasting theories in marketing: one is standardisation, the other is an adaptation (Hollensen, 2016). The two theories are widely practised in international management to deal with cross-cultural values.

Supporters of standardisation view the world as increasingly homogeneous and similar in terms of environmental factors and customer requirements, irrespective of geographical locations (ibid). However, supporters of adaptation indicate difficulties in using a standardised approach, which supports the adaptation in this research and fits the unique dimensions in its ED. Proponents of adaptation claim that '*there are substantial differences between countries and even between regions in the same country*' (ibid, 2016, p.475).

The concept of adaptation fits this research where there are substantial differences between the four justified ethical elements in the CAI. Some are in the same country such as Confucianism and Communism, while WNE belongs to the global dimension; and EPE is at the industrial dimension. Therefore, there is no standardised approach for managers to make ethical decisions in this moral value context; it is imperative for them to adopt the adaption concept in decision-making.

Recently, a newly coined concept is proposed in China, called '马魂、中体、西用' to indicate the co-existence and adaptability between values (Fang, 2010). It is interpreted as '*Marxism as the Spirit, Chinese Learning as the Fundamental Structure and Western Learning for Practice*' (Xie, 2014). This concept is believed to be the driving force for Chinese cultural development (Fang, 2010) or the establishment of an academic paradigm in contemporary China (Xie, 2014).

4.7.5 Pedagogic feasibility

Literature indicates the necessity of training managers to be more ethically responsible. For example, the United Nations Global Compact, the largest corporate citizenship initiative, calls all institutions and associations of higher learning dedicated to the education of business leaders to advocte responsible management (The UN Global Compact, 2007).

Literature has also indicated the pedagogic feasibility to train managers' non-coercive ethics for improvement, which applies to the four ethical elements derived, as exemplified earlier (Sections 3.3.3 and 4.5.2). The principles and practices of Communism are taught nationally, cultivating cadres' integrity and morality through different levels of party schools (Shambaugh, 2008a; CCPS, 2017). As with Confucianism, the cultivation of personal values is its core spirit (Ip, 2009a). In the industry, codes of ethics and EPE are embedded as important elements in training for professional development (The Engineering Council, 2018). It is also applicable for WNE, as international hypernorms; this ethics has been a basis in fundamental ethical decision-making models, management ethics nd engineering ethics.

The fundamental concept for the pedagogy of ethics in management and engineering training is cognitive moral development. The ethicist and psychologist, Kohlberg Lawrence (1985) designed a six-stage model of cognitive moral development, which Ferrell and Fraedrich (2013) argued, '*although not specifically designed for business contexts, this model provides perspectives on the issues of moral philosophy in business*' (p.167). Table 4.14 demonstrates these stages with an association to their behaviours in business practices, showing how their morals are progressed from a lower level (stage 1) to higher levels (Stage 6).

Table 4-14: Cognitive moral development in a business context

Stage	Cognitive moral development	Behaviours exemplified in a business context
Stage 1	The stage of punishment and obedience.	A salesperson might refuse or reject gifts by referring to the company's rule, or might accept the gift believing there was no chance to be caught and published.
Stage 2	The stage of individual instrumental purpose and exchange.	An individual would define 'right' which satisfies his or her own needs. The salesman might accept or give gifts believing it is part of their pay or believing it's a custom to expect a gift in some countries.
Stage 3	The stage of mutual interpersonal expectations, relationships, and conformity	Stage 3 differs from Stage 2 in that fairness to others is one of the individual's ethical motives. E.g. The managers' ethical behaviour might be they not only consider their own well-being but also try to put others in upper management's and fellow employee's shoes.
Stage 4	The stage of the social system and conscience	An individual determines what is right by considering his or her duty to society, not just to certain other people.
Stage 5	The stage of prior rights, social contracts, or utility.	Individuals feel a sense of obligation or commitment to other groups a part of a social contract, basing their decisions on a rational calculation of overall utility, i.e. the action of donation by the company expecting to be perceived as responsible to the society.
Stage 6	The stage of universal ethical principles.	A person believed that right is determined by universal ethical principles everyone should follow.

Source: Ferrell and Fraedrich (2013)

Kohlberg also suggests that people continue to change their decision-making priorities after their formative years. Tthey may change their values and ethical behaviour as a result of time, education, and experience, which suggests the feasibility of pedagogy of training. In terms of the associating with the business, Ferrell and Fraedrich (2013) hold that '*in the context of business, an individual's moral development can be influenced by corporate culture, especially ethics training*' (p.169). It is also believed that '*ethics training and education have been shown to improve managers' cognitive development scores*' (ibid, p.169).

Managers in the highest stage of the moral development process seem to be more democratic than autocratic and more likely than those at lower stages to consider the ethical views of other people involved in an ethical decision-making situation. This information is consistent with the justification to focus on ethical principles that are based on moral values and philosophies, such as the EPE *Statement* in the UK (The Engineering Council, 2018) and the EPE framework development for China (Xiao et al., 2018).

This concept and model are also applicable to the engineering sector. Richard McCuen (1979) holds that such a concept could be equally applied to the moral development of engineers. Based on Kohlberg's (1985) model, Vesilind and Gunn (2016) designed a model for engineers' moral development. This progressive movement from the lower to higher stages (Table 4.15) suggests the feasibility for its training.

Table 4-15: Moral development of engineers

Stage	Description
Stage 1 : Pre-professional I	The engineer is not concerned with social or professional responsibilities. Professional conduct is dictated by the gain for the individual.
Stage 2: Pre-professional II	The engineer connects conduct to marketability. The engineer is aware of the ideas of loyalty to the firm, client; ethical behaviour depends on the motive of self-advancement.
Stage 3: Professional I	The engineer puts loyalty to the firm above any other consideration. The engineer concentrates on technical matters, becomes a 'term player' within the firm, ignoring the ramifications of the job on society and the environment.
Stage 4: Professional II	The engineer retains loyalty to the firm but recognises that the firm is part of a larger profession. Good engineering practice becomes that helps the profession- and not necessarily society in general.
Stage 5: Principled professional I	The engineer recognises that service to human welfare is paramount, and this brings credit to the firm and the profession.
Stage 6: Principled professional II	The engineer follows rules of universal justice, fairness, and caring for fellow humans.

Source: Vesilind and Gunn (2016)

Based on the discussion, the four justified non-coercive ethical elements are used as variables or measurements to explore their effectiveness in management training. The concept of non-coercive ethics will help build managers' moral perspectives for their intentions, which is a central component of ethical decision-making (Ferrell and Fraedrich, 2013). There is no single moral philosophy, cultural value or code of ethics that everyone accepts, or that solves all ethical issues. However, the understanding of the core values in non-coercive ethical elements in the CAI context and the ethical decision-making dimension approach will enhance managers' EI in decision-making and provide competence for integrated ethical consideration.

4.8 Research gap

Chapter 1 discussed the research rationale and identified a gap in research. Regarding the outcomes of four non-coercive ethical elements derived from this chapterr, the existing literature further has constituted the research gap. This section overviews this gap to show what is needed to address it.

On the whole, there is an increasing research interest in ED research, which shows the significance of this research. Altogether there are four key literature reviews on ED studies from 1978 to 2011 (Ford and Richardson, 1994; Loe et al., 2000; O'Fallon and Buttetfield, 2005; Craft, 2013). The number of findings related to EI is increasing over the four reviews; this increase is prominent from 86 findings in the third review (1996 - 2003) to 131 findings in the fourth review (2004 - 2011) (Appendix 4.1).

This increased research interest on ED has also been reflected within Craft's (2013) shows this recent trend. Most of the studies were from key journals such as the *Journal of Business Ethics* (JBE) (Appendix 4.2). In Craft's (2013) review, the number of individual findings by dependent variables on the stage of EI was the largest compared with findings on other three stages in EI, where there were 131 dependent variables out of the 357 findings in total (Table 4.16).

However, in terms of EI, the results of the three previous reviews (1978 - 2003) indicate a paucity/gap of research for systematic moral value dimensions. The three prior studies were categorised into individual and organisational factors, and based on the two factors, Craft (2013) summarised their defect that '*the majority of research involved individual factors:*

aspects of ethical decision-making uniquely associated with an individual decision maker' (p.222). Within these reviews, many individual factors were researched; however, they were generic, without specific discussion to the CAI or on its moral value context of EI (Appendix 4.1). In addition, as shown in Table 4.16, there is no research finding of the impact of 'Training' on EI, as an organisational factor (highlighted in the dotted line).

Table 4-16: Empirical ED studies examining direct effects by dependent variables and construct (2004-2011)

Construct	Number of empirical studies by dependent variable				
	Awareness	Judgment	Intent	Behavior	Totals
Individual factors					
Age	4	7	2	1	14
Awareness		1	2		3
Behavior			6		6
Cognitive moral development	2	2	2	1	7
Cultural values/nationality	6	2	24	3	35
Decision style			6		6
Education, employment, experience	6	13	3	5	27
Emotions/mood		3	4		7
Gender	5	13	14	6	38
Organizational commitment			2		2
Peers/management	4	2	5		11
Personal values	3	2	6		11
Personality	12	12	9	10	43
Philosophy/value orientation	4	15	11	2	32
Religion/spirituality	6	2	2		10
Situation	5	4	10	3	22
Organizational factors					
Code of ethics	3	2			5
Competitiveness			4		4
Ethical culture	2	4	4		10
Industry		1			1
Organization culture	4			1	5
Organization level		1			1
Organization performance				1	1
Organization size		1		3	4
Policies/procedures	4				4
Professional relationships			1		1
Rewards/sanctions	1	11	4	1	17
Subjective norm	1		4		5
Teams			1		1
Training		2			2
Moral Intensity	5	12	5		22
Total	77	112	131	37	357

Note: Totals indicate the number of individual findings by dependent variable. The number of studies reviewed is 84

Source: Craft (2013)

Craft's (2013) review (2004 to 2011) also reflects this gap by exclusively focusing on individual and organisational factors, with improvement. During the period of Craft's review, in terms of intent, more individual and organisational factors have been researched, such as 'Cultural values/nationality', 'Philosophy/value orientation' or 'Codes of ethics' (Appendix

4.3). Some research studies began to research a specific philosophy and complete moral value dimensions related to managers. One of these studies was by Groves et al. (2008) who researched the factor of philosophy/value orientation with the finding that '*Managers tended to rely on utilitarian theories when addressing ethical dilemmas*' (p.244). The research also has the complete design of a managerial ED model (Figure 4.9 Section 4.2.2). This strength has been indicated with a comparison of the fundamental ED models (Tables 4.3 and 4.4 in Section 4.2.2). However, for most research at this period, there was still a paucity of moral value research.

Another gap indicated that within the four reviews there was no direct research on the specific moral value context of the CAI. However, some ethical factors discussed might have implications for this research. For example, Groves et al. (2007) identified that managers tended to rely on utilitarian theories in resolving dilemmas; this finding on managers might be applied in the Chinese context. However, this Western philosophy of utilitarianism cannot be imported into the CAI context directly, as it needs to be converted into similar values in the moral value context of the CAI.

There was also a lack of research on the nature of ethics and the effectiveness of these ethics to address ethical issues in the specific moral value dimensions in the CAI. These reviews discussed a wide range of factors; however, little literature researched the nature of ethics, instead, 'age' and 'gender' were among the most popularly discussed individual factors. Some researched ethical factors or philosophies; however, most of them were generic. The rationale in Section 1.1 indicates the necessity to explore such ethics to address the complexities of ethics and values in the CAI.

In addition, there is limited discussion of the compatibility between values, which should also be considered for the co-existence of values in one context. In the four reviews, both individual and organisational factors were researched individually. As indicated in Section 3.2.2, this joint venture feature necessitates values to work together and achieve synergy.

Finally, in the four reviews, there is a lack of research on the application of ethical factors in training practices. This research interest involved issues of 'Education, employment, experience' (Appendix 4.3). However, there is no direct research about the effectiveness of ethical elements in managerial training related to EI in the CAI.

Recently, this situation is improving, and research is beginning to be more closely related to this project. However, there is still a research gap in this area.

- Some research involves factors or correlations related to EI impact in management ED. For example, in international decision-making, Elango et al. (2010) researched the correlation factors with managers' EI impact, one of them being management level. Rausch et al. (2014) researched the correlations between national culture and impact on EI.

- Effective ethics in ethical management decisions have also been researched. For example, Snellman (2015) researched the effectiveness of ethical elements for ethical management in the public service, and with the finding that the non-coercive ethics such as WNE and codes of ethics were effective to deal with specific unethical issues. Ethical principles are believed to be more effective than codified ethics in engineering (The Engineering Council, 2018).

- Some research is related to the intellectual value dimension in China or the CAI. For example, Zhu and Jesiek (2015) researched the intellectual context related to the CAI with the finding of three ethical elements of 'Confucianism', 'Marxism', and 'Pragmatism'. Yang (2012) researched the three cultural forces of 'Confucianism', 'Socialism' and 'Capitalism' in the management dimension in China. The gaps in these researches is detailed in Section 1.2.

Although these research studies are not directly related to this research, they are valuable in offering key insights, i.e. in terms of dimensions and ethical element (summarised in Table 4.17). A more rigorous research method is needed that makes use of this knowledge and accommodates these features.

Table 4-17：Literature of ethical dimensions and elements related to the research

Sources	Finding	Relevance
Zhu and Jesiek (2015)	Intellectual context of 'Confucianism' (historical), 'Marxism' (ideological), and 'pragmatism' (economic) in the CAI.	Dimension
Yang (2012)	Three cultural forces of 'Confucianism', 'Socialism' and 'Capitalism' in the management dimension in China.	Dimension
Snellman (2015)	The effectiveness of non-coercive ethical elements for ethical management, such as WNE and codes of ethics.	Element
Elango et al. (2010)	Correlation between management level and managers' EI in the international decision-making	Element
Rausch et al. (2014)	Correlation of national culture in the ethical decision-making process	Element
Cao (2015)	Interpretation of "physical absence" of engineering ethics in China, indicating a transformative impact from indigenous culture and ideology in China.	Element
The Engineering Council (2018)	The ethical principles in engineering are more effective than codes of ethics.	Element

Source: Author (2019), based on Elango et al. (2010); Yang (2012); Rausch et al. (2014); Cao (2015); Snellman (2015); Zhu and Jesiek (2015); The Engineering Council (2018);

4.9 Summary

This chapter reviewed underpinning theories related to EI and undertook a series of theoretical conceptualisation processes. These included the development of a moral value dimension framework appropriate for the CAI and the critical evaluation of effective ethics for the CAI. Consequently, based on the concept of EI, four non-coercive ethical elements were derived from the three-fold moral value dimension framework, specific to the perspective of the CAI. Compatibility and pedagogic feasibility discussions further validated these elements. Compared with these outcomes, a research gap was identified in the existing literature, which calls for rigorous research in the following chapters. Chapter 5 will discuss issues related to research methods and explore an appropriate methodology to undertake this research and accommodate its features, being multidisciplinary and ethics-sensitive.

Chapter 5 Research Methodology

5.1 Introduction

This chapter justifies the research philosophy and methodological strategies employed to address the research questions. Followed by the justification of the sequential approach applied in this thesis in Chapter 2, this chapter starts with a brief summary of challenges for a rigorous research methodology (Section 5.2, as detailed in Section 2.2) to link to the following discussion, which takes into account the complexities attributed to this multidisciplinary and sensitive ethical subject.

The breadth of research activities (Section 5.3, as detailed in Section 2.5) and theoretical and conceptualising frameworks (Section 5.4, detailed in Section 4.1) are summarised as an antecedent to the research method discussions. The remainder of the chapter makes use of the 'Research Onion' framework (Saunders et al., 2016, p.124) (see Figure 5.1 in Section 5.5).

5.2 Summary of challenges for rigorous research

As discussed in Section 2.2, this multidisciplinary thesis on the effective, ethical elements in managerial training in the CAI was challenged by its focus in bringing together values of culture, ideology and philosophy from Western and Chinese thinking. To be specific, challenges have been dissected from both macro and micro perspectives. In a macro sense, discussions have integrated managerial EI within training practice in the CAI. In a micro sense, discussions encompassed several subject areas, including fundamental EI theories, the moral value context of the CAI, the nature of ethics, ethical elements from both the Western philosophy and Chinese indigenous culture and ideology, and their mutual compatibility. Their suitability should also consider ethical issues confronting managers in the CAI. Moreover, the sensitive nature of ethics adds to the difficulties of obtaining genuine and spontaneous in-depth data, necessitating the embedding of ethics-specific projective mechanisms/techniques. A tailored research process and methodology was thus designed to help mitigate these challenges.

5.3 Summary of exploratory research activities

As outlined in Chapter 2, it was necessary to conduct preliminary, informal qualitative

research to help identify the focus due to the multidisciplinary and ethics-sensitive feature. The information on these preliminary research activities reveals three common features within the research approach adopted:

- The first feature is that the activities employed many method designs on the basis that the breadth of disciplines and ethical sensitivities calls for more than one approach to help facilitate in-depth and authentic communications, and support the validation of information. These forms included both formal and in-depth research activities, which have greatly aided the quality of communication, and impacted upon improved understanding of ethics in the CAI. The establishment of online contacts via Chinese social media tools/App of *WeChat* and *QQ* dramatically facilitated free and instant communication in the CAI and also added value.

- It is also recognised that these data gathered in the preliminary stage were not strictly defined as formal qualitative data collection for many un-structured in-depth interviews, field visits or document textual understanding could not be formally recorded and analysed (Saunders et al., 2016). However, the benefits of this mode cannot be underestimated (addressed in Sections 5.7.6 and 5.11). The non-standardised communicative research activities at the refinement stage outlined in Section 8.4 to clarify inconsistency were similar to this approach.

- Another feature is that information obtained from a breadth of communications has effectively helped in the theoretical conceptualising process. For example, the exploratory activities offered opportunities for the researcher to become familiar with issues related to moral values in the CAI, which later allowed for the narrowing of scope into the non-coercive ethical elements that could effectively address ethics in the CAI.

These key stages of the research project are outlined in Table 5.1 with their stages, focus and approaches.

Table 5-1: Summary of key research stages, focus and activities

Main stages	Focus and finding	Key approaches/activities
Stage 1 Preliminary background research	See Tables 2.1- 2.3 in Section 2.5	See Tables 2.1- 2.3 in Section 2.5
Stage 2 Theoretical conceptualisation and survey implementation	Exploration of ED dimensions, effective ethics nature, the conceptualisation of effective ethical elements and their implementation in surveys (detailed in revised Chapters 3, 4 and 5) Findings from the survey results indicated the effectiveness of these four non-coercive ethic elements in managerial training, EPE being the most prominent (detailed in revised Chapters 6, 7 and 8).	· Focusing on theoretical conceptualisation and derivation of four effective ethical elements and the implementation of quantitative surveys. · Being accompanied by unstructured and semi-structured interviews and company visits.
Stage 3 Clarification and refinement	Follow-up communications and clarification of managers' understanding of a key feature of EPE. Data validated their understanding and showed consistency with the literature (detailed in revised Section 8.4).	· Internet-mediated communications via *WeChat*.

Source: Author (2019)

5.4 Summary of theoretical conceptualisation

As stated in Chapter 2, the complexity of the conceptualisation itself necessitated rigorous research methods. The breadth of research activities has contributed to the process of theoretical conceptualising, narrowing down the focus of the research as illustrated in Figure 4.1 (Section 4.1). Research activities in the corresponding three research stages were summarised in Table 5.1, similar to the description in Tables 2.1-2.3 in Section 2.1.

5.5 Research philosophy

To achieve coherence and be 'systematic' in research, an appropriate research method is necessary (Saunders et al., 2016). Furthermore, irrespective of the methods adopted, it is imperative to explain the reason for choices made (Saunders and Tosey, 2013). In business and management research, the metaphor of the 'Research Onion' is commonly utilised to depict the interconnectedness or interdependence of the research design steps, i.e. how data collection and analysis (the core of the 'Research Onion') need to be considered in relation to the philosophical and methodological elements (the outer layers of the Research Onion) (ibid). The 'Research Onion' (Figure 5.1) initiates the coherence from the outer layer to the

inner layer. These approaches and methods are indicated to be able to be adaptable to almost any type of research (Bryman, 2016). Thus, this chapter follows a sequence of 'peeling' the 'Research Onion.'

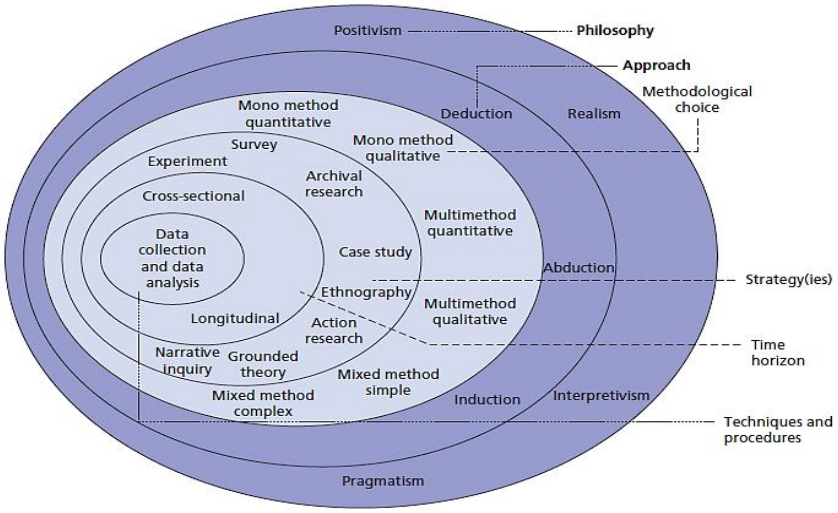


Figure 5-1: The 'Research Onion'
Source: Saunders et al. (2016)

In practice, the choice of a particular methodology should be based on its suitability to answer the research questions (Bryman and Bell, 2011). The outer layer of the 'Research Onion' is the research philosophy that lays the basis for the justification for the rest of the research elements (Johnson and Clark, 2006). From a macro perspective, the assumptions on the objectivism-subjectivism continua decide the philosophy (Collis and Hussey, 2009; 2014). Due to the challenges of the research being multidisciplinary and ethics-sensitive (Sections 2.2 and 5.2) and the complex conceptualisation process (Sections 4.1 and 5.4); no single approach can fully support the research alone.

Within the business and management domain, five research philosophies, positivism, critical realism, interpretivism, postmodernism, and pragmatism are commonly presented (Saunders et al. 2016). Of these, it is pragmatism which allows for the adaptation and mixing of research methods; its feature and fitness are captured in Table 5.2. This philosophical stance is underpinned by 'pluralism,' allowing for diversity and uniqueness in research practices (Knudsen, 2002).

Table 5-2: Research philosophy of pragmatism and fitness to this research

Philosophy	Features	Typical methods	**Fitness to this research (Yes)**
Pragmatism	Asserting that concepts are only relevant where they support action.	Following research problems and research questions, emphasis on practical solutions and outcomes; The range of methods includes mixed, multiple, qualitative, quantitative, and action research.	The benefits can help address challenges and complexities presented in Sections 4.2, 4.3, and 4.4.

Source: Reproduced from Saunders et al. (2016)

The pragmatic philosophy supports the 'logic of abduction' (Saunders et al., 2016), one of the three theory development approaches. This approach of 'abduction' also underpins this research. 'Abduction' combines features of 'deduction' and 'induction' (Saunders, 2016), in that it inductively explores, identifies themes, locates these in a conceptual framework, and deductively verifies this through subsequent data collection. The inductive process fits the research activities in Stage 1 and Stages 2.1-2.4, which explore the moral values in the CAI and conceptualise to identify themes and variables. The deductive process fits stages 2.5 and 3, making use of data collection surveys to verify these themes and variables. Table 5.3 summarises features and appropriateness of abduction to the research.

Table 5-3: Features of deductive, inductive, abduction and fitness to this research

	Logic	Use of data	Theory	**Fitness to this research (Yes)**
Induction	Known premises are used to generate untested conclusions.	Data collection is to explore a phenomenon, identify themes and patterns, and create a conceptual framework.	Theory generation and building.	Inductive feature reflected in Stage 1-Stages 2.1-2.4 in Figure 4.1
Deduction	When the premises are true, the conclusion must also true.	Data collection is to evaluate propositions or hypotheses related to an existing theory.	Theory falsification or verification.	Deductive feature reflected in Stage 2.5 and Stage 3 in Figure 4.1
Abduction	Known premises are used to generate testable conclusions.	Data collection is used to explore a phenomenon, identify themes and patterns, locate these in a conceptual framework, and test this through subsequent data collection.	Theory generation or modification; incorporating existing theory where appropriate, to build a new theory or modify existing theory.	Both deductive and inductive features reflected in the whole research Stages 1-3 in Figure 4.1

Source: Reproduced from Saunders et al. (2016)

5.6 Exploratory research

Research design varies according to the nature and purpose of the study. Five common categorisations, according to Saunders et al., (2016), include exploratory, descriptive, analytical predictive and combined research/studies. The exploratory research type and purpose are summarised in Table 5.4, which is justified as the best fit for this research.

Table 5-4: Exploratory research: features and fit

Research type	Features	**Fitness to this research (Yes)**
Exploratory research/ studies	Applying to studies where no or few relevant or previous studies can be referred to, or research that there may be few theories or a deficient body of knowledge (Collis and Hussey, 2014).	The broad discipline subjects have few relevant or previous studies; Sections 1.2 and 4.8 demonstrated this research gap.
	Exploring the research questions with no intention to offer final and conclusive solutions to existing problems (Saunders, 2012); Conducted to determine the nature of the problem, this type of research is not intended to provide conclusive evidence but helps us to have a better understanding of the problem (ibid).	This research aims to explore ethical elements for critical evaluation. While the result can have implications for future training in the CAI, but not to offer final and conclusive solutions to existing problems (Section 1.3).

Source: Reproduced from Collis and Hussey (2014); Kumar (2014; 2019); Saunders et al. (2016)

In practice, the exploratory research has advantages and disadvantages (Dudovskiy, 2016). Table 5.5 shows how this project has taken measures to avoid these drawbacks.

Table 5-5: Exploratory research: Measures to amplify advantages and avoid disadvantages

	Advantages	Disadvantages	**Measures to amplify strengths and avoid disadvantages**
1	Flexibility and adaptability to change	Generating qualitative information and interpretation of such type of information is subject to bias.	Adopting all forms and all-time formal and informal communications with people from all related fields, facilitating instant verification of information and clarification of data interpretation (Sections 2.5 and 5.3).
2	Effective in laying the groundwork that will lead to future studies	Usually making use of a modest number of samples that may not adequately represent the target population.	Following the philosophy of pluralism, the project has adopted the exploratory multi-stage sequential mixed methods with adaptation, prioritising the quantitative survey, but complemented by qualitative data from all stages. This method has generated large quantified qualitative data, representing the large population of the CAI.

Source: Reproduced from Dudovskiy (2016)

5.7 Research design adaptation

5.7.1 Philosophical foundation

The challenges and features proposed for rigorous research (Sections 2.3 and 5.2) and the complexities presented in the research activities (Sections 4.3 and 4.4) require an approach that can accommodate these features. The exploratory design offers a solution. However, it is acknowledged that '*There is no single best research philosophy or method in business and management; each contributes a unique and valuable way*' (Saunders et al., 2016, p.151). The philosophy of pragmatism and the pluralistic perspective justified in Section 5.5 underpin the utilisation of multiple methods in one study (Tashakkori and Teddlie, 2010), and allow for the adoption of multiple research methods or mutual adaptation (Andrew and Halcomb, 2007; Morgan, 2007; Cameron, 2009). However, with adaptation, a good research study should rely on the research questions, but not too rigidly to select approaches or paradigm (Salehi and Golafshani, 2010). The suitability to answer research questions (Bryman and Bell, 2015), the nature of the research question, research context, and likely research consequences are also driving forces determining the most appropriate methodological choice (Nastasi et al., 2010).

5.7.2 Fundamental mixed research designs and integrating principles

There are three main research designs, qualitative, quantitative and mixed methods (Denzin and Lincoln, 2011; Saunders et al., 2016). Under the philosophy of pluralism, the use of single designs such as quantitative and qualitative designs cannot accommodate complex features of research, as indicated in Sections 2.2 and 5.2. However, a mixed-method design can accommodate both features from quantitative and qualitative designs to address the complicated situation. Furthermore, its added value is also widely acknowledged in business and management research (Bryman and Bell, 2011;Molina-Azorín, 2011;Creswell, 2015;Saunders et al., 2016). Table 5.6 indicates the mixed design and its appropriateness of fit to the research.

Table 5-6: Mixed research design and fitness to this research

Research design	Research philosophy	Theory development approach	Characteristics	Fitness to this research
Mono method Qualitative	Generally, positivism may be seen to fit partly within an interpretivist philosophy	Associated with the deductive approach to test theory, possible to incorporate an inductive approach	Examining relationships between variables, which are measured numerically and analysed using a range of statistical and graphical techniques	No, the mono method does not fit the complexities of this research, as stated in Sections 2.2, 5.2, and 5.3.
Mono method Quantitative	Often associated with an interpretive philosophy (Denzin and Lincoln, 2011).	Commencing with an inductive approach, where a naturalistic and emergent research design is used to build theory. Might use abductive approaches	Studying participants' meanings and their relationships, using a variety of data collection techniques and analytical procedures, to develop a conceptual framework and theoretical contribution; Data collection is non-standardised, questions and procedures may alter and emerge that is both naturalistic and interactive.	
Mixed methods	Combing quantitative and qualitative philosophic al positions.	May use a deductive, inductive, or abductive approach.	Multiple methods research combining the use of quantitative and qualitative data, and these data are combined in a variety of ways, ranging from simple, concurrent forms to more complex and sequential forms.	Yes, it fits this research that is multidisciplinary, ethics-sensitive, and faces difficulty in obtaining natural and in-depth data, as stated in Sections 2.2, 5.2, and 5.3.

Source: Reproduced from Denzin and Lincoln (2011) and Saunders et al. (2016)

This adaptation has also followed the integrating principles on how they are integrated as well as the extent or weighting they occur (Creswell, 2015). These principles are demonstrated in Table 5.7, which are an appropriate fit for this research.

Table 5-7: Principles for using a mixed-method design

Principles	Description
Initiation	The initial use of a qualitative or quantitative method to define the nature and scope of the sequential process; or provide a contextual background for a better understanding of the research problem.
Facilitation	One method may lead to the discovery of new insights which inform and are followed up through the use of the other method.
Complementarity	Allow meanings and findings to be elaborated, enhanced, clarified, confirmed, illustrated, or linked.
Interpretation	One method may help to explain relationships between variables emerging from the other, e.g. qualitative, to explain quantitatively.
Generalisability	Help to establish the generalisability of a study or its relative importance, and establish the credibility of a study.
Diversity	May allow for a greater diversity of views to inform and be reflected in the study.
Focus	One method may be used to focus on one attribute, while the other method may be used to focus on another attribute (e.g., quantitative and qualitative on macro and micro aspects).
Triangulation	To combine data to ascertain if the findings from one method mutually corroborate the findings from the other method

Source: Author (2019), based on Greene et al. (1989); Bryman (2006); Molina-Azorín (2011); Saunders (2016)

These principles are realised through four specific forms, 'merging, explaining, building, and embedding' (Creswell, 2015, p7). Simultaneously, there are two criteria to classify mixed methods, '*the priority decision and the sequence decision*' (Bryman, 2016, p.637), which informs whether they have equal weighting, or they are concurrent or otherwise (Bryman, 2016).

Given that the informal qualitative methods can help initiation of the exploratory stage and support micro-level investigations, in this research, they are employed in the initial exploration of ethics and the value context specific to the CAI (Stage 1 in Table 5.1). On account of the benefit that the qualitative method can explain relationships between variables, it is also used in the formal quantitative survey such as in the open-ended and open questions. Due to these benefits, this approach is also used in the final refinement stage to clarify and explain inconsistency in key quantitative data generated from Stage 2.

At the same time, quantitative methods are used to explore macro aspects through a survey implementation, which satisfies Stage 2. The focus and prioritisation on the quantitative method can contribute to generalisability for higher data credibility and avoid bias due to small sampling numbers (Saunders et al., 2016).

5.7.3 Unfitness of concurrent triangulation and sequential explanatory designs

There are four fundamental types of mixed methods (Creswell, 2015; Bryman, 2016; Saunders et al., 2016) (see Table 5.8).

Table 5-8: Mixed methods research designs

Mixed design	Principles	Priority	Phase 1	Phase 2	Phase 3
Concurrent Triangulation (Convergent)	Merging	Equal	Quantitative methods Qunalitative methods		
Feature	Collect and analyse quantitative and qualitative data in the same phase to compare how these data sets support one another, results interpreted together, and richer than mono-method design.				
Sequential explanatory	Explaining	Equal	Quantitative methods	Qualitative methods	
Feature	Quantitative, followed by qualitative. data, dynamic, interactive, iterative				
Sequential exploratory	Building	Quantitative	Qualitative methods	Quantitative methods	
Feature	Commence with a broad focus, qualitative followed by quantitative data, dynamic, interactive, iterative				
Sequential multi-phase	Explaining	Equal	Qualitative methods	Quantitative methods	Qualitative methods
Feature	Most advanced, dynamic, interactive, iterative				

Source: Author (2019), based on Creswell (2015); Bryman (2016); Saunders et al. (2016)

As indicated in Table 5.8, in the Concurrent Design/Convergent Design [CD], both quantitative and qualitative data are collected and analysed concurrently, then the individual results are *merged* to be compared or validated with each other. However, this design does not fit the discussion in 5.7.2 on the integration relation.

The exploratory research requires the process to either explain or build upon each other, but not to merge at one time. In addition, this CD does not fit any of the three prominent features demonstrated in the research background:

- The exploratory research needs initiation for the research but not to occur concurrently;
- Among the multi-disciplines, there should be prioritisation and for this project; also, as stated, to avoid bias from a small number and achieve generalisation feature, the quantitative stage is justified to be prioritised;
- The sensitive ethics subject itself makes it difficult to attain rich and authentic in-depth data, particularly in socialist China, where management staff are under more scrutiny than common staff. This sensitive situation necessitates a sequential process that

gradually helps build trust from these populations, intending to gather rich and in-depth date at the preliminary stage and of clarifying any inconsistency at the refinement stage.

Similarly, the Explanatory Sequential Design [ESD] does not fit this research, for there is no exploratory stage to be coherent with the exploratory nature, the complexity of multi-disciplines and the sensitive ethics subject. Moreover, the explanatory integration also does not fit, by lacking initiation to deal with the sensitive ethics subject.

5.7.4 Adaptation by combining exploratory and sequential features

The Exploratory Sequential Design [ESD] has exploratory and sequential strengths, starting with a qualitative stage to initiate the research and focusing on a followed-up quantitative stage for data generalisation. However, there is no last stage to clarify key data from the main quantitative stage for higher reliability, such as inconsistency.

In terms of stages, the Multi-phase Sequential Design [MSD] suffices. MSD has a final refinement stage (Table 5.8). Nevertheless, its integration to '*expand'* or *'elaborate'* between each stage does not fit this exploratory project.

Therefore, there are two alternatives to modify either of them. Table 5.9 shows the modified designs of ESD and MSD. The combined method is called Exploratory Sequential Multi-phase Mixed Research Method [ESMMRM]. However, the scale and form of research at the last refinement stage is subject to the features of the research and the necessity for data clarification.

Table 5-9: Combination of ESD and MSD Designs- ESMMRM

Mixed designs	Phase 1	Phase 2	Phase 3
Adaptation Alternative 1			
ESD	Qualitative methods	Quantitative methods	
Original integration	Initiation to build into Phase 2	Prioritisation	None
Adapted features	**Keep** initiation feature	**Keep** prioritisation feature	**Add** qualitative refinement stage
Adapted ESD	Qualitative methods	Quantitative methods	Qualitative methods
Adaptation Alternative 2			
ESD	Qualitative methods	Quantitative methods	Qualitative methods
Original integration	Equal expanding	Equal expanding	Equal expanding
Adapted features	**Change** expanding to build to Phase 2, an initiation,	**Change** expanding to prioritise Phase 2	**Change** expanding into refinement and validation of Phase 2
Adapted EPSD	Qualitative methods	Quantitative methods	Qualitative methods
A new design of ESMMRM combining ESD & EPSD			
ESMMRM for this research	Qualitative methods	Quantitative methods	Qualitative methods
Integration	Initiation to build into Phase 2	Prioritisation	Refinement
Features	Exploratory initiation in the preliminary qualitative phase	Prioritised quantitative phase (literature review, instrument development, and implementation)	Refinement in the final qualitative phase

Source: Author (2019), based on Creswell (2015), Bryman (2016) and Saunders et al. (2016)

5.7.5 Further adaptation with an advanced mixed design

This ESMMRM has further adopted features of an advanced mixed model to amplify its main stage: Multistage Evaluation Design [MED] (Creswell, 2015) (Figure 5.2).

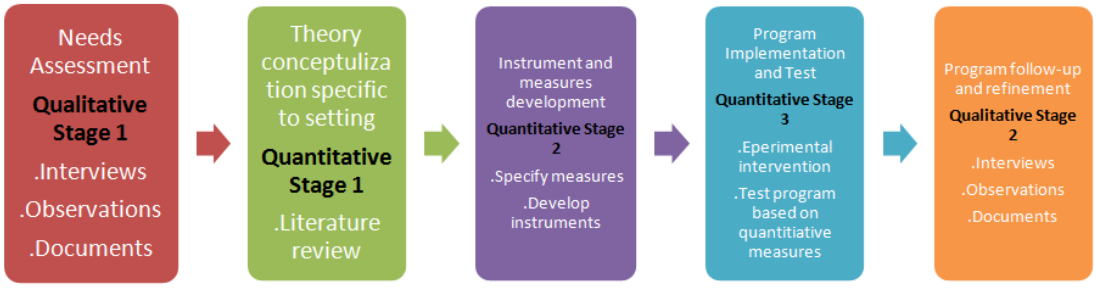


Figure 5-2: Multistage Evaluation Design
Source: Reproduced from Creswell (2015)

According to Figure 5.2, this MED consists of one initial qualitative stage, followed by three sub-quantitative stages and one qualitative refinement stage. The three main stages and sequences are similar to the adapted ESMMRM, indicating its success. In addition, the separation of the three quantitative stages has ensured thorough and in-depth quantitative research. To amplify the credibility of the main stage of this thesis, the main quantitative stage in ESMMRM is further modified into three sub-quantitative stages (Figure 5.3).

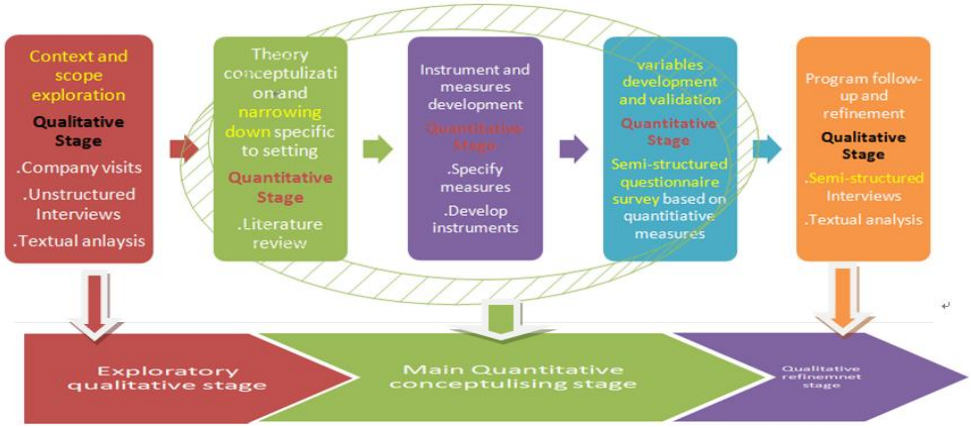


Figure 5-3: Modified ESMMRM Design incorporating advanced features
Source: Author (2019), based on Creswell (2015); Saunders et al. (2016)

Nevertheless, each stage in the advanced design is relatively a dependent research project, convenient for large scale assessment and evaluation (Creswell, 2015). The integration in the advanced model of being 'equal' and 'explaining' are also not suitable for a single researcher (ibid). Therefore, the scale of the three sub-quantitative stages and the last qualitative refinement stage will not be the same.

5.7.6 Strength summary of ESMMRM

The new design has strengths to fit the three key features of this research:

1) The resulted new design consists of systematic procedures including initiation, generalisation, facilitation, and clarification to accommodate multidisciplinary features and fit the exploratory and sensitive ethics subject.

2) Its prioritisation feature at the quantitative stage can ensure large scale data and enhance generalisation, particularly, the sub-division of the original quantitative stage into three can enhance data validity.

3) This researcher has employed a number of techniques to enhance the discovery of new insights, whilst recognising limitations of misleading or giving hints (Saunders et al., 2016), as follows:

3.1 Adoption of a prioritisation strategy across the research design process and particularly in Stage 2 (Table 5.10), as are summarised in Table 5.11. The activities marked with a are essential and, therefore, prioritised.

Table 5-10: Prioritisation in the Research Activities

No	Prioritisation in the Research Activities
1	Several methods developed the questionnaire, but variables derived from the literature review are prioritised, others are used as complementary.
2	Within the diversified perspectives in questionnaire validations, the feedback from the business and management background is more focused compared with feedback from culture, ethics, and the automotive industry.
3	Two types of questionnaires were developed. However, as the principal agent of EI, the management one was more instrumental.
4	Given the exploratory and abductive research design (Section 4.6), there was a focus on quantified qualitative and descriptive data (Dawson, 2017). Thus, in the analysis, compared with inferential data, descriptive data were focused on (ibid).

Source: Author (2019)

Table 5-11: Prioritisation adopted in the Quantitative Stage

Stage 2	Research activities	Priority
Questionnaire variables development	Variables derived from the literature review	
	Diversified perspectives at validation meetings	
	Pilot study	
	Pilot feedback meetings	
	Credibility test of Cronbach's Alpha	
Questionnaire design	The questionnaire for managers	
	The questionnaire for trainers	
Questionnaire analysis	Descriptive analysis of the frequency	
	Descriptive analysis of cross-tabulation	
	Inferential analysis of correlation with P-values	

N.B. The priority is symbolised by
Source: Author (2019)

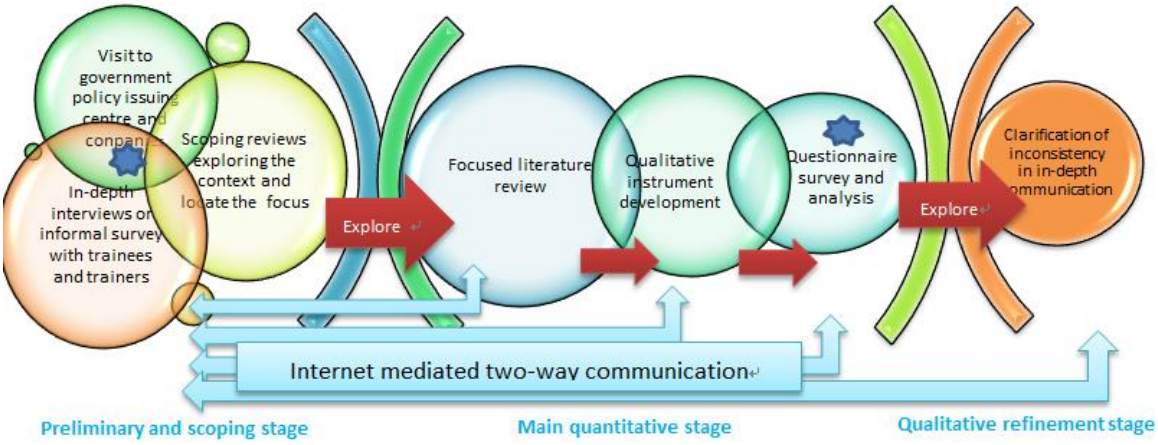
3.2 To employ many methods to ensure the most effective and efficient exploration result. For example, in the initiation stage, to yield naturalistic and spontaneous in-depth responses, all forms of methods were utilised (Saunders et al., 2016). These included unstructured interviews with trainers and trainees, company visits or document textual analysis or interpretations.

3.3 To employ efficient internet-mediated communications given, some are believed to be relatively more efficient in helping investigate issues than others (Dudovskiy,

2014). The Chinese Apps *WeChat* and *QQ* were embedded throughout the whole research journey and facilitated timely and in-depth communication. During the time this project was conducted, the researcher closely connected with people in the CAI via these tools. This approach helped to validate or clarify important information instantly, as well as keep the author abreast of new policies or regulations that might be related to the project, such as the recent policy on share lifting (The Economic Times, 2018) and the party branch building in joint ventures (CPC NEWS, 2012).

3.4 It is important for researchers to visually represent their mixed-methods procedures, which has become one of the features of mixed methods (Saunders et al., 2016). Its benefits lie in the fact that such graphical modeling of the study design might lead to better understanding of the characteristics of the design, including the sequence of the data collection, priority of the method, and the connecting and mixing points of different forms of data within a study (Ivankova et al., 2006). Figure 5.4 is the research method map portraying the exploratory integration and unique mechanisms for facilitation in the whole research journey. The author has also designed two research posters (Section 10.3).

Exploratory Sequential Multi-phase Mixed Research Method



N.B. The priority is symbolised by

Figure 5-4: A graphic display of ESMMRM
Source: Author (2019)

5.8 The survey design

After the methodological justification of an adapted mixed research method, consideration

of the selection of research strategies follows. There are eight strategies: experiment, survey, archival and documentary research, case study, ethnography, action research, grounded theory, and narrative inquiry (Saunders et al., 2016).

The survey strategy seems to have more features in common with this research. The survey strategy is usually associated with a deductive research approach, and is prevalent in business and management to answer 'what', 'who', 'where', 'how much' or 'how many' questions, which is popular in exploratory and descriptive research (ibid).

However, in using the survey, some points require due attention (Creswell, 2015):

- It is necessary to spend time ensuring that the sample is accurately representative;
- With a limited number of questions, data collected may also be restricted;
- When designing and piloting a data collection instrument, it is important to ensure a good response rate;
- Preparing and analysing data is time-consuming.

This project has adopted a survey design strategy, with measures taken to overcome these potential issues:

- The research has ensured that the data are representative. As indicated in Section 3.2.7, of the six major automotive corporations (Table 3.8), namely FAW, BAIHC, SAIC, Dongfeng, Chang'an, and GACC, four of them were sampled. The four sampled companies of FAW, SAIC, Dongfeng, and GAC account for 66.67% of the main corporations.

- This researcher has taken measures to ensure data collection is rigorous; through the adoption of a mixed methods approach and design to accommodate both qualitative and quantitative data. As discussed in Section 5.7, the quantitative data collection tool of the questionnaire survey was designed and used in the main quantitative stage (Stage 2) to achieve a macro perspective with generalised results due to the large quantity of data. In addition, non-standardised qualitative interview data collection or clarifying communication (in-depth, unstructured, structured and semi-structured) was designed and used before and after the main stage due to its benefits for in-depth communication. The combination of both quantitative and qualitative data, with prioritisation from diversified perspectives, is regarded as a study strength (Section 5.7.6), and they

permeated the research activities of this project (indicated in Section 5.3).

- This project also deals with attitudes and perceptions towards ethics and values, which is difficult to assess. To overcome this, the researcher employed means to scale people's attitudes, which allows for such data to '*be counted as frequencies and numerically coded for statistical analysis*' (Sanders et al., 2016, p172). Consequently, a large sum of 'quantified' qualitative data has contributed to a higher generalisation and convenience in data analysis (Appendices 5.1 and 5.2). Moreover, the non-numerical data generated through the open questions in the survey, and a large number of qualitative data from the informal research activities in the preliminary and refinement stages have also allowed for further triangulation or clarification, enhancing the overall reliability and validity of the research (Figure 5.4).

- Measures have also been taken to support a high response rate. A delivery and collection tool was employed to administer questionnaires on the spot (Section 5.12). A convenience sampling approach was adopted; the familiarity and connection with the sampling population ensured a good response rate in the piloting and survey processes.

- The author also allowed for sufficient time to prepare and analyse data. Since the collection of the survey data in July 2016, the data analysis and validation has taken approximately two years. In addition, there is strength in the integrated utilisation of data in the survey, as indicated in Table 5.12.

Table 5-12: The integrated utilisation of data in the survey

Stage	Description	Research instruments used or developed	
		Informal	Formal
Stage 1 (Qualitative 1)	Qualitative exploratory stage	· Documents from public domain; · Unstructured, and semi-structured interviews and questionnaires.	None
Stage 2.1 (Quantitative 1)	Theoretical conceptualisation	· Internet-mediate Chinese *WeChat/ QQ* and email communications; · Company visits.	Literature Review from academic sources.
Stage 2.2 (Quantitative 2)	Quantitative instrument and measures development	· Documents from company homepage; · Internet-mediate *WeChat/QQ* and email communication.	Piloting report, Cronbach's Alpha value, feedback meetings
Stage 2.3 (Quantitative 3)	Quantitative surveys	The same as above	Semi-structured questionnaire
Stage 3 (Qualitative 2)	Qualitative clarification and refinement stage	Non-standardised communication.	None

Source: Author (2019)

5.9 Quantitative data collection instrument development and features

5.9.1 Design concept

The fundamental principle for the questionnaire was to fit the research aim and objectives, facilitating the answering of the research questions (Bryman, 2016). As indicated in Section 1.3, this research aims to critically evaluate the ethical elements in management training that effectively influence managers' EI in the CAI. The questionnaire was focused on the concept of 'EI', which consists of three consecutive stages, eventually resulting in decisions (Rest, 1986; Craft, 2013).

This design also had to fit the questionnaire design technique. According to the convention to start with the demographic information (Sanders et al., 2016), Part I was designed to deal with profile information to demonstrate, and reveal sampling representativeness. The whole design consists of six parts. Table 5.13 indicates the design concept.

Table 5-13: The concept of EI in the Survey Design

Parts	Contents
Part I	The demographic information;
Part II	The first philosophical stage (awareness);
Part III	The second philosophical stage (judgment);
Part IV	The third philosophical stage (intentions) and application in training;
Part V	Compatibility of the variables and application in training for EI impact;
Part VI	An open question probing more suggestions.

Source: Author (2019)

5.9.2 Design map

Based on design concept, the design map is shown in Table 5.14 (based on the final version dated 19/07/2016 for managers, Appendices 5.1 and 5.2). The map demonstrates the combination of the subject knowledge and company information.

Table 5-14: Questionnaire Design Map (version dated 19/07/2016 for managers)

Description	Q(s)	Design rationale
Part I Demographic data	**Q1-Q10**	**Objective 1**
Personal information: gender Q1, age Q2, and nationality Q3	**Q1-Q3**	Identify the representativeness of the sampling population.
Professional background: Company Q4; Ownership Q5; Foreign partner Q6; Position Q7; Department Q8; and Management level Q9	**Q4-Q9**	Identify the representativeness of managers' professional background. Some items, i.e., Q7 & Q9 may have correlations with managerial training or EI perceptions.
Education background	**Q10**	Education may have an impact on EI
Part II Ethical awareness	**Q11-Q14**	**Objectives 2, 3 &4**
Managers' general awareness of the four variables	**Q11**	Establish a philosophical basis for general discussion on ethics
Managers' enhanced awareness of the compatibility in the four variables	**Q12**	Establish a philosophical basis for general compatibility discussion
Managers' importance awareness of the four variables in the CAI	**Q13**	Establish a philosophical basis for discussion specific to the CAI
Managers' importance awareness of the impact of the four variables on EI in the CAI	**Q14**	Establish a philosophical basis for discussion specific to managers' EI in the CAI.
Part III Ethical judgment	**Q15-Q19**	**Objectives 2, 3 &4**
Using thematic apperception and semiotics to elicit managers' judgment on the real ethical issues.	**Q15-Q16**	Get a further insightful understanding of the managers' EI competence and ethical attitudes. Q15 probes naturalist qualitative responses.
Using vignettes and the third person to tease managers' in-depth judgments on the impact of the four variables on EI.	**Q17-Q19**	Get an insightful understanding of the managers' ethical judgment and real attitudes. Q18 offers in-depth qualitative responses to Q17.
Part IV EI impact and managerial training practices	**Q20-Q23**	**Objectives 2, 3 & 4**
The variable of WNE	**Q20, Q20.1-Q20.2**	To obtain combined information about the application of the four variables in managerial training on EI, preparing for pedagogical recommendations in the training programmes of Part VI.
The variable of Confucianism	**Q21, Q21.1-Q21.2**	
The variable of Communism	**Q22, Q22.1-Q22.2**	
The variable of EPE	**Q23, Q23.1-Q23.2**	
Part V Ethical variables compatibility in training practice	**Q24-Q27**	**Objectives 2, 3 & 4**
Compatible variables in management training in the CAI	**Q24**	To get data about the compatibility of the four variables in managerial training on EI; Q25 explores reasons for and validates results in Q24, and prepares qualitative data for interviews as well.
The subjective free opinion to validate the answer to Q24	**Q25**	
The level of agreement of the influence on compatible variables on manager's EI	**Q26**	
The level of recommendations to compatible variables in managerial training on EI	**Q27**	
Part VI Suggestions	**Q28**	**Objective 5**
Open suggestions for training providers and automotive companies on the four variables regarding EI and managerial training in the CAI.		Based on the previous opinions, to further probe open suggestions for future managerial training on EI enhancement.

Source: Author (2019)

5.9.3 Question design map

To enhance research effectiveness, it is important to design an appropriate question, the design of which is influenced by the purpose of each question and the variable types. This discussion is based on the final version questionnaire (dated 19/07/2016 in Appendix 5.1 for managers). The design concept applies both to the survey for trainers and managers.

Altogether six types of questions were identified as appropriate for use: open questions, open-ended question, closed-ended questions, vignette questions, probing question and specific/closed questions (Dillman et al., 2014; Bryman, 2016; Saunders et al., 2016). Three types of variables were used: demographic, attitude/opinion, and event variables (ibid). The following justification applies:

1) The majority of the questions were of open-ended design as the researcher was focused on exploring new and unexpected ideas or areas (Bryman, 2016), congruent with the exploratory research design (as justified in Section 5.6). It was argued that more closed survey options would not exhaust alternative answers, instead, might have a high potential to irritate/frustrate respondents if an appropriate option was not offered (ibid). In these instances, the option of 'Other (please specify)' was added, or category options were utilised instead of specific aspects, e.g., an age group but not each age (ibid) (i.e. Q2).

2) A few questions were designed as closed-ended due to necessity, e.g. the filter questions (i.e. Q20), and single Liker Scale questions (i.e. Q19). The former is due to their feature of being data of dichotomy; the latter is expected to choose between 'Yes' or 'No', designed to get a definite answer from these options.

3) The third type of question design was very open, e.g. the vignette question of Q15 allowed participants to reveal their attitudes without hint or interference freely. The last question of Q28 offered opportunities for participants to offer a free recommendation for training. There were also open probing questions to explore a focused direction, such as Q18 in probing reasons for the choice of Q17.

Overall, the questionnaire design presented in the closed-ended or open-ended questions were the main quantitative questions, and the open and probing questions were qualitative.

The question variety allowed for the combined advantages of both qualitative and quantitative data to fit the mixed methods and to meet the key features of being multidisciplinary, exploratory and ethics-sensitive. These questions were mixed to mutually enhance data reliability and validity. Moreover, in the open-ended questions, the 'Other' option may also provide qualitative non-numerical data. Thus, within a single question, there was a combination of quantitative and qualitative data.

Table 5-15 displays the design rationale for each question, based on the advantages (Bryman, 2016; Saunders et al., 2016) and appropriateness of fit to the research in Appendix 5.3:

Table 5-15: A map of Question Design Types and Rationale (dated 19/07/2016 for managers)

Question Description		Q(s)	Type	Design Type Rationale
Part I Demographic data		**Q1-Q10**	**Objective 1**	
Personal information	Gender	**Q1**	Closed-ended/ dichotomous	Natural types, and fits Chinese habit
	Age	**Q2**	Category options for age, open-ended with the 'Other' option at the end for others.	More varieties, new responses
	Nationality	**Q3**		
Professional background		**Q4-Q9**		
Education background		**Q10**		
Part II Ethical awareness		**Qs 11-Q14**	**Objectives 2, 3 & 4**	
Awareness of the four variables		**Q11**	Open-ended Likert Scale questions, with the 'Other' option at the end.	Quantitise qualitative data for high generalisation and survey convenience; the open-ended "Other" option offers opportunities to explore new areas and unusual answers
Enhanced awareness of the compatibility in the four variables		**Q12**		
Importance awareness of the four variables in the CAI		**Q13**		
Importance awareness of the impact of the four variables on managers' EI in the CAI		**Q14**		
Part III Ethical judgment		**Qs 15-Q19**	**Objectives 2, 3 & 4**	
Ethical judgment by Vignette question		**Q15**	Open questions	Useful to tease attitudes
Ethical judgment by Vignette probing question		**Q16**	Open-ended, multiple choices, with the 'Other' option	The same reason as in Qs11-14
Ethical judgment by Vignettes question		**Q17**	Open-ended Likert Scale questions with the 'Other' option.	
Ethical judgment by Vignettes question		**Q18**	Probing questions.	Explore on focused aspects
Recommendation and application in the CAI, based on the ethical judgment above		**Q19**	Closed-ended Likert Scale questions.	Quantify qualitative data for generalisation and survey convenience
Part IV Ethical intention and managerial training practices		**Q20-Q23**	**Objective 2, 3 & 4**	
Western ethics variable in management training		**Q20, Q20.1-Q20.2**	Q20, Q21, Q22 and Q23 and their first sub-question were close-ended questions, and their second sub-question was open-ended.	The four filter questions and the first sub-question needed to make a choice, but the second sub-question used the open-ended questions to generate more opinions.
Confucianism variable in management training		**Q21, Q21.1-Q21.2**		
Communism variable in management training		**Q22, Q22.1-Q22.2**		
Ethical Principles for Engineers variable in managerial training		**Q23, Q23.1-Q23.2**		
Part V Ethical variables compatibility in training practice		**Q24-Q27**	**Objective 2, 3 & 4**	
Compatible variable in management training in the CAI		**Q24**	Open-ended	Allow unusual responses or new ideas
The subjective free opinion to validate the answer in Q24		**Q25**	Open	Useful to reveal attitudes or obtain facts
The level of agreement of the influence of compatible variables on manager's EI		**Q26**	Close-ended	Clarify the meaning of a question
The level of recommendation of compatible variables in management training on EI		**Q27**	Closed-ended	Clarify the meaning of a question
Part VI Suggestions		**Q28**	**Objective 5**	
Open suggestions			Open	Useful to reveal attitudes or obtain facts

Source: Author (2019)

5.9.4 Features of embedding facilitation techniques associated with ethics research

Amongst all psychological characteristics, attitudes are possibly the most conspicuous (Riley 2000). In addition, ethics as a subject has sensitivities which can create difficulties in gathering authentic and in-depth data (Bryman, 2016). Consequently, two techniques, the use of Likert Scales and projective techniques were employed.

5.9.4.1 Use of attitude measurement of Likert Scale

Numerous methods have been used to measure character and personality traits, and the Likert Scale is one of the most commonly used (Likert, 1932). The Likert Scale is a psychometric response scale primarily used in questionnaires to obtain participants' preferences or degree of agreement with a statement or a set of statements (ibid). It is widely used in business and management research. Its strengths, as summarised below, are particularly important to this research, within which a large body of quantitative attitudinal data needed to be processed efficiently:

- Simple to construct, likely producing a highly reliable scale and being easy to read and complete for participants (Likert, 1932);
- Convenient to pre-code information for easy data process (Bryman, 2016), and easy to read and complete for participants (Bertram, 2007; Joshi et al., 2015);
- Effective to quantify qualitative data for the survey (Bryman, 2016). The scaling is believed to be quantifiable that 'subjective' attitudes are 'relative concepts' and can be measurable by quantitative scales (Riley, 2000, p.119).

However, its weakness should also be noted, which might include:

- Central tendency bias that participants may avoid extreme response categories;
- Acquiescence bias that participants may agree with statements as presented to 'please' the experimenter;
- Social desirability bias that participants may portray themselves in a more socially favourable light rather than being honest (Bertram, 2007; Joshi et al., 2015);
- It might also be difficult to transfer these qualities into a quantitative measure for data analysis purposes (Boone and Boone, 2012).

Concerning its potential weaknesses, measures were adopted to mitigate:

1) Scale options can vary: odd (3, 5, 7 or 9 points) and even (4, 6, 10 points). Some practitioners advocate the use of 7 and 9 - point scales, which add additional granularity (Bertram, 2007). The literature of ED and EI related to culture and decisions in the organisation is more commonly making use of the 7-point scales (Cohen et al., 2001; Valentine and Rittenburg, 2004; Elango et al., 2010).
2) To save space, the horizontal format was adopted (Bryman, 2016).
3) Reversed scales in descending order were adopted, avoiding the convenience of choice (Bryman and Bell, 2015) and avoiding the thinking mode of the natural sequence (Kumar, 2014; 2019).

The scaling design was tested thoroughly, inviting a variety of perspectives and pilot feedback. Figure 5.5 indicates the example by Kumar (2014; 2019) and the design in the research.

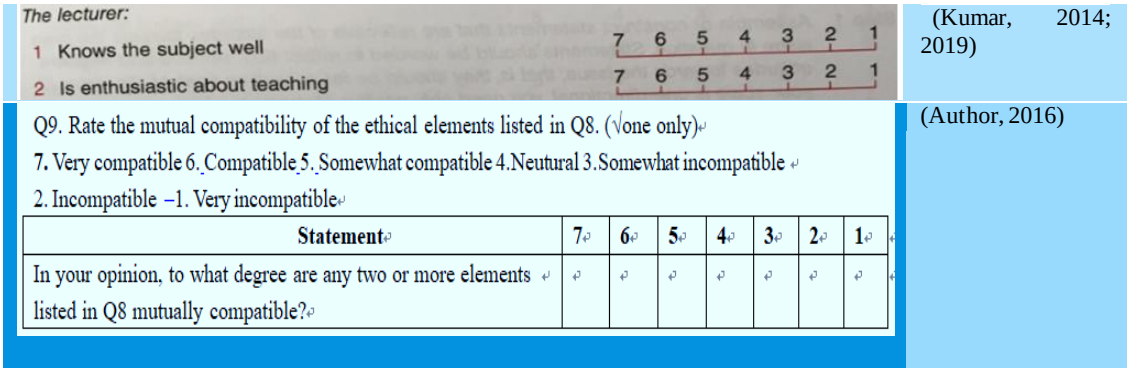


Figure 5-5: Seven-point reversed horizontal numerical scales
Source: Author (2019)

5.9.4.2 Use of projective techniques

Projective techniques are used commonly to support the gathering of unbiased data (Cooper and Schindler, 2013) and in sensitive situations, such as consideration of ethical issues in this research instance, where people may be less reluctant, to tell the truth (Crouch and Housden, 2012). Examples of techniques include thematic apperception/ picture interpretation, third person, word association, sentence completion, story completion, cartoon completion, and psychodrama (Crouch and Housden, 2012). Vignettes or ethical stories or scenarios are also approaches that can help explore in-depth data about participants' moral reasoning (Mah et al., 2014). The use of signs or symbols and semiotics are also techniques to consider (Mick, 1986).

The following depicts each projective technique and indicates their benefits:

- Vignettes are ethical stories, which are widely used in teasing ethical attitudes (Renold, 2002). The vignettes or scenarios are designed to elicit opinions in an objective and unconscious way (Renold, 2002). Vignettes can be used both quantitatively and qualitatively. When vignettes are employed within a quantitative approach, they are usually used as a self-contained method or integrated within a large-scale questionnaire. Participants are presented with some scenarios, and their responses are elicited using a Likert-style format of a predetermined category that follows the vignettes (Mudrack and Mason, 2013).

- In engineering, to anticipate the moral impact of products-in-design, tools such as the Moral Impact Anticipation Tool (MIAT), in which mediation theory and techno-moral scenarios have been developed (Claas, 2015). Techno-moral virtues deal with ethics or moral philosophy within the realm of technology (Vallor, 2016).

- Thematic apperception, also known as picture interpretation, allows for a scenario whereby an individual is required to bring his or her point of view to interpret or complete an ambiguous stimulus provided by the researcher (Crouch and Housden, 2012).

- Semiotics is terminology and a method that can help clarify and understand the role of embodied meaning (Mick, 1986). The advantage is that it provides descriptive insight into signs and symbols that are usually widely used in media and consumer research content analysis (Macnamara, 2005).

- The technique of the 'third person' also referenced as the 'friendly Martian' (Crouch and Housden, 2012) is widely used in products and services for participants who must explain what someone else or a 'friendly Martian' might do (ibid). This approach makes it possible to ask questions more objectively without falsely raising the awareness of the participant, or for the interviewer to provide too strong a steer/influence.

Based on these benefits, these projective techniques were utilised in this research. The most important was the use of vignettes, embedding them into the questionnaire supplemented by Semiotics and Thematic Apperception, as detailed below:

- The fundamental problem of survey research lies in its omission of the contextual information vital to realistic decision-making (Renold, 2002). Therefore, the technique of vignettes in the form of scenario stories was used in the survey to elicit participants' in-depth attitudes towards EI in the CAI.

  Based on these considerations, the officially published Volkswagen Diesel Gate Emission Fraud in BBC News (Hutton, 2015), in which Volkswagen cheated in the design for an environmental test in the USA, fits the requirement and therefore was embedded as a vignette/scenario in the questionnaire. According to the four stages of EI (awareness, judgment, intention and behaviour) (Rest, 1986), attitudes towards EI are based on the initial awareness and judgment survey, which are sensitive and it is difficult to perceive their authentic and in-depth feedback. Therefore, the Volkswagen Diesel Gate Emission Fraud vignette was infused into Part III (ethical judgment stage) (refer to Table 5.14, the design map or the questionnaires for managers and trainers in Appendices 5.1 and 5.2).

  As indicated in Table 5.14, the vignette was used in Q17, Q18 and Q19. The open-ended question of Q17 was followed by an open probing question in Q18 to explore responses further. Q19 was designed by using the Likert Scale to triangulate their response. These vignettes were validated and piloted together with the full questionnaire validations for nine times to most appropriately fit the research. The original length of the story was embedded, but after the pilot study, at the feedback meeting, suggestions were raised again about the ethical story for its length. The relatively long story had added to the length of the questionnaire, and more importantly, these participants were engineers or employees in the automotive industry who were familiar with the story and technique description. Therefore, the original vignette story was shortened and rewritten under their guidance (Table 5.16 or Part III in Appendix 5.1 /Appendix 5.2).

Table 5-16: Evolution of the vignette in the Questionnaire Survey

Original vignette
What is Volkswagen accused of? It's been dubbed the "diesel dupe". In September, the Environmental Protection Agency (EPA) found that many VW cars being sold in America had a "defeat device" - or software - in diesel engines that could detect when they were being tested, changing the performance accordingly to improve results. The German car giant has since admitted cheating emissions tests in the US. VW has had a major push to sell diesel cars in the US, backed by a huge marketing campaign trumpeting its cars' low emissions. The EPA's findings cover 482,000 cars in the US only, including the VW-manufactured Audi A3, and the VW models Jetta, Beetle, Golf and Passat. But VW has admitted that about 11 million cars worldwide, including eight million in Europe, are fitted with the so-called "defeat device". The company has also been accused by the EPA of modifying software on the 3-litre diesel engines fitted to some Porsche and Audi as well as VW models. This 'defeat device' sounds like a sophisticated piece of kit. When the cars were operating under controlled laboratory conditions - which typically involve putting them on a stationary test rig - the device appears to have put the vehicle into a sort of safety mode in which the engine ran below normal power and performance. Once on the road, the engines switched out of this test mode. The result? The engines emitted nitrogen oxide pollutants up to 40 times above what is allowed in the US. *Source*: BBC News (Hutton, 2015).
Revised vignette
What is Volkswagen accused of? The German car giant has since admitted cheating emissions tests in the US. VW has had a major push to sell diesel cars in the US, backed by a huge marketing campaign trumpeting its cars' low emissions. However, in September, the Environmental Protection Agency (EPA) found that many VW cars being sold in America emitted nitrogen oxide pollutants up to 40 times above what is allowed in the US. The EPA's findings cover 482,000 cars (including Jetta, Beetle, Golf, Passat and Audi A3). This is because VW had a "defeat device" - or software - in diesel engines. When the cars were operating under controlled laboratory conditions - which typically involve putting them on a stationary test rig - the device appears to have put the vehicle into a sort of safety mode in which the engine ran below normal power and performance. Once on the road, the engines switched out of this test mode. *Source*: BBC News (Hutton, 2015).

Source: Author (2019)

- Other projective tactics such as 'Thematic Apperception', 'Semiotics' and 'Third Person' were also infused with the story to enhance effect due to their benefits of allowing an individual to bring his her point of view to interpret or complete an ambiguous stimulus provided by the researcher (Crouch and Housden, 2012).

  For example, 'Thematic apperception' was utilised by using an image for participants to view and interpret (Figure 5.6). The participants were asked 'Q15. What kind(s) of the ethical issue(s) do you perceive from Image 1?'

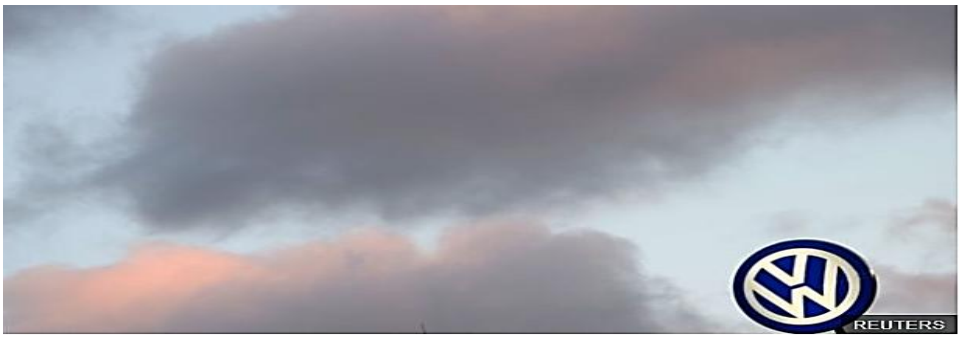


Figure 5-6: Image 1 of Volkswagen emission scandal situation
Source: Hutton (2015)

This research also utilised 'Semiotics' by embedding the damaged logo of the Volkswagen Company (Figure 5.7). Based on it, the participants were asked to finish Q16 '*Rank the importance for the management of Volkswagen of the following ethical aspects that might be conveyed by the damaged image*'.

Figure 5-7: Image 2 of Volkswagen damaged logo
Source: Hutton (2015)

The 'Third Person' approach was also utilised in asking questions related to the vignette. The questions (Q15-Q17) were asked by taking the participants as the 'third person' and without giving any hint so that they could offer an objective response, particularly in Q15.

5.9.5 Development process

The validation of questionnaires is a necessary stage in conducting research (Saunders et al., 2016). This questionnaire survey has been subject to ten adaptations, including nine initial feedback meetings and one pilot feedback meeting. These activities have effectively validated this survey design making use of a variety of perspectives (Figure 5.8), supporting goals for rigorous multidisciplinary research (stated in Sections 2.2 and 4.2). The design has also considered the aim, objectives, and research questions. As an innovation, this research has produced a formal report after each validating event to reflect the evaluation.

Figure 5-8: Survey design development perspectives
Source: Author (2019)

The following is the design outline summary according to the final questionnaire survey dated 19/07/2016 (Appendix 5.1 and Appendix 5.2). This summary was also based on the design concept (referred to Table 5.13 in Section 5.9.1 and Table 5.14 in Section 5.9.2) and the design map with question types (see Table 5.15 in Section 5.9.3).

Part I contained demographic variables to get data from the participants. The analysis of these data also helped validate the representativeness of the total population (Saunders et al., 2016). They were mostly designed as open-ended.

Part II contained attitude variables in open-ended questions, designed to get data on the participant's awareness of the core ethical values in the CAI. This stage was the first stage of EI.

Part III included variables designed to get participants' attitudinal data about ethical judgment. To elicit real opinions, the real ethical vignette story of Volkswagen Scandal was integrated (Section 5.9.4) through the use of 'Semiotics' and 'Semantic Appreciation'. This stage was the second stage of EI. To validate data from Part II and get insightful opinions, open-ended questions, open questions and probing questions were included.

Part IV contained both attitude variables and event variables, designed to obtain data about participants' EI and pedagogic data on the four value variables in the managerial training practices. This stage was the third stage of EI. The main question and their first sub-questions were designed close-ended for the necessity to make a choice, such as a filter question; while the second sub-questions were designed open-ended to intake more opinions.

Part V dealt with compatibility among the four variables in training. Q25 was designed as a follow-up probing question to Q24; the other questions were designed as open-ended to intake more opinions.

Part VI invited freely structured opinions from participants about the variables in training; avoiding the constraints/limitations of subscribed options.

5.10 Pilot study and report

A pilot study, also known as a feasibility study, is run before the finalised study (Collis and Hussey, 2009). A pilot is always desirable before administering a self-completion questionnaire or structured interview (Bryman, 2016), illuminating any instrument or question deficiencies (ibid).

The pilot sample group and sample size were also carefully considered, with members not expected to be participants in the full study, for it may have affected the representativeness of any subsequent sample (Bryman and Bell, 2011). They included a small set of respondents who were comparable to members of the final sample population (Bryman, 2016).

To improve the pilot efficiency, an expert or a group of experts may comment on the representativeness and suitability of the questions in the questionnaire; establishing content validity and opportunity for amendment (Saunders et al., 2016). Before piloting, nine validating meetings were held with a group of experts (see Figure 5.8 in Section 5.9.5), with the questionnaires adjusted accordingly. Each validation activity was conducted with an expert from a related area; their comments on the suitability of the questions in terms of context and design form have significantly helped enhance the validity of the questionnaire before the pilot.

Based on the nine amendments in this research, before the formal questionnaire survey, a

pilot was conducted with a valid sample of 20 (25 invited), thus an 80% return rate. Results were fed back and discussed with experts from the automotive engineering field. Prior to the pilot, the previous nine validation meetings had been dominated by the Western point of view. Therefore the Chinese feedback, from managers, and internal and external trainers within the CAI was deemed essential.

A series of validation meetings took place during the period of 14th July-22nd July 2016, at the Automotive Engineering Depart in University A, with follow-up communications through telephone calls, *WeChat*, and emails. To sum up, this feedback was highly relevant and pertinent to the CAI, and were accordingly used to revise the questionnaire.

Cronbach's Alpha tests for internal consistency, which is an estimate of reliability showing test scores (Cronbach, 1949). This pilot's internal reliability (based on 20 usable questionnaires) Cronbach Alpha was 0.83, indicating high reliability of the pilot data.

The key points from the piloting were summarised as follows:

1. The pilot questionnaire was subjected to several validations, which was recognised to support credibility and validity, with the contents and structure agreed by the supervisory team. Generally, the pilot result had positive feedback. However, some problems were identified for additional action.

2. The seven-point Likert Scale was suggested to replace the five-point scale, due to its high-intensity measurement for this project and high reliability and validity. More importantly, as stated in Section 5.9.4.1, this would mirror the literature of ED and EI related to the culture, which more commonly employs this approach (Cohen et al., 2001; Valentine, 2004; Elango et al., 2010).

3. In Q16, some options such as 'filial piety' were believed irrelevant; therefore, were highlighted for an omission.

4. According to the engineers' point of view, the ethical story was too long, compromising the return rate of the questionnaires. Therefore, the vignette was shortened under their guidance (stated in Section 5.9.4.2).

5. The last was concerning the technique of page design and printing effect. It was suggested to print Q15 and Q16 on two separate pages, ensuring there was not any reference or hint from one to the other. To achieve the effect, Page 4 was left blank. Also, the two images were suggested to be printed in good quality colour to ensure clear images for observation and judgment. All the questionnaires were printed in one batch to ensure consistency of printing quality.

5.11 In-depth qualitative research activities

A key feature of this research project is the breadth of rich exploratory research activity to initiate and facilitate in-depth communication and exploration (Section 2.2 and 5.3). These rich qualitative research activities are captured in Figure 5.9 (highlighted within dotted red lines).

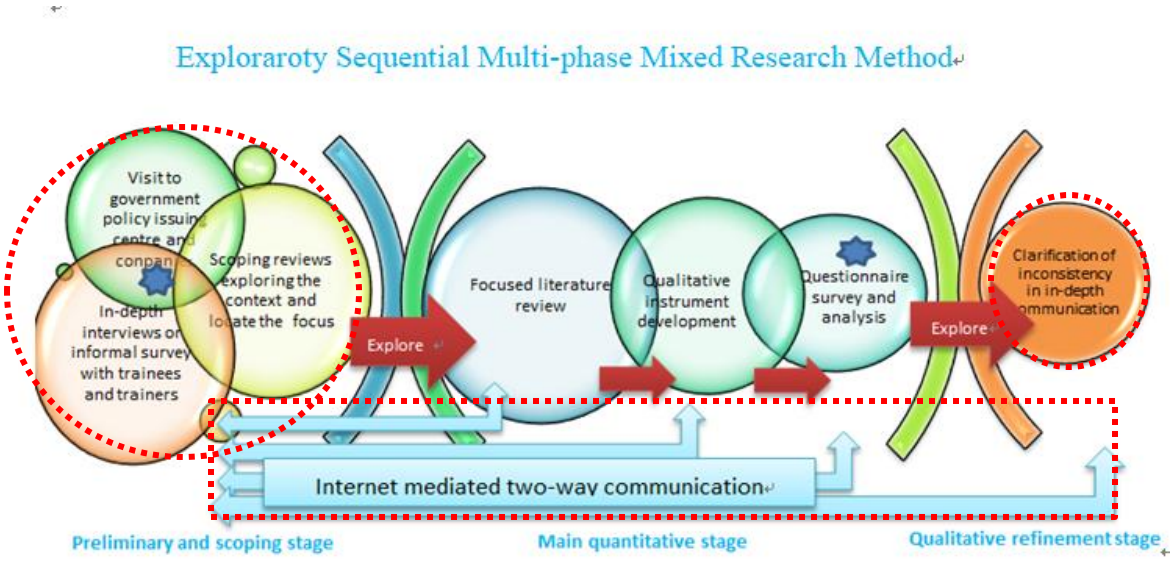


Figure 5-9: Summary of in-depth qualitative research activities
Source: Author (2019)

The highlighted data collected were not all strictly defined as formal qualitative, as many pieces of data from the unstructured in-depth interviews, field visits or text analysis could not be formally recorded and analysed (Saunders et al., 2016). However, the researcher carefully prepared each interview outline and recorded upon approval. This can be viewed from the evolution of different types of interview questions (Appendices 2.1-2.7) in that the original interviews were broader in topic, while the rest were more focused. For example, the first interview outline (04/2014 in Company D and Company F, Appendix 2.1) broadly

covered issues relating to ED, ethics in the whole product life cycle, marketing, culture, and training practices.

This meticulous preparation was also applied to the interview design. There are three types of interviews, namely, structured interviews, semi-structured and unstructured (Saunders et al., 2016). To fit this exploratory study, unstructured interviews were employed for in-depth communications. However, this project also utilised semi-structured interviews subject to the progress of the particular exploration degree and necessity (ibid); their fitness to this project was indicated in Table 5.17.

Table 5-17: Circumstances to carry out in-depth and semi-structured interviews

Circumstances	The nature of data collection questions	Fitness for this project
1	There are a large number of questions to be answered;	Yes
2	The questions are either complex or open-ended;	Yes
3	The order and logic of questioning may need to be varied	Yes

Source: Reproduced from Saunders et al. (2016)

These informal interviews can also be defined as non-standardised interviews (Saunders et al., 2016). To enhance its effects, all forms of interviews under the non-standardised type were utilised subject to necessity, as indicated in Figure 5.10 highlighted in the red dotted line. For example, to timely communicate with participants and help clarify issues arisen, the internet-mediated online communication was accompanied throughout all the research stages. One of the prominent benefits is that this approach can help '*establish personal contact and trust between each other'* in initial communication (Saunders et al., 2016, p.394). Other forms of non-standardised interviews were also utilised, such as face-to-face interviews during company visits and one to many in the form of a focused group in a visit to Company D and Company F (Appendix 2.5). In the refinement stage, the informal qualitative research activities in the form of communication were undertaken to clarify the inconsistencies in the quantitative survey and literature review and further refine the thesis outcome.

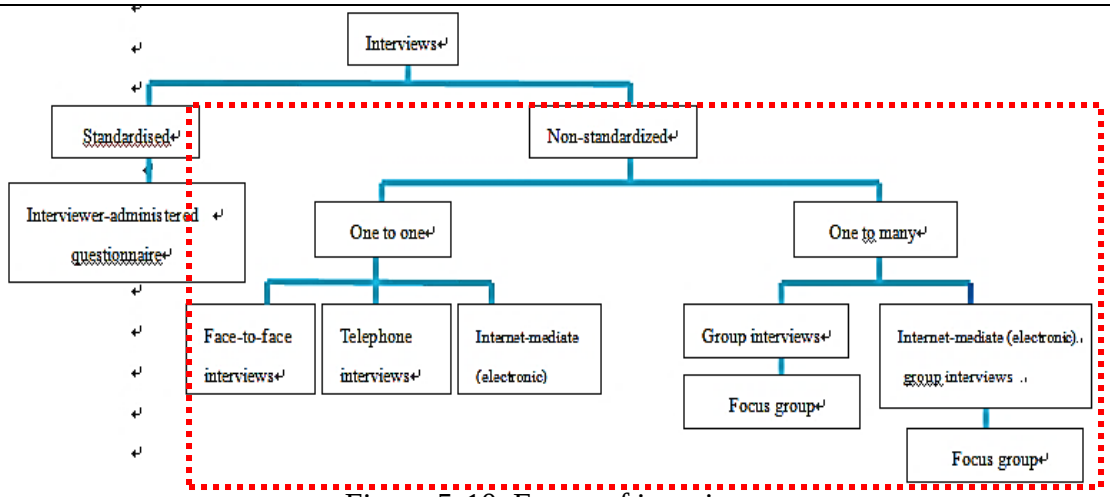


Figure 5-10: Forms of interviews

Source: Author (2019), based on Saunders *et al.* (2016)

5.12 Delivery and collection of self-completion questionnaire

Saunders et al. (2016) believe '*the design of a questionnaire differs according to how it is delivered, returned, or collected and the amount of contact the researcher has with the respondents*' (Saunders et al., 2016, p.441).

There are three major types of questionnaires:

- Self-completed questionnaires: Internet questionnaire; postal or mail questionnaires and delivery; delivery and collection questionnaires.
- Completed questionnaires/ telephone questionnaires.
- Face-to-face questionnaires/structured interviews.

The self-completion delivery and collection questionnaires have advantages to fit this research. One of the advantages of a questionnaire survey is to promote valid return; otherwise, the low return rate might impact the result (Bryman, 2016). Another strength is enhanced respondent participation by delivering and collecting questionnaires, and the confidence whether the right person has responded can be checked (Saunders et al., 2016).

This method also fits the research subject, being related to people's ethical values, which is sensitive in China. There were concerns people might not want to complete the whole questionnaire, which would impact the return rate. They may also consult others, thus contaminating the data (Saunders et al., 2016). By administrating the questionnaires on the spot, the researcher could control for the aforementioned concerns, assisting in the mitigation of potential contamination.

The author took measures to avoid drawbacks. As one of the important aspects of carrying out research, the author has kept close contact with the industry (Saunders et al., 2016). The author contacted each company to get consent and permission to conduct these surveys prior to the actual survey. In addition, the author has achieved trust and access to contact respondents with the sampling companies and obtained authorisation to be present to dispatch and collect questionnaires.

5.13 Sampling/Population

A sample is '*a set of elements selected in some way from a population*' (Sapsford and Jupp, 2006, p.25). Sampling aims to save time and effort and have an unbiased estimate of the population for the research (Sapsford and Jupp, 2006).

In the mixed research, two different kinds of sampling were utilised, including random sampling and purposeful sampling. The purposeful sampling is used more in the exploratory stage to interview the targeted person and get accurate information (Kumar, 2014; 2019). Random sampling is usually used in formal data collection to ensure high validity and avoid any bias. This research mainly used purposeful sampling in the exploration and refinement stage and random sampling for the formal quantitative survey.

In the formal quantitative survey, another two samplings were also utilised according to the industry situation, namely, convenience and snowball sampling:

- Although the specific sampling population was random, the contact with the companies ussed a convenience sampling strategy. The benefit is that '*a convenience sample is a non-probability sample that is selected because of its availability to the researcher*' (Bryman, 2016, p.689).

  It is indicated in Chapter 2 that there are six main auto corporations in China (Chen, 2016; He, 2018). Each corporation is based in a city or an area and radiates to other parts of China (SIC, 2014) (Table 3.8), resulting in around 14,149 automobile manufacturers by the end of 2015 (He, 2018). Therefore, this author focused on these main corporations. It was not easy to get approval due to the fact that the survey was about ethics perceptions among management staff within the main auto corporations of a pillar industry in China.

By using convenience sampling, the author was successful in gaining access and approval from four of them (FAW, SAIC, Dongfeng, GAGC), a percentage of 66.67%. This success was achieved through establishing familiarity with the management staff. This strength was underpinned by the fact the author had worked in a Chinese university that is famous for automotive engineering education and training, and had taken part in the management training programmes for auto companies. Therefore, the author was able to establish a trusted connection.

This convenience sampling was also utilised in the success of surveying a party school and a university. As stated in Section 3.2.4, China is under the leadership of the CPC, which is 'the founding and major ruling political party of the People's Republic of China (PRC)' (Hunt, 2015, p.118). Therefore, its ideology of Communism is dominant in China, and it is promoted through all forms of party schools (Lee, 2010; Pieke, 2015). As the main ideological training centre, due to the sensitivities of the suspect of ethical clashes between the West and the Communist ideology, it was challenging to get approval from the party school. By using convenience sampling, a party school and a university were finally accessed.

- In addition to the initial contact with the main corporations by convenience sampling, the author also needed to expand to more of their subsidiaries and joint ventures. Here, using snowball sampling, the author was successful in expanding to 18 auto companies and one auto research centre. The feature of a snowball being that '*it is a non-probability sample in which the research makes initial contact with a small group of people who are relevant to the research topic and then uses these to establish contacts with others*' (Bryman, 2016, p.696).

The sampling size also impacts the reliability of results. Some believe the size of sampling is indefinite; some claim the necessity to know the saturation point. However, these are only a subjective judgment (Kumar, 2014; 2019). For this research, to ensure high reliability, the researcher adopted the 7-point Likert Scale to enhance its reliability and validity within a definite size. In this research, around 300 respondents engaged in the questionnaire survey, including managers and trainers (294 valid returns).

Eighteen Chinese automotive companies and one research institute were involved. These companies and training centres are representative, accounting for 66.67% of main

auto corporations and of different ownership and functions in different parts of China (refer to Section 3.2.3). A training holder of a university and a party school also participated. The university is famous for management training in the auto sector. The party schools also hold many training programmes for the auto sector and offer ideological training for all levels of cadres in the industry.

Some of the population attended the refinement stage to clarify key results of EPE further. During the whole research process, the population was voluntary and anonymous. Certain techniques were utilised to hide or conceal the respondents' identities.

5.14 Data analysis tools

5.14.1 Quantitative data

As indicated in Sections 5.3 and 5.6, this exploratory research focused on the quantitative stage, although there was substantial data from in-depth communication, being defined as informal (Saunders et al., 2016) (Section 5.11), therefore, excluded in the formal data analysis. Consequently, data analysis methods focused on the quantitative stage. This section discusses the particular methods for quantitative data from the questionnaire surveys. The method for non-numerical data embedded in the questionnaire was discussed in 5.14.3.

The choice of the type of analysis method depends on many factors, such as the research design, characteristics of the variables, shape of the distributions, level of measurement, and whether the assumptions require a particular statistical test (Michael, 2001). Dawson (2017) also believes that there are generally several possible stages in data analysis; which type of analysis to apply at each stage depends on the research questions and objectives and the types of data available. Quantitative data consist of descriptive and inferential categories (Salkind, 2016). Consistent with the philosophy of pragmatism and pluralism adopted (Section 5.5), this research combined the two quantitative data analysis methods.

Inferential data are concerned with making causal inferences through probabilistic interpretations with twofold of both subjective and objective features (Russo, 2007). However, when inferential statistics draw a conclusion for population-based samples, sampling errors naturally incur, so they may not perfectly represent the population (ibid).

Moreover, the methods of statistics are the estimation of the parameter(s) and testing of statistical hypotheses (Laerd, 2017), which does not fit this exploratory research. As indicated in Sections 5.6, this research is exploratory research with no existing hypothesis to test.

However, by using inferential data to some limited extent, their exploratory feature can assist in exploring associations or correlations between variables, particularly multivariable correlations for the four sensitive ethical elements (Aspelmeier and Pierce, 2009; 2015). This additional method also enhanced triangulation for some variables from the cross-tabulation and Chi-square statistics perspectives (Dawson, 2017). Therefore, this research used inferential data to a limited extent.

Descriptive statistics are numbers that are used to summarise and describe data collected from an experiment, a survey, a historical record (Hebl, 2017). Different from inferential data, descriptive statistics do not involve generalising beyond the data at hand, and are therefore considered to be more objective (ibid). Besides providing objective and summarised information, these descriptive statistics may make people ponder the reason behind and beyond them, useful for exploratory research (ibid). Ethical related researches also need to be based on the objective summary to carry out further exploratory research, and it is preferale to not to be influenced by subjective inferences (ibid). Dawson (2017) also believes that an exploratory research, there are more descriptive data to explore reason and relations between variables objectively.

Therefore, this research focused on descriptive data and the descriptive analysis method, supplemented by inferential data to a limited extent. Many data analysis models underpin the combination of the two approaches. One model is called Exploratory Data Analysis (EDA), which has the feature to '*entail a two-stage process in which data are first surveyed and explored*' (Turkey, 1977, p. 331). Another is proposed by Dawson (2017) with a three-stage process, after the data tidying in the first stage, the second and the third stages are descriptive and inferential analysis. This process has the advantage to be based on descriptive data while using inferential analysis to draw inferences from the samples to the broader population. Within the two models, the descriptive and inferential analysis are equally combined to achieve high reliability and validity of results.

Within descriptive data, frequency tables and cross-tabulations are two commonly used

analytic methods in the social sciences (Michael, 2001) and were implemented in this research. The former is a method in univariate analysis, to summarise a single categorical variable in each category for the variable in question, by providing the number of people and the percentage (Bryman, 2016). The latter (or crosstab for short or contingency table) is one method in bivariate analysis, to summarise the relationship in a joint frequency distribution of cases based on two or more categorical variables, and aims to uncover and explore the possible relations between two variables (ibid). The frequency tables and cross-tabulations fit this exploratory research type and therefore, were utilised in its individual data and data comparisons, respectively.

The joint frequency distribution with the Chi-square statistics (X_2) was utilised but in very limited ways in this research. It is because using Chi-square is one of the most common ways of looking at the association between two categorical variables (Einspruch, 2005), and to determine whether the variables are statistically independent or if they are associated (Aspelmeier and Pierce, 2009). The Chi-square test of statistical significance assumes that both variables are measured at the nominal level (Cox, 2002). A two-tailed P-value of < 0 05 or 0.01 is accepted as significant (Field, 2013), as is the case in this research. For the unique function of cross-tabulation to show the relationship in some inferential data, this statistical analysis method was utilised after the univariable exploring and presenting. However, as exploratory research, there is no existing hypothesis, and therefore its effectiveness is limited.

For multivariate analysis, in addition to the frequency comparison, an inferential analysis of correlation was complemented. This is because the correlation coefficient can both quantify the strength of the linear relationship between ranked or numerical variables and help assess the strength of the relationship between variables (Saunders et al., 2016).

To assist quantitative data, IBM SPSS (Version 24) was employed. To sum up, this research focused on frequency and cross-tabulation for descriptive data, aided by a limited utilisation of inferential data analysis tool of Chi-square and correlations. The results generated are used to answer research questions or explore a possible relationship; those that need further validation were refined in the final stage.

5.14.2 Missing data

For the past 20 years, missing data has been a pervasive concern in quantitative research (Widaman, 2006). Consideration of missing data is important because it may affect whether

the data collected is representative of the population (Saunders et al., 2016, p.509). If missing data follow patterns, such as occurring for particular questions or a subgroup of the population, the results are unlikely to be representative of the population and should not be ignored (MacDonald, 2002). However, if there are random missing data items, then it is unlikely that they will affect the results representativeness (Allison, 2001).

The type of missing data that a researcher has in their dataset determines the appropriate method to use in handling the missing data before a formal statistical analysis begins (Bennett, 2001). Widaman (2006) identifies four of these origins of missing data under the heading of 'time non-response', 'scale non-response', 'time of measurement non-response', and 'failure to assess participants at intermediate times'. De Vaus (2013) identifies four main reasons for missing data:

- Not required as a skip generated by a filter question;
- Non-response question refused by the respondent;
- Not knowing the answer or not having an opinion, which is either treated as an answer or as missing data;
- Missed by mistake, or offered an unclear answer;
- Leaving part of a question in a question blank implies an answer, not as missing data

De Vaus' (2013) pattern is complete, which has considered the entire situation. For example, it indicates the natural filter questions, which exist in this questionnaire, such as Q20, Q21, Q22l, and Q23, which are part of a situation in which the answer was not known or left blank to imply an answer.

In the analysis process, missing data can be excluded from subsequent analysis when necessary. While sometimes, there is a need to distinguish for the reasons for missing data (Saunders et al., 2016), considering missing data analysis can help avoid any biases or inaccuracies in analysis and conclusion. Otherwise, the results will be biased; an amount of variability in the data will not be correctly estimated (Bennett, 2001). Therefore, this research has adequately considered the possibility of missing data guided by De Vaus' (2013) pattern, and some measures were taken to prevent and resolve missing data issues in the whole process of research (before, during, and after data collections).

This research considered the missing data and their pattern and impact, which were archived

for further investigation.

5.14.3 Non-numerical data

Although the large sum of informal qualitative data was difficult to record and analyse, the non-numerical data in the open-ended and open questions in the questionnaires were formal data and properly recorded. These non-numerical data retain their qualitative features; therefore, corresponding qualitative analysis techniques were imported.

There are several qualitative data analysis methods. The Grounded Theory method needs to develop code from the data and develop a theory (Glaser and Strauss, 2017; Charmaz, 2014). This approach did not fit this research, which is to critically review the derived ethical elements instead of developing a theory.

Qualitative content analysis and thematic analysis are two commonly used approaches to data analysis, but there are boundaries between them (Vaismoradi et al., 2013). Their main difference lies in the opportunity for quantification of data, and that measuring the frequency of different categories and themes is possible in content analysis (ibid). This feature of content analysis fits the research for the necessity to quantify these non-numerical data.

Its definition can also perceive the quantifiable benefit of content analysis. Berelson (1952, p.18) states that '*Content analysis is a research technique for the objective, systematic, and quantitative description of the manifest content of the communication.*' Saunders et al. (2016, p.608) also echo that '*content analysis is an analytical technique that codes and categories qualitative data to analyse them quantitatively*', they reinforced its four features of being '*objective, systematic, quantitative description and manifest content*'. '*Manifest conten*t' means that this technique is concerned with analysing what is apparent in the data (ibid). The whole research project is to identify the ethical elements existing, which is objective and requires thorough, systematic analysis based on what is apparent in the data. Therefore, content analysis fits these features.

Content analysis also has the advantage to analyse a wide variety of contexts, such as newspapers, other media such as radio and television programmes or to analyse textual material, such as documents, or online media (Bryman, 2016). Therefore, content analysis can handle these large numbers of non-numerical data in this research. In addition, content analysis is more likely to follow a step-by-step or sequential process. The process involves

sampling, devising analytical categories, defining the unit of analysis, conducting coding and undertaking quantitative analysis (Saunders et al., 2016).

To enhance the coding efficiency, two processes of coding from grounded theory were imported but not used strictly as in grounded theory analysis. Open coding and axial coding helped facilitate systematic and professional data processing due to their systematic coding strength (Glaser, 2016; Saldaña, 2015). The added coding feature provided a more complete picture of the information obtained than simple categorisation in content analysis (Strauss and Juliet, 1998; Corbin et al., 2014; 2015).

Open coding was used first. After reviewing data several times, it was found possible to start creating tentative labels for chunks of data that summarised what was happening in participants' words and establish properties of each code (Saldaña, 2015; Glaser, 2016). Based on open coding, axial coding was followed. It consisted of identifying relationships among the open codes, establishing properties of each code, and labeling them into more macro-categories (ibid).

This combination of content analysis and coding process from grounded theory made it more convenient and efficient analyse large sum of qualitative feedback. Philosophical foundations of mixed methods research also underpin this combination, and is consistent with this research. Stated in Section 5.5, this research adopted the research philosophy of pragmatism (Andrew and Halcomb, 2007; Morgan, 2007; Cameron, 2009), which accepts the use of multiple methods in one study (Tashakkori and Teddlie, 2010).

To sum up, for the non-numerical data embedded in the questionnaire surveys, content analysis was implemented, and partial analysis techniques from grounded theories of open coding and axial coding were incorporated to amplify the coding process for better analysis effect.

5.15 Reliability and validity

Reliability and validity are central to judgment about the quality of research by natural science and social science researches (Saunders et al., 2016). This research has taken measures in all its research processes to achieve high reliability and validity.

Reliability considers the replication and accuracy in measurement and consistency in

responses (Silverman, 2001). It is referred to as '*the consistency of a measure of a concept'* (Bryman and Bell 2011, p.158). Therefore if the repetition of the study produces the same results, it means the replication is very high. It is especially related to positivist studies (Collis and Hussey, 2009). Saunders et al. (2014) believed there is internal and external reliability. The internal reliability includes an appropriate design, and a well-designed questionnaire can also reduce the danger of results being unreliable (Collis and Hussey 2009).

In this research, a series of robust validation procedures have enhanced the quality of the questionnaire design (Saunders et al., 2016) (see Figure 5.8 in Section 5.9.5). In addition, most of the questions were designed to include a 7-point Likert Scale with a wide range of options to reduce risk due to limited options such as a 5-point scale, which might reduce the data validity (Gliem and Gliem, 2003). Measures were also taken to enhance the external reliability of the administrative process as specified in Section 5.12, such as delivery and collection of self-completion questions.

Validity also considers accuracy in response and analysis (Silverman, 2001). It refers to '*the extent to which the research findings accurately reflect the phenomena under study'* (Collis and Hussey 2009, p. 64). Validity is achieved when the researcher thinks the test or effect demonstrates or measures what he/she thinks or claims (Coolican, 2017). Some research errors may undermine validity, such as misleading measurements or inaccurate, faulty research procedures, and poor samples (Coolican, 2017; Collis and Hussey, 2009). This research has implemented a random sampling and purposeful sample to avoid any bias by interviewing different types of people in informal research activities (Kumar, 2014; 2019). For the formal survey, it made use of convenience sampling due to its availability to the researcher and the mutual trust built up, and snowball sampling to establish contacts with others (Bryman, 2016).

One of the alternative criteria to assess the quality of research is through validation (Saunders et al., 2016). Validation is defined as '*the process of verifying research data, analysis and interpretation to establish their validity/credibility/authenticity*' (Saunders et al., 2016, p. 206), which can be permeated into each process, measuring validity, checking data with participants, and other aspects. The validation includes triangulation and participant or member validation (ibid). This research has fully employed approaches in the whole research journey to improve validity. As indicated in the previous sections in the chapter, the outsider research philosophy and their inter approach in the 'Research Onion' were coherent to the

exploratory research type, ethical subject of EI, and the training situation in the CAI.

Another opportunity to enhance validity was taken through the decision to design the research in the way it reduced the possibility of getting the answer wrong (Rogers, 1995; Saunders et al., 2016). As indicated in the previous discussion, this research adopted a mixed-methods approach; the approahes validated and complemented each other, supporting triangulation, and further enhancing reliability and validity. As indicated in Section 4.7, this research adapted and combined the advantages of two fundamental mixed methods designs and developed ESMMRM to accommodate both its features of being multidisciplinary, ethics-sensitive and difficult in obtaining authentic and in-depth data. The ESMMRM resulted in a systematic procedure including initiation, facilitation, and triangulation, with major strengths such as prioritisation, generalisability, all forms of methods and all process exploration (Section 5.7.6). These designs substantially enhanced the reliability and validity of the research process and result.

In addition to the design, some techniques were also utilised to ensure in-depth and insightful data to enhance reliability and validity. For example, as indicated in Section 5.9.4, a series of projective techniques were employed in the questionnaires to facilitate the survey effect, such as the attitude measurement of the Likert Scale, thematic apperception, semiotics, third person, and vignettes/scenarios, to elicit and tease more authentic thinking. The compact scales by utilising 7-point Likert Scales in the questionnaire design also reduced the danger of low reliability and validity of data (Gliem and Gliem, 2003). What is more, there was a combination of question designs, some questions in the questionnaires or interviews were designed as open-closed, or wholly open (Section 5.9.3) to allow people to air their personal opinions outside the rigid options (Saunders at al., 2016). One of the most prominent features of this research is the substantial attention given to validation activities in the piloting stage. For example, the refinement of questionnaires underwent nine rounds of testing activity, including a series of pilot studies and meetings (Sections 5.9.5 and 5.10) before being finally distributed to the final sample. The Cronbach's Alpha value (0.83) was also used to enhance the validating activities (Section 5.10).

The high reliability and validity have also been reflected through the final data distribution, collection, and analysis process. Delivery and collection of a self-completing questionnaire were conducted to reduce potential risks and enhance the number and quality of returned data (Section 5.12). A combination of data analysis tools was employed including descriptive and inferential data (Section 5.14).

5.16 Ethical considerations

Research ethics refers to '*the standards of behaviour that guide the conduct in relation to the rights of those who become the subject of your work or are affected by it*' (Saunders et al., 2016, p. 264). Whether in natural science or social science, it is '*difficult to conduct much research at all without running into ethical arguments*' (Coolican, 1992, p.45). Ethical concerns will emerge in the whole process of research, including designing or planning the research, seeking access to organisations and individuals, collecting, analysing, managing and reporting the data (ibid). Therefore, for this research, potential ethical issues had to be recognised and considered.

To overcome ethical dilemmas arising from different stages of the research process, some measures were taken, with adherence to UWTSD's Codes of Ethics and Principles of its Research Ethics Committee. The details are:

- To abide by the codes of ethics of the University. The research has been guided by the University's code of ethics and ethical guidelines. Even though Bell and Bryman (2007) doubt their usefulness for being written in abstract terms and for only being designed to prevent misconduct, this is by far, for the student researcher, an ideal way to practically follow and ensure not to transgress them (Saunders et al., 2016). However, these codes of ethics cannot exhaust all principles, so the researcher interpreted those codes of ethics with care and applied them to their context (ibid).

- To follow principles set out by UWTSD's Research Ethics Committee. This Committee fulfills many objectives, and their approval of the research proposal and ethical form are the initial guarantees for the research project. The researcher obtained approval through appropriate adherence and detailing of measures as documented. Ethical consideration progressed beyond the approval stage (McAreavey and Muir, 2011), making use of the general categories of ethical issues and principles documented in Table 5.18:

Table 5-18: Ethical principle and the ethical Rationale for and development of each principle

Ethical principles	The ethical rationale for the principle	Application in this research
Integrity and objectivity of the researcher	Being truthful and promoting accuracy	Fully considered
Respect for others	Recognise the rights of all persons and respect their dignity	Fully considered
Avoidance of harm (non-maleficence)	Avoid any harm to the participants, not be intrusive to cause embarrassment, stress, discomfort, pain or conflict, anxiety, or discrimination.	Fully considered
Participants' privacy	Compliance in all aspects to show voluntary, informed consent, confidential, and anonymous.	Fully considered
Participants' voluntary nature and the right to withdraw	The right to or not to take part in or not to be harassed to participate, can withdraw anytime or withdraw data provided.	Fully considered
Informed consent	Sufficient information and assurance to the participant or withdraw without any pressure or coercion, without widening the scope with no permission, no breach of consent	Fully considered
Data confidentiality and participants' anonymity	Not to focus on who provide the data, disguise and make information non-attributable unless agreed	Fully considered
Responsibility in data analysis and reporting	Assurance of privacy, anonymity and confidentiality, an accuracy of the report and others	Fully considered
Data management compliance	Personal data need to be protected and comply with the legislation.	Fully considered
Ensuring researchers' safety	Considering when planning and conducting a research project, such as "risk of physical threat or abuse."	Fully considered

Source: Reproduced from Saunders et al. (2016)

In addition to the aforementioned, guided by the two codes and principles, the author strictly respected the privacy of each data source, obtained informed consent, and ensured confidentiality and anonymity of data source and participants. The following detail some of the principles adhered to:

- To ensure voluntary participation. There should be no coercion to force people into taking part in the research or using financial or material offers as a reward to induce people to take part in, for in this case, biased results may be generated (Collis and Hussey 2009). As stated in Section 5.12, before the distribution of the questionnaire, consent letters were sent to the company to get approval, every participant was entirely voluntary, and they were free to withdraw at any time. The same measures were migrated through formal and informal interviews.

- To ensure anonymity and confidentiality (Crow and Wiles, 2008). This research aimed to obtain a generalised survey result; there was no mention of specific names of any organisation or person. To avoid ethical issues, in the process of both the questionnaire survey and the interviews, the name of the respondents was omitted, and the names on each questionnaire or for the interview were designed generally without referring to or mentioning any particular person or organisation. The contributing companies of some first-hand data such as training programmes were anonymous but systematically dealt with by using numbers so that readers can have a whole picture of these data. The videos or tapes from the interviews will not be allowed to be listened to by others without permission. Also, no information will be disclosed or released to the public without permission.

- To avoid the risk of data used from the public domain. Some data used in the research were from the public domain, such as the introduction, background, literature review, or even analysis chapters. These are in the public realm, therefore there is no need to obtain permission for their use, thus incurring no ethical issues. However, it might involve copyright issues, and '*these issues are permeated in each stage of the research including design and gaining access*' (Saunders et al., 2016). Therefore, the author used them faithfully and appropriately sourced them. For the information generated from the organisations, such as training programmes, permissions were obtained and kept anonymous.

- To avoid potential risks to participants. Some participants may have been reluctant to provide information on ethical measures and internal ethical training programmes. They might have been afraid others could borrow their good ethical actions; they might also have been afraid their weak ethical actions would be revealed to the public, and thus they would be blamed or punished. Therefore, it was important for the researcher to conceal identities and guarantee confidentiality.

- To follow and adopt best practices in the data collection and analysing process. A consent letter was sent out for each research activity; the permission ensured non-coercive research. The author was also accurate in reporting and analysing these data, but disguised any identity. This research utilised a large sum of internet-mediated research; but necessary attention should also be paid to this (Saunders et al., 2016).

Therefore, for these informal communications, trust was established, and permission was obtained.

- To avoid the potential risks to the researcher. Some public information, such as the ethical measures and training programmes, are already published in newspapers and websites; people are free to access them, and there is low risk; however, the distorted use of this information was investigated for legal responsibility. Also, for the information from the internal training in the organisations, there were some risks that some information may have been sensitive and confidential only within the organisation, the researcher had to be responsible for their information and be careful. Otherwise, there might have been adverse effects on the company. It is possible some participants may have been reluctant to participate in the research. Given coercion is illegal, the researcher dealt with these issues appropriately by addressing the freedom to withdraw at any stage of research in the consent letter, as indicated in the questionnaires (Appendices 5.1 and 5.2).

- To avoid ethical issues in data management. For public information, only if the researcher was to be strictly faithful to the information, and it was to be cited with its sources, there would be no risk. For internal information and training programnes in the organisations, the researcher was careful to keep them confidential and anonymous so that adverse effects on the company could be avoided. The author followed these rules and made these companies anonymous.

- To ensure safe data management by the University. There was a low risk to the researcher herself. Therefore the research was also of low risk. However, if the information submitted to the University was not kept confidential, there would be adverse effects for the organisations. In the latter case, the University would be investigated for legal responsibility.

To sum up, the author took measures to try to reduce or avoid ethical risk throughout the whole research journey; some of the key measures are highlighted:

- When conducting the research, there was thorough communication with the six sampling auto organisations and the university (training centre) to get permission regarding the research aims, contents, and future use of data.
- All the information was credited to the original source.

- All the participants were voluntary and could decline or stop at any stage.
- All types of results generated from the research were anonymous, with no identifying information on any audiotapes or transcripts of the questionnaires or any interviews. No outside person would hear any audiotapes or see any transcripts without the participant's prior consent or permission from the University.
- All materials generated from this research remained confidential.
- No information will be released to the general public without permission.

5.17 Summary

To conclude, this chapter discussed issues related to the research methodology for this project. Driven by the challenges for rigorous research, this research justified an exploratory approach to this research study. A mixed methods research method underpinned by a pragmatist philosophy, with modification and embedded mechanisms, was employed and has been detailed, including the justification of its quantitative data design, survey implementation, data collection and use of quantitative, and non-numerical data analysis methods.

The methods employed, underpinned by a philosophy of pragmatism, have met the high demands of a multidisciplinary and ethics-sensitive subject. The large numbers of research activities, validation processes, mixed research methods with adaptation, and mixed data analysis methods have ensured high reliability and reliability. Measures have been taken to avoid ethical issues across the research journey effectively.

Chapter 6 Findings and Analysis: Managers

6.1 Introduction

This chapter deals with findings and analysis of data from managers, based on the research questionnaire (Appendix 5.1). Due to the large volume of data, only key data is shown in this chapter; the detailed findings are either appended or recorded as confidential for further investigation.

Underpinned by the philosophy of pragmatism adopted (Section 5.7.1), this chapter utilises an integration of methods to achieve high validity, reliability and in-depth data comparisons (Dawson, 2017). These include the justified adoption of a mixture of both descriptive and inferential data and both numerical and non-numerical data. However, based on necessity, the focus is different.

This research focuses on descriptive data (stated in Section 5.14.1) and is demonstrated in two ways. For general questions, data are shown in both the 'Frequency' column and 'Percent' column. It is displayed this way for convenience of comparisons, by using the common denominator. For filter questions, data are displayed in the 'Valid Percent' column, because of the importance of data validity (Saunders et al., 2016), as with Qs 20-23.

Numerical data from Likert Scales are presented according to their natural ascending order, from 1 to 7, for clarity and convenience in analysis. This is different from their descending order in the questionnaire. The analysis is aided by the use of the IBM SPSS statistical analysis tool (Version 24). The patterns of non-respondent data and their impact were recorded, and any outliers were demonstrated and analysed to avoid any bias or inaccuracy (Bennett, 2001; Widaman, 2006).

Non-numerical data are shown in their logical sequence in each part of the questionnaire, to be analysed along with numerical data. Some of them were from the open option 'Other (please specify)' in open-ended questions (e.g. Q3), while some were from totally open questions (e.g. Q15). These data went through a systematic coding and quantification process, based on the acceptance of the content analysis approach to quantify qualitative data for analysis convenience (Vaismoradi et al., 2013) and the systematic coding strength of open coding and axial coding (Glaser, 2016; Saldaña, 2015) (specified in Section 5.14.3).

Inter-question and intra-question comparisons were conducted as necessary. Descriptive frequency, cross-tabulations and inferential correlations were utilised in comparisons, depending on appropriateness and necessity. For example, cross-tabulation and inferential correlation methods were utilised for categorical comparisons and continuous relationship comparisons between variables, respectively (Aspelmeier and Pierce, 2009). In another, there is a cross-tabulation between managers' level (Q9) and the training they received (Q20, Q21, Q22 and Q23), therefore, a cross-tabulation was established (Section 6.3.1). There was an inferential correlation between managers' ethical awareness (in Part II) and judgment (in Part III) for the continued impact on EI, therefore, a correlation was established between them (Section 6.3.3).

Three hundred questionnaires were sent out to managers, and 213 complete questionnaires were returned: a success rate of 71%. The findings and analysis are divided into two main interrelated parts:

- Individual data (Section 6.2);
- Comparison and validation between results (Section 6.3).

6.2 Individual data

The individual data are presented in six sections based on the six parts of the questionnaire.

6.2.1 Part I Demographic information

1) **The information in Q1, Q2 and Q3 indicated there were more male staff than female, and young managers, exclusively from mainland China, which is consistent with the demographic profile for managers in the CAI, evidenced in Section 3.2.**

In response to Q1, gender was demonstrated by a 182 (85.4%) male and 31 (14.6%) female split. Industry statistics from documents indicated the balance would be in the approximate range, being from 80% to 20% (Table 3.6 in Section 3.2.6). Therefore, the result was only slightly different.

Regarding Q2, the majority of respondents were between 31 and 45 years old (76.6%) (Appendix 6.1). Government policies on cadres' rejuvenation offer explanation as to

why the majority of cadres were at this young age (Han, 2010), and this similarity can be evidenced by industry statistics in Table 3.7 (Section 3.2.6).

Responses to Q3 indicated that the nationality of the participants was almost exclusively mainland Chinese (98.6%; Appendix 6.2). The dominance of indigenous staff and this similarity is evidenced by industry statistics (Table 3.5 in Section 3.2.5).

2) The information in Q4, Q5 and Q6 revealed managers were from a variety of companies, and mainly from six major Auto Group Corporations.

Responses to Q4 identified that managers came from a variety of companies (Appendix 6.3), but predominately, four of the six major automotive group corporations and their subsidiaries or joint ventures in China: SAIC, Dongfeng, GAC and FAW. The non-numerical data from the 'Other' option indicated that the additional companies were subsidiaries or joint ventures of the major corporations, and some were in the component field, mainly GACC and Dongfeng.

The information on the layout of the main auto group corporations in the CAI could explain the important role that the four automotive group corporations and their auto parts companies play in the CAI, particularly GACC. A similar situation can be evidenced by the industry statistics in Tables 3.8 - 3.10 and Figure 3.9 (Section 3.2.7). The importance of component companies can be evidenced in Tables 3.10 and 3.11 and Figure 3.12 (Section 3.2.8). The similar importance of GACC can be evidenced in industrial statistics, being ranked fifth among the top 100 in auto parts enterprises in Guangzhou (Figure 3.12 in Section 3.2.8).

Concerning Q5, ownership structure information was shown, with 109 (51.2%) and 98 (46.0%) state-owned and JVs from the sample, respectively (Appendix 6.4). The similarity can be evidenced in the industry statistics that foreign investment was around 55% (China Statistical Yearbook, 2015) in Section 3.2.1. The high joint-venture situation can be evidenced in Tables 3.2 and 3.3 (Section 3.2.2) and Figure 3.1 (Section 3.2.3). Figures 3.2 (DFL) and 3.3 (FAW) (Section 3.2.3) are two examples from the sample.

In response to Q6, the cooperative company's nationality/nationalities split was

demonstrated. There was a broad range of cooperative companies in the sample, and the two most influential were from the U.S.A and Germany, being 36 (16.9%) and 28 (13.1%), respectively (Appendix 6.5). The industry statistics from documents corroborate this variety of cooperative nationalities, and a similar situation can be evidenced by Tables 3.1 to 3.3 (Section 3.2.2), wherein which the two countries were among the early collaborative partners and have been the most influential to date

3) **The information in Q7, Q8, Q9 and Q10 indicated managers were from a variety of sources of departments, yet most were from lower and middle management levels, commonly having achieved Bachelor's and/or Master's Degrees, consistent with the general management requirement for eductational levels.**

Responses to Q7 and Q8 showed that managers were drawn from a breadth of positions and departments (Appendices 6.6 and 6.7). The majority were middle-level management, with a few from senior-level (3.2%), including 'Executive General Manager' and 'Deputy General Manager', being 2 (0.9%) and 5 (2.3%), respectively. Responses to Q8 also indicated a similar variety of departments, exclusively manufacturing and R&D centres, being 40 (18.8%) and 67 (31%), respectively. The non-numerical information in the breakdown in the 'Other' option showed a similar situation with that in the numerical data. The situation is consistent with the general situation in the automotive industry and management staff distribution.

With respect to Q9, management level split was demonstrated, with 160 (75.1%) medium-level managers and 43 (20.2%) lower-level managers in the sample (Appendix 6.8). This result fits the general situation of corporations and can triangulate with data in Q7 and Q8, with fewer seniors and a dominance of middle-level managers. One hundred per cent of the responses in Q9 indicated the qualified sampling profile of managers.

Responses to Q10 demonstrated that their degrees consisted of Bachelor's (54.0%) and Master's Degrees (31.5%) (Appendix 6.9). This result fits the general educational background levels of staff in an organisation.

To sum up, data in Part I reflected the complex background of the participants' company sources, mirroring the complexity of moral values in the CAI due to their various ownerships,

foreign partners and a large number of unlisted information. Responses also indicated the general information for management staff and their profiles. The consistency with background information such as imbalanced gender and young age (Section 3.2.6), dominance of Chinese nationality (Section 3.2.5), and similarity with main auto corporation distributions (Sections 3.2.7 and 3.2.8) and its joint venture features (Sections 3.2.1- 3.2.3) in a high percentage of foreign partners, also reflected the qualified sampling population of managers and their representativeness of the industry and management situation. These consistencies are important to ensure the validity of data in the analysis (Saunders et al., 2016).

6.2.2 Part II Managers' awareness of non-coercive ethical elements

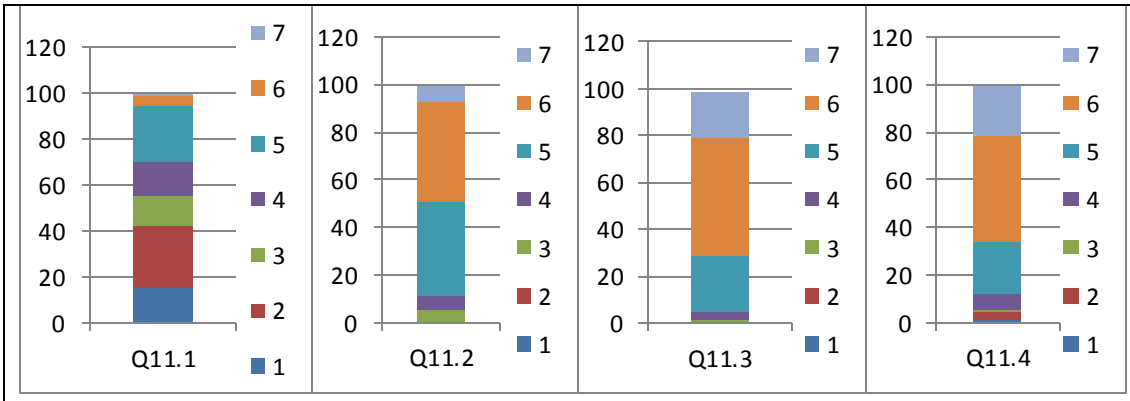
Awareness is the first stage in the ED process (Rest, 1986). Based on the design concept (Section 5.9.1), data were analysed to assess and track participants' in-depth ethical awareness towards the four ethical elements: participants' general awareness (Q11), compatibility awareness (Q12), CAI specific awareness (Q13) and managers' EI awareness (Q14).

1) **The information in Q11 indicated a high ethical awareness on general ethical stances among the four non-coercive ethical elements as a whole, while the highest and lowest were on EPE and WNE, respectively.**

   With respect to Q11, most responses fell on positive scores of '5= Somewhat aware', '6= Aware', and '7= Very aware', while the most positive responses scored highest on EPE and lowest on WNE, indicated in Figure 6.1.

   Industry statistics indicated a similar situation in that managers in the CAI are impacted by indigenous ideology (Communism) and culture (Confucianism) (Sections 3.2.4 and 3.2.5), as well as joint ventures and its various values such as WNE (Section 3.2.1-3.2.3), thus resulting in high awareness of the four ethical elements. Whilst the relatively low awareness response to WNE was consistent with the impact from the political regime and training practice, where this Western value might be considered to clash with the ideology of Communism, the lack of due attention to its values has resulted in its low inclusion in managerial training, evidenced in Section 3.4.3. This particularly high response to EPE has also been explained in Section 3.4.4 due to its transformative

impact from ethics inherent in the ideology and culture (Cao, 2015). This high score can also be evidenced by the indispensable role of the four ethical elements from different ED dimensions, addressed in Section 4.3. Therefore, the result was consistent with the literature, and the validity of this awareness result continued to be explored in the following situations.



Likert Scales: 1= Very unaware, 2= Unaware, 3= Somewhat unaware, 4= Neutral, 5= Somewhat aware, 6= Aware, 7= Very aware
Variables: Q11.1= WNE, Q11.2= Confucianism, Q11.3= Communism, Q11.4= EPE

Figure 6-1: Q11 - General awareness stance among the four non-coercive ethical elements

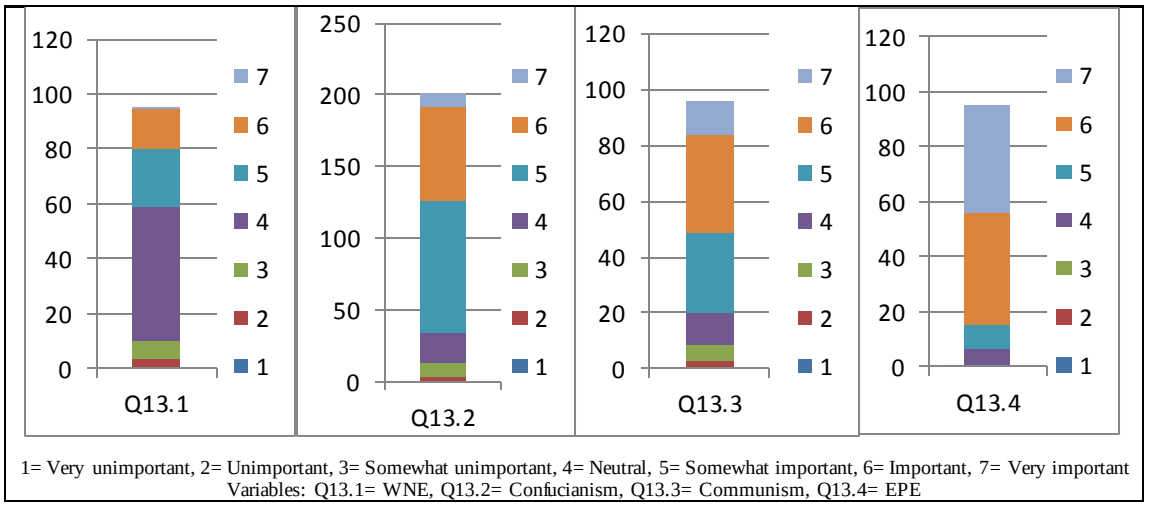
2) The information in Q12 indicated a positive awareness of compatibility relations between the four ethical elements.

Responses to Q12 (Appendix 6.10) on compatibility indicated that the three scales with the highest scores in order were '4= Neutral', '5= Somewhat compatible' and '6= Compatible'. This result was consistent with the joint venture environment information of the CAI where its managers had opportunities to interact with these diversified ethical elements from different foreign partners and consider them in decisions (Section 3.2.1).

3) The information in Q13 and Q14 indicated a higher awareness of these four ethical elements when applying these theories into the industry and associating with its EI practice than the awareness on understanding pure theory in Q11, among which responses on EPE still ranked highest.

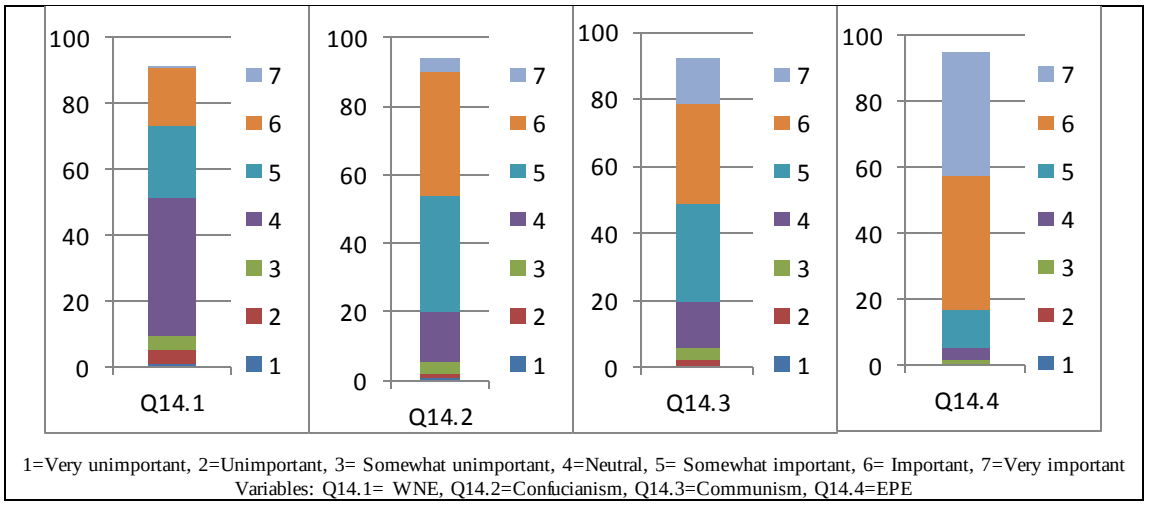
Responses to Q13 and Q14 showed similar trends in the application of awareness in the industry (Figure 6.2) and association with the discussion of EI (Figure 6.3). These responses were more positive than to the scores on pure theory awareness in Q11. This result is consistent with the background information available for the CAI, where managers' EI activities were impacted by the industry in their interaction with decisions, evidenced in Chapters 1 and 3 (particularly in Sections 1.1, 3.2.1 and 3.2.2).

The two questions also indicated a highest awareness of EPE. In response to Q13.4 and Q14.4, most responses were on absolute and positive scales, at 'Important' and 'Very important' levels, as shown in Figures 6.2 and 6.3. These high responses of EPE together with those in Q6 can also explain the transformative impact from culture and ideology.



1= Very unimportant, 2= Unimportant, 3= Somewhat unimportant, 4= Neutral, 5= Somewhat important, 6= Important, 7= Very important
Variables: Q13.1= WNE, Q13.2= Confucianism, Q13.3= Communism, Q13.4= EPE

Figure 6-2: Q13 Specific awareness of four ethical elements associated with the CAI



1=Very unimportant, 2=Unimportant, 3= Somewhat unimportant, 4=Neutral, 5= Somewhat important, 6= Important, 7=Very important
Variables: Q14.1= WNE, Q14.2=Confucianism, Q14.3=Communism, Q14.4=EPE

Figure 6-3: Q14 Specific awareness of four ethical elements associated with the EI

To sum up, data in Part II reflected a high awareness of the four ethical elements, and a higher awareness was reflected when associating with the CAI and its EI practice than the awareness of the general theories. Respondents' awareness of compatibility was also high. Among the four ethical elements, EPE and WNE received the highest and lowest scores, respectively.

These results were consistent with statistics of the literature of the CAI background situation, where managers had opportunities to interact with the four ethical elements and make synergistic decisions, evidenced in Sections 3.2.1 and 3.2.2. The high responses on

Communism and Confucianism can be explained by the working environment in China, in which the CAI operates. It is therefore, influenced by this indigenous ideology and traditional culture (Sections 3.2.4 and 3.2.5). The high EPE is also consistent with the literature indicating its transformative impact from its indigenous culture and ideology in Section 3.4.4 (Cao, 2015). The relatively lowest response of WNE fits the joint venture culture in the CAI (Section 3.2.2); which gives managers opportunities to interact with Western values. In addition, as reviewed, WEN, a type of normative ethics, has been the basis of ethics and values for Western cultures (Section 3.2.3). However, this value is neglected, and less embedded in managerial training due to people's awareness of its benefits or a potential to clash with the ideology, this deficiency was addressed in Sections 3.4.3 and 4.7.3.

6.2.3 Part III The judgment-formulation of non-coercive ethical elements in the Volkswagen vignette

Ethical judgment is the second stage in the ED process (Rest, 1986), the data were analysed to assess the impact on participants' judgment on its practical application in the CAI context and in leading to training practice on EI improvement. The whole structure is as follows: open qualitative feedback about perceived ethical issues relating to ethical Image 1 (Q15), random ethical options relating to Image 2 (Q16), feedback of the four focused ethical elements relating to the Volkswagen emission scenario (Q17), with qualitative explanations in Q18 related to choices in Q17 and degree of agreement applying the four ethical elements in managerial training (Q19).

1) **The information in Q15 indicated a high response to the violation of the four ethical elements, with violation of EPE being the highest, upon perceived ethical issues in Image 1.**

Table 6-1: Q15 Non-numerical data of ethical issues perceived from Image I

Q15	**Ethical issues perceived from Image I**		
Categories	Properties	Frequency	Percent
1	Violating WNE	50	23.5
2	Violating Confucianism	45	21.1
3	Violating Communism	42	19.7
4	Violating EPE	136	63.8
5	Violating justice	17	8
6	Violating CSR	17	8
7	Cost-benefit utility-driven	9	4.2
8	Impacting environment	43	20.2
9	Need further exploration	5	2.3
	Total valid	181	85
	Non-respondent	32	15
Total		213	100

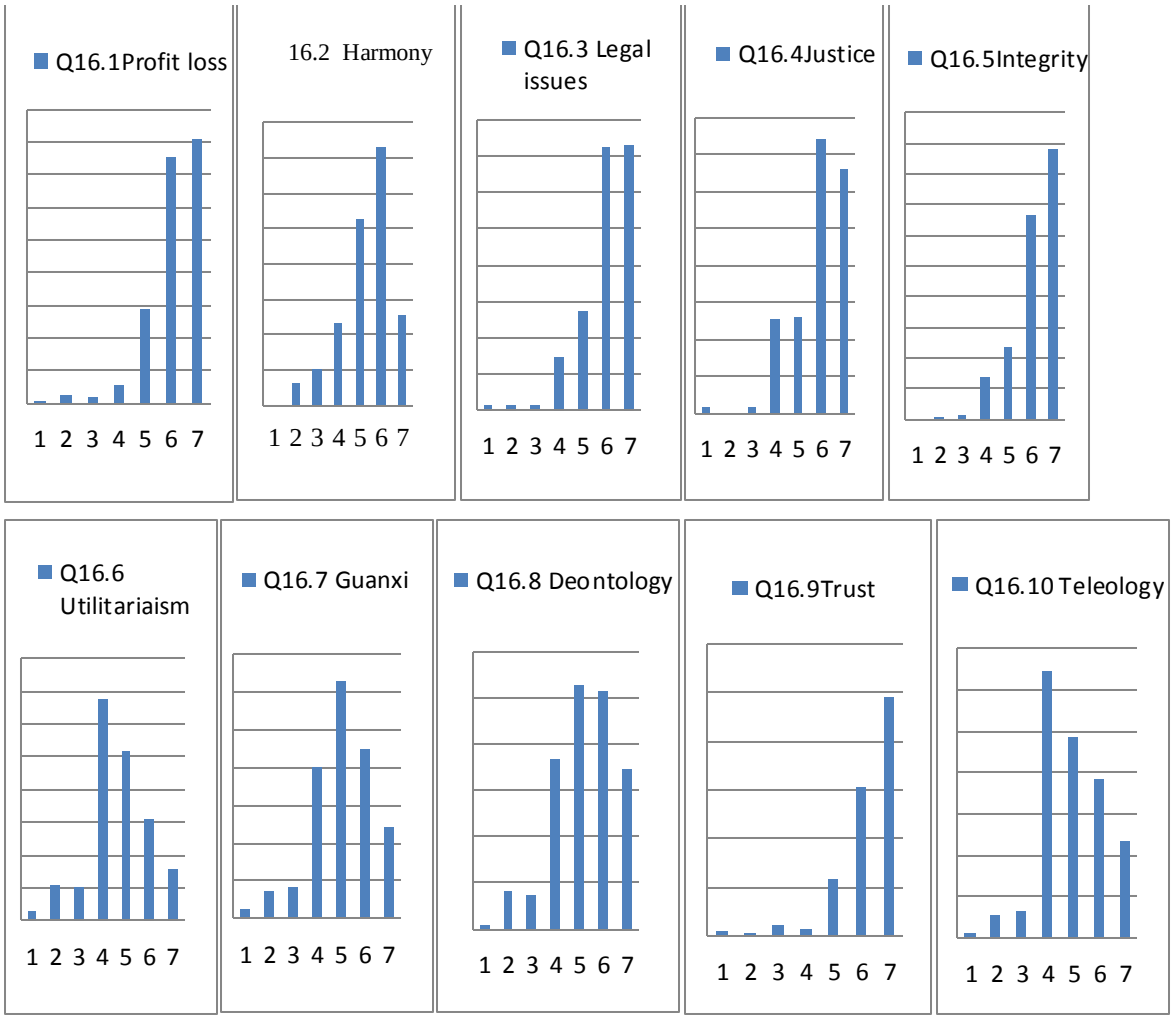
Concerning Q15, altogether 181 responded with 213 valid questionnaires, a success rate of 85%. A series of coding processes were conducted; the last category divisions are detailed in Appendix 6.11, where nine micro-categories and six macro categories were generated according to their similar properties.

The result in Table 6.1 indicated, regarding the ethical vignette, the perceived violation of 'WNE', 'Confucianism', 'Communism', and 'Environmental issues' received a high score, ranging from 20% to 24%, while violating EPE received the highest (63.8%). The same reason summarised in Part II for the scores to the awareness of the four ethical elements can be applied to this phenomenon.

'Impacting the environment' is not one of the four main ethical elements; however, each of the four elements contains this ethical concept. Therefore, the result is valid. This can be explained by their common features. For example, 'Maximising the public good' is shared by the four (Section 4.6.2), whereas the environment is under the issue of the public good, and many ethical scandals in this industry relate to environment such as the Volkswagen Emission Scandal (Li et al., 2018). This high response is also consistent with the prominent environmental issue in the CAI, evidenced in Section 3.5.1. The valid information also indicates its effectiveness by using the thematic interpretation approach.

2) The information in Q16 indicated a close connection to EPE from the ten randomly

mixed ethical consequence options, relating to Image 2, highlighting the exclusively positive responses.



1= Very unimportant, 2= Unimportant, 3= Somewhat unimportant, 4= Neutral, 5= Somewhat important, 6= Important, 7= Very important

Figure 6-4: Q16 - Judgment on adverse consequences relating to Image 2

Figure 6.4 shows a prevalence on the neutral and positive areas of the scales, the most common responses being on the five adverse consequences of 'Resulting in profit loss' (Q16.1), 'Ensuing legal action' (Q16.3), 'Violating justice' (Q16.4), 'Affecting Image/Brand honesty and integrity' (Q16.5) and 'Affecting customer trust' (Q16.9). These ethical options proved to be closely related to ethical natures of EPE (Cao, 2015; Zhu and Jesiek, 2015), evidenced in Sections 4.5.4 and 4.6. For example, 'Affecting Image/Brand honesty and integrity' (Q16.5) is consistent with one of the features of EPE's 'Upholding of honesty of integrity', evidenced in Section 4.6.3.

3) The information in Q17 indicated a significant violation of the four ethical elements provided in response to the Volkswagen emission ethical vignette, among which the EPE was the highest.

Table 6-2: Q17: Judgment on the four focused ethical elements regarding the Volkswagen Emission Vignette

Q17 Focused on ethical judgment (Incorporating combination results)		Frequency	Per cent
Valid	1. WNE	152	71.4
	2. Confucianism	124	58.2
	3. Communism	109	51.2
	4. EPE	174	81.7
	5. None	5	2.3
	6. Other	1 (No further information)	0.5
	Total	209	98.1
Non-respondents		4	1.9
Total		213	100

In response to Q17, the violation responses to the four ethical elements were high, and the highest was on the element of EPE, being 81.7%, as shown in Table 6.2. As a multiple-choice question, the individual result has incorporated all multiple choices. These high scores on the four ethical elements were due to the impact on managers of the values brought by the joint venture culture, as discussed in Part II for similar high scores. The explanation for the similar high scores to the four ethical elements in the previous questions of Part II also applies to the high scores of EPE.

4) The non-numerical information in Q18 supported the result in Q17. The high scores were 'Violating Confucianism', 'Violating Communism', 'Violating justice' and 'Violating WNE', and 'EPE' was still the highest.

Table 6-3: Q18 – Non-numerical explanations for the choices in Q17

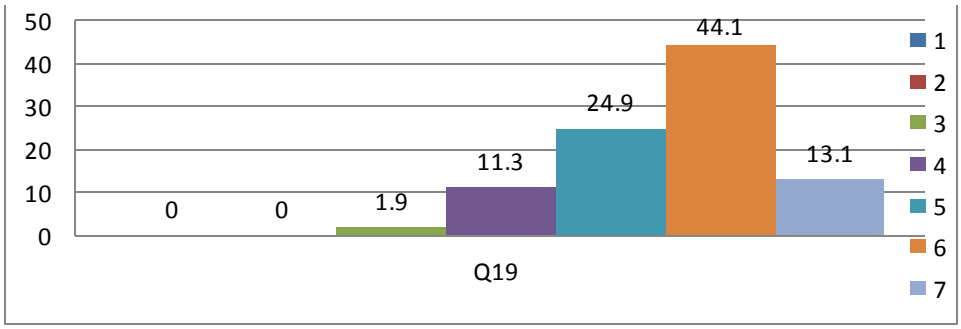
Q18		**209 valid (according to Q17)**		
Valid	Micro categories	Properties	Frequency	Valid Percent
	1	Violating WNE	42	20.1
	2	Violating Confucianism	59	28.2
	3	Violating Communism	57	27.3
	4	Violating EPE	136	65.1
	5	Violating justice	43	20.6
	6	Violating CSR	2	0.96
	7	Cost-benefit utility-driven	10	4.8
	8	Impacting environment	13	6.2
	9	Need further explanation	1	0.48
		Total valid	155	74.2

		Non-respondents	54	25.8
Total			204	100

With respect to Q18, of the 209 expected respondents in Q17, 155 responded, a response rate of 74.2%. For similar responses to Q15, information was coded into the same nine micro categories and six macro categories. As shown in Table 6.3, violation of EPE received the highest responses (65.1%), while four other elements also received high responses, from 21% to 29%, in order of their responses, they were namely 'Violating Confucianism', 'Violating Communism', 'Violating justice' and 'Violating WNE'.

The importance of these ethical elements has been reviewed and justified in Section 4.5; their existence in the CAI is also summarised in Part II for the similarly high responses to these four ethical elements. Although the ethical element of 'Justice' was not listed as the main element, each of the four main elements contains this ethical feature. Evidenced in Section 4.5.1, 'justice' is believed to be an important element in the goodness theories of virtue ethics, carrying the non-coercive nature, similar and compatible to other ethics (Ferrell and Fraedrich, 2014).

5) **The information in Q19 indicated positive feedback towards the perception of embedding the four ethical elements in managerial training in the CAI to improve managers' EI and resolve ethical issues similar to the Volkswagen case.**



1= Strongly disagree, 2= Disagree, 3= Somewhat disagree, 4=Neutral, 5= Somewhat agree, 6= Agree, 7= Strongly agree

Figure 6-5: Q19 - Agreement level in recommending the four ethical elements in training for EI

In response to Q19, 'Agree' (46.1%) and 'Somewhat agree' (26.0%) received the highest proportion of positive responses, shown in Figure 6.5. This result of the high scores to the four ethical elements has been indicated due to their importance as consistent with the complex moral value environment (Sections 3.2.1-3.2.3) and the indispensable complete dimensions (Section 4.3).

The data were congruent and comparable with awareness data in Part II (Q13 and Q14) and the high judgment data in Part III (Q16 and Q17), as awareness and judgment are the first two consecutive stages of ED, and therefore the recommendation should be a rational result being based on the two stages. Furthermore, the scarcity of these ethical elements in current managerial training (Sections 3.4 and 4.4) also call for education on the benefits of these non-coercive ethical elements to help improve the situation.

To sum up, data discussed in Part III reflected a high response to the violation of four ethical elements in judging the impact on the Volkswagen emission scenario. Both the non-numerical and numerical data indicated a high response on the perceived violation of 'EPE', 'WNE', 'Communism' and 'Confucianism', while 'EPE' was the highest. The ethics-specific options to the CAI emission scandal, namely 'environmental issues' and 'justice' in both Q15 and Q18, also received high responses. These data were justified as valid because these options are under the four ethical element concepts and retain non-coercive nature. There were also high responses agreeing to embed these four ethical elements into managerial training for EI enhancement, which was consistent with the high positive score to similar ethics questions, such as awareness and judgment questions in Parts II and III.

6.2.4 Part IV The practice of non-coercive ethical elements in managerial training and its effect on EI

The pedagogical application of the four non-coercive ethical elements in managerial training and their impact on managers' EI were gathered through four main questions and their two respective sub-questions. The main questions surveyed the prevalence of each element in the training programme that the participants attended, while the two respective sub-questions surveyed the impact on managers' EI, and the training mode managers attended with these ethical elements. Invalid responses to the sub-questions, if any, were discounted.

1) **The information in Q20, Q21, Q22 and Q23 indicated a high inclusion of 'Confucianism', 'Communism' and 'EPE', while 'WNE' had a relatively lower response.**

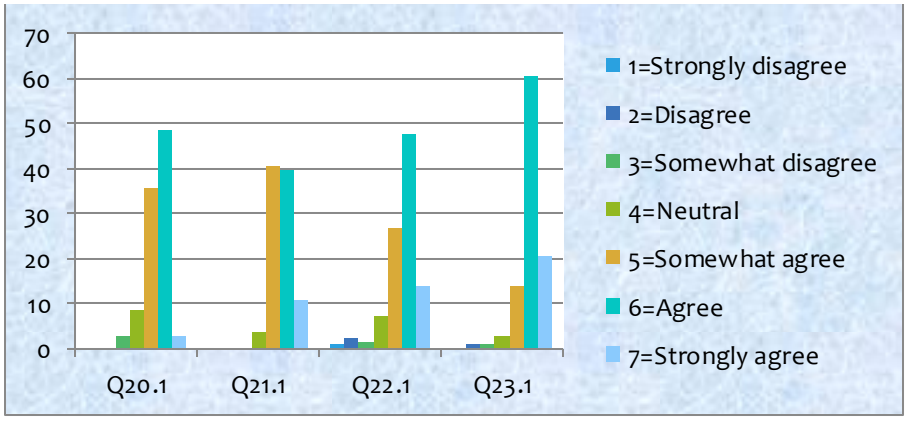
Table 6-4: Ethical elements in managerial training

Q20, Q21,Q 22, Q23		Frequency				Percent			
Elements		Q20	Q21	Q22	Q23	Q20	Q21	Q22	Q23
Valid	1.Yes	70	139	145	136	32.9	65.3	68.1	63.8
	2.No	138	66	58	68	64.8	31.0	27.2	31.9
	Total	208	205	203	204	97.7	96.2	95.3	95.8
Non-respondent	System	5	8	10	9	2.3	3.8	4.7	4.2
Total		213				100.0			

Q20= WNE, Q21= Confucianism, Q22= Communism, Q23= EPE

Concerning Q20-Q23, the responses to WNE, Confucianism, Communism and EPE in managerial training were 32.9%, 65.3% 68.1% and 63.8%, indicated in Table 6.4. Industry statistics from documents and the public domain indicate a similar situation that in both internal and outsourced managerial training Confucianism and Communism are embedded widely, as evidenced in Section 3.3. EPE is not directly embedded by using a nationally unified form like the West, stated in Section 3.4.4. However, the transformative moral learning styles from 'Confucianism' and 'Communism' have an influence on the industry (Cao, 2015), which can be used to explain this high response (Section 3.4.4). The low response to WNE is consistent with its situation in China for a potential ideological clash and a lack of due awareness of its importance; this deficiency is also reflected in a managerial training situation, identified in Section 3.4.3.

2) **The information in the first sub-questions (Q20.1, Q21.1, Q22.1 and Q23.1) indicated a similarly high level of positive agreement on scales of 'Somewhat agree' and 'Agree', admitting these ethical elements embedded in managerial training having impact on managers' EI (from the participants themselves), while 'EPE' received the most positive responses.**



Q20.1= WNE, Q21.1= Confucianism, Q22.1= Communism, Q23.1= EPE

Figure 6-6: Level of agreement on managers' EI (if 'yes')

With regard to Q20.1, Q21.1, Q22.1 and Q23.1**,** most responses fell on scales of 'Somewhat agree' and 'Agree', as indicated in Figure 6.6.

3) **The information in the second sub-questions (Q20.2, Q21.2, Q22.2 and Q23.2) reflected that 'Company Training', 'Automotive Association' and 'University Training' were the most prevalent training modes that embedded WNE, Confucianism and EPE, while Communism was more prevalent in 'Company Training', 'University Training' and 'Party school (at the company level). No participants surveyed attended training at a Confucian Academy.**

Responses indicated that these managers attended similar training modes of which the most prevalent were 'Company Training' (66% to 78%), 'Automotive Association' (10% to 36%) and 'University Training (28% to 32%). The element of Communism was trained using relatively different modes, the highest modes being 'Company Training', 'University Training' and 'Party school (at the company level)', accounting for 77.9%, 29% and 20%, respectively.

Training programmes from the industry and the public domain were consistent with the result of the second sub-questions, which can be evidenced in Section 3.3. Figure 3.13 demonstrated the prevalence of these ethical elements in internal and external training, consistent with the high responses on the four ethics in training. This slight difference from a party school fits the literature in Section 3.2.4. Communism, which is the dominant ideology in China, is trained to all levels of party schools. 'Automotive Association' was not as prevalent in containing Communism as for the other three elements, which also fits its function with a focus on technical aspects (e.g. CATARC and CATTC in Figures 3.18 and 3.19 in Section 3.3.3). Table 3.13 (Section 3.3.3) indicates inclusion of Confucianism in university training (Wuhan University, 2018). The result that no participants surveyed attended a Confucian Academy was also consistent with its limited training situation, being confined to local areas, evidenced in Figure 3.26 (Section 3.3.3). Their similarity and difference were indicated in Table 6.5.

Table 6-5: Prevalence of Training Models Containing Ethical Elements (if 'Yes')

Q20.2 (70 valid), Q21.2 (139 valid), Q22.2 (145 valid), Q23.2 (13 valid)		Frequency				Valid Percent			
Training mode prevalence		**Q20.2**	**Q21.2**	**Q22.2**	**Q23.2**	**Q20.2**	**Q21.2**	**Q22.2**	**Q23.2**
Valid	1.Company Training	46	93	113	102	65.7	67.9	77.9	75.0
	2.Automotive Association	25	18	14	33	35.7	13.1	9.7	24.3
	3.Party School (company level)	7	16	29	12	10	11.7	20.0	8.8
	4. Party School (provincial level)	1	4	7	3	1.4	2.9	4.8	2.2
	5.Central Party School	1	1	3	1	1.4	0.7	2.1	0.7
	6.University Training	19	43	42	38	27.1	31.4	29.0	27.9
	7.Confucian Academy	0	0	0	0	0	0	0	0
	8. Other	10	16	7	12	14.3	11.7	4.8	8.8
	Total	68	137	145	133	97.1	98.6	100	97.8
Non-respondent System		2	2	0	3	2.9	1.4	0	2.2
Total		70	139	145	136	100	100	100	100

Q20.2= WNE, Q21.2= Confucianism, Q22.2= Communism, Q23.2= EPE

4) The non-numerical information in the 'Other' option also demonstrated a similar result. The additional information was: WNE embedded at 'The parent company training from Japan', Confucianism embedded at 'The party school at the city level', Communism was embeded at 'The party school at the city level' and 'Jingangshan Cadre's Training School', and the EPE embedded at 'The parent company training from Japan'.

Indicated in Appendix 6.12, within the additional information in the 'Other' option, some responses repeated the listed options, and some were not relevant such as 'book', 'web' or 'self-study' model, and therefore were not accounted. The additional information in the 'Other' option was valid, consistent with the real joint venture situation and training practice in the CAI.

The inclusion of cultural and ideological ethical elements such as Confucianism or Communism in its ideological training centre at these levels also accord with the literature (Shambaugh, 2008b). As indicated in Section 3.3, Figure 3.24 demonstrates all levels of party school training. Literature also shows the benefit of Confucianism and its acceptance by CPC (Sections 3.2.4 and 3.2.5). Therefore, the inclusion of these cultural and ideological ethical elements fits the situation.

The training from the parent company such as Japan also fits the industry. The information from the industry indicated there was a large percentage of JVs in the CAI, with both Western and Asia countries, such as Japan and Korea (Section 3.2.2). Therefore, it is reasonable for these parent companies to hold training for their overseas JVs.

To sum up, the four main questions indicated a high inclusion of Confucianism, Communism and EPE, while WNE was relatively less included. The information in the first sub-question indicated a similar level of agreement, 'Somewhat agree' and 'Agree', admitting these ethical elements in managerial training were having an impact on managers' EI. EPE received the most scores on positive scales.

The information taken from the second sub-questions reflected 'Company Training', 'Automotive Association' and 'University Training' were the most prevalent training modes that embedded WNE, Confucianism and EPE, while Communism was more prevalent in 'Company Training', 'University Training' and 'Party school (at the company level)'.

The non-numerical information in the 'Other' option also demonstrated a similar result, the additional details were: WNE at 'The parent company training from Japan', Confucianism at 'The party school at the city level', Communism at 'The party school at the city level' and 'Jingangshan Cadre's Training School', and the EPE at 'The parent company training from Japan'. No participants surveyed attended Confucian Academy training. These additional details fit the training situation and the literature both regarding joint venture companies and in domestic training.

6.2.5 Part V Practical use of mutually compatible ethical elements in managerial training and their impact on EI in the CAI

Part V explores management training modes which contain compatible ethical elements.

1) **The information in Q24 indicated that four training modes were most prevalent in containing compatible ethical elements, namely, 'Company Training', 'Automotive Association', 'University Training' and 'Party School (company level)'.**

Table 6-6: Prevalence of training with compatible ethical elements

Q24 Training containing compatible ethical elements (Incorporating multiple choices)		Frequency	Per cent
Valid	1.Company Training	70	32.9
	2.Automotive Association	23	10.8
	3.Party School (at the company level)	13	6.1
	4. Party School (provincial level)	2	0.9
	5.Central Party School	0	0
	6.University Training	20	9.4
	7.Confucian Academy	0	0
	8. Other (see Appendix 5.13)	10	4.7
	9. None	94	44.1
Total		192	90.1
Non-respondent System		21	9.9
Total		213	100.0

As indicated in Table 6.6, with respect to Q24, 192 responded, while 94 on 'None'. The 98 valid responses indicated that the four most prevalent training modes with compatible ethical elements were 'Company Training' (32.9%), 'Automotive Association' (10.8%), 'University Training' (9.4%), and 'Party School (company level)' (6.1%). These most common modes were the same as in Part IV.

The compatibility of these four embedded ethical elements can be evidenced in Sections 4.6 and 4.7. Their compatibility regarding the features in the CAI was discussed with respect to four main aspects: respect for life, maximising the public good and upholding of honesty and integrity and a high standard moral leadership (Section 4.6).

2) The non-numerical information in the 'Other' option in Q24 indicated a similar pattern as in Part IV.

As indicated in Appendix 6.13, the two valid pieces of information were training at 'Group Corporation' and 'The local party school'. The information was consistent with the background information on the six main corporations (e.g. Figure 3.9 in Section 3.2.7) and the function of a party school (e.g. Figures 3.24 and 3.25 in Section 3.3.3).

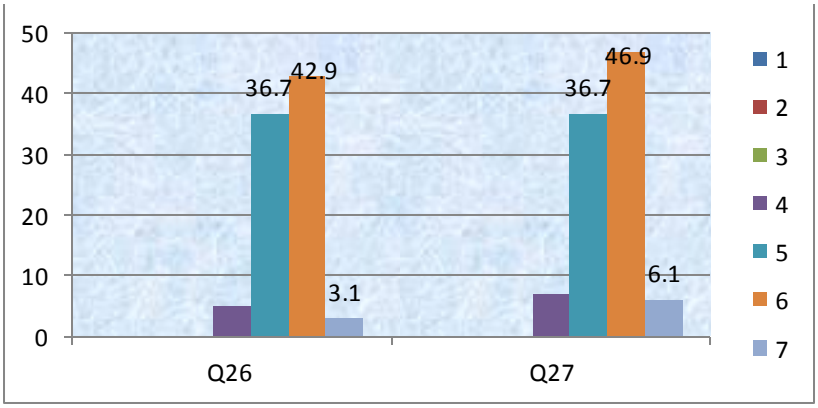
3) The information in Q25 indicated that the category of 'All ethical elements are mutually compatible' ranked highest and the two most prevalent explanations were 'The utmost purpose of all ethical elements are the same in nature', and 'All non-coercive ethical elements are compatible in nature'.

Responses to Q25 continued to explain how these ethical elements were compatible with each other. Within the 98 expected responses based on Q24, 81 responded, a rate of 82.7%. Similar to the previous non-numerical questions, responses were coded into 25 micro, and six macro categories, according to their similar properties, as described in Appendix 6.14.

The negative and uncertain categories of A and B received a small number of responses (7.1%). The two most prevalent explanations were indicated to be in Category E: 'The utmost purpose of all ethical elements are the same in nature' (15.3%) and 'All non-coercive ethical elements are compatible in nature' (6.1%). The rest of the categories showed that ethical elements were mutually compatible in different ways, such as in the nature of justice, benevolence, integrity or honesty in Category 3.7 and the intrinsic goodness nature among the four ethical elements in Category 5.5. When combining micro categories in each macro group together, mutual compatibility of Category E ranked first, demonstrated in Appendix 6.15.

This compatibility was consistent with the moral values in the CAI and their training practice. Their co-existence is evidenced in Sections 3.2 and 3.3. Their mutual compatibility is validated in Section 4.6.

4) **Q26 and Q27 both indicated positive correlation towards the level of agreement that these compatible elements could influence EI and should be embedded in managerial training**.



1= Strongly disagree, 2= Disagree, 3= Somewhat disagree, 4= Neutral, 5= Somewhat agree, 6= Agree, 7= Strongly agree
Q26 Level of agreement of compatible elements on EI, Q27 Level of agreement embedding compatible elements in training
Figure 6-7: Q26 & Q27 - Level of agreement of compatible elements on EI and in training (if 'Yes')

As shown in Figure 6.7, within the 98 valid responses, 86 responded to Q26 and 95 to Q27. Their scores for 'Agree' and 'Somewhat agree' were similar, at 36.7% and 42.9% for Q26, and 36.7% and 46.9% for Q27, respectively.

To sum up, four training modes in Q24 were perceived to be most prevalent in containing compatible ethical elements: 'Company Training', 'Automotive Association', 'University Training', and 'Party School (company level)'. The non-numerical information in the 'Other' option indicated a similar pattern as in Part IV; the two pieces of valid information were 'Group Company' and 'The local party school'. In Q25, Category E 'All ethical elements are mutually compatible' ranked highest and the two most prevalent explanations under it were 'The utmost purpose of all ethical elements are the same in nature', and 'All non-coercive ethical elements are compatible in nature'. Q26 and Q27 both indicated positive feedback towards the level of agreement that these compatible elements could influence EI and should be embedded in managerial training.

6.2.6 Part VI Suggestions for the Chinese automotive companies and their training providers

Q28 gathered suggestions for future training, within the 213 valid questionnaires, 149 answered this question, a rate of 70%. These responses were summarised and coded into 28 micro categories and 7 macro-categories, according to their similar properties.

1) **The information in Q28 indicated that there were detailed micro category divisions for managers (28 categories), with few negative and uncertain responses on the necessity of training for EI enhancement.**

2) **The information also indicated that the three highest positive suggestions for managerial training were 'To embed ethical dimension concept specific for the CAI', 'To pay attention to the non-coercive nature of ethics and moral values', and 'To differentiate on training approaches, such as management level, particularly for seniors'.**

   To be specific, in response to Q28, results in Appendix 6.16 indicated that the three micro categories with the highest responses were 'Embedding three dimensions concept

in training (global, Chinese societal and industrial)', at 6.1%; 'Popularising the knowledge of non-coercive ethics', at 5.6%; and 'Targeting senior management more', at 2.8%.

The three macro-categories with the highest responses were 'Strengthening ethical elements in training', at 11.7%; 'Offering suggestions on training approaches and improvements', at 8.5%; and 'Paying attention to the different dimensions of ethical elements', at 8%.

These suggestions are consistent with the training situation in the CAI. Industry statistics from documents and the public domain indicated that there are defficiencies in managerial training in the CAI with respect to ethics in that there is a lack of a whole dimension such as ethical elements from the West and insufficient attention to the nature of non-coercive ethics, evidenced in Sections 3.4.1, 3.4.3 and 3.4.5. There is also no indication of an appropriate approach in training, such as the differentiation in training contents according to management levels. Therefore, it is reasonable that managers proposed to embed such training approaches. This three-dimension concept (global, Chinese societal and industrial) to include the indigenous culture and ideology also fits with the managers' perspective. As evidenced in Section 3.3, these managers were impacted by the joint venture environment and indigenous values from culture and ideology and values from the Western cooperative companies.

6.3 Comparisons between results

Comparisons were conducted to clarify and probe inner relationships between data; these comparisons were based on the literature. The descriptive frequency, cross-tabulation and inferential correlation were utilised, justified in Section 6.1 and are shown below:

- Section 6.3.1-**Categorical level data**: Cross-tabulation between management level and each of the factors (managers' ED stages of awareness and judgment, the prevalence in training and training effect on EI);
- Section 6.3.2-**Descriptive data**: Descriptive comparison of managers' ED stages (ethical awareness and judgment), training prevalence, compatibility and impact on EI;
- Section 6.3.3-**Inferential correlation data**: Correlation between managers' ED

stages (ethical awareness and judgment), training prevalence, compatibility and impact on EI;

6.3.1 Cross-tabulations: Managerial level and ethical awareness/judgment/ training impact on EI

The possible relationship between management level and differentiation in the inclusion of ethical elements in training programmes was compared. This is because managers' level might impact the levels of training they attend, which might further impact their ethical awareness, judgment and intentions.

This possible relationship can also be evidenced in industrial training programmes. The information from Section 3.3.3 indicates some managerial training programs target different levels of management, with slightly different training programmes and moral contents. For example, evidenced in Figures 3.14 and 3.22 (Sections 3.3.1 and 3.3.3), there is a phenomenon that indicates there are more ethical elements in managerial training from religion, culture and philosophy for higher-level management, particularly for senior management than for general management.

Categorical and level comparisons usually employ a cross-tabulation approach (Aspelmeier and Pierce, 2009), stated in Chapter 5. Therefore, three cross-tabulations were constituted, and their results are as follows:

1) **Insignificant cross-tabulation between manager's level (Q9 in Part I)* awareness (Q14 in Part II).**

The Chi-Square tests between Q9 and the four ethical elements in Q14 demonstrated their insignificant relationships, at P-value > 0.05, being 0.448, 0.761, 0.929 and 0.487, respectively, as summarised in Table 6.7 (for details, see Appendices 6.18 and 6.19).

Table 6-7: Chi-Square test summary in cross-tabulation: level Q9 * Ethical awareness Q14

Level of management Q9	WNE Q14.1	Confucianism Q14.2	Communism Q14.3	EPE Q14.4
Pearson Chi-Square	.448	.761	.929	.487

2) **Insignificant cross-tabulation between manager's level (Q9 in Part I) * judgment (Q19 in Part III).**

The Chi-Square tests between Q9 and Q19 demonstrated their insignificant relationships, at P-value > 0.05, being 0.439, shown in Table 6.8 (for details, see Appendix 6.20).

Table 6-8：Chi-Square Tests for Cross-tabulation Q9 * Q19

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	7.837[a]	8	.450	.439		
Likelihood Ratio	9.161	8	.329	.381		
Fisher's Exact Test	6.679			.527		
Linear-by-Linear Association	1.036[b]	1	.309	.344	.174	.037
N of Valid Cases	203					

a. Eight cells (53.3%) have expected count less than 5. The minimum expected count is .20. b. The standardised statistic is 1.018.

3) **Insignificant cross-tabulation between managers' level (Q9 in Part I) and ethical elements in the management training they attended (Q20, Q21, Q22 and Q23 in Part IV).**

The Chi-Square tests demonstrated an insignificant relationship, at P-value > 0.05, being 0.950, 0.841, 0.116 and 0.453, respectively, summarised in Table 6.9.

Table 6-9: Chi-Square test for cross-tabulation of Level (Q9) * Management training (Q20-Q23)

Level of management Q9	WNE Q20	Confucianism Q21	Communism Q22	EPE Q23
Pearson Chi-Square Asymptotic Significance (2-sided)	.950	.841	.116	.453

The three insignificant p-values indicate no apparent relationships between managers' level and their ethical perceptions. However, this phenomenon can be explained from the participants' level. Literature in Section 3.3.3 indicates that there are more ethical elements in managerial training from religion, culture and philosophy for higher-level management, particularly for senior management than general management. The information in Section 6.2.6 also proposed this suggestion. Therefore, there is sufficient evidence to indicate the relationship between the training according to management level and impact on managers' ethical perceptions. The indicated insignificant values might be due to the low number of senior managers in the survey (see Appendix 6.8), which is typical of any company.

6.3.2 Descriptive data comparisons: Awareness, judgment, training inclusion, compatibility and impact on EI in terms of the four ethical elements

It is indicated that managers' high ethical awareness and judgment to the four ethical elements are consistent with their inclusion in training and perception of compatibility and impact on their EI, EPE being the highest. These can be seen through the summary of individual descriptive data in each sub-chapter and related comparisons across these sub-chapters:

1) **Individual data in Part II (demonstrated in Section 6.2.2) indicated the generally high levels of awareness of the four non-coercive ethical elements, EPE being the highest and WNE the lowest (relatively).**

   These features in individual data have been confirmed by comparisons from the descriptive data within Part II (Q11, Q13 and Q14). The intra-question comparisons indicated the two highest responses were on the scales of '5=Somewhat aware/important' and '6= Aware/important' (Figure 6.8).

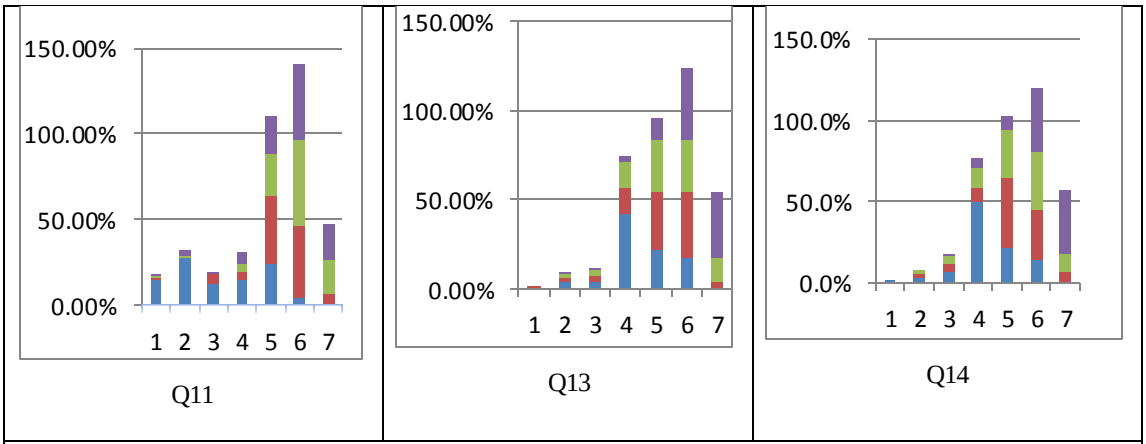


Figure 6-8: Intra-question comparisons of the four ethical elements within Q11, Q13 and Q14

The inter-question comparison also indicates, except for WNE, the highest responses were on the two scales mentioned, responses for EPE being the most positive (Figure 6.9).

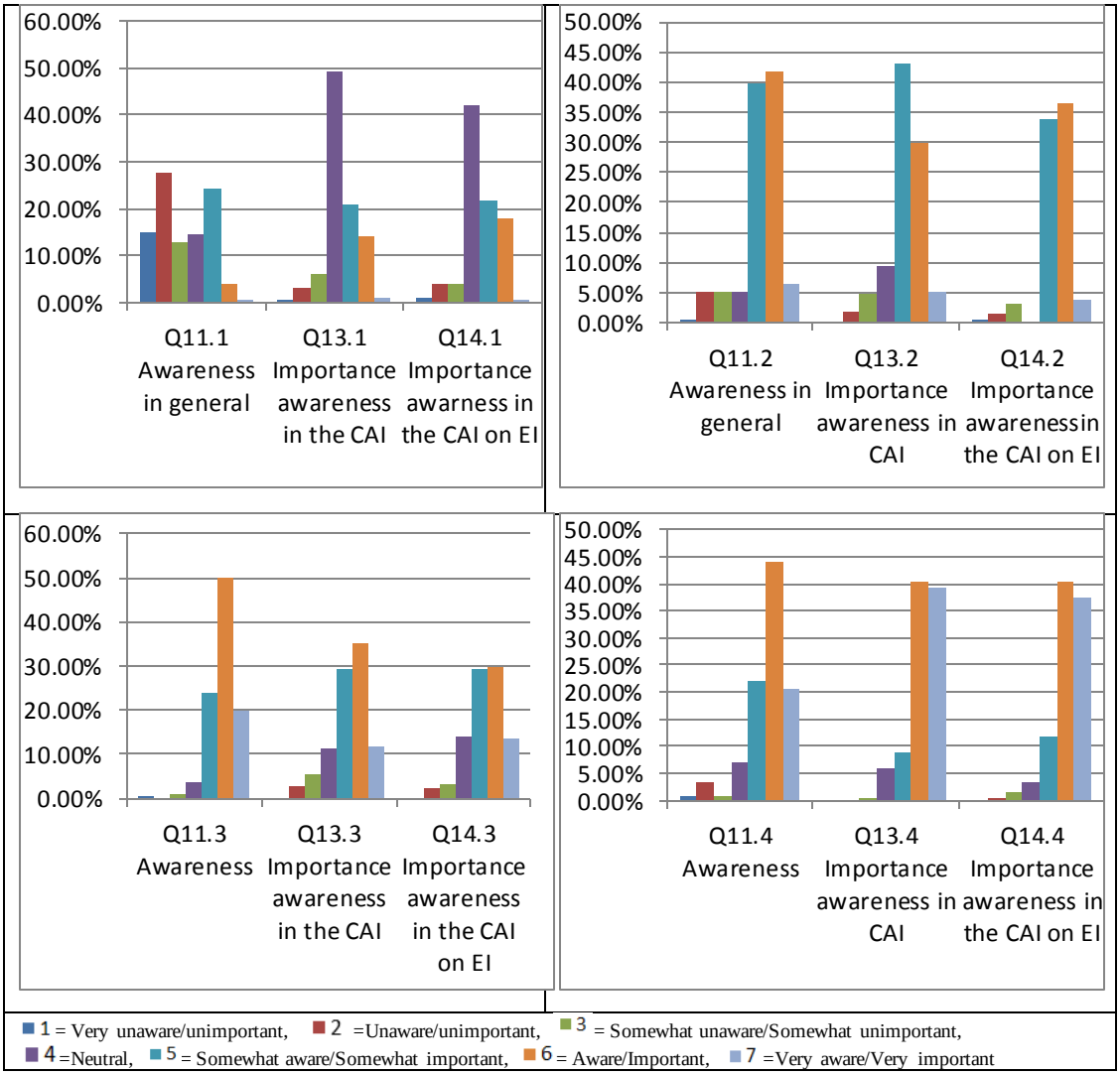


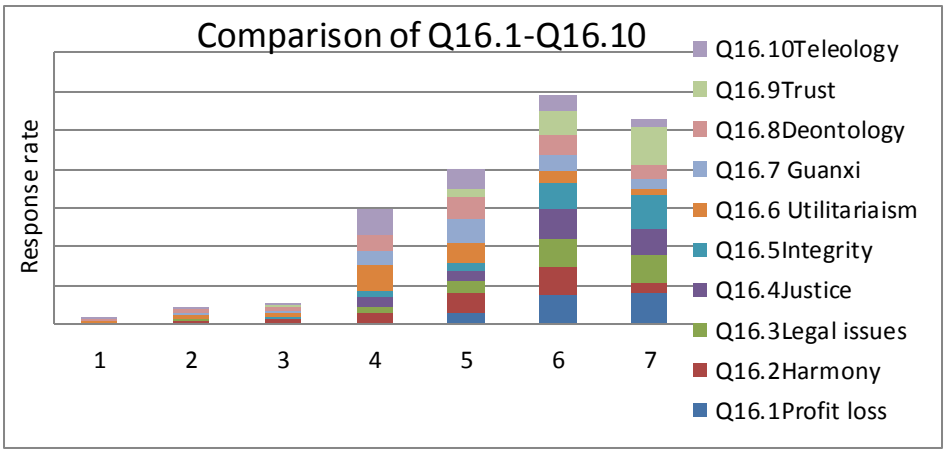
Figure 6-9: Inter- question comparisons of four ethics across Q11, Q13 and Q14

2) **The result in Part II about ethical awareness was proven consistent with the ethical judgment in Part III** (Section 6.2.3)**.**

The results from the individual data in Part III indicate that **the four non-coercive ethical elements were always high**, EPE being the highest, regardless of the open non-numerical feedback related to Image 1 (Q15), the random feedback on mixed ethical options related to Image 2 (Q16) or feedback on the four focused ethical elements (Q17 and Q18) and application in training (Q19).

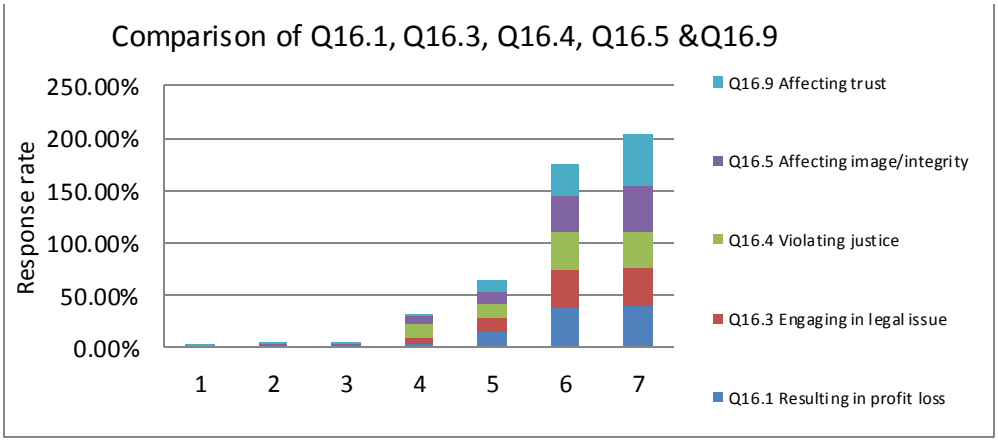
The highest response on EPE was also indicated within the comparisons in Part III, such as in the intra-question comparison of Q16. As shown in Figures 6.10 and 6.11, the five top rankings were on the options of 'Profit loss' (Q16.1), 'Legal issues' (Q16.3), 'Justice' (Q16.4), 'Integrity' (Q16.5) and 'Trust' (Q16.9), which were exclusively related

to EPE as discussed in Section 6.2.3 and based on the literature (National Society of Professional Engineers, 2007; IMECHE, 2016; The Engineering Council, 2018).



1= Very unaware/unimportant, 2= Unaware/unimportant, 3= Somewhat unaware/Somewhat unimportant, 4= Neutral, 5= Somewhat aware/Somewhat important, 6= Aware/Important, 7= Very aware/Very important

Figure 6-10: Ethical element impact comparison of Q16



Liker Scales: 1= Very unaware/unimportant, 2= Unaware/unimportant, 3= Somewhat unaware/Somewhat unimportant, 4= Neutral, 5= Somewhat aware/Somewhat important, 6= Aware/Important, 7= Very aware/Very important

Figure 6-11: Comparisons of the highest responses in Q16

The similar result is reflected in the comparison between Q14 in Part II and Q19 in Part III. The two questions concern the integration of ethical awareness and judgment. Data in Q14 and Q19 indicate their consistency in highest responses, being high on the two positive scales of '5=Somewhat aware/Somewhat important' and '6= Aware/Important' to the four ethical elements, indicated in Figures 6.3 and 6.5.

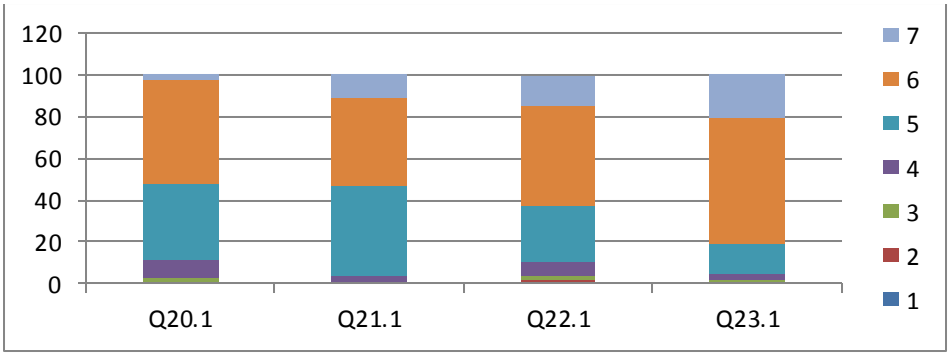
3) **These features were also consistent with the training prevalence of these individual ethical elements in management training and their impact on managers' EI across inter-question comparison in Part IV** (Section 6.2.4)**.**

The inter-question comparison of the four ethical elements in Part IV indicated high

scores to the four ethical elements, with a relatively low response for WNE (Table 6.10). The inter-question comparison on the first sub-question shows a high and positive response of the four ethical elements on the impact of managers' EI (Figure 6.12).

Table 6-10: Response rate comparison of the four main questions in Part IV on the 'Yes' option

Qs	Ethical Elements	Responses (213 in total)	Responses (Yes)
Q20	WNE	208 (97.7%)	70 (32.9%)
Q21	Confucianism	205(96.2%)	139(65.3%)
Q22	Communism	203(95.3%)	145 (68.1%)
Q23	EPE	204(95.8%)	136 (63.8%)



1= Strongly disagree, 2= Disagree, 3= Somewhat disagree, 4= Neutral, 5= Somewhat agree, 6= Agree, 7= Strongly agree

Figure 6-12: The Impact comparison of ethical elements in training on EI - Sub-questions

4) **These features were also consistent with the result in Part V on the compatibility of these four ethical elements in management training.** As indicated in Section 6.2.5, the four most prevalent ones with compatible ethical elements were the same as in Section 6.2.4.

This quantitative result was also supported by the non-numerical data, as evidenced in Appendix 6.14. The two most prevalent explanations were 'The utmost purpose of all ethical elements are the same in nature' (15.3%), 'All non-coercive ethical elements are compatible in nature' (6.1%).

5) **These results in the previous numerical data were also consistent with the non-numerical data in Part VI on managerial training suggestions**.

As indicated in Section 6.2.6, the highest positive responses suggestions were on training dimensions and nature of ethical elements, which are consistent with the numerical data on the high responses of the four ethical elements in that they were derived from the modified dimensions (Section 4.3) and justified to retain the non-

coercive nature (Section 4.4).

6) The results from Part II to Part VI are consistent with each other, indicating the high and positive response towards the four non-coercive ethical elements, EPE and WNE being the highest and lowest in all occasions, respectively. Figure 6.13 shows the awareness, judgment, training inclusion and impact on EI based on results from Part II to Part VI.

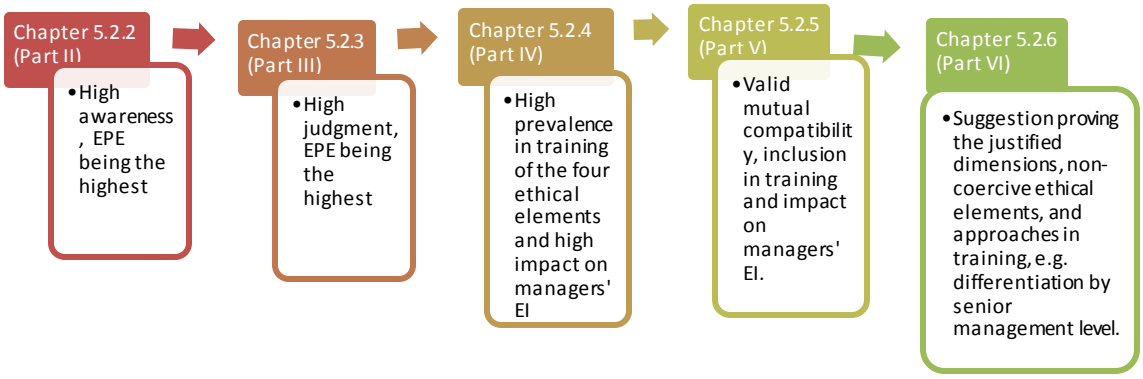


Figure 6-13: High awareness, judgment, training inclusion and impact on EI reflected from descriptive data
Source: Author (2019)

6.3.3 Correlations: awareness, judgment, training, compatibility and impact on EI in terms of the four ethical elements

Correlations were conducted with inferential data to statistically validate their inner relationships and triangulate the resulting individual data in Section 6.2.

The premise for this comparison is based on the literature. According to Rest (1986), ethical awareness, judgment and intentions are a series of continuously related processes in ED, evidenced in Section 4.2. In addition, an inferential 'correlation table' with Chi-square results is a statistical method used for continuous relation comparisons between variables (Aspelmeier and Pierce, 2009), evidenced in Section 5.14.1.

Accordingly, based on the literature, four inferential P-value correlations were constituted as follows:

1) Correlation between Q11(general awareness in ethics), Q13(awareness specific to managers' EI) and Q14 (awareness specific to managers' EI in the CAI);

2) Correlation between Q14 (awareness specific to managers' EI in the CAI) and Q19 (judgement of agreement to utilise these ethics in the CAI);

3) Correlation between Q14 (awareness specific to managers' EI in the CAI) and Q20.1-Q23.1(impact on EI of the four ethics); Q19 (judgment specific to managers' EI in the CAI);
4) Correlation between Q12 (general compatibility of the ethics) and Q26 (utilisation of agreement of the impact) and Q27 (agreement to embed these in training for managers' EI).

The four correlations have been presented in details:

1) There was a valid correlation in terms of the four ethical elements across their general awareness, awareness specific to the CAI and specific to their EI, at P < 0.01.

Table 6-11: Correlations of Q11, Q13 and Q14

Note: This comparison is in terms of the four ethical elements on their relationships on three occasions: Q11.1-Q11.4: general awareness; Q13.1-13.4: awareness in the CAI; Q14.1-Q11.4: awareness specific to EI.

Correlations-WNE

		Q11.1	Q13.1	Q14.
Q11.1	Pearson Co relation	1	.458**	.435**
	Sig. (2-tailed)		.000	.000
	N	211	203	195
Q13.1	Pearson Correlation	.458**	1	.671**
	S g. (2-tailed)	.000		.000
	N	203	203	194
Q14.1	Pearson Correlation	.435**	.671**	1
	Sig. (2-tailed)	.000	.000	
	N	195	194	195

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations-Confucianism

		Q11.2	Q13.2	Q14.2
Q11.2	Pearson Correlation	1	.200**	.209**
	Sig. (2-tailed)		.004	.003
	N	211	202	200
Q13.2	Pearson Correlation	.200**	1	.564**
	Sig. (2-tailed)	.004		.000
	N	202	202	198
Q14.2	Pearson Correlation	.209**	.564**	1
	Sig. (2-tailed)	.003	.000	
	N	200	198	200

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations-Communism

Correlations-WNE

		Q11.3	Q13.3	Q14.3
Q11.3	Pearson Co relation	1	.379**	.264**
	Sig. (2-tailed)		.000	.000
	N	211	204	196
Q13.3	Pearson Correlation	.379**	1	.728**
	S g. (2-tailed)	.000		.000
	N	204	204	196
Q14.3	Pearson Correlation	.264**	.728**	1
	Sig. (2-tailed)	.000	.000	
	N	196	196	196

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations-EPE

Correlations-WNE

		Q11.4	Q13.4	Q14.4
Q11.4	Pearson Co relation	1	.387**	.371**
	Sig. (2-tailed)		.000	.000
	N	211	203	202
Q13.4	Pearson Correlation	.387**	1	.731**
	S g. (2-tailed)	.000		.000
	N	203	203	199
Q14.4	Pearson Correlation	.371**	.731**	1
	Sig. (2-tailed)	.000	.000	
	N	202	199	202

**. Correlation is significant at the 0.01 level (2-tailed).

The four P-values were exclusively valid, indicating to be 0.000 or 0.003. The correlation values were also high, indicating to be 0.671**, 0.564**, 0.728** and 0.732**, very close to 1, shown in Table 5.11.

These P-values statistically indicate the valid relationships of the three awareness questions in terms of the four ethical elements. It validates that managers' general ethical awareness (Q11), awareness specific to the CAI (Q13) and awareness specific to their EI (Q14) are closely related. The high correlation values further enhanced these relationships.

This result is consistent with the individual descriptive data in Sections 6.2.2 and 6.2.3 and comparison in Section 6.3.2. This result is also consistent with the literature, identifying the importance to design training associated with the industry; this deficiency was evidenced in Section 3.4.4.

2) **There was a valid correlation in terms of the four ethical elements between their ethical awareness and judgment in recommending inclusion in managerial training, at $P < 0.01$.**

Table 6-12: Correlation of ethical judgment in training (Q19) * Awareness in the CAI (Q14)

Correlations Q19* Q14.1, Q14.2. Q14.3 and Q14.4						
		1 (Q19)	2(Q14.1)	3(Q14.2)	4(Q14.3)	5(Q14.4)
1.Level of agreement in utilising non-coercive ethical elements in training (Q19)	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	203				
2.Importance of WNE in managers' EI (Q14.1)	Pearson Correlation	.252**	1			
	Sig. (2-tailed)	.000				
	N	188	195			
3.Importance of Confucian teachings in managers' EI in the CAI (Q14.2)	Pearson Correlation	.256**	.310**	1		
	Sig. (2-tailed)	.000	.000			
	N	193	195	200		
4.Importance of Communist ethics in managers' EI in the CAI (Q14.3)	Pearson Correlation	.199**	.214**	.472**	1	.
	Sig. (2-tailed)	.006	.003	.000		.
	N	189	195	196	196	
5.Importance of EPE in managers' EI in the CAI (Q14.4)	Pearson Correlation	.353**	.179*	.237**	.318**	1
	Sig. (2-tailed)	.000	.012	.001	.000	
	N	195	195	196	196	202

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

These p-values were exclusively valid, at $P < 0.01$, indicated in Table 6.12. These P-values statistically indicated the valid relationship between managers' ethical awareness (Q14) and their judgment to recommend the inclusion of these ethical elements (Q19).

This result is consistent with the individual descriptive data in Sections 6.2.2 and 6.2.3 and comparison in Section 6.3.2. This result is also consistent with the literature that has identified the importance of these ethical elements in training to resolve ethical issues, evidenced in Sections 3.4 and 3.5.

3) There was a valid correlation between the impact of the four non-coercive ethical elements on training in Part IV and their awareness and judgment results in Parts II and III, at $P < 0.01$.

Q14 is about ethical awareness, and its four sub-questions in the four ethical elements, which are Q14.1= Importance of WNE in the CAI on managers' EI, Q14.2= Importance of Confucianism in the CAI on managers' EI, Q14.3= Importance of Communism in the CAI on managers' EI, Q14.4= Importance of EPE in the CAI on managers' EI.

The first sub-question in Part IV is about managers' agreement on the impact of these four ethical elements. The four sub-questions are Q20.1= Level of agreement

of impact on EI (WNE), Q21.1= Level of agreement of impact on EI (Confucianism), Q22.1=Level of agreement of impact on EI (Communism), Q23.1= Level of agreement of impact on EI (EPE).

The correlations (Q14*Q20.1, Q21.1, Q22.1, Q23.1) were significant, at $P < 0.01$, as indicated in Table 6.13.

Table 6-13: Correlations Q14* Q20.1, Q21.1, Q22.1, Q23.1

Correlations (Q14.1, Q14.2, Q14.3, Q14.4 * Q20.1, Q21.1, Q22.1 and Q23.1) (if 'Yes')									
		Q20.1	Q21.1	Q22.1	Q23.1	Q14.1	Q14.2	Q14.3	Q14.4
Q20.1	Pearson Correlation	1							
	Sig. (2-tailed)								
	N	195							
Q21.1	Pearson Correlation	.310**	1						
	Sig. (2-tailed)	.000							
	N	195	200						
Q22.1	Pearson Correlation	214**	.427**	1					
	Sig. (2-tailed)	.003	.000						
	N	195	196	196					
Q23.1	Pearson Correlation	.179*	.237**	.316**	1				
	Sig. (2-tailed)	.012	.001	.000					
	N	195	196	196	202				
Q14.1	Pearson Correlation	.287*	.370**	.203	.322**	1			
	Sig. (2-tailed)	.020	.002	.105	.008				
	N	64	66	65	66	69			
Q14.2	Pearson Correlation	.165	.332**	.274**	.317**	.632**	1		
	Sig. (2-tailed)	.073	.000	.002	.000	.000			
	N	119	124	120	125	53	131		
Q14.3	Pearson Correlation	.287**	.174*	.447**	.250**	.105	.376**	1	
	Sig. (2-tailed)	.001	.041	.000	.003	.494	.000		
	N	134	138	135	139	45	97	144	
Q14.4	Pearson Correlation	.081	.067	.184*	.317**	.168	.361**	.406**	1
	Sig. (2-tailed)	.374	.457	.041	.000	.203	.000	.000	
	N	122	127	123	129	59	104	99	135
**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).									

Q19 is about managers' ethical judgement perception to recommend using the four ethical elements to enhance managers' EI. The correlation between Q19 and the first sub-question in Q20 was used to validate the consistency of their perception in recognising these ethical elements in managerial training for managers' EI.

The correlations (Q19* Q20.1, Q21.1, Q22.1, Q23.1) were significant, at $P < 0.01$, as indicated in Table 6.14.

Table 6-14: Correlations between Q19* Q20.1, Q21.1, Q22.1 and Q23.1

Correlations (Q19 * Q20.1, Q21.1, Q22.1 and Q23.1) (if 'Yes')						
		Q19	Q20.1	Q21.1	Q22.1	Q23.1
Q19	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	203				
Q20.1	Pearson Correlation	.461**	1			
	Sig. (2-tailed)	.000				
	N	67	70			
Q21.1	Pearson Correlation	.445**	.632**	1		
	Sig. (2-tailed)	.000	.000			
	N	129	53	131		
Q22.1	Pearson Correlation	.252**	.112	.376**	1	
	Sig. (2-tailed)	.003	.006	.000		
	N	140	46	97	144	
Q23.1	Pearson Correlation	.169	.168	.361**	.406**	1
	Sig. (2-tailed)	.008	.007	.000	.000	
	N	133	59	104	99	135

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

The two valid correlations (Q14 and Q19 * Q20.1, Q21.1, Q22.1 and Q23.1) indicate consistency between the individual data on ethical awareness (Q14) and judgment (Q19) and their impact on managers' EI (Q20.1, Q21.1, Q22.1 and Q23.1). The valid P-values also indicate their inner relationships in that high awareness and judgment can enhance their EI.

This continued impact is consistent with the EI theory, which consists of several consecutive stages, namely, awareness, judgment, EI and decisions (Rest, 1986), evidenced in Section 4.2. Accordingly, the comparable rationality is that the high and positive impact of managers' ethical awareness and judgment can significantly enhance their EI, and this positive impact of EI due to ethical behaviour and cognitive moral development through training cultivation can be evidenced in Section 4.7.5 (Kohlberg and Turiel, 1970; Trevino, 1986).

4) **There was a valid correlation on the general compatibility of the four non-coercive ethical elements and their utilisation in training on EI enhancement, at P < 0.01.**

Table 6-15: Correlations Q12* Q26 and Q27

Correlations Q12* Q26 and Q27				
		Q12	Q26	Q27
Q12	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	205		
Q26	Pearson Correlation	.447**	1	
	Sig. (2-tailed)	.000		
	N	83	86	
Q27	Pearson Correlation	.304**	.829**	1
	Sig. (2-tailed)	.003	.000	
	N	91	86	95
**. Correlation is significant at the 0.01 level (2-tailed).				

Q12=Compatibility Q26=Level of agreement of the compatible elements on the EI
Q27=Level of the agreement to recommend the compatible elements in management training

As indicated in Table 6.15, there was a valid correlation (Q12 * Q26 and Q27), which indicates consistency between the individual data on the compatibility of the four ethical elements (Q12) and their impact on EI (Q26) in managerial training (Q27). The valid P-values also indicate their inner relationships in which the high perception of compatibility might enhance their perception of EI and training practice. This cognitive moral development through training cultivation can be evidenced in Sections 3.3 and 4.7.5 (Kohlberg and Turiel, 1970; Trevino, 1986).

6.4 Visualisation of the validating by both descriptive and inferential data

Figure 6.14 visualises the individual data in Section 6.2 and the validation by both the descriptive data comparisons and inferential correlations in Section 6.3.

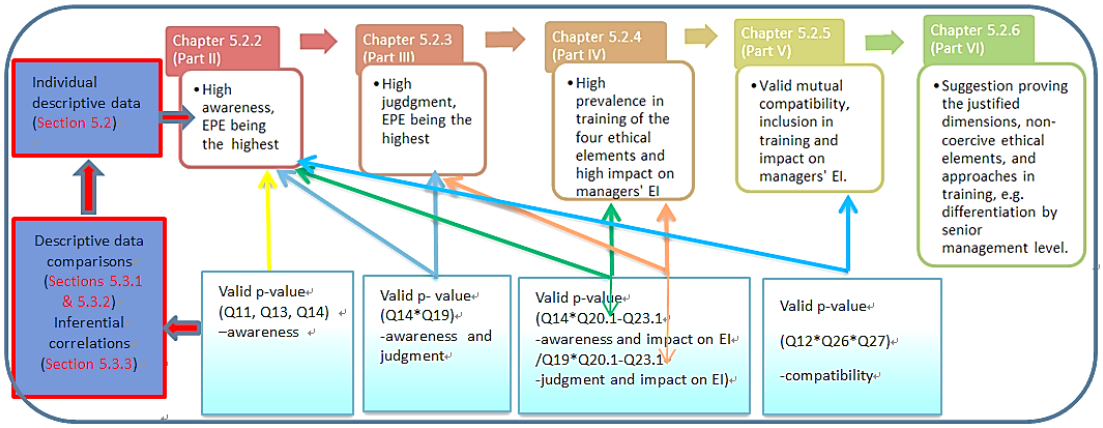


Figure 6-14: Descriptive and inferential data validating high awareness, judgment, training inclusion and impact on EI

Source: Author (2009)

6.5 Summary

This chapter consists of discussion of both individual data (Section 6.2) and data comparisons and validation (Section 6.3). These data were also shown to be consistent with the literature and fitting managers' background and perspective:

Section 6.2 demonstrated individual data in each part of the questionnaire:

- Information in Part I demonstrated the complexities of the moral value context in the CAI. Managers were from a variety of companies, but mainly represented six sampling companies from the major auto corporations, with a majority of young male staff and an exclusive nationality of mainland Chinese.
- The rest of this section showed data related to different stages of ethical decision-making and training practices. A high awareness (Part II) was displayed of the four ethical elements, both general and associating with the CAI and EI practice, 'EPE' showing the highest, while 'WNE' the lowest.
- A similar situation was reflected in their ethical judgment (Part III), by applying these ethical elements in the Volkswagen Emission Scenario.
- The similar ranking of the four ethical elements was indicated in embedding them in managerial training for EI enhancement in Part IV, where 'Company Training', 'Automotive Association' and 'University Training' were the most prevalent modes, while 'Communism' had slightly different prevalence, namely 'Company Training', 'University Training' and 'Party School (at company level)'. No participants surveyed attended a Confucian Academy.
- These similar modes were also indicated to be prevalent in terms of the embedding of the compatibility discussion in Part V, and with positive agreement to embed them in managerial training for EI enhancement.
- Part VI offered suggestions: to embed the ethical dimension concept specific for the CAI, to pay attention to the non-coercive ethics and moral values, and to differentiate on training approaches, such as management level, particularly for seniors.

These features from the individual data have been validated by comparisons from descriptive and inferential data in Section 6.3. The key themes were:

- The three insignificant P-values indicated no obvious relationships between managers' level and their ethical perceptions. However, this phenomenon has been explained by the impact of the number of different levels of participants, which is a natural fact in

any company. In addition, this phenomenon was validated from the literature in Section 3.3.3, indicating the differentiation for higher-level management particularly for senior management. Moreover, the non-numerical information in Section 6.2.6 also proposed the suggestion to differentiate training for senior management.

- Descriptive data comparisons validated the four ethical elements in their awareness, judgement, training inclusion, compatibility and impact on EI.
- The inferential data validated the descriptive data comparisons.

Chapter 7 `Findings and Analysis: Trainers

7.1 Introduction

This chapter discusses data from trainers based on the research questionnaire (Appendix 5.2 for trainers). This chapter presents data in a similar pattern to Chapter 6 but from a trainer's perspective (see Section 6.1).

One hundred questionnaires were sent out to trainers, of which 81 complete questionnaires were returned: a success rate of 81%. Like Chapter 6, the data presented is divided into two interrelated parts:

- Individual data (Section 7.2)
- Comparison between results (Section 7.3)

7.2 Individual data

The individual data are discussed in six sections based on the six parts of the questionnaire.

7.2.1 Part I Demographic information

1) **The information in Q1, Q2 and Q3 indicated more young male staff and an exclusive nationality of mainland Chinese, consistent with the demographic profile for trainers in the CAI, evidenced in Section 2.3.**

In response to Q1, the gender split was demonstrated, with 51 (63.0 %) males and 30 (37.0 %) females. Industry statistics from documents indicated the balance would be in the approximate range of 80% to 20% for all staff in the industry. However, some of the trainers were from external training centres, where there is less imbalance in the age distribution than the industry in general. Therefore, this result is less industry-led but fits trainers' real situations, as evidenced in Figure 3.14 (Section 3.3.1).

With regard to Q2, the majority of them were between 25 to 40 years old, the largest age groups being 25-30 years old (32.1%) (Appendix 7.1). This result fits the employment situation evidenced by industry statistics in Table 3.7 (Section 3.2.6).

Responses to Q3 indicated that the nationality of the participants was exclusively mainland Chinese (98.8%; Appendix 7.2), excepting one person (1.2%) from Chinese Taiwan. The dominance of ideology training and Chinese-based internal and external training reflect this situation, as evidenced by the training summary in Figure 3.14 (Section 3.3.2) and the party school training in Figures 3.24 and 3.25 (Section 3.3.3).

2) The information in Q4 and Q5 indicated the majority of trainers came from inner company training centres, consistent with trainers' features in the CAI, evidenced in Section 2.3.

Responses to Q4 identified that the internal training represented 87.7% of the sample: 13 listed companies or training centres, and 6 unlisted companies in the 'Other' category (Appendix 7.3). The external training providers included: University Training Centre, the Automotive Engineering Dept. and the External Party School, altogether 12.3 % of the total (Appendix 7.3).

In response to Q5, most trainers were found to be from HR or technique related training departments. There was no missing or non-respondent data in Q5 (Appendix 7.4), suggesting that all participants met 'Trainers' criteria and ensured the validity of trainers' responses. Within the five departments listed, Human Resource (HR) featured predominantly as a training mode (32.1%), while the generic 'Training Department' ranked second (17.3%). Research and Teaching departments accounted for 16.0 % and 8.6%, respectively. The 'Other' option indicated three unlisted departments, namely, 'Technology', 'Manufacturing' and 'Product R&D and Planning', which were indirectly related to training departments. However, these data were valid as it is common practice to hold training programs in different departments. The industry statistics about training contents indicate a similar situation (e.g. Table 3.12 and Figure 3.14 in Section 3.3.1).

3) The information in Q6 was consistent with trainers' profiles at lower and middle management levels and with a majority of participants holding a Bachelor's Degree.

With respect to Q6, the trainers' profiles in management were demonstrated. Most of them were in lower and middle level management (Appendix 7.5), the lower-level trainers representing the largest number (70.4%), and the medium-level trainers being the second (28.4%), and the senior level 1.2%. This result fits the trainers' general

situation.

Responses to Q7 demonstrated that the majority of responders (64.2%) held a Bachelor's Degree, 19.8% had a Master's Degree, and 9.9% a Technical Institute Certificate (Appendix 7.6). Some responders also held higher-level degrees, Doctorate Degree being 4.9% and Post-Doctoral being 1.2%. This result fits the general situation of trainees' education levels.

To sum up, data in Part I reflected trainers' less industry-led features compared with managers. The trainees are confined to the indigenous environment, mainly in HR and technique-related company in-house training centres. This information is consistent with trainers' information specific to the CAI and its staff's training situation. The consistency with Section 3.3 reflected that the sampling of trainers was qualified and representative of the industry and its management training situation, which is important in data analysis (Saunders et al., 2016).

7.2.2 Part II Trainers' awareness of non-coercive ethical elements

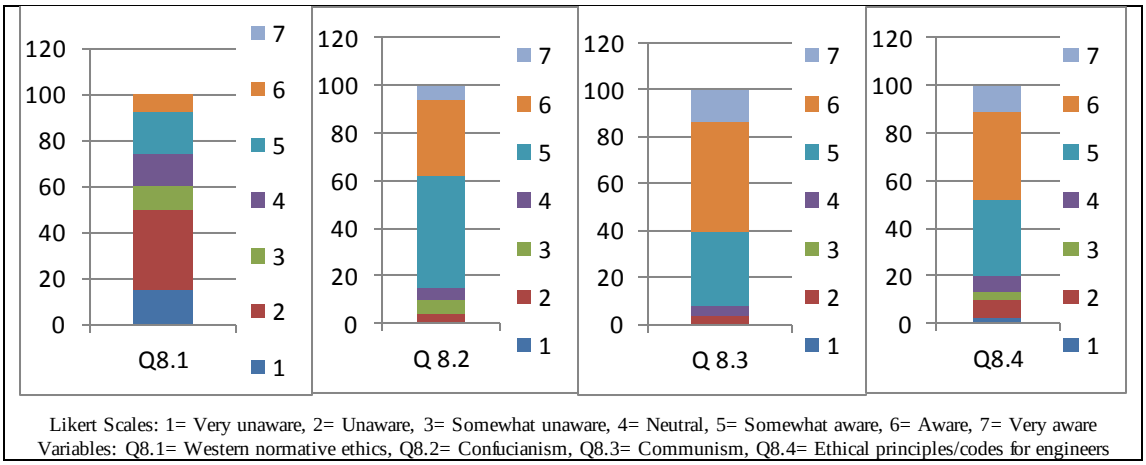
Awareness is the first stage in the ED process (Rest, 1986). Data were used to assess the impact on participants' general awareness (Q8), compatibility awareness (Q9), CAI specific awareness (Q10) and managers' EI awareness (Q11). This type of data helped to track participants' in-depth ethical awareness. The following indicates the key features of this type of data.

1) **The information in Q8 indicated a high score on general ethical awareness among the four non-coercive ethical elements as a whole, with the highest and lowest awareness on EPE and WNE, respectively.**

With respect to Q8, most responses fell on positive scores of '5 = Somewhat aware', '6 = Aware', and '7 = Very aware', while EPE and WNE received the highest scores on most positive scales, indicated in Figure 7.1.

This result can be explained and evidenced by the similar reasons for Q11 in the managers' survey stating that there is a joint venture culture in the industry (evidenced

in Sections 3.2.1- 3.2.3). These trainers are directly or indirectly impacted by these values, and are thus highly aware. The highest score on E.PE can also be evidenced in Section 3.4.4 for a high transformative impact from the indigenous culture and ideology (Cao, 2015) (Section 3.2.4). The lowest scores on WNE can be evidenced by Section 3.4.3 as a deficiency due to low awareness of this value in training or potential ideological clash. The high response to the four ethical elements can also be evidenced by the indispensable role from different ED dimensions, addressed in Section 4.3. Therefore, the result was consistent with the literature, and the validity of this awareness result continued to be explored in the following situations.



Likert Scales: 1= Very unaware, 2= Unaware, 3= Somewhat unaware, 4= Neutral, 5= Somewhat aware, 6= Aware, 7= Very aware
Variables: Q8.1= Western normative ethics, Q8.2= Confucianism, Q8.3= Communism, Q8.4= Ethical principles/codes for engineers

Figure 7-1: Q8 - General awareness of the four non-coercive ethical elements

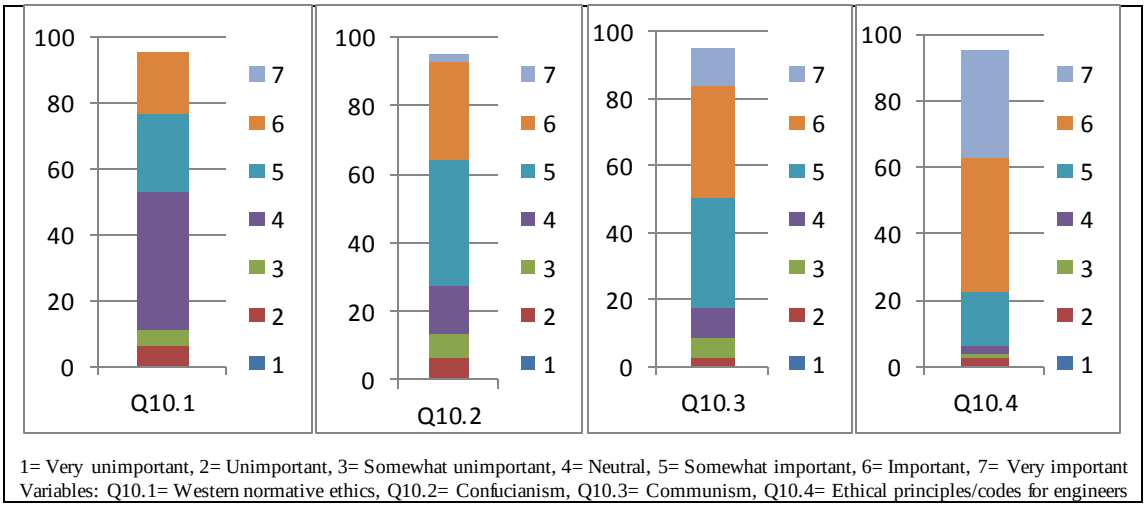
2) **The information in Q9 indicated a positive awareness of compatibility between the four ethical elements.**

Responses to Q9 (Appendix 7.7) on compatibility indicated the three scales with the highest responses were '4= Neutral' (39.5%), '5= Somewhat compatible' (29.6%) and '6= Compatible' (22.2%). Although most trainers might not be directly involved in the CAI joint venture decision-making, knowledge from a cultural background and previous education on management, culture or philosophy might give them this awareness. However, the response was relatively low compared with that of managers, who directly interact with these values.

3) **The information in Q10 and Q11 indicated a higher awareness of these four ethical elements when applying these theories in the industry and associating with its EI practice than the awareness of pure theory in Q9; among them responses on EPE still ranked highest.**

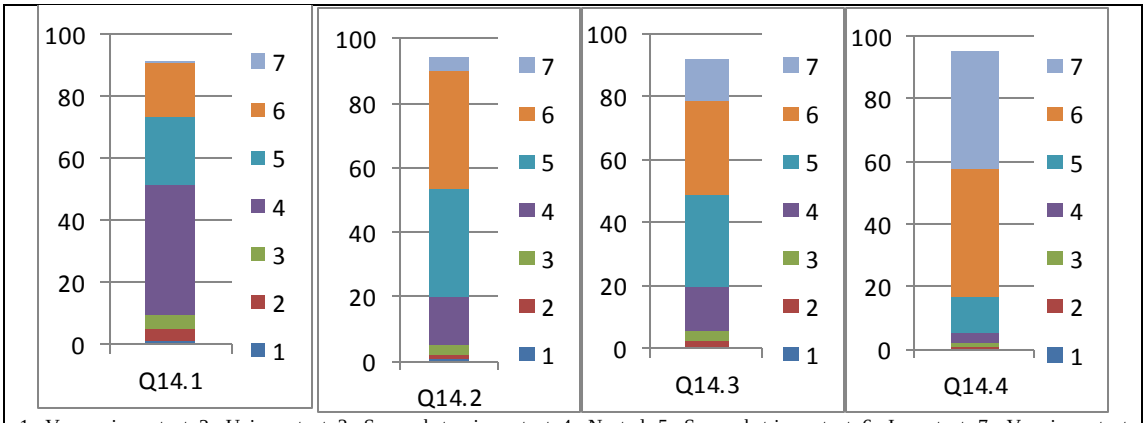
Responses to Q10 and Q11 showed similar trends in the application of awareness in the industry (Figure 7.2) and association with the discussion of EI (Figure 7.3). These responses were more positive than to the pure theory awareness in Q9. This result is consistent with the background information of the CAI because these trainers work in this environment, as evidenced in Sections 1.1, 3.2.1 and 3.2.2. However, they are less involved in decisions than managers. Therefore, the relatively lower responses compared with those of managers' indicate the validity of these data.

These two questions also indicated trainers' highest awareness of EPE. In response to Q10.4 and Q11.4, most responses were on the absolute and positive scales, at 'Important' and 'Very important' levels, as indicated in Figures 7.2 and 7.3. The high responses of EPE together with those in Q8 can also explain the transformative impact from culture and ideology.



1= Very unimportant, 2= Unimportant, 3= Somewhat unimportant, 4= Neutral, 5= Somewhat important, 6= Important, 7= Very important
Variables: Q10.1= Western normative ethics, Q10.2= Confucianism, Q10.3= Communism, Q10.4= Ethical principles/codes for engineers

Figure 7-2: Q10 - Specific awareness of the four ethical elements associated with the CAI



1= Very unimportant, 2= Unimportant, 3= Somewhat unimportant, 4= Neutral, 5= Somewhat important, 6= Important, 7= Very important
Variables: Q11.1= Western normative ethics, Q11.2= Confucianism, Q11.3= Communism, Q11.4= Ethical principles/codes for engineers

Figure 7-3: Q11 - Specific awareness of the four ethical elements associated with EI

To sum up, data in Part II reflected a high awareness of the four ethical elements on the

whole, and a higher awareness when associating with the CAI and its EI practice than the awareness of the general theories. Their awareness of compatibility was also high. Among the four ethical elements, EPE and WNE received the highest and lowest scores, respectively.

These results are consistent with the background situation of the CAI, where trainers have opportunities to directly or indirectly interact with the four ethical elements, as evidenced in Sections 3.2.1-3.2.2. The existence and different weighting of each ethical element is explained and summarised for similar responses in Part II in the managers' survey (Section 4.2.2). These can be exemplified by the cultural and ideological background and their transformed impact on EPE (Cao, 2015), which has resulted in a higher response on Communism, Confucianism and EPE than WNE (Section 3.4.4).

7.2.3 Part III The judgment-formulation of non-coercive ethical elements in the Volkswagen Emission Vignette

Ethical judgment is the second stage in the ED process (Rest, 1986). The data were analysed to assess the impact on participants' judgment on its practical application within the context of the CAI and in leading to training practice on EI improvement. The whole structure is as follows: open qualitative feedback about perceived ethical issues relating to ethical Image 1 (Q12), random ethical options relating to Image 2 (Q13), feedback on four focused ethical elements relating to the Volkswagen emission scenario (Q14), with qualitative explanations in Q15 related to Q14 choices and degree of agreement applying the four elements in managerial training (Q16).

1) **The information obtained from Q12 showed a high score on the violation of the four ethical elements, with violation of EPE being the highest, upon perceived ethical issues in Image 1.**

Table 7-1：Q12 – Non-numerical data for ethical issues perceived from Image I

Q12	**Ethical issues perceived from Image I**		
Categories	Properties	Frequency	Per cent
1	Violating WNE	17	21.0
2	Violating Confucianism	13	16.0
3	Violating Communism	11	13.6
4	Violating EPE	41	50.6
5	Violating justice	4	4.9
6	Violating CSR	3	3.7
7	Cost-benefit utility driven	1	1.2
8	Impacting environment	23	28.4
9	Need further exploration	2	2.5
	Total valid	62	76.5
	Non-respondent	19	23.5
Total		81	100

Concerning Q12, 81 responded, with 62 valid questionnaires, a success rate of 76.5%. A series of coding processes were conducted, as indicated in Appendix 7.8. Similar to Q15 in managers' questionnaire, 9 micro categories (from open coding) and 6 macro-categories (from axial coding) were generated according to their similar properties.

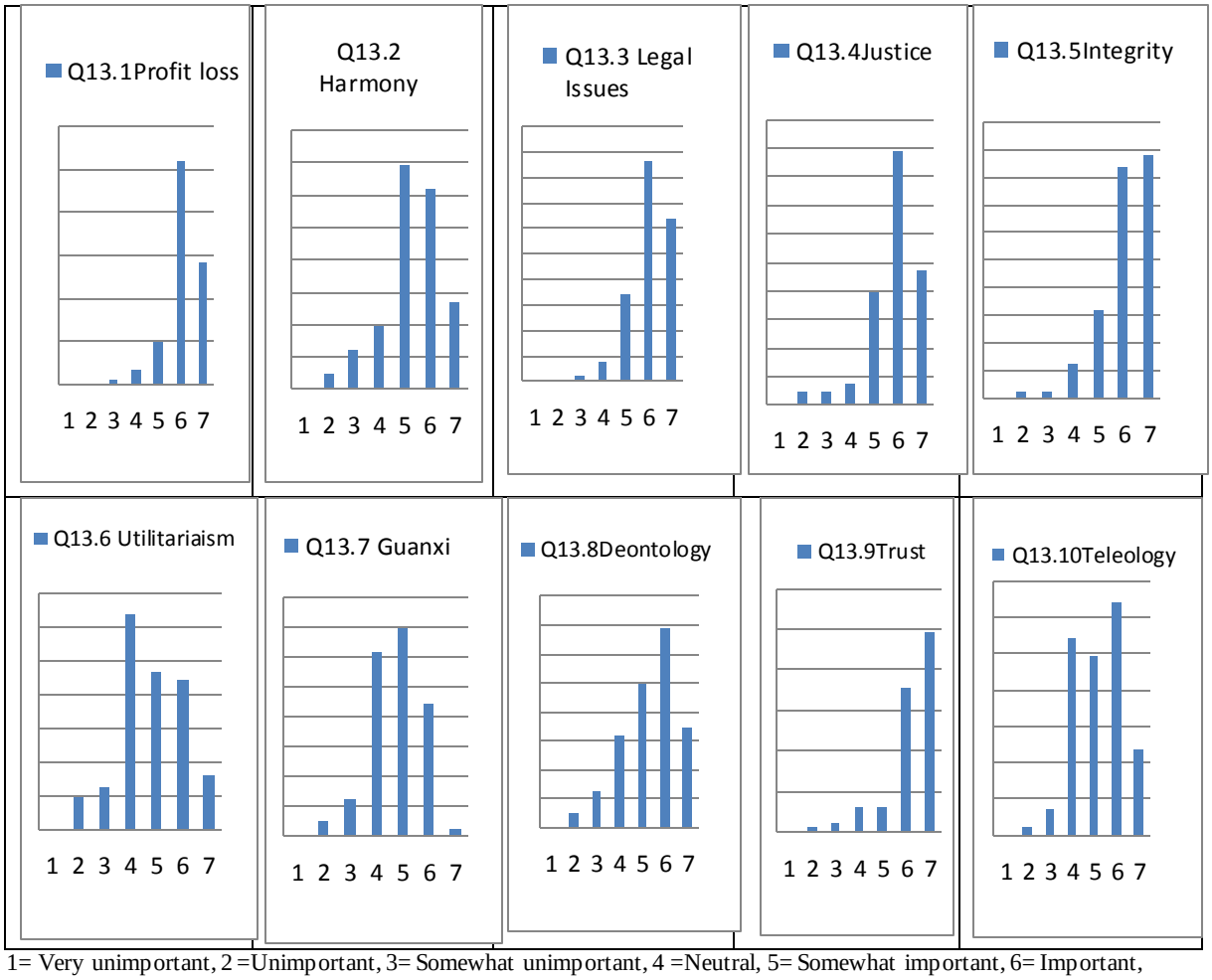
The result in Table 6.1 indicated, regarding the ethical vignette, the perceived violation of 'WNE', 'Confucianism', 'Communism', and 'Environmental issues' received a high response, ranging from 14% to 29%, while violating EPE received the highest response, representing 50.6%.

Similarly, the summary in Section 6.2.2 can evidence this data in Q15 for the managers' questionnaire. For example, the high response on the four ethical elements is consistent with the moral value impacts from the joint venture features (Sections 3.2.1 -3.2.2 and Section 3.3), and the particularly high response of EPE due to its transformative impact from culture and ideology (Section 4.3). However, in general, these responses are lower than those of managers' perceptions in Q15. The high response on 'Environmental issues' is also explained in Section 7.2.3 as a common ethical issue in the global auto industry and the CAI (Section 3.5.1), carrying common ethical concepts with the four ethical elements (Sections 4.6. and 4.7).

2) The information in Q13 indicated a close connection to EPE from the 10 randomly mixed ethical consequence options, relating to Image 2, highlighting the exclusively

positive responses.

Figure 7.4 demonstrates that the prevalence fell on neutral and positive areas of the scale, with the five most common responses being on the five adverse consequences of 'Profit loss' (Q13.1), 'Ensuing legal action' (Q13.3), 'Violation of justice' (Q13.4), 'Affecting Image/Brand honesty and integrity' (Q13.5) and 'Affecting customer trust' (Q13.9). These options are proven to be related to EPE (Cao, 2015; Zhu and Jesiek, 2015), evidenced in Section 3.5.4 and Section 4.6. For example, 'Affecting Image/Brand honesty and integrity' (Q13.5) is consistent with one of the features of EPE 'Upholding of honesty of integrity', evidenced in Section 4.6.3.



1= Very unimportant, 2 =Unimportant, 3= Somewhat unimportant, 4 =Neutral, 5= Somewhat important, 6= Important, 7 =Very important

Figure 7-4: Q13 - Judgment on adverse consequences relating to Image 2

3) The information in Q14 indicates a significant violation of the four ethical elements in response to the Volkswagen Emission Ethical Vignette, from which EPE received the highest score on positive scales.

Table 7-2: Q14: Judgment on the four focused ethical elements regarding the Volkswagen

Emission Vignette

Q14 Focus on ethical judgment (Incorporating combination results)		Frequency	Percent
Valid	1.WNE	55	67.9
	2.Confucianism	39	48.1
	3.Communism	28	34.6
	4.EPE	68	84
	5.None	4	4.9
	6.Other	1 (Violation of trustworthiness)	1.2
	Total	80	98.8
Non-respondent		1	1.2
Total		81	100

In response to Q14, the violation responses to the four ethical elements were high, the highest being the element of EPE, at 84%, as shown in Table 7.2.The question was a multiple-choice question, and the individual result has incorporated all the available choices. These high responses on the four ethical elements were due to the direct and indirect impact on trainers on the values brought by the joint venture culture, evidenced in Sections 3.2.1, 3.2.2 and 3.2.3. A similar explanation applies to the high response of EPE as in previous questions.

4) **The non-numerical information in Q15 supported the result in Q14. The high responses were 'Violating WNE', 'Violating Confucianism', 'Violating Communism' and 'Violating justice', and 'EPE' was still the highest.**

Table 7-3: Q15 – Non-numerical explanations for the choices in Q14

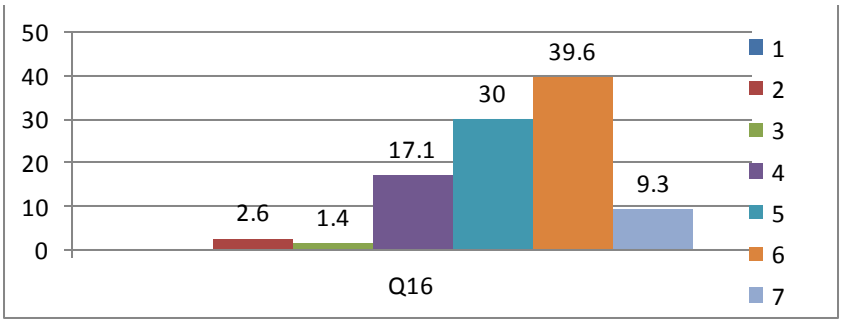
Q15		**80 valid (according to Q14)**		
Valid	Micro categories	Properties	Frequency	Valid Percent
	1	Violating WNE	15	18.8
	2	Violating Confucianism	20	25
	3	Violating communism	17	21.3
	4	Violating EPE	46	57.5
	5	Violating justice	17	21.3
	6	Violating CSR	4	5
	7	Cost-benefit utility driven	8	10
	8	Impacting environment	8	10
	9	Need further explanation	0	0
		Total valid	57	71.3
		Non-respondents	23	28.8
Total			80	100

With respect to Q15, based on the 80 expected respondents in Q14, 57 responded, a response rate of 71.3%. For similar responses to Q12, information was coded into the

same 9 micro categories and 6 macro categories. As shown in Table 7.3, 'Violation of EPE' received the highest responses (57.5%), while four other elements also received high responses, from 19% to 25%, namely 'Violating WNE', 'Violating Confucianism', 'Violating Communism' and 'Violating justice'.

The importance of these ethical elements has been reviewed and justified in Section 3.5; their existence in the CAI is also summarised in Part II and Q14 in this part for similarly high responses on these four ethical elements. Although the ethical element of 'Justice' was not listed as the main element, each of the four main elements contains this ethical feature. Evidenced in Section 4.5.1, justice is believed to be an important element in the goodness theories of virtue ethics, carrying the non-coercive nature, similar and compatible with other ethics (Ferrell and Fraedrich, 2016).

5) The information in Q16 indicates positive feedback towards the perception to embedding the four ethical elements in managerial training in the CAI to improve managers' EI and resolve ethical issues similar to the Volkswagen case.



Likert Scales: 1= Strongly disagree, 2= Disagree, 3= Somewhat disagree, 4= Neutral, 5= Somewhat agree, 6= Agree, 7= Strongly agree

Figure 7-5: Q16 - Agreement level in recommending the four ethical elements in training for EI

In response to Q16, Figure 7.5 shows that 'Agree' (39.6%) and 'Somewhat agree' (30.0%) received the highest proportion of positive responses. The data were congruent and comparable with awareness data in Part II (Q10 &Q11) and the high judgment data in Part III (Q13 and Q14), as awareness and judgment are the first and second stages of EI, and the recommendation for EI improvement is based on the two stages. Furthermore, the deficiencies of these ethical elements in current managerial training also call for the inclusion of these non-coercive ethical elements to help improve the situation due to their benefits (Section 3.4).

To sum up, data in Part III have reflected a high response on the violation of four ethical elements in judging the Volkswagen emission scenario. Both the non-numerical and

numerical data indicated a high response on the perceived violation of 'WNE', 'Confucianism', 'Communism' and 'EPE' while EPE was the highest. The ethics-specific options to the CAI emission scandal were also responded highly, namely 'environmental issues' and 'justice' in both Q12 and Q15. These data were justified valid because these results were consistent with the literature for their common feature with the four non-coercive ethical elements. There were also high responses to agree to embed these four ethical elements into managerial training for EI enhancement, which is also consistent with the high responses to similar ethics questions, such as awareness and judgment questions in Parts II and III.

7.2.4 Part IV The practice of non-coercive ethical elements in management training and the effect on EI

Data on the pedagogical application of the 4 non-coercive ethical elements in management training and their impact on managers' EI were gathered through 4 main questions and their 2 respective sub-questions. The main questions surveyed the prevalence of each element in the training programme that the participants provided, and the two respective sub-questions surveyed their impact on managers' EI and the training modes they held with such ethical elements. Any invalid responses to the sub-questions, were discounted.

1) **The information in Q17, Q18, Q19 and Q20 indicates a high inclusion of 'Confucianism', 'Communism' and 'EPE', while 'WNE' had a relatively lower response.**

Table 7-4: Management training prevalence (Q17-Q20)

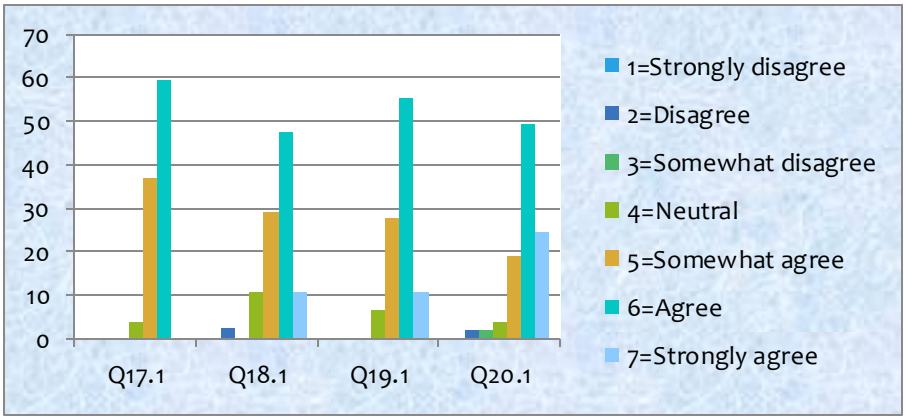
Q17, Q18,Q 19, Q20		Frequency				Percent			
Elements		**Q17**	**Q18**	**Q19**	**Q20**	**Q17**	**Q18**	**Q19**	**Q20**
Valid	1.Yes	27	38	48	53	33.3	46.9	59.3	65.4
	2.No	53	39	32	26	65.4	48.1	39.5	32.1
	Total	80	77	80	79	98.8	95.1	98.8	97.5
Non-respondent	System	1	4	1	2	1.2	4.9	1.2	2.5
Total		213				100.0			

Q17= WNE, Q18= Confucianism, Q19= Communism, Q20= EPE

With respect to Q17-Q20, the responses to WNE, Confucianism, Communism and EPE in managerial training were 33.3%, 46.9%, 59.3% and 65.4%, respectively, indicated in Table 7.4. Industry statistics from documents and the public domain indicate a similar

situation that in both internal and outsourced managerial training, 'Confucianism' and 'Communism' are embedded widely, as evidenced in Section 3.3. 'EPE' is not directly embedded in the Western form, which is identified in Section 3.4.2. However, the transformative moral learning styles from 'Confucianism' and 'Communism' are influencing the industry (Cao, 2015), which can be used to explain this high response (Section 3.4.4). The low response on WNE is consistent with its situation in China for a potential ideological clash, and lack of due awareness of its importance; this deficiency is also reflected in a managerial training situation, identified in Section 3.4.3.

2) **The information in the first sub-questions (Q17.1, Q18.1, Q19.1 and Q20.1) indicates a similarly high level of positive agreement, 'Somewhat agree' and 'Agree', suggesting that these ethical elements embedded in managerial training are having an impact on managers' EI (from the trainers' perspective), while 'EPE' received the most positive responses.**



Q17.1=WNE, Q18.1=Confucianism, Q19.1=Communism, Q20.1= EPE

Figure 7-6: Level of agreement on managers' EI (if 'Yes')

Regarding Q17.1, Q18.1, Q19.1 and Q20.1, most responses fell on scales of 'Somewhat agree' and 'Agree', as indicated in Figure 7.6.

3) **The information in the second sub-questions (Q17.2, Q18.2, Q19.2 and Q20.2) reflect that 'Company Training', 'Automotive Association' and 'University Training' are the most prevalent training modes that embed WNE, Confucianism and EPE, while Communism is prevalent in 'Company Training', 'University Training' and 'Party school (at the company level). No participants surveyed attended a Confucian academy.**

Responses indicated similar modes that these trainers provided and the most prevalent were 'Company Training', 'Automotive Association' and 'University Training', ranging

from 58% to 76%, from 8% to 23% and from 19% to 37%, respectively. The element of Communism had relatively different training modes due to its ideology dominance, the highest modes being 'Company Training', 'Party school (at the company level)' and 'University Training', accounting for 75.0%, 20.8% and 18.8%, respectively. Communism was not as prevalent in containing Communism in comparison with the other three elements. University training contained a relatively equal inclusion of these elements. Their similarities and differences are indicated in Table 7.5. A similar explanation can be viewed from the same question in managers' survey (Q20.2, Q21.2, Q22.2 and Q23.2 in Section 6.2.4)

Table 7-5: Prevalence of training models containing ethical elements (if 'Yes')

Q17.2 (27 valid), Q18.2 (38 valid), Q19.2 (48 valid), Q20.2 (53 valid)	Frequency				Valid Percent			
Training mode prevalence	**Q17.2**	**Q18.2**	**Q19.2**	**Q20.2**	**Q17.2**	**Q18.2**	**Q19.2**	**Q20.2**
Valid 1.Company Training	18	22	36	40	66.7	57.9	75.0	75.5
2.Automotive Association	6	7	4	11	22.2	18.4	8.3	20.8
3.Party School (company level)	1	4	10	5	3.7	10.5	20.8	9.4
4.Party School (provincial level)	1	3	6	1	3.7	7.9	12.5	1.9
5.Central Party School	0	0	0	0	0	0	0	0
6.University Training	10	14	9	13	37.0	36.8	18.8	24.5
7.Confucian Academy	0	0	0	0	0	0	0	0
8.Other	5	1	1	4	18.5	2.6	2.1	7.5
Total	27	38	48	53	100	100	100	100
Non-respondent System	0	2	0	3	0	0	0	0
Total	27	38	48	53	100	100	100	100

Q17.2= WNE, Q18.2= Confucianism, Q19.2= Communism, Q20.2= EPE

4) The non-numerical information in the 'Other' option does not contain valid information.

There was no valid information in the 'Other' option. As indicated in Appendix 7.9, the information reflected was either irrelevant or repeating the listed options. This situation fit trainers' less industry-led profiles. These trainers came from both internal and outsourced training centres, some of which were exclusively focused on ideological training, such as the Party School, evidenced in Section 3.3. Therefore, trainers might not have been confident to offer much non-numerical information.

7.2.5 Part V Practical use of mutually compatible ethical elements in managerial training and their impact on EI in the CAI

Based on the prevalence discussion of ethical elements in managerial training, Part V explores management training modes which contain compatible ethical elements.

1) **The information in Q21 indicates that four training modes are most prevalent in containing compatible ethical elements, namely, 'Company Training', 'University Training', 'Automotive Association' and 'Party School (company level)'.**

Table 7-6: Q21 Prevalence of training with compatible ethical elements

Q21 Training containing compatible discussion (Incorporating combination results)		Frequency	Per cent
Valid	1.Company Training	25	30.9
	2.Automotive Association	5	6.2
	3.Party School (company level)	3	3.7
	4.Party School (provincial level)	1	1.2
	5.Central Party School	0	0
	6.University training	11	13.6
	7.Confucian Academy	0	0
	8.Other	2 (No further information)	2.5
	9.None	40	49.4
Non-respondent System		6	7.4
Total		81	100.0

With respect to Q21, 75 responded, with 40 answering 'None' (49.4%). According to Table 7.6, in the 35 valid responses, the four most prevalent training modes with compatible ethical elements were 'Company Training' (30.9%), 'University Training' (13.6%), 'Automotive Association' (6.2%), and 'Party School (company level)' (3.7%). These most prevalent modes are the same as in Part IV.

The compatibility of these four embedded ethical elements can be evidenced in Section 4.6. Their compatibility regarding the features in the CAI was discussed with respect to four main aspects: respect for life, maximising the public good, upholding honesty and integrity and high standard moral leadership.

2) **The non-numerical information in the 'Other' option in Q21 indicates a similar pattern as in Part IV, with no valid additional information.**

There was no further valid information in the split information in the 'Other' option. The information was consistent with the industry-training situation and trainers' profile in that they were more impacted by indigenous values and not confident to answer, evidenced in Sections 3.3 and 3.4.

3) **The information in Q22 indicates that the category of 'All ethical elements are mutually compatible' (11.4%) ranked highest and the two most prevalent explanations are 'All non-coercive elements are compatible in nature. Good nature and kindness are compatible' (11.4%), 'The utmost purpose of all ethical elements are the same in nature' (8.6%), and 'The four ethics are based on justice, integrity and CSR' (8.6%).**

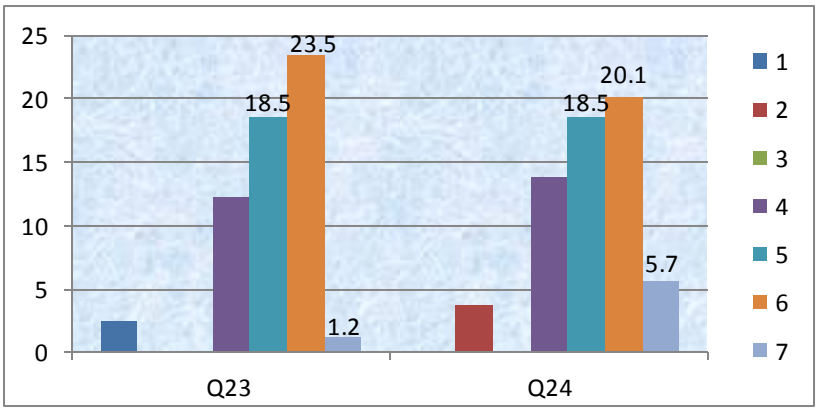
Responses to Q22 continued to explain how these ethical elements were compatible with each other. Within the 35 expected responses based on Q21, 21 responded, a rate of 60.0%. This relatively lower response rate than the rest of the non-numerical data might be due to two rational reasons. The first was due to the trainers' demographic background; some of them work in external training centres like party schools, even though they work in the companies, their departments are mainly HR and training centres, which are interacted indirectly with foreign partners. Therefore, this unfamiliarity with the CAI ethical issues and lack of comfort might result in reluctance and low responses. Another reason, common to any questionnaire, is that for the latter part of a long questionnaire, fewer responses are likely to be generated (Saunders et al., 2016).

As with the previous non-numerical questions, responses were coded into micro and macro categories. As indicated in Appendix 7.10, overall, the response contents in the trainers' questionnaire were similar to those of the same question in the managers' questionnaire, but had a lower response rate than that of the managers' questionnaire. The number of micro categories from axial coding for trainers was not as explicit as for managers (Appendix 7.10).

There were few responses in the negative and uncertain categories, 5.6% in total. This fits the trainers' profession, and they might value their work as important. The rest of the categories showed that ethical elements were mutually compatible in different ways. This compatibility perception was consistent with the moral values in the CAI and

trainers' situations. The co-existence of these elements can be evidenced in Sections 3.2 and 3.3. Their mutual compatibility is validated in Section 4.6.

4) **Q23 and Q24 both indicate a positive correlation towards the level of agreement that these compatible elements could influence EI and be embedded in managerial training.**



1= Strongly disagree, 2= Disagree, 3= Somewhat disagree, 4= Neutral, 5= Somewhat agree, 6= Agree, 7= Strongly agree
Q23. Level of agreement of compatible elements on EI, Q24. Level of agreement embedding compatible elements in training
Figure 7-7: Q23 & Q24 - Level of Agreement of Compatible Elements in EI and Training (if 'yes')

As indicated in Figure 7.7, regarding the 35 valid responses, 33 responded similarly to Q23 and Q24. Their scores for 'Agree' and 'Somewhat agree' were similar, at 23.5% and 18.5% for Q23, and 20.1% and 18.5%, respectively for Q24.

To sum up, the information in Q21 indicates that four training modes were shown to be most prevalent in containing compatible ethical elements, namely, 'Company Training', 'University Training', 'Automotive Association' and 'Party School (company level)'. The non-numerical information in the 'Other' option in Q21 indicates a similar pattern as in Part IV, with no valid additional information.

The information in Q22 indicates that the category of 'All ethical elements are mutually compatible' (Category E) ranked highest and that the two most prevalent explanations were 'All non-coercive elements are compatible in nature. Good nature and kindness are compatible' (11.4%), 'The utmost purpose of all ethical elements are the same in nature' (8.6%), and 'The four ethics are based on justice, integrity and CSR' (8.6%). Q23 and Q24 both indicates positive feedback towards the level of agreement that these compatible elements could influence EI and be embedded in managerial training.

7.2.6 Part VI Suggestions for Chinese automotive companies and their training providers

Q25 gathered suggestions for future training, within the 81 valid questionnaires, 48 answered this question, a rate of 81%. These responses were summarised and coded into 21 micro-categories and 7 macro-categories according to their similarities.

1) **The information in Q25 indicates that there are 21 micro categories with more generic and general micro properties, and there is no negative or uncertain response to training effects.**

2) **The three highest positive suggestions for managerial training are to embed the ethical dimension concept specific for the CAI, pay attention to the non-coercive nature of ethics and moral values, and differentiate on training approaches.**

   To be specific, in response to Q25, results in Appendix 7.11 indicated that 3 micro categories whose highest responses were 'Reinforcing training on non-coercive ethics such as integrity, fairness, honesty, and comply with common values', at 4.8%; 'Strengthening training of functional ethics such as CSR, sustainable development and enhance their awareness of decision making', at 3.6%; and 'Stressing dual dimensions (Chinese and Western cultures)', at 2.4%.

   The3 macro-categories with the highest responses were 'Strengthening ethical elements in training', at 17.3%; 'Offering suggestions on training approaches and improvements', at 12.3%; and 'Paying attention to different dimensions of ethical elements', at 2.4%; evidenced in Appendix 7.12.

3) **The information in Q25 indicates that trainers provided detailed and systematic suggestions from their training experiences, such as a theoretical basis, value compatibility and a continued education concept.**

   As shown in Appendix Table 7.11, trainers stressed a theoretical basis (Categories 4.4 and 6.5), value compatibility (Categories 4.6 and 5.1) and continued education from university education to management training in the company (Category 6.6).

These suggestions were consistent with the training situations in the CAI. Industry statistics from documents and public domain indicated there were deficiencies in managerial training in the CAI with respect to ethics in that there was a lack of a whole dimension such as ethical elements from the West and insufficient attention to the nature of non-coercive ethics, evidenced in Sections 3.4.1, 3.4.3 and 3.4.5. There was also no indication of an appropriate approach in training such as a theoretical basis, value compatibility and a continued education concept. The dual-dimension concept to include indigenous culture and ideology also fits the trainers' perspective. As evidenced in Section 3.4, these trainers were more impacted by the domestic environment and its cultural and ideological values. The result with no uncertain or negative responses also fits the trainers' perspective that they value their training work.

7.3 Comparisons and validations between results

Comparisons were conducted to clarify and probe inner relationships between data; these comparisons were based on literature. The descriptive frequency, cross-tabulation and inferential correlation were utilised, as shown below:

- Section 7.3.1-**Categorical level data**: Cross-tabulation between management level and each of the factors (managers' ED stages of awareness and judgment, the prevalence in training and training effect on EI);
- Section 7.3.2-**Descriptive data**: Descriptive comparison of managers' ED stages (ethical awareness and judgment), training prevalence, compatibility and impact on EI;
- Section 7.3.3-**Inferential correlation data**: Correlation between managers' ED stages (ethical awareness and judgment), training prevalence, compatibility and impact on EI;

7.3.1 Cross-tabulations: Managerial level and ethical awareness/judgment/ training impact on EI

The possible relationship between management level and differentiation in the inclusion of ethical elements in training programmes was compared. The justification is demonstrated in Section 6.3.1. Three cross-tabulations were constituted, and their results are as follows:

1) **Insignificant cross-tabulation between the trainer's level (Q6 in Part I)* awareness (Q11 in Part II).**

The Chi-Square tests between Q6 and the four ethical elements in Q11 demonstrated their insignificant relationships, at P-value > 0.05, being 0.161, 0.771, 0.864, 0.939, respectively, as summarised in Table 7.7 (for details, see Appendix 7.13).

Table 7-7: Chi-Square Test summary in Cross-tabulation: Level Q6 * Ethical awareness Q11

Level of management Q6	WNE Q11.1	Confucianism Q11.2	Communism Q11.3	EPE Q11.4
Pearson Chi-Square	.161	.771	.864	.939

2) **Insignificant cross-tabulation between the trainer's level (Q6 in Part I)*judgment (Q16 in Part III).**

The Chi-Square tests between Q6 and Q16 demonstrated their insignificant relationships, at P-value > 0.05, being 0.686, demonstrated in Table 7.8.

Table 7-8: Chi-Square tests for cross-tabulation Q6 * Ethical judgment Q16

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	6.147[a]	10	.803	.686		
Likelihood Ratio	6.794	10	.745	.653		
Linear-by-Linear Association	.143	1	.706	.739		
N of Valid Cases	76			.748	.401	.082

a. 13 cells (72.2%) have expected count less than 5. The minimum expected count is .01.

3) **Insignificant cross-tabulation between trainers' level (Q6 in Part I) and ethical elements in the management training they held (Q17 Q18, Q19 and Q20 in Part IV).**

The Chi-Square tests demonstrated an insignificant relationship, at P-value > 0.05, being 0.140, 0.304, 0.611, 0.605, respectively, summarised in Table 7.9.

Table 7-9: Chi-Square tests for cross-tabulation of Level (Q6) * Management training (Q17-Q20)

Level of management Q9	WNE Q17	Confucianism Q18	Communism Q19	EPE Q20
Pearson Chi-Square Asymptotic Significance (2-sided)	.140	.304	.611	.605

The three insignificant P-values indicate no obvious relationships between trainers' level and their ethical perceptions. Regarding this situation, the explanation in the managers' survey (Section 6.3.1) is also applicable.

7.3.2 Descriptive data comparisons: Awareness, judgment, training inclusion, compatibility and impact on EI in terms of the four ethical elements

It is indicated that trainers' high ethical awareness and judgment of the four ethical elements are consistent with the inclusion of these ethical elements in training, their perception of compatibility and impact on their EI, EPE being the highest. These can be seen through the summary of individual descriptive data in each subchapter and the following comparisons across these sections.

1) **Individual data in Part II (demonstrated in Section 7.2.2) regarding ethical awareness indicates the generally high levels of awareness of the four non-coercive ethical elements, EPE being the highest and WNE the lowest (relatively).**

   These features have been confirmed by comparisons from the descriptive data within Part II (Q8, Q10 and Q11) on their awareness perceptions. The intra-question comparisons indicated the two highest responses were on the scales of '5=Somewhat aware/important' and '6= Aware/important' (Figure 7.8). The inter-question comparison also indicated, except for WNE, the highest responses were on the two scales mentioned, responses for EPE being the most positive (Figure 7.8).

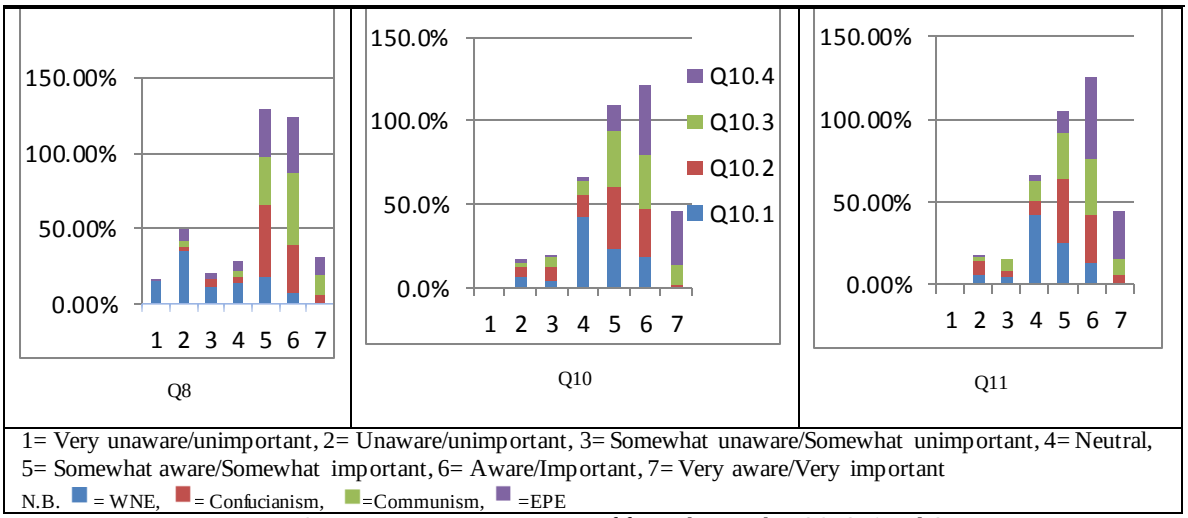


Figure 7-8: Intra-question comparisons of four ethics within Q8, Q10 and Q11

The inter-question comparison indicated a similar result. Figure 7.9 indicates that except for WNE, the highest responses were on the two positive scales 'Awareness/Importance' and 'Somewhat awareness/Importance', responses for EPE being the most positive.

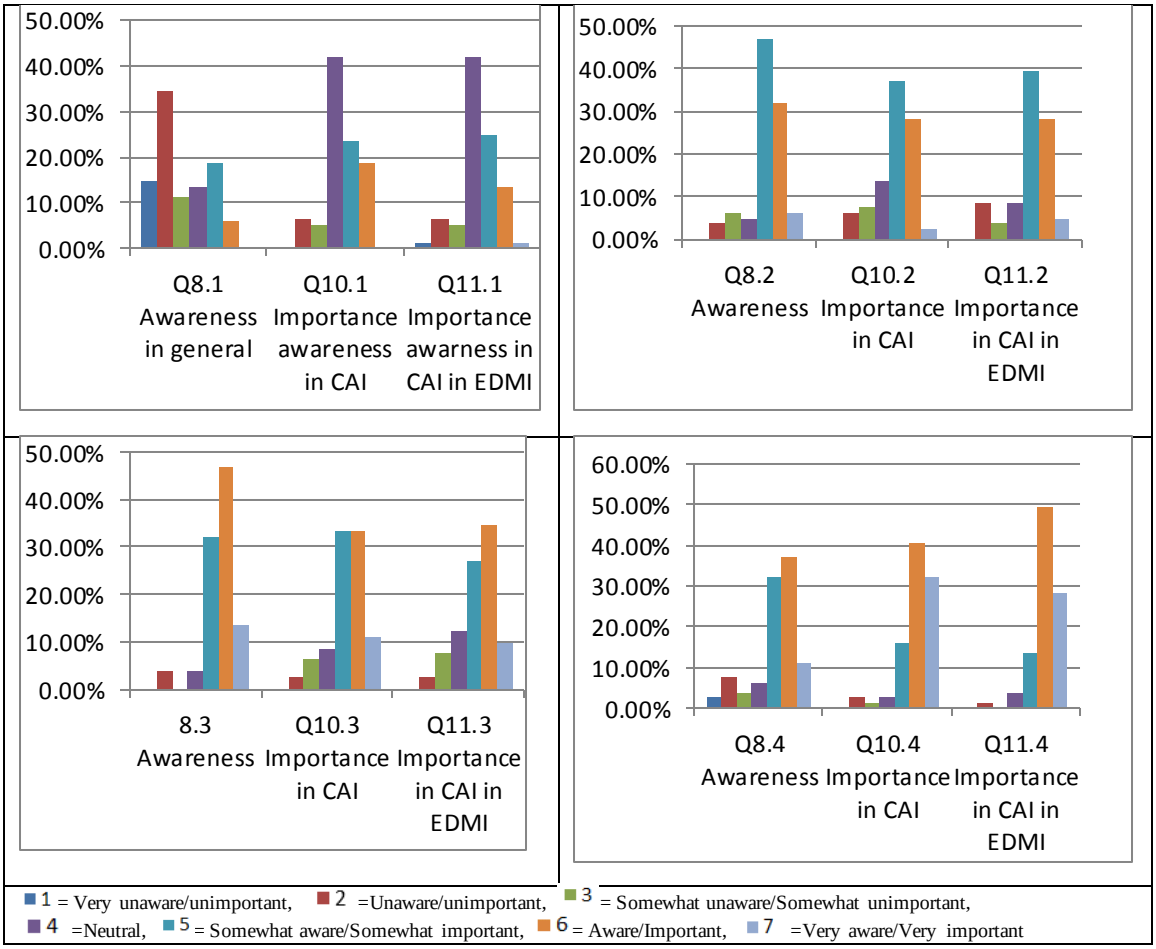
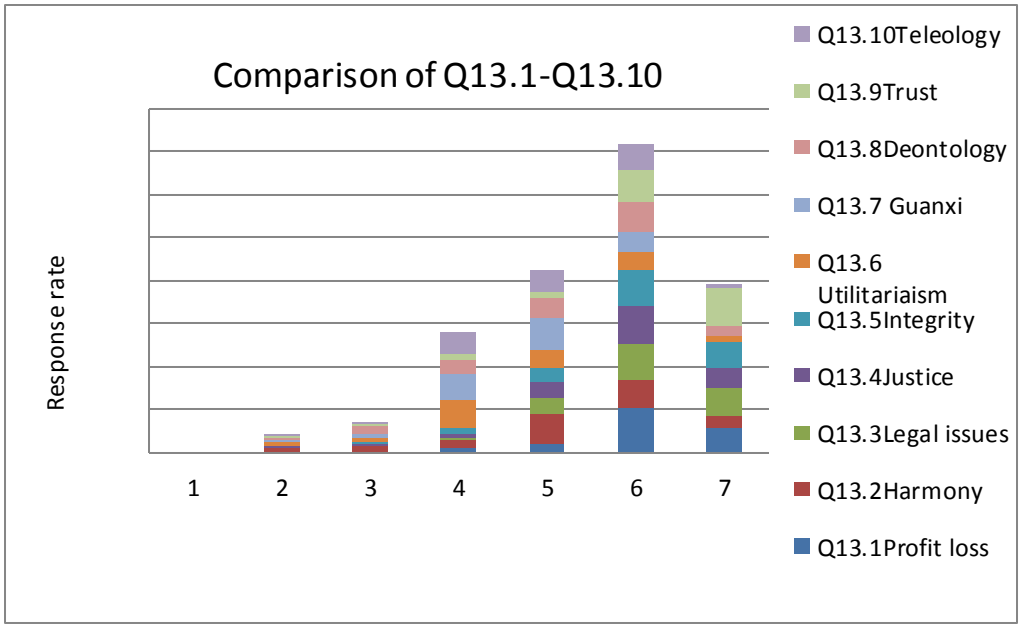


Figure 7-9: Inter- question comparisons of four ethics across Q8, Q10 and Q11

2) **The result in Part II regarding ethical awareness is proven consistent with the data relating to ethical judgment in Part III** (Section 7.2.3).

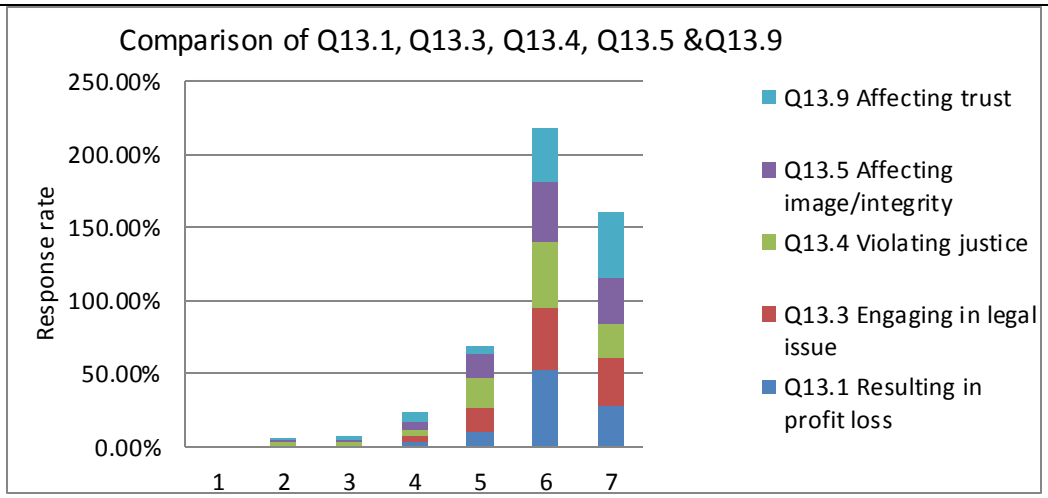
The results from the individual data in Part III indicate that the f**our non-coercive ethical elements were always high, with EPE as the highest**, regardless of the open qualitative feedback related to Image 1 (Q12), the random feedback on mixed ethical option related to Image 2 (Q13) or feedback on the four focused ethical elements (Q14 and Q15) and application in training (Q16).

The high response on EPE was indicated in descriptive comparisons within Part III. For example, this situation was reflected in the intra-question comparison of Q13. As indicated in Figures 7.10 and 7.11, the five top rankings were on the options of 'Profit loss' (Q13.1), 'Legal issues' (Q13.3), 'Justice' (Q13.4), 'Integrity' (Q13.5) and 'Trust' (Q13.9), which were exclusively related to EPE as discussed in Section 7.2.3 and accord with the literature on the feature of EPE (National Society of Professional Engineers, 2007; IMECHE, 2016; The Engineering Council, 2018).



Liker Scales: 1= Very unaware/unimportant, 2= Unaware/unimportant, 3= Somewhat unaware/Somewhat unimportant, 4= Neutral, 5= Somewhat aware/Somewhat important, 6= Aware/Important, 7= Very aware/Very important

Figure 7-10: Ethical element impact comparison of Q13



Liker Scales: 1= Very unaware/unimportant, 2= Unaware/unimportant, 3= Somewhat unaware/Somewhat unimportant, 4= Neutral, 5= Somewhat aware/Somewhat important, 6= Aware/Important, 7= Very aware/Very important

Figure 7-11: Comparisons of the highest responses in Q13

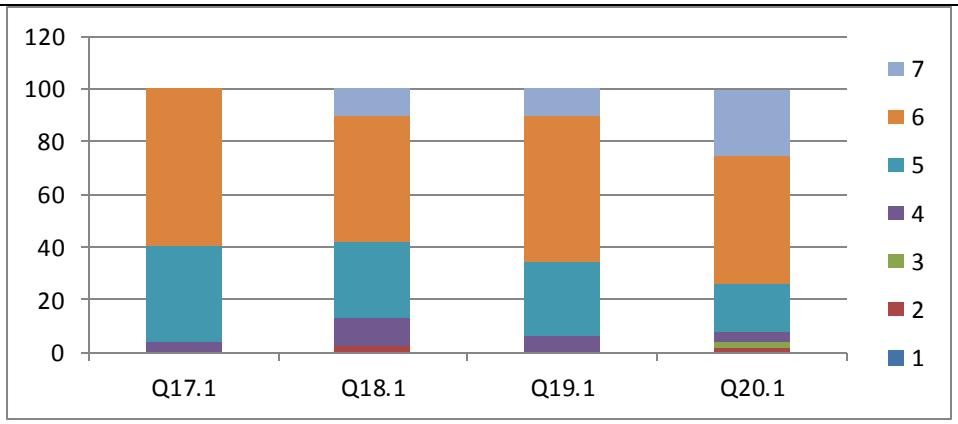
A similar result is reflected in the comparison between Q11 in Part II and Q16 in Part III. The two questions concern the integration of ethical awareness and judgment. Data in Q11 and Q16 indicated their consistency in highe scores, being high on the two positive scales of '5=Somewhat aware/Somewhat important' and '6= Aware/Important' to the four ethical elements, indicated in Figures 7.3 and 7.5.

3) **These features are also consistent with the training prevalence of these individual ethical elements in management training and their impact on managers' EI across the inter-question comparison in Part IV** (Section 7.2.4).

The inter-question comparison of the four ethical elements in Part IV showed high scores to the four ethical elements, with a relatively low response for WNE (Table 7.10). The inter-question comparison on the first sub-question also showed a high and positive response regarding the four ethical elements on the impact of managers' EI (Figure 7.12).

Table 7-10: Response rate comparisons of four main questions and the 'Yes' option

Qs	Ethical Elements	Responses (81 in total)	Responses (Yes)
Q17	Western Normative Ethics	81 (100.0%)	27 (33.3%)
Q18	Confucianism	78(96.3%)	38(46.9%)
Q19	Communism	79(97.5%)	48(59.3%)
Q20	Principles/Codes of Ethics for Engineers	78(96.3%)	53(69.1 %)



1= Strongly disagree, 2 = Disagree, 3= Somewhat disagree, 4= Neutral, 5= Somewhat agree, 6= Agree, 7= Strongly agree

Figure 7-12: The impact comparison of ethical elements in training on EI - Sub-question One

4) **These features are also consistent with the result in Part V on the compatibility of these four ethical elements in management training.** As indicated in Section 7.2.5, the four most prevalent ones with compatible ethical elements were the same as those discussed in Section 7.2.4.

   This quantitative result was also supported by the non-numerical data, as evidenced in Appendix Table 7.10. The three most prevalent explanations were 'All non-coercive ethical elements are compatible in nature' (11.4%), 'The utmost purpose of all ethical elements are the same in nature' (8.6%), and 'The four ethics are based on justice, integrity and CSR' (8.6%).

5) **These results in the numerical data are also consistent with the non-numerical data in Part VI on managerial training suggestions, which was the last question but was open-answer to include all opinions.**

   As indicated in Section 7.2.6, the highest positive response suggestions were on training dimensions and nature of ethical elements, which are consistent with the numerical data on the high responses of the four ethical elements in that they were derived from the modified dimensions (Section 4.3) and justified to retain non-coercive nature (Section 4.4).

6) The results from Part II to Part VI were consistent with each other, indicating the high and positive responses towards the four non-coercive ethical elements, EPE and WNE being the highest and lowest respectively in all occasions. Figure 7.13 illustrates the awareness, judgment, training inclusion and impact on EI based on results from Part II

to Part VI.

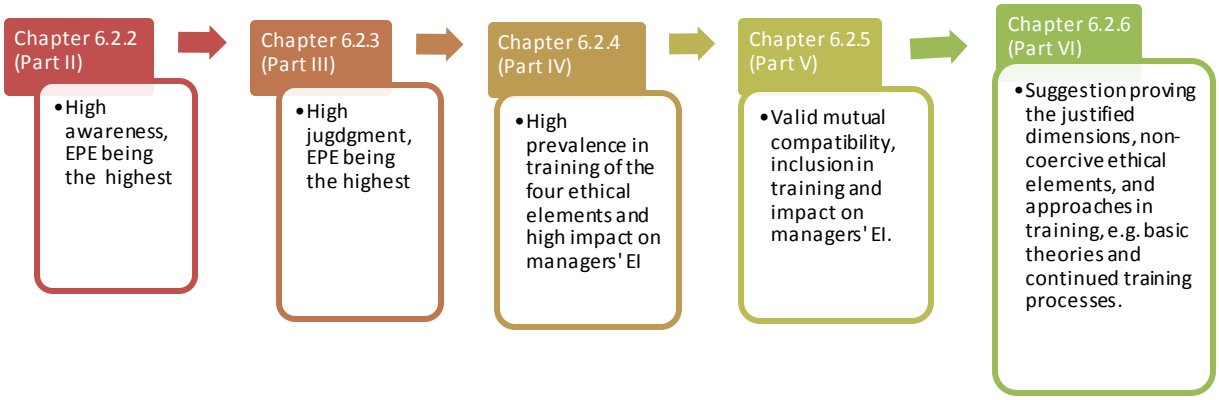


Figure 7-13: High awareness, judgment, training inclusion and impact on EI reflected from descriptive data

Source: Author (2019)

7.3.3 Correlations: Awareness, judgment, training, compatibility and impact on EI in terms of the four ethical elements

Correlations were conducted with inferential data to statistically validate their inner relationships and triangulate the resulting individual data in Section 7.2. The premise for this comparison is based on the literature. According to Rest (1986), ethical awareness, judgment and intentions are a series of continuously related processes in ED, evidenced in Section 4.2. In addition, an inferential 'correlation table' with Chi-square results is a statistical method used for continuous relation comparisons between variables (Aspelmeier and Pierce, 2009), as evidenced in Section 5.14.1.

Accordingly, based on the literature, four inferential P-value correlations were constituted as follows:

1) Correlation between Q8 (general awareness in ethics), Q10 (awareness specific to managers' EI) and Q11 (awareness specific to managers' EI in the CAI);

2) Correlation between Q11(awareness specific to managers' EI in the CAI) and Q16 (judgement agreement to utilise these ethics in CAI for resolving ethical issues);

3) Correlation between Q11 (awareness specific to managers' EI in the CAI) and impact on EI of four ethics (Q17.1-Q20.1); Q16 (judgement specific to managers' EI in the CAI and impact on EI of four ethics (Q17.1- Q20.1);

4) Correlation between Q9 (general compatibility of the ethics) and Q23 (utilisation of agreement of the impact) and Q24 (agreement to embed these in training for managers' EI).

The four correlations are presented in detail:

1) **There is a valid correlation of the four elements across their general awareness, awareness specific to the CAI and specific to their EI, at P < 0.01 or 0.05.**

The four P-values were exclusively valid, indicating to be 0.000 or 0.026. The correlation values were also high; two of them were indicated to be .683** or .697**, close to 1, shown in Table 7.11.

Table 7-11: Correlations of Q8, Q10 and Q11

Note: *This comparison is in terms of the four ethical elements on their relationships on three occasions: Q8.1-Q8.4: general awareness; Q10.1-10.4: awareness in the CAI; Q11.1-Q11.4: awareness specific to EI.*

Correlations

		Q8.1	Q10.1	Q11.1
Q8.1	Pearson Correlation	1	.387**	.255*
	Sig. (2-tailed)		.001	.026
	N	81	77	76
Q10.1	Pearson Correlation	.387**	1	.683**
	Sig. (2-tailed)	.001		.000
	N	77	77	74
Q11.1	Pearson Correlation	.255*	.683**	1
	Sig. (2-tailed)	.026	.000	
	N	76	74	76

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

		Q8.2	Q10.2	Q11.2
Q8.2	Pearson Correlation	1	.293**.	.013
	Sig. (2-tailed)		.010	
	N	81	77	76
Q10.2	Pearson Correlation	.293**	1	.504**
	Sig. (2-tailed)	.010		.000
	N	77	77	74
Q11.2	Pearson Correlation	.284*	.504**	1
	Sig. (2-tailed)	.013	.000	
	N	76	74	76

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

		Q8.3	Q10.3	Q11.3
Q8.3	Pearson Correlation	1	.566**	.575**
	Sig. (2-tailed)		.000	.000
	N	81	77	76
Q10.3	Pearson Correlation	.566**	1	.697**
	Sig. (2-tailed)	.000		.000
	N	77	77	74
Q11.3	Pearson Correlation	.575**	.697**	1
	Sig. (2-tailed)	.000	.000	
	N	76	74	76

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		Q8.4	Q10.4	Q11.4
Q8.4	Pearson Correlation	1	.411**	.342**
	Sig. (2-tailed)		.000	.002
	N	81	77	78
Q10.4	Pearson Correlation	.411**	1	.523**
	Sig. (2-tailed)	.000		.000
	N	77	77	76
Q11.4	Pearson Correlation	.342**	.523**	1
	Sig. (2-tailed)	.002	.000	
	N	78	76	78

**. Correlation is significant at the 0.01 level (2-tailed).

These P-values statistically indicated the strong relationships between the three awareness questions in terms of the four ethical elements. It validates that managers'

general ethical awareness (Q8), awareness specific to the CAI (Q10) and awareness specific to their EI (Q11) are closely related. The high correlation values further emphasised these relationships.

This result is consistent with the individual descriptive data in Sections 7.2.2 and 7.2.3 and comparison in Section 7.3.2. This result is consistent with the literature, identifying the importance to design training associated with the industry; this deficiency is evidenced in Section 3.4.4.

2) **There is only one valid correlation (Communism - Q11.3 * Q16) of the four elements between their ethical judgment and recommendation in training in Parts II and III, at P < 0.01, the rest were invalid, at P > 0.01 or 0.05.**

Table 7-12: Correlation of ethical judgment in training (Q16) * Awareness importance in the CAI (Q11)

Correlations (Q16)* (Q11.1, Q11.2, Q11.3 and Q11.4)						
		1 (Q16)	2(Q11.1)	3(Q11.2)	4(Q11.3)	5(Q11.4)
1.Level of agreement in utilising non-coercive ethical elements in training (Q16)	Pearson Correlation	1	.218	.174	.413**	.191
	Sig. (2-tailed)		.068	.146	.000	.105
	N	76	71	71	71	73
2.Importance of Western normative ethics in managers' EI (Q11.1)	Pearson Correlation	.218	1	.484**	.354**	.202
	Sig. (2-tailed)	.068		.000	.002	.081
	N	71	76	76	76	76
3.Importance of Confucian teachings in managers' EI in the CAI (Q11.2)	Pearson Correlation	.174	.484**	1	.564**	.283**
	Sig. (2-tailed)	.146	.000		.000	.013
	N	71	76	76	76	76
4.Importance of Communist ethics in managers' EI in the CAI (Q11.3)	Pearson Correlation	.413**	.354**	.564**	1	.367**
	Sig. (2-tailed)	.000	.002	.000		.001
	N	71	76	76	76	76
5.Importance of Engineering Codes of Ethics in managers' EI in the CAI (Q11.4)	Pearson Correlation	.191	.202	.283*	.367**	1
	Sig. (2-tailed)	.105	.081	.013	.001	
	N	73	76	76	76	78

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

Table 6.12 indicates one significant P-value (Correlations Variables= Q16* Q11.3), at P < .01. This indicates a significant correlation between managers' awareness of the importance of Communism (Q11.3) and the recommendation to embed it into management training (Q16), while the remaining three elements (WNE, Confucianism, and EPE) were not significantly correlated from the trainers' perspectives. This is different from the managers' perspectives, in which the four elements significantly correlated.

Further exploration is necessary. The significant relation between Communism and its inclusion in training might be due to China's political regime and its trainers' function

in the profession, whose main job might be focused on ideological aspects such as the prevalence training of Communism, thus resulting in their higher perception of Communism in training than other elements, as evidenced in Section 3.3.

The insignificance of engineering-related ethics and Western Normative Ethics in training might also be due to trainers' less industry-led background. As indicated in data in Part I, trainers were not indicated to be as familiar as managers with the industry and have fewer opportunities to contact foreign values such as WNE. Therefore, their perception to embed it in training might be lower than managers.

3) **There are partially valid correlations between the impact of the four non-coercive ethical elements in training in Part IV and their awareness and judgment results in Parts II and III.**

Q11 is about ethical awareness, and its four sub-questions are in the four ethical elements, which are: Q11.1= Importance of WNE, Q11.2= Importance of Confucianism in the CAI on managers' EI, Q11.3= Importance of Communism in the CAI on managers' EI, Q11.4= Importance of EPE in the CAI on managers' EI.

The first sub-question in Part IV is about managers' agreement on the impact of these four ethical elements. The four sub-questions are: Q17.1= Level of agreement of impact on EI (WNE), Q18.1= Level of agreement of impact on EI (Confucianism), Q19.1=Level of agreement of impact on EI (Communism), Q20.1= Level of agreement of impact on EI (EPE).

The correlations (Q11*Q17.1, Q18.1, Q19.1, Q20.1) are shown in Table 7.13, most are insignificant, at $P > 0.01$.

Table 7-13: Correlations between Q11* Q17.1, Q18.1, Q19.1, Q20.1

Correlations (Q11.1, Q11.2, Q11.3, Q11.4 * Q17.1, Q18.1, Q19.1 and Q20.1) （If Yes）									
		Q11.1	Q11.2	Q11.3	Q11.4	Q17.1	Q18.1	Q19.1	Q20.1
Q11.1	Pearson Correlation	1							
	Sig. (2-tailed)								
	N	76							
Q11.2	Pearson Correlation	.484	1						
	Sig. (2-tailed)	.000							
	N	76	76						
Q11.3	Pearson Correlation	.354**	.564**	1					
	Sig. (2-tailed)	.002	.000						
	N	76	76	76					
Q11.4	Pearson Correlation	.202	.283*	.367**	1				
	Sig. (2-tailed)	.081	.013	.001					
	N	76	76	76	78				
Q17.1	Pearson Correlation	.241	.587**	.286	.111	1			
	Sig. (2-tailed)	.235	.002	.157	.588				
	N	26	26	26	26	27			
Q18.1	Pearson Correlation	-.036	.282	.206	.301	.233	1		
	Sig. (2-tailed)	.836	.100	.235	.070	.337			
	N	35	35	35	37	19	38		
Q19.1	Pearson Correlation	-.031	.048	.305*	.222	.121	.582**	1	
	Sig. (2-tailed)	.844	.761	-.47	.142	.612	.001		
	N	43	43	43	45	20	30	47	
Q20.1	Pearson Correlation	-.187	.061	-.072	.317*	-.152	.785**	.616**	1
	Sig. (2-tailed)	.193	.673	.621	.022	.511	.000	.000	
	N	50	50	50	52	21	28	33	53

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

These insignificant values indicate there were no noticeable correlations between managers' ethical awareness towards these ethical elements and the impact of the training on their EI with these ethical elements. This phenomenon can be explained from the perspective of trainers. This question was designed to test the continuous correlation between managers' awareness, judgment, training and impact on their EI based on EI theories (Kohlberg and Turiel, 1970; Trevino, 1986). These kinds of questions suit the perspective of a manager, which has been proven valid in the managers' survey. However, it might not be eligible to apply to trainers, as they might not be able to offer feedback from a manager's perspective precisely. Therefore, this insignificant correlation in Table 7.13 indicated the significant design and result.

This perspective concept can also be utilised to explain the similar insignificant

correlation data between trainers' ethical judgment and managers' EI correlations (Q16 and Q17.1, Q18.1, Q19.1 and Q20.1). As indicated in Table 7.14, some P-values were > .05, the correlation was valid only with Confucianism. Again, this result fit the trainers' working environment and national promotion, as discussed in Chapter 3.

Table 7-14: Correlations Q16 * Q17.1, Q18.1, Q19.1, Q20.1

Correlations (Q16* Q17.1, Q18.1, Q19.1 and Q20.1) （If Yes）

Note: Q16 is about ethical judgment. The first sub-question in Part IV is about the impact on managers' EI in terms of four ethical elements: Q17.1 (WNE), Q18.1 (Confucianism), Q19.1 (Communism) and Q20.1 (EPE).

		Q16	Q17.1	Q18.1	Q19.1	Q20.1
Q16	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	76				
Q17.1	Pearson Correlation	.446*	1			
	Sig. (2-tailed)	.020				
	N	27	27			
Q18.1	Pearson Correlation	.646**	.233	1		
	Sig. (2-tailed)	.000	.337			
	N	36	19	38		
Q19.1	Pearson Correlation	.312*	.121	.582**	1	
	Sig. (2-tailed)	.039	.612	.001		
	N	44	20	30	47	
Q20.1	Pearson Correlation	.242	-.152	.785**	.616**	1
	Sig. (2-tailed)	.087	.511	.000	.000	
	N	51	21	28	33	53

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

To sum up, from the trainers' perspective, the descriptive data have validated a particular influence of ethical elements in training, as set out in Section 7.3.2. In addition, some insignificant data have significantly demonstrated trainers' perspectives and fit the trainer's background stated in Part I.

4) **There is an invalid correlation on the general compatibility of the four non-coercive ethical elements and their utilisation in training on EI enhancement, at P > 0.01.**

As indicated in Table 7.15, the correlation value between Q23 and Q24 was low or negative. As stated, these questions were designed more from the managers' perspectives; these insignificant values from the trainers' perspectives are acceptable.

Table 7-15: Correlations Q9* Q23 and Q24

Correlations				
		Q9	Q23	Q24
Q9	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	81		
Q23	Pearson Correlation	.065	1	
	Sig. (2-tailed)	.707		
	N	36	36	
Q24	Pearson Correlation	.-.061	.499**	1
	Sig. (2-tailed)	.723	.002	
	N	36	36	36
**. Correlation is significant at the 0.01 level (2-tailed).				

Q9= Compatibility Q23= Level of agreement of the compatible elements on your EI
Q24= Level of agreement to recommend the compatible elements in management training

7.4 Visualisation of the validating by both descriptive and inferential data

Figure 7.14 visualises both the individual data in Section 7.2 and the validation by both the descriptive data comparisons and inferential correlations in Section 7.3.

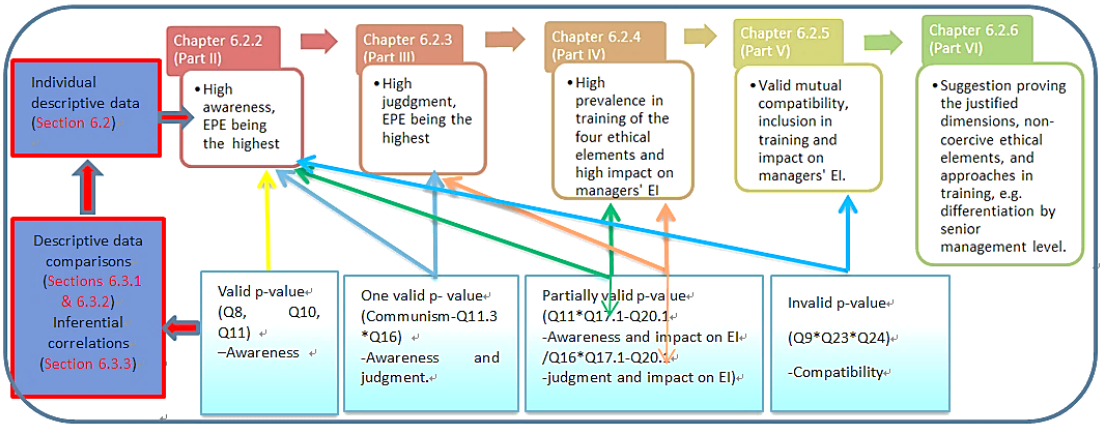


Figure 7-14: Descriptive and inferential data validating high awareness, judgment, training inclusion and impact on EI

Source: Author (2019)

7.5 Summary

This chapter consists of both individual data (Section 7.2) and data comparisons and validation (Section 7.3). These data accord with the literature and trainers' backgrounds and perspectives. Section 7.2 described individual data in each part of the questionnaire:

- Information in Part I demonstrated trainers' less industry-led background. Trainers were from exclusively inner company training centres, with more young male staff than female staff and an almost exclusive nationality of mainland Chinese, which fits the authentic situation.
- The rest of this section showed data related to different stages of ethical decision-making and training practices. A high awareness (Part II) was shown of the four ethical elements, both general and associating with the CAI and EI practice, 'EPE' showing the highest, while 'WNE' the lowest.
- A similar situation was reflected in their ethical judgment (Part III), by applying these ethical elements in the Volkswagen emission scenario.
- The similar ranking of the four ethical elements was indicated in embedding them in managerial training for EI enhancement in Part IV, where 'Company Training', 'Automotive Association' and 'University Training' are the most prevalent modes, while 'Communism' has a slightly different prevalence, namely 'Company Training', 'University Training' and 'Party School (at company level)'. No participants surveyed attended a Confucian Academy.
- These similar modes were also indicated to be prevalent in terms of the embedding of the compatible ethical elements in Part V, and with positive agreement to embed them in managerial training for EI enhancement.
- Part VI offered suggestions: to embed an ethical dimension concept specific for the CAI, pay attention to the non-coercive nature of ethics and moral values, and differentiate on training approaches, such as management level. Trainers provided detailed and systematic suggestions from their training experiences, such as theoretical basis, value compatibility and the continued education concept.

These features from the individual data were validated by comparisons from descriptive and inferential data in Section 7.3. The key themes are:

- The three insignificant P-values indicated no obvious relationships between trainers' level and their ethical perceptions. However, this phenomenon hass been explained by various factors. The first is the impact of the number of different levels of participants, which is a fact in any corporation. In addition, this phenomenon was validated from the literature in Section 3.3.3, indicating the differentiation for higher-level management; particularly for senior management. The designing of such training revealed trainers' related perceptions. Moreover, the non-numerical information in Section 7.2.6 also proposed the suggestion to differentiate training for senior management.
- Descriptive data comparisons validated the four ethical elements in their awareness, judgement, training inclusion, compatibility and impact on EI.
- The inferential data validated the descriptive data comparisons, some of which might be invalid, yet fit the trainers' perspective.

Chapter 8 Comparisons and Evaluations: Managers and Trainers

8.1 Introduction

This chapter draws together the main summary assessment of results in Chapters 6 and 7, followed by a further explanation. The significance of the final result is evaluated with respect to the achievement of the aim and objectives. The whole comparison consists of two main aspects; within the comparisons, key themes are identified.

- Section 8.2 Individual data comparisons
- Section 8.3 Key feature comparisons and evaluations
- Section 8.4 Further clarification of EPE

8.2 Individual data comparisons

This section compares the data (managers and trainers) across the six different parts of the questionnaire from Chapters 6 and 7.

8.2.1 Part I Demographic information

Respondent profiles from the data gathered from Part I from both questionnaires were representative of the industry as captured in the literature. As evidenced in Sections 6.2.1 and 7.2.1, both groups of participants were similar in their demographic profiles, regarding gender percentage, age group, nationality, working areas, management level and general educational attainment. Most respondents were younger than 40 years old. There was more male staff than female. The majority of respondents were from mainland China, working in automotive-related sectors, at lower and medium levels in management. Most held Bachelor's and Master's Degrees. Only the expected minor differences existed in age, gender, nationality, departments, and educational background. A summary of key themes emerging from the comparative analysis is captured in Table 8.1.

Table 8-1: Comparison: Part I Managers' and trainers' demographic information

Managers-Section 5.2.1	Trainers-Section 6.2.1	Similarities	Differences
The information in Q1, Q2 and Q3 indicated male-dominated gender, young age and an exclusive nationality of mainland Chinese.	The information in Q1, Q2 and Q3 indicated male-dominated gender, young age and an exclusive nationality of mainland Chinese.	Similar imbalanced gender, young age and an exclusive nationality of mainland Chinese.	Trainers' less industry-led feature, with relatively less imbalanced gender.
The information in Q4, Q5 and Q6 indicated managers were mainly from the six major auto corporations, with a complexity of foreign ownership.	Information in Q4 and Q5 indicated that the majority of trainers came from exclusively inner company training centres.		Complex moral value background for managers, indigenous background for trainers.
The information in Q7, Q8, Q9 and Q10 indicated a majority of managers were at lower and middle management level, with a dominance of Bachelor's and Master's Degrees.	The information in Q6 indicated that a majority of trainers were at lower and middle management level, with a dominance of Bachelor's Degree.	Similar management and degree background	
Key themes reflected			
Moral value complexities for managers in the CAI (Evidenced by literature in Section 2.2).	Trainers' less industry-led feature, from broad sources within and outside the company, but mainly HR and technique-related training centres (Evidenced in Section 2.2).	Trainers were confined to an indigenous background, working in ideological and technique related internal training (Evidenced by literature in Section 2.3).	

Source: Author (2019)

8.2.2 Part II Managers' and trainers' awareness of non-coercive ethical elements

Part II assessed data regarding the four ethical elements in four awareness aspects: general awareness, awareness associating with the CAI and awareness of the impact on EI, and awareness of their mutual compatibility. Data from both questionnaires indicate similarities in their high awareness of these four ethical elements, EPE and WNE being the highest and lowest, respectively. An obvious difference is also indicated due to their unique background, which has resulted in a relatively lower awareness from trainers than managers. Table 8.2 summarises similarities and differences.

Table 8-2: Comparisons: Part II Managers' and trainers' awareness of non-coercive ethical elements

Managers-Section 5.2.2	Trainers-Section 6.2.2	Similarities	Differences
The information in Q11 indicated a high ethical awareness on general ethical stances among the four non-coercive ethical elements as a whole, while the highest and lowest were on EPE and WNE, respectively.	The information in Q8 indicated a high general ethical awareness among the four non-coercive ethical elements as a whole, with the highest and lowest were on EPE and WNE, respectively.	A high general ethical awareness among the four non-coercive ethical elements as a whole, with the highest and lowest awareness on EPE and WNE	All the positive scores given to trainers were relatively lower than to managers.
The information in Q12 indicated a positive awareness of compatibility between the four elements.	The information in Q9 indicated a positive awareness of compatibility between the four elements.	A positive awareness of compatibility between the four elements.	
The information in Q13 and Q14 indicated a higher awareness when applying these theories into the industry and associated with its EI practice than the awareness on pure theory in Q11, among which responses on EPE still ranked highest.	The information in Q10 and Q11 indicated a higher awareness when applying these theories into the industry and associated with its EI practice than the awareness on pure theory in Q9, among which responses on EPE still ranked highest.	A higher awareness when applying these theories into the industry and associating with its EI practice than the awareness of pure theory, EPE still ranked highest.	
Key themes reflected			
There was a high awareness of the four non-coercive ethical elements, but an even higher awareness was demonstrated when applying these theories into the industry and associated with its EI practice than the awareness on pure theory, EPE and WNE ranked highest and lowest, respectively.		Trainers had relatively lower awareness than managers, due to their less industry-led feature and fewer opportunities to interact with these values in decisions.	

Source: Author (2019)

8.2.3 Part III The judgment-formulation of non-coercive ethical elements in the Volkswagen Vignette

Part III indicates managers' and trainers' ethical judgment, which is the second stage of EI. The data were achieved through their judgment perception towards the damaged logo from the perspective of Volkswagen management.

There are similarities in both questionnaires. Both results demonstrate high ethical judgment perception. In numerical ethical judgment options, most responses were on neutral and positive scales, EPE being the highest. These data were consistent with Part II of similar high ethical awareness. However, managers' responses were proportionately higher than trainers'. Table 8.3 indicates these features.

Table 8-3: Comparisons: Part III Managers' and trainers' ethical judgment relating to the Volkswagen emission scandal

Managers-Section 6.23	Trainers-Section 6.2.3	Similarities	Differences
The information in Q15 indicated a high response to the violation of the four ethical elements, with the violation of EPE being the highest, upon perceived ethical issues, relating to Image 1. 'Environment issue' was also proposed high.	The information in Q12 indicated a high response to the violation of the four ethical elements, with the violation of EPE being the highest, upon perceived ethical issues in Image 1. 'Environment issue' was proposed high.	A high response on the violation of the four ethical elements, with the violation of EPE being the highest. 'Environment issue' was proposed high.	All the positive scores given to trainers were relatively lower than those given to managers.
The information in Q16 indicated a close connection to EPE from the ten randomly mixed ethical consequence options, relating to Image 2.	The information in Q13 indicated a close connection to EPE from the ten randomly mixed ethical consequence options, relating to Image 2.	The non-numeric data indicate a high repose on five options, which have a close connection to EPE.	
The information in Q17 indicated a significant violation of the four ethical elements provided in response to the Volkswagen emission ethical vignette, among which EPE was the highest.	The information in Q14 indicated a significant violation of the four ethical elements provided in response to the Volkswagen emission ethical vignette, among which the EPE was the highest.	A significant violation of the four ethical elements, of which EPE was the highest.	
The non-numerical information in Q18 supported the result in Q17. The high responses were 'Violating WNE', 'Violating Confucianism', 'Violating Communism' and 'Violating justice', and 'EPE' was still the highest.	The non-numerical information in Q15 supported the result in Q14. The high responses were 'Violating WNE', 'Violating Confucianism', 'Violating Communism' and 'Violating justice', and 'EPE' was still the highest.	The high responses were 'Violating WNE', 'Violating Confucianism', 'Violating Communism' and 'Violating justice', and 'EPE' was still the highest.	
The information in Q19 indicated positive feedback towards the perception to embedding the four ethical elements in managerial training in the CAI to improve managers' EI and resolve ethical issues similar to the Volkswagen case.	The information in Q19 indicated positive feedback towards the perception to embedding the four ethical elements in managerial training in the CAI to improve managers' EI and resolve ethical issues similar to the Volkswagen case.	To embed the four ethical elements in managerial training in the CAI to improve managers' EI.	
Key themes reflected			
A high response of the four non-coercive ethical elements, EPE and WNE still ranked highest and lowest, in judging the scenario.		Trainers had relatively lower judgment responses than managers.	

Source: Author (2019)

The non-numerical data in the two open questions indicated a similarly high response on the four categories, carrying the features of the four non-coercive ethics. The difference is that the responses of trainers were consistently lower compared with those of managers. These

similarities and differences are demonstrated in Tables 8.4 and 8.5.

Table 8-4: Response comparisons between Q15 (managers) and Q12 (trainers)

Q15&Q12		**Response comparison**				
Macro categories	Micro categories	Properties	Frequency		Percent %	
			Manager Q15	Trainer Q12	Manager Q15	Trainer Q12
A	1	Violating WNE	50	17	23.5	21.5
B	2	Violating Confucianism	45	12	21.1	14.8
C	3	Violating Communism	42	10	19.7	12.3
D	4	Violating EPE	136	39	63.8	48.1
E	5	Violating justice	17	4	8	4.9
	6	Violating CSR	17	3	8	3.7
	7	Cost-benefit utility driven	9	1	4.2	1.2
	8	Impacting environment	43	23	20.2	28.4
F	9	Need further exploration	5	2	2.3	2.5
Category E: An integration of micro categories 5, 6, 7,8			86	31	40.4	39.5
		Total respondents	181	63	85	78
		Non-respondents	32	19	15	23.5
	Total		213	81	100	100

Table 8-5: Response comparisons between Q18 (managers) and Q15 (trainers)

Q18&Q15		**Response comparison**				
Macro categories	Micro categories	Properties	Frequency		Percent %	
			Manager Q18	Trainer Q15	Manager Q18	Trainer Q15
A	1	Violating WNE	42	15	20.1	18.8
B	2	Violating Confucianism	59	20	28.2	25
C	3	Violating Communism	57	17	27.3	21.3
D	4	Violating EPE	136	46	65.1	57.5
E	5	Violating justice	43	17	20.6	21.3
	6	Violating CSR	2	4	0.96	5
	7	Cost-benefit utility driven	10	8	4.8	10
	8	Impacting environment	13	8	6.2	10
F	9	Need further exploration	1	0	0.48	0
Category E: An integration of micro categories 5, 6, 7,8			68	37	74.2	71.3
		Total respondents	155	57	25.8	28.8
		Non-respondents	54	23	20.1	18.8
	Total valid		209	80	100	100

8.2.4 Part IV The practice of non-coercive ethical elements in managerial training and the effect on EI

Part IV surveys the pedagogic application of the prevalence of the four ethical elements in managerial training for managers' EI in CAI. Each main question has two sub-questions, surveying the impact on managers' EI and the training mode from both managers' and trainers' perspectives. Table 8.6 indicates their similarities and differences, including information from numerical and non-numerical data.

Table 8-6: Comparisons: Part IV The non-coercive ethical elements in managerial training and the effect on EI

Managers-Section 6.2.4	Trainers-Section 7.2.4	Similarities	Differences
The information in Q20, Q21, Q22 and Q23 indicated a high inclusion of Confucianism, Communism and EPE, while WNE was relatively lower.	The information in Q17, Q18, Q19 and Q20 indicated a high inclusion of Confucianism, Communism and EPE, while WNE was relatively lower.	High inclusion of Confucianism, Communism and EPE, while WNE was relatively lower.	Managers' responses were higher and more positive than trainers'.
The information in the first sub-questions (Q20.1, Q21.1, Q22.1 and Q23.1) indicated a similarly high level of positive agreement, 'Somewhat agree' and 'Agree', admitting the impact on managers' EI of these ethical elements in managerial training (from managers' perspective). EPE received the most positive responses.	The information in the first sub-questions (Q17.1, Q18.1, Q19.1 and Q20.1) indicated a similarly high level of positive agreement on 'Somewhat agree' and 'Agree', admitting the impact on managers' EI of these ethical elements in managerial training (from the trainers' perspective). EPE received the most positive responses.	A similarly high level of positive agreement on 'Somewhat agree' and 'Agree', admitting the impact on managers' EI of these ethical elements in managerial training. EPE received the most positive responses.	
The information in the second sub-questions (Q20.2, Q21.2, Q22.2 and Q23.2) reflected 'Company Training', 'Automotive Association' and 'University Training' were the most prevalent training modes that embedded WNE, Confucianism and EPE, while Communism was more prevalent in 'Company Training', 'University Training' and 'Party school (at the company level). No participants surveyed attended training at a Confucian Academy.	The information in the second sub-questions (Q17.2, Q18.2, Q19.2 and Q20.2) reflected 'Company Training', 'Automotive Association' and 'University Training' were the most prevalent training modes that embedded WNE, Confucianism and EPE, while Communism was prevalent in 'Company Training', 'University Training' and 'Party school (at the company level). No participants surveyed attended training at a Confucian Academy.	'Company Training', 'Automotive Association' and 'University Training' were the most prevalent training modes embedding WNE, Confucianism and EPE, while Communism was prevalent in 'Company Training', 'University Training' and 'Party school (at the company level). No attendance training	

		at a Confucian Academy.	
The non-numerical information in the 'Other' option also demonstrated a similar result and with additional information, and was consistent with the CAI.	The non-numerical information in the 'Other' option does not contain valid information.		More information in the 'Other' option from the managers' perspective than trainers'.
Key themes reflected			
High inclusion of the four non-coercive ethical elements, WNE being relatively lower;	A positive level of agreement of these ethical elements on managers' EI, EPE being the highest;	'Company Training', 'Automotive Association' and 'University Training' were the most prevalent training modes that embedded WNE, Confucianism and EPE, while Communism was prevalent in 'Company Training', 'University Training' and 'Party school (at the company level)'; No attendance at training at a Confucian Academy;	More positive and additional information from the managers' perspective.

Source: Author (2019)

8.2.5 Part V Practical use of mutually compatible ethical elements in the managerial training and their impact on EI in the CAI

Part V aimed to gather insight into the compatibility of ethical elements. The first question surveyed the most common mode to embed the compatibility discussion of these elements. The second question gathered non-numerical data about the first question's choice. The third and fourth questions were designed to reflect participants' agreement level of these compatible elements' impact on managers' EI in the CAI and offer recommendations in training. Table 8.7 indicted their similarities and differences, including numerical and non-numerical information.

Table 8-7: Comparisons: Part V Compatible ethical elements in CAI managerial training and impact on EI

Managers-Section 6.2.5	Trainers-Section 7.2.5	Similarities	Differences
The information in Q24 indicated that four training modes were most prevalent containing compatible ethical elements, namely, 'Company Training', 'Automotive Association', 'University Training' and 'Party School (company level)'.	The information in Q21 indicated that four training modes were most prevalent containing compatible ethical elements: 'Company Training', 'University Training', 'Automotive Association' and 'Party School (company level)'.	Four training modes were most prevalent containing compatible ethical elements: 'Company Training', 'University Training', 'Automotive Association' and 'Party School (company level)'.	Managers' responses were higher and more positive than trainers'.
The non-numerical information in the 'Other' option in Q24 indicated little additional information, similar to Part IV, being 'Group Company' and 'The local party school'.	The non-numerical information in the 'Other' option in Q21 indicated a similar pattern as in Part IV, with no valid additional information.		
The information in Q25 indicated that the category of 'All ethical elements are mutually compatible' ranked highest and the two most prevalent explanations were 'The utmost purpose of all ethical elements are the same in nature' and 'All non-coercive ethical elements are compatible in nature'.	The information in Q22 indicated that the category of 'All ethical elements are mutually compatible' ranked highest and the two most prevalent explanations were 'All non-coercive elements are compatible in nature. Good nature and kindness are compatible', 'The utmost purpose of all ethical elements are the same in nature', and 'The four ethics are based on justice, integrity and CSR'.	The category of 'All ethical elements are mutually compatible' ranked highest and the two most prevalent explanations were 'The utmost purpose of all ethical elements are the same in nature', and 'All non-coercive ethical elements are compatible in nature' and 'in CSR'.	Trainers' indicated more functional perceptions, such as 'CSR'.
Q26 and Q27 both indicated positive feedback towards the level of agreement that these compatible elements could influence EI and should be embedded in managerial training.	Q23 and Q24 both indicated positive feedback towards the level of agreement that these compatible elements could influence EI and be embedded in managerial training.	Positive feedback is agreeing that these compatible elements could influence EI and should be embedded in managerial training.	More information in the 'Other' option from the managers' perspective than trainers'.
Key themes reflected			
The survey was indicated to contain the four most prevalent training modes containing compatible ethical elements: 'Company Training', 'University Training', 'Automotive Association' and 'Party School	The non-numerical explanation to the first question indicated their congruence on the compatibility, believing they are	Positive feedback is agreeing that these compatible elements could influence EI and should be embedded in	There was more non-numerical information in managers' survey than in trainers', and non-numerical

(company level)'. Additional modes in the managers' survey include 'Group company' and 'The local party school'.	compatible in nature.	managerial training. Responses to managers' survey were higher than to trainers'.	information in managers' survey was more specific, evidenced in Tables 7.8 and 7.9.

Source: Author (2019)

The two questions indicate similarities, shown in Table 8.8.

Table 8-8：Comparisons of the choices for the first question in Part V: Similarities

Q25 (managers) & Q22 (trainers)	Most significant reasons (Valid)				
	Properties	Frequency		Per cent	
Highest responses	Categories	Manager Q25	Trainer Q22	Manager Q25	Trainer Q22
Most significant macro reason	E. All ethical elements are mutually compatible.	31	13	14.5%	16%
Most significant micro reasons	E. 5.2 The utmost purpose of all ethical elements are the same in nature, such as in kindness, humanistic spirit, and harmony with nature.	15	3	7%	3.6%
	E.5.3 All no-coercive elements are compatible in nature. Good nature and kindness are compatible.	6	4	2.8%	4.9%

However, there were also differences which demonstrate their unique features, indicated in Table 8.9.

Table 8-9：Comparisons of the choices for the first question in Part V: Differences

Q25 (managers) & Q22 (trainers)	Differences in explanations	
	Manager	Trainers
Reponses rate	82.7%	60%
Micro types	25 micro types	13 micro types
Explanations	Specific, in detail	Generic or no information
Uncertain and negative attitudes	7 (3.3%)	2 (2.4%)

8.2.6 Part VI Suggestions for the Chinese automotive companies and their training providers

Part VI gathered suggestions for future training. These responses were summarised and coded into micro and macro categories, according to their similar properties. The similarities and differences are indicated in Table 8.10.

Table 8-10: Comparisons: Part VI Suggestions for the Chinese automotive companies and their training providers

Managers-Section 6.2.6	Trainers-Section 7.2.6	Similarities	Differences
The information in Q28 indicated that there were 28 detailed micro category divisions for managers, 70% responses.	There were 21 micro categories with more generic and general micro properties, 59.3% responses.		More responses in the managers' survey than trainers'.
There were few negative and uncertain responses to the necessity of training for EI enhancement.	There was no negative or uncertain response to the training effect.		No negative or uncertain response to the training effect in the trainers' survey.
The three highest positive suggestions for managerial training were 'to embed ethical dimension concept specific for the CAI', 'to pay attention to the non-coercive nature of ethics and moral values' and 'To differentiate on training approaches, such as management level, particularly for seniors'.	The three highest positive suggestions for managerial training were 'to embed ethical dimension concept specific for the CAI', 'To pay attention to the non-coercive nature of ethics and moral values' and 'To differentiate on training approaches'.	Three most positive pieces of suggestions for managerial training were: to embed ethical dimension concept specific for the CAI, to pay attention to the non-coercive nature of ethics and moral values, and to differentiate on training approaches.	
No professional suggestions about training.	Trainers provided detailed and professional suggestions on ethical elements from their training experiences: stressing theoretical basis, value compatibility and continued education from university education to management training in the company.		More detailed and professional suggestions on ethical elements from trainers' survey, stressing theoretical basis, value compatibility and continued education process of these ethics, evidenced in Table 7.11.
Key themes reflected			
The most significant suggestions were: 'to embed ethical dimension concept specific for the CAI', 'to pay attention to the non-coercive nature of ethics and moral values' and 'to differentiate on training approaches'.	Managers proposed the programme tailoring for senior management. Trainers provide more detailed and systematic suggestions on ethical elements, stressing theoretical basis, value compatibility and continued education process.		

Source: Author (2019)

Comparison of training suggestions (Q28 for managers, Q25 for trainers) was shown in Table 8.11.

Table 8-11: Comparison of training suggestions (Q28 for managers, Q25 for trainers)

Similar macro-categories with the highest responses		**Per cent**	
Macro categories		Manager Q28	Trainer Q25
Strengthen ethical elements in training.		11.7%	17.3%
Offer suggestions on training approaches and improvements.		8.5%	12.3%
Pay attention to the different dimensions of ethical elements.		8%	2.4%
Different micro categories with the highest responses respectively			
Macro categories	**Micro categories**		
C. Pay attention to different dimensions of ethical elements in training	3.1 Embed training with three dimensions (three dimensions: global, societal and industry).	6.1%	1.2%
D. Strengthen some ethical elements in training	4.1Popularise the knowledge of non-coercive ethics.	5.6%	1.2%
	4.4 Strengthen the training of CSR, sustainable development and enhance their awareness of DM.		3.6%
	4.6 Reinforce training on integrity, fairness, honesty, and compliance with common values.		4.8%
E. Stress element compatibility in training	5.1 Stress Chinese and Western cultures (Dual dimensions).		2.4%
F. Offer suggestions on training approaches and effects improvement.	6.2 Target more senior management.	2.8%	1.2%
	6.5 Train from basic theories.	None	2.4%
	6.6 Train business ethics from school education and keep on to managerial training.	None	2.4%

8.3 Comparisons and validations between results

Comparisons were conducted in both surveys by using descriptive frequency, cross-tabulation and inferential correlation. The similarities and differences are indicated in the following sections.

8.3.1 Cross-tabulations: managerial level and ethical awareness, judgment and training impact on EI

The survey results from managers and trainers statistically indicated insignificant relationships between their level and ethical perceptions. However, these are justified in Sections 6.3.1 and 7.3.1 and literature has proven the existence of this phenomenon. Their features are illustrated in Table 8.12.

Table 8-12: Cross-tabulation: Managerial level and factors of ethical awareness, judgment and training impact on EI

Managers-Section 6.3.1	Trainers-Section 7.3.1	Similarities	Differences
Insignificant cross-tabulation between manager's level (Q9 in Part I) * awareness (Q14 in Part II).	Insignificant cross-tabulation between the trainer's level (Q6 in Part I)* awareness (Q11 in Part II).	Insignificance between managers'/ trainers' level and their ethical perceptions.	
Insignificant cross-tabulation between manager's level (Q9in Part I) * judgment (Q19 in Part III).	Insignificant cross-tabulation between the trainer's level (Q6 in Part I) * judgment (Q16 in Part III)		
Insignificant cross-tabulation between managers' level (Q9 in Part I) and ethical elements in the management training they attended (Q20, Q21, Q22 and Q23).	Insignificant cross-tabulation between trainers' level (Q6 in Part I) and ethical elements in the management training they held (Q17 Q18, Q19 and Q20 in Part IV).		
Key themes reflected			
There were statistically insignificant relationships between managers'/ trainers' level and their ethical perceptions in awareness, judgment and training impact. However, literature gave strong evidence towards the existence of this phenomenon, indicated in Sections 6.3.1 and 7.3.1. Literature in Section 3.3.3 indicates that there are more ethical elements in managerial training from religion, culture and philosophy for higher-level management, particularly for senior management than general management. The information in Sections 6.2.6 and 7.2.6 also proposed this suggestion. The indicated insignificant values might be due to the small number of senior management in the survey (see Appendix 6.8), which is a fact in any company.			

8.3.2 Descriptive data comparisons: awareness, judgment, training inclusion, compatibility and impact on EI, in terms of the four ethical elements

The descriptive data comparisons from the dual surveys indicate a similar consistency between participants' high awareness and judgment of the four ethical elements and their inclusion in training and perception of their mutual compatibility as well as the impact on managers' EI. Among them, EPE is the highest. Their features are illustrated in Table 8.13.

Table 8-13: Descriptive data comparison: awareness, judgment, training inclusion, compatibility and impact on EI, in terms of the four ethical elements

Managers-Section 6.3.2	Trainers-Section 7.3.2	Similarities	Differences
It is indicated that managers' high ethical awareness and judgment of the four ethical elements are consistent with the inclusion of these elements in training, the perception of compatibility and the impact on their EI, EPE being the highest.	It is indicated that trainers' high ethical awareness and judgment of the four ethical elements are consistent with their inclusion in training, the perception of compatibility and impact on their EI, EPE being the highest.	Participants' high ethical awareness and judgment of the four ethical elements triangulate with previous data on similarly high responses.	The results with mangers were higher than trainers.
Key themes reflected			
Participants' high ethical awareness and judgment of the four ethical elements are consistent with the inclusion of these ethical elements in training and their perception of compatibility and impact on their EI, EPE being the highest. This result is consistent and triangulated with each other. The results with mangers were higher than trainers.			

8.3.3 Correlations: awareness, judgment, training, compatibility and impact on EI in terms of the four ethical elements

The correlations in Table 8.14 indicate valid relations between awareness, judgment, training, compatibility and impact on EI in terms of the four ethical elements in the managers' survey, which has also validated the individual data, whereas some of the correlation values in the trainers' survey were insignificant. However, these have been justified in Section 7.3.3 to fit the trainers' perspective and the training situation.

Table 8-14: Correlation: awareness, judgment, training, compatibility and impact on EI in terms of the four ethical elements

Managers-Section 6.3.3	Trainers-Section 7.3.3	Similarities	Differences
There was a valid correlation in terms of the four ethical elements across their general awareness, awareness specific to the CAI and specific to their EI, at $P < 0.01$.	There was a valid correlation of the four elements across their general awareness, awareness specific to the CAI and specific to their EI, at $P < 0.01$ or 0.05.	Valid correlation of the four elements across their general awareness, awareness specific to the CAI and specific to their EI.	
There was a valid correlation in terms of the four ethical elements between their ethical awareness and judgment in recommending inclusion in managerial training, at $P < 0.01$.	There was only one valid correlation (Communism - Q11.3 * Q16) of the four elements between their ethical judgment and recommendation in training in Parts II and III, at $P < 0.01$, the rest were invalid, at $P > 0.01$ or 0.05.		Only one valid correlation (Communism - Q11.3 * Q16) in trainers' survey.
There was a valid correlation in terms of the four ethical elements between managers' ethical awareness and judgment perception and their agreement of these elements on managers' EI, at $P < 0.01$.	There were partially valid correlations between the impact of the four non-coercive ethical elements in training in Part IV and their awareness and judgment results in Parts II and III.		Partially valid correlations in trainers' survey.
There was a valid correlation in terms of the four non-coercive ethical elements on their general compatibility and their utilisation in training for EI enhancement, at $P < 0.01$.	There was an invalid correlation on the general compatibility of the four non-coercive ethical elements and their utilisation in training on EI enhancement, at $P > 0.01$.		Invalid correlation on the general compatibility data in trainers' survey.
Key themes reflected			
All valid correlations for the managers' survey triangulated individual data results and were consistent with the literature.	Some of the correlations were partially valid or totally invalid. However, these insignificant values were justified to fit trainers' perspective.		

8.4 Clarifying understanding of EPE

8.4.1 Rationale

The analysis in Chapters 6 and 7 and their comparison in Sections 8.2 and 8.3 indicate consistency with the existing literature for most of the data. However, the analysis of the questionnaire survey and the review of the literature still indicate some inconsistencies that warrant further explanation and clarification. This inconsistency is mainly reflected in the highest-ranking of the ethical element of EPE (Ethical principles for engineers) (see Sections

8.2 and 8.3).

The literature review (see Section 4.5.4) demonstrates the significance of EPE, and how it is regarded as a new trend in the engineering sector for ethical training and enhancement (The Engineering Council, 2018). However, there is no codified and nationally unified EPE in the CAI (stated in Section 3.4.4). This 'unwritten' or 'physical absence' of EPE in the engineering sector in China has been pointed out as a unique feature different from the West (Cao, 2015). Consequently, in managerial training, there is obvious neglect of this ethical element (see Section 3.4.4), and there is a necessity to clarify these inconsistencies.

As stated in previous chapters and underpinned by Saunders et al. (2016) in Section 5.11, the data collected were not all strictly defined as formal qualitative, as many pieces of data from the unstructured in-depth interviews could not be formally recorded and analysed. Additionally, these informal interviews can also be defined as non-standardised interviews; and to enhance their effects, all forms of interviews under the non-standardised category can be utilised as necessary (ibid). Therefore, to clarify the inconsistencies, the innovative approach of the clarification in the form of informal communication was undertaken, justified as follows:

- This research activity aims to clarify the inconsistencies in the quantitative survey and literature review and further refine the thesis outcome, but not to conduct formal interviews to triangulate the quantitative data, which is unnecessary and ineffective for this ethics-sensitive project and at this stage.

- This informal and non-standardised communication approach can explore data inconsistency and enhance data validity and credibility. This approach can also avoid the rigid form of a traditional interview approach, which might not have a specified focus and is difficult from which to extract in-depth data, particularly for ethics-sensitive and exploratory research project targeting managers in socialist China.

- Throughout the whole research process, there were already sufficient qualitative data to triangulate the quantitative data, such as the sequential reviews and the open-ended and open questions in the dual-perspective quantitative surveys.

- This approach is similar to the informal and in-depth interviews in the preliminary stage, which Saunders et al., (2016) argued is very effective for in-depth communication and

therefore can help effectively clarify the inconsistency derived from the formal quantitative data and literature.

- Moreover, in such an ethics-sensitive project, formal interviews could alert interviewees and impact results, which needed to be gathered in a natural and in-depth way.

Consequently, in the refinement stage, the clarification in the form of in-depth informal communication was logically integrated with the formal quantitative survey. This approach fits into the multi-method research process by being consistent with the nature of research activities in the preliminary stage and fitting well with this thesis in this nature and its stage. Therefore, this section has justified the research approach in the form of communications.

To explore these inconsistencies, six individuals, who had been active in communication with the researcher for the duration of the whole research project, participated in the communication. These interviews were conducted through the Chinese internet-mediated social network tool *WeChat*. The communications focused on clarifying their understanding of EPE in management training and the impact on their EI.

8.4.2 Key findings from the communications

Most of the six participants confirmed that EPE was embedded in the managerial training in the CAI and admitted its influence on their EI. When questioned as to the detail of these principles, they could not provide exact EPE that might be similar to the codified forms in the West. However, they did provide equivalent sources or alternative documents, as indicated in Table 8.15.

Table 8-15：Communication responses relating to EPE

Answer summary	Theme: Please talk about your understanding of EPE
1	The greatest piece of evidence proving the existence of EPE was the rules and regulations in *Employee Handbook* 《员工手册》;
2	The correspondents also mentioned *Company Cultural Handbook* 《企业文化手册》;
3	In addition, they mentioned *Articles of the Enterprise* 《企业章程》;
4	They also mentioned *Enterprise Moral Concept Manual* 《企业道德概念手册》;
5	Cadres' governance ethic norms were mentioned: e.g. in the form of Party's Constitution '党章', Party's Democratic Life '党的民主生活' and party-themed lecture '党课', with morality such as 'serving the people heart and soul' (translation: 全心全意为人民服务) and 'wholehearted devotion to public duty/ public interest' (translation: 克己奉公);
6	They mentioned product standard specifications or GB from the *Ministry of Communication, Administration of Quality Supervision* or *Standardisation Administration of China*.

The responses (as summarised in Table 8.15) gave no direct mention of EPE. This result is consistent with the literature which concludes there is no codified EPE in China (Cao, 2015; Zhu and Jesiek, 2015), stated in Section 3.4.4.

The summary in Table 8.15 also shows alternative ethical elements related to EPE from a wide range of aspects. Some elements are coercive, such as rules and regulations (Summary 1) and standard specifications (Summary 6). Most of them are from non-coercive aspects, such as from culture (Summary 2), enterprise morality (Summary 4) and Communist ethics (Summary 5). Summary 3 provides the title of *Articles of the Enterprise* (《企业章程》), but there is no indication to show whether these *Articles* embed non-coercive or coercive ethical elements.

The majority (four) of the respondents mentioned culture, morality and ideology related ethical elements, which fits with the findings in the literature review. According to the literature (Section 3.4.4), there is no codified EPE in China; however, there is an 'unwritten' and invisible EPE (Davis, 2009, p.34). Explained from cultural and philosophical perspectives, Chinese EPE is largely impacted by moral learning and education, with transformed synergy from its traditional culture and ideological ethics (Cao, 2015; Zhu and Jesiek, 2015).

This additional information-gathering activity has indicated these participants' high awareness of EPE and triangulated the results from the two surveys with each other and with the academic literature.

8.5 Summary

This chapter compared the two quantitative surveys, which found that participants of both surveys held similar perceptions on ethical awareness, judgment, compatibility, inclusion in training and impact on EI.

In responses to both surveys, the four non-coercive elements were compatibly interwoven in ED. Responses to WNE showed lower awareness, judgment and inclusion in training than Confucianism, Communism and EPE, while EPE ranked the highest. Higher responses were reflected in the managers' survey. No association was found within managerial levels, but a correlation was seen from a manager's perspective between awareness, judgment, training and impact on EI, while assessment of trainers' responses indicated some invalid correlations and more functional and ideological engagement with ethics. These results fit both managers' and trainers' perspectives. The high response of EPE was further clarified in the form of non-standardised qualitative communication, appropriate for the research in its stage and ethics-sensitive nature. The result indicated their consistency with each other and the existing literature.

Chapter 9 Discussion

9.1 Introduction

Data from this research, particularly the dual-perspective survey responses (discussed in Chapters 6, 7, and 8), are positive for the four ethical elements that are compatibly interwoven with different weighing for managerial ethical intentions in the CAI–i.e. WNE, Confucianism, Communism and EPE.

These data results, along with other research activities and literature, indicate that this research delivered four distinctive features. Feature 1 shows the conceptualisation (Figure 4.1 in Section 4.1) and adapted research methods (Figures 5.3 and 5.4 in Section 5.7) that ensured rigorous research and outcomes. The first outcome (Feature 2) identified key themes emerging from the analysis, which derived another two other outcomes. The third outcome (Feature 3) evaluated specific contributions of engagement for the four non-coercive ethical elements on EI enhancement, and the third outcome (Feature 4) assessed the mechanisms and appropriate approaches to deliver in training. Figure 9.1 shows the relationship between them.

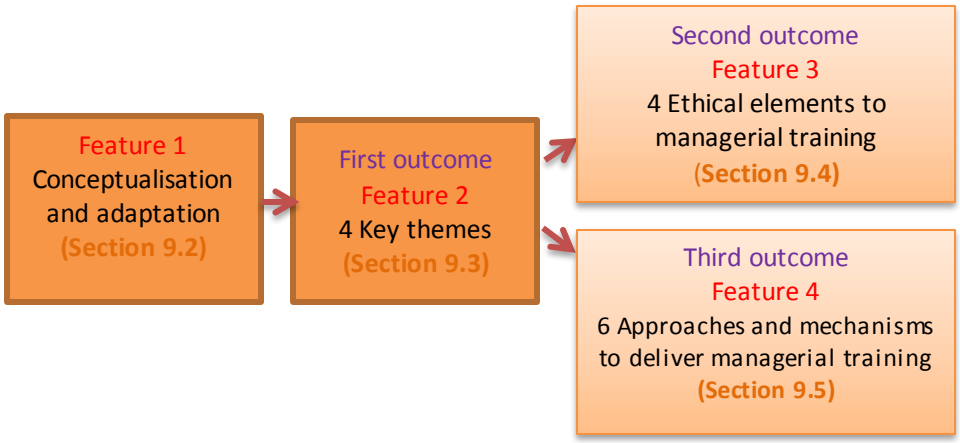


Figure 9-1: Construction of distinctive features and outcomes
Source: Author (2019)

9.2 Two key approaches: Conceptualisation and methodological adaptation

9.2.1 Theoretical conceptualisation: Moral value focus and dimension considerations

This research has been challenging due to the ethical and moral complexities in the CAI and the multidisciplinary approach proposed in the Introductory, Scoping Reviews and Background Chapters (Chapters 1-3). The achievement of the result of the four moral value elements was based on the theoretical conceptualisation to derive these research variables in the CAI. Therefore, these positive responses to the four moral values have indicated the success of the focus on moral values and dimensions in dealing with these ethical challenges.

As indicated in Figure 4.1 (Section 4.1), this theoretical conceptualisation and its focus on moral values has gone through several stages. The entire process was underpinned by the essential features of ethics for the CAI and by fundamental EI theories and models, described in the rationale (Section 1.1), as well as guided by the research aim (Section 1.3) and the research questions (Section 4.1). This theoretical process was supported by rich research activities conducted from 2014 to 2017 (Section 2.5 and 5.3), narrowing from a broad ethical background in the CAI to this focus on moral values. These processes and advantages will be discussed according to their sequence in Figure 4.1.

1) In Stage 1 (see Chapters 1 and 2 and 3), to address these ethical challenges, this research has been able to initially identify the key ethical issues and realise the core ethical feature necessary for the CAI. This challenge can be reflected in the Research Rationale (Section 1.1), indicating ethics that would be able to address the complex ethics and broad moral values confronting the CAI at a certain level and breadth. Features of ethics were summarised, and it was concluded that being non-coercive is of paramount importance. Some of these challenges have been exemplified in Section 1.1, for example: being the largest economic scale both in China and the world (CAAM, 2018a), while being obliged to respond to corresponding ethical challenges in its development (Wells, 2013). These challenges also include technical ethical issues such as the safe use of AI in automotive design (Vallor, 2016; Thornton et al., 2017), and non-technique issues such as the product liability of the Pinto Memo scandal (De George, 1981; Lee, 1998; Lee and Emann, 1999)

and Volkswagen's 'Emission gate' scandal (Lane, 2016).

Additionally, the background information in Chapter 3 also indicated challenges. For example, the mixed moral values of around 55% of JVs (China Statistical Yearbook, 2015) (Figures 3.1-3.3 and Table 3.3, in Sections 3.2.2 and 3.2.3), and the ongoing policy of lifting ownership restrictions (Xinhuanet, 2018) add to these complexities. Managerial ethical issues also evidenced the managers' lapses of such knowledge (Section 3.5).

2) In Stage 2.1 (see Chapter 4), based on the previous preliminary research and scoping reviews, this research has also shown innovation in analysing related disciplines and the ethical features necessary for the CAI, and in importing the theory of EI to underpin this conceptualisation. As stated in Section 4.2, this research has realised the importance of ED, in that it has significant effects on others and relevance to one or more parties in decision-making (Crane and Matten, 2016). Compared with other stages in ED, the third stage of EI (Rest, 1986) retains advantages over others and has '*the ability to prioritise moral values over other values*' (Craft, 2013). This EI concept has proposed a necessity to research the dimensions, which is also strongly supported by fundamental ED models that contain the consideration of an ethical dimension and in a specific context. This concept of EI with its dimension consideration fits in well with the rationale for research of depth and breadth to address ethical complexities in the CAI.

However, there is no existing dimension framework to fit the managerial ED in the CAI, along with its ethics features. This research has analysed the drawbacks of existing fundamental ED dimensions and the limitations in the existing training programmes, which indicate a lack of elements from the West and the existence of the bias of Western perspectives. Therefore, based on the above discussion, previous research activities and existing dimensions, Section 4.3 has described the modification of a three-layered ED dimensional framework. This dimensional framework modified from a CAI perspective and its ethics features, has avoided duplications and Western-specific perspective bias from existing dimensions and neatly fits the CAI perspective (validated in Sections 4.6 and 4.7).

3) In Stage 2.2 (see Section 4.4), among the ethics types, this research has been able to identify and focus on the strength of moral values. Following the justification set out in

Sections 1.1 and 4.2.3, that by differentiating in the literature from descriptive ethics and those in the intellectual context, this moral value class is acknowledged to retain the intrinsic nature of goodness (Aristotle, 1925; Carroll and Buchholtz, 2014). This discussion has also considered the ethical issues summarised in Section 3.5. Its benefits were detailed in Section 4.4.2. An example of such moral values was stated in Section 4.2.3, in that normative ethics can deal with 'what ought to be' in business and should focus on the nature of human beings and the morality of the issue regardless of any consequences (Crane and Mattern, 2010). Thus, this moral value with the intrinsic nature of goodness from the inner heart would be effective to empower managers to non-coercively deal with ethical issues in the CAI.

4) Stage 2.3 (see Section 4.5) has derived four moral values, based on the justification of moral value dimensions and non-coercive ethics in Stages 2.1 and 2.2.

5) Stage 2.4 (see Sections 4.6 and 4.7) has validated these ethical elements with their compatibility both in terms of their shared features in resolving ethical issues, underpinning compatibility theories, their feasibility in pedagogic training and international trend in the UK, supported by external recognition through academic publication. For further details, refer to Section 9.4.

6) Finally, in Stage 2.5 (outlined in Chapters 6, 7 and 8), these derived and validated research variables were implemented in dual-perspective surveys. The result of the positive responses to the four ethical elements has further verified the success of this conceptualisation and focuses on moral values and their modified dimensions.

This advantageous strength and research interest in EI, with its consideration of a focus on moral values and dimensions, has also been widely acknowledged as supporting this theoretical conceptualisation. One piece of evidence for this is the increasing number of findings over the three literature reviews on ED from 1978 to 2011 (Ford and Richardson, 1994; Loe et al., 2000; O'Fallon and Buttetfield, 2005; Craft, 2013). In particular, the most recent review by Craft (2013) indicates that the research on EI as a dependent variable is the highest among the four stages from 2004 to 2011 (see Table 4.16 in Section 4.8). The benefit of this EI concept has also been evidenced in fundamental ED models, such as the one put forward by Groves et al. (2008) considering ethics from '*cultural, social, economic, organisational, professional/industry*' levels (see Figure 4.9 in Section 4.2.2).

This success in focusing on moral values has also been enhanced by the identified gap in research and training practices. Section 1.2 demonstrates that the current literature exclusively covers the intellectual contexts in the CAI (Cao, 2015; Zhu and Jesiek, 2015). There is also an obvious gap with limited research on managerial training and its impact on EI as an organisational factor in ED (Craft, 2013) (see Table 4.16 in Section 4.8). Limited awareness of moral values is also indicated in managerial training, being fragmented, superficial and coercive; as shown in Sections 3.3 and 3.4.

9.2.2 Methodological adaptation: Adapted mixed research methodology

This theoretical conceptualisation is based on and supported by, rich and well-designed research activities. However, in addition to the moral value complexities in the CAI and the difficulty in dealing with multiple disciplines, this research is also challenged by its difficulty in handling this ethics-sensitive subject and obtaining both natural and in-depth data. It is particularly difficult to carry out such research among management staff in the CAI. As a pillar industry in the socialist country of China, opinions from management are under scrutiny (CAAM, 2018a). Therefore, these positive data have also indicated the success in tailoring a research method to overcome such challenges.

The challenges in conducting this multidisciplinary and sensitive ethics subject have been covered in Section 5.2, and this research has been able to analyse and tailor a mixed research method to overcome these challenges. One of the benefits of this is being able to follow the logical sequence in the *Research Onion* (Saunders et al., 2016) and to define itself as exploratory research based on this research feature, which considers different types of research (see Table 5.5 in Section 5.6). This exploratory research has few theories to refer to and is not intended to provide conclusive evidence but helps to provide a better understanding of the problem (Saunders, 2012). In addition, rather than adopting rigid traditional research methods, this research has modified an appropriate research method. It has made use of the traditional mixed research method designs and incorporated features of an advanced mixed research method, underpinned by research philosophical theories such as pragmatism and pluralism (Taskakkori and Teddlie, 2010; Bryman and Bell, 2015).

According to Section 5.7, the resulting Exploratory Multiphase Sequential Mixed Research Method [ESMMRM] design has been shown to fit the research: being exploratory and

sequential, and with ethics-sensitive mechanisms to initiate and facilitate in-depth ethical feedback in a multidisciplinary and ethics-sensitive context. This ESMMRM design has combined features that can support Exploratory Sequential Design [ESD] and Multiphase Sequential Design [MPSD] (Creswell, 2015; Bryman, 2016; Saunders et al., 2016).

More specifically, the ESMMRM consists of three main stages that are consistent with the conceptualising of the narrowing-down stages (see Figure 4.1 in Section 4.1): the exploratory stage of the research context, the main quantitative conceptualisation stage followed by duel perspective surveys, and the key results that have been refined by further explanation in the final stage (see Figure 5.4 in Section 5.7.6). To be more effective, the main quantitative conceptualisation stage has further incorporated features of an advanced mixed-method, Multistage Evaluation Design [MED] (see Figure 5.3 in Section 5.7.5). This meant, therefore, that the main quantitative stage was further subdivided into three stages: a literature review of theory conceptualisation, a research variables/instrument development stage and a data implementation stage (see Figure 5.4 in Section 5.7.6).

Also, regarding the complexity of research, to facilitate and elicit natural and in-depth communication, this research has also been innovative in embedding mechanisms. An all-process informal internet-mediated communication network was implemented to work in parallel with the formal research process, which has the benefit of amplifying its explorative nature and ensuring more natural and instant communication (Dudovskiy, 2014) (see Figure 5.4 in Section 5.7.6). This approach helped rectify any issues that had arisen in the background, such as the clarification of ownership (Section 3.2.3), demographic information (Section 3.2.6), training situation (Section 3.3) and other important policies (Section 3.2.4). This approach was also used to clarify inconsistencies at the last stage. Therefore, this modified ESMMRM design and its invisible approach have ensured both adequate communication with people in the CAI and the clarification and delivering of information instantly.

To deal with the complexities in these stages during the whole research process, it was necessary to prioritise key stages, approaches or activities (Table 5.12). Other ethics-sensitive tactics have also been utilised, such as attitude scales and vignettes to facilitate the achievement of in-depth data result (Section 5.9.4).

Therefore, this ESMMRM design with mechanisms has been proven to retain strengths that

fit the requirements of this research and has ensured a rigorous research result (Section 5.7.6). This systematic procedure includes initiation, facilitation and triangulation to accommodate multidisciplinary features and to fit the exploratory and sensitive ethical subjects. The quantified qualitative ethics data in the second stage has enabled large-scale data yielding, which has enhanced data generalisation, achieving higher validity and reliability in data acquisition. It has avoided potential drawbacks due to a limited amount of qualitative data (Saunders et al., 2016).

9.3 Four key conceptual themes

The success of theoretical conceptualisation and research methodology, as mentioned in Section 9.2, has ensured a rigorous research process, resulting in data with high validity and reliability. The resulted data have unveiled a number of key conceptual themes.

9.3.1 Complete moral value dimensions

As stated in previous chapters (e.g. Chapter 4 and Section 9.2.1), the four ethical elements that received positive responses were derived from conceptualisation and a series of sequential research activities. Underpinned by the EI concept (Craft, 2013) and the existing dimensions for managerial ED, a three-fold moral value dimension framework (global, societal and industrial levels) was modified (Section 4.3) and resulted in the four ethical elements (Section 4.5). This framework has been justified from the CAI moral value perspective and its unique ethics. Therefore, a key theme was indicated for this research: that of considering ethical elements from complete moral value dimensions in the CAI.

This concept of considering moral values from a complete contextual approach for EI enhancement is reflected in fundamental ED models (Section 4.2.2). For example, the model developed by Hunt and Vitell (1986) considers values from '*personal, cultural, professional, industry and organisational levels*' (Figure 4.5); the model by Ferrell and Gresham (1985) considers ethics from '*a social and cultural environment*' (Figure 4.6); and in Groves et al.'s (2008) model, ethics is considered from '*cultural, social, economic, organisational, professional and industry levels*' (Figure 4.9).

The necessity of a complete moral value dimension consideration is also consistent with the literature relating to the background of the CAI (see Chapters 1 -3). It has been stated that

the complexity of ethics and particularly the moral values diversity due to the joint venture culture in the CAI has necessitated a framing of a dimension of moral values that can derive ethical elements to effectively address these ethical issues. More specifically, the CAI is based in China, and it collaborates with foreign partners from all over the world, particularly from Western countries such as the U.S, Germany and France (see Tables 3.1-3.3 in Section 3.2). These foreign partners might bring moral values from their own cultural and moral value backgrounds to decisions.

The demographic data for managers' backgrounds and their companies in the surveys also indicate the necessity to consider a complete moral value context. The data (i.e. that which is shown in Part I of the managers' survey; presented in Section 6.2.1) showed that there were high percentages of staff from joint ventures with a full range of ownership, and a large amount of unlisted non-numerical information that was also indicated in the open questions in this section to further indicate the value complexities.

In addition, this necessity to consider the complete set of moral value dimensions is also driven by the limitations in the existing training programmes gathered from the preliminary stage and the public domain. This incompleteness can be evidenced by three of the four limitations indicated in Section 3.4: fragmented cultural elements, a lack of Western elements, and a lack of awareness of engineering ethics in the CAI.

This necessity is also driven by a corresponding research gap specific to the CAI (Section 1.2) and in the ED and training in general (Section 4.8). The traditional approaches were indicated to be fragmented and lacking ethical elements from the West. A typical example is the three ethical elements proposed by Zhu and Jesiek (2015), namely 'Confucianism', 'Marxism' and 'pragmatism' from the intellectual context, with no values from the West. The number of findings related to EI shows an increase in number over the four reviews (1978 - 2011). For example, an increase from 86 to 131 findings was indicated in both the third (1996 - 2003) and fourth reviews (2003 - 2011) (Appendix 4.1). However, as summarised by Craft (2013), '*The majority of research involved individual factors: aspects of ethical decision-making uniquely associated with an individual decision-maker*' (p.222), rather than a complete moral value context from the manager's perspective. These variables were generally individual and organisational factors, such as 'cultural values/nationality', 'philosophy/value orientation' or 'codes of ethics' (Appendix 4.3), with no global or industrial perspective. More importantly, within the recent review of EI by Craft (2013),

there is no finding on 'training' and its impact on 'EI' in terms of an organisational factor. In addition to considering the complete set of moral values from the managers' perspective, the data also indicate the necessity from the trainers' perspective - the designers of the training programmes. The data indicate that, on the whole, the positive responses to trainers were lower than those of managers in the four ethical elements. This result, when compared to managers, indicates the trainers' low awareness of this concept and the lapses in such knowledge.

9.3.2 The effectiveness of non-coercive ethics in addressing specific complexities

One of the key themes reflected in Sections 3.3-3.4 is the dominance of internal training with indigenous and superficial ethical elements, limited to ideological, cultural, or technique-specific areas. Driven by this deficiency, there was a success of theoretical conceptualisation and derivation of four non-coercive ethics (Chapter 4) and the following validation of the moral value focus (Section 9.2.1). These successes were based on the benefits of the moral value class with its effectiveness and non-coercive nature to address specific complexities, with evidence from previous literature.

This benefit of the moral value class has been detailed in Section 1.1.4 Aristotle (1926) differentiated values by dividing values into intellectual value and moral value. This moral value class consists of '*courage, temperateness, liberality and justice*' (Murphy, 1999, p.108). The globally acknowledged concept of ED and the third stage of EI is also focused on these moral values, one of the definitions is: '*the ability to prioritise moral values over other values*' (Craft, 2013, p.221) (Table 4.1 in Section 4.2.1).

Their effectiveness has also been stated in both Sections 4.2.3 and 4.4.2, with the example of normative ethics. Normative ethics, such as deontology, utilitarianism or justice, deals with 'what ought to be' (Carroll and Buchholtz, 2014; Crane and Matten, 2016) and 'have the nature of instrumental and intrinsic goodness' (Ferrell and Fraedrich, 2013, p.155), guiding people only to do 'good' and 'right' things regardless of other conditions. Western normative ethics and codes of ethics are also believed to be effective in management - guiding managers to make ethical decisions non-coercively (Snellman, 2015). Due to these benefits, these normative ethics, along with its variations, such as teleology and deontology, are regarded as fundamental concepts in ED in business (see Table 4.8 in Section 4.4.2) and

are widely embedded in fundamental managerial ED models (Section 4.2.2).

In China, these non-coercive moral values tend to be reflected in the form of cultural elements and are believed to retain a non-coercive nature. Culture in general has been regarded as the basis of both ethics and universal hyper norms (Hofstede and Bond, 1988). It is the same for Chinese culture. One of the most prominent examples is the dominant Chinese culture of '*Confucianism*', which is believed to consist of ethics of virtues (Rithline and McCann, 2015; Vallor, 2016), due to its non-coercive nature of self-cultivation, self-governance or the five cardinal virtues of '*Ren*', '*Yi*', '*Li*', '*Zhi*' and '*Xin*' (Ip, 2009a) (Section 4.5.3).

These non-coercive ethical elements have also been proven to be effective in organisational decisions as a core leadership strategy. For example, these Western normative ethics are regarded as fundamental in managerial ED (Ferrell et al., 2019); and Chinese Confucianism is also acknowledged to be able to offer guidance for both management and leadership ethics (Cheung and Han, 2005; Low, 2012; Han, 2013) (see Table 4.13, Figures 4.21 and 4.22 in Section 4.5.3).

In addition, these non-coercive ethical elements are also effective in dealing with ethics in the engineering sector (Section 4.5.4). This can be evidenced from the prevalence of including virtue ethics or cultural elements in IEEE conferences; with the theme of engineering, science, technology and sustainability, as indicated in Table 4.9 (Section 4.4.2). In engineering, virtue ethics is also among the discussion, such as advocating giving virtue its due (Harris, 2008). Ethical principles for engineers are based on normative ethics; such as the *UK Statement of Ethical Principles* (The Engineering Council, 2018) (Figure 4.24 in Section 4.5.4). These normative ethics have formed the basis for constructing codes of ethics or principles for engineers and are believed to be able to help engineers formulate more ethical decisions (National Society of Professional Engineers, 2007; Vesilind and Gunn, 2016).

The significance of non-coercive ethics has also been driven by the rationale indicating that managers need to empower themselves to address complex ethical issues in the CAI. The complexities of ethics and moral values in the CAI have been presented in the research rationale (Section 1.1), while the complex moral value background was discussed in Section 3.2. Section 3.5 discussed the specific ethical issues confronting managers in the CAI; such

as environmental issues, product safety, bribery issues (Liu, 2018) and managerial corruption (Hang, 2015).

9.3.3 Integrating EI into managerial training

This research aimed to critically evaluate ethical elements in management training that influence managers' EI in decision-making in the CAI (Section 1.3). These validated ethical elements and key concepts were applied to managerial training to achieve the research aim. Therefore, in continuing the success of the first two themes, the third theme is concerned with the integrating of this EI concept (with a complete dimension and focus on non-coercive moral values) into managerial training in the CAI.

The data from the surveys also indicate the necessity and importance of integrating EI into managerial training. The data indicated a high level of response to the inclusion of these ethical elements in managerial training and the impact on their training effect for EI enhancement (Chapters 6, 7 and 8). The correlation was also valid in terms of ethical awareness, judgement and EI among the four ethical elements (Sections 6.3.3, 7.3.3 and 8.3.3). To explore their effectiveness in managerial training, these ethical elements were embedded in the questionnaires in Parts IV, V and VI, applying in managerial training practice (Tables 5.14 and 5.15 in Sections 5.9.2 and 5.9.3, Appendices 5.1 and 5.2). The EI concept underpinned these ethical elements. Consequently, the positive responses towards the four ethical elements in these parts have further validated the effectiveness of the EI concept and the necessity of integrating it into the CAI managerial training.

Therefore, based on the discussion of the two themes in Sections 9.3.1and 9.3.2 and the data on the four ethical elements, it is important to integrate the concept of EI into managerial training in the CAI to improve managers' EI by considering the complete moral value context of the CAI to a certain depth.

9.3.4 Compatibility between ethical elements

Based on the success of justifying the introduction of the concept of EI into managerial training in the CAI, it is imperative to discuss the mutual compatibility of these ethical elements (discussed in Section 4.7): WNE from the global dimension, Confucianism and Communism from the Chinese societal dimension and EPE from the industrial dimension.

They need to work and synergise in making ethical decisions. This key theme has also been validated by data from the survey, supported by previous discussion and the literature.

Their mutual compatibility has been evidenced by positive responses to the compatibility question in the survey. To ensure the synergy in making ethical decisions in the CAI context, a compatibility question was embedded into the quantitative surveys to explore their effectiveness (Q12 in Part II and Q24 to Q27 in Part V for managers, Q9 in Part II and Q21 to Q24 in Part V for trainers). The positive responses to all of the four ethical elements and specifically on these compatibility questions have validated their mutual compatibility.

This result is also consistent with previous compatibility discussions. Their compatibility has been demonstrated through their shared values of dealing with key ethical issues raised for the CAI with publication (Section 4.6): respect for life (Section 4.6.1), maximising the public good (Section 4.6.2), upholding honesty and integrity (Section 4.6.3) and high standard moral leadership (Section 4.6.4). These shared values and compatibility have also been based on the *UK Statement of Ethical Principles for Engineers*. This *Statement* is a current trend compared with rigid codes, which applies normative ethics (The Engineering Council, 2018) (Section 4.5.4). This has further validated their compatibility.

Moreover, this compatibility has also been underpinned by compatibility theories from related perspectives. As indicated in Sections 2.2 and 5.2, this research is challenged by the breadth of several subjects and the depth of cultural, ideological and philosophical ethical element discussions from both the West and China. Therefore, the underpinning theories from cultural, philosophical and ideological perspectives were discussed (Section 4.7), with relation to international business and management. These include cultural equality and hypernorm-compatibility from a cultural perspective (Ip, 2009a), pluralism from philosophy (Ferrell and Fraedrich, 2014) and convergence, adaptation and glocalisation from an international business management perspective (Hollensen, 2016).

9.4 Four ethical elements for managerial training for EI enhancement

Based on the validations of the four key conceptual themes (Section 9.3), the specific nature of each ethical element in managerial training in the CAI needs further discussion. Data results (from Chapters 6 and 7 and in comparison to Chapter 8) indicated that they were

compatible and interwoven in ethical decisions in the CAI, and the positive responses to them by ranking were EPE, Communism, Confucianism and WNE.

Different weightings might imply a correspondingly different impact on EI. Therefore, these ethical elements will be discussed according to these results. Result based on weighting might offer precise implications for future training practices.

9.4.1 Indigenous ideological and cultural perspectives

The two ethical elements of Communism and Confucianism from Chinese indigenous ideological and cultural perspectives received good responses in general, while specifically, the responses to Communism were greater than those given to Confucianism.

9.4.1.1 The impact of Communist ethics

The high responses to Communism indicated a strong impact on managers' EI, which is consistent with the previous literature. The political regime can evidence this strong impact of Communism in China. CPC is '*the founding and major ruling political party*' (Hunt, 2015, p.118) (Section 3.2.4). Therefore, the ideological concept of Communism is present in every industry with a formidable influence over the entire decision-making process (Marketline, 2018).

The profound impact on management can be reflected by a dominant number of CPC party members in management with authority in decision-making. Section 3.3.3 shows that among approximately 9 million administrative staff, 7.4 million of them are Communist members, which comprises 82% (South China Morning Post, 2015). The policy of '三重一大' (Translation: *Triple important decisions and one large fund operation decision system of Party Committee*) indicates that the CPC party committee is responsible for important decisions (CCP ZGG, 2010) (Figure 3.6 in Section 3.2.4).

In addition to state-owned car companies, this impact on managerial decision-making from the CPC also exists in joint ventures. This is mirrored in one of the policies that all JVs including the whole foreign-funded enterprises operating in China should establish a local party branch (CPC NEWS, 2012) (Figure 3.7 in Section 3.2.4). Therefore, even though now there is a new whole-ownership by foreign enterprises due to the ongoing lifting of the foreign ownership cap (The Economic Times, 2018; Xinhuanet, 2018), the impact from the

CPC still exists.

The literature indicates that Communism has strength in moral virtues (Section 4.5.2). Communist ethics carry intrinsic goodness and a non-coercive nature, compatible and similar to other values such as WNE and Confucianism. This can be exemplified by some of the ideological norms proposed by CPC leadership (Table 4.12 in Section 4.5.2): '*Serve the people heart and soul*' (Li, 1964) and '*Always represent the fundamental interests of the overwhelming majority of the Chinese people*' (Kuhn, 2011). The two norms regard the fulfilment of the public interest to the greatest extent as fundamental mission and governance ethics (Xian and Xiangwen, 2003). In this respect, they are similar to utilitarianism - a variation of WNE (Rothlin and McCann, 2015), which stresses the greatest happiness for the greatest number of people (Mill, 1863). They are also similar to Confucian ethics *Ren* and *De,* extending passion and love for fellow human beings (Ip, 2009b). Other cadres' governance norms are listed in Table 3.12 such as '*Three Stricts and Three Steadies*' (CPC NEWS, 2015a) and a new cadre election and appointment norm issued in 2019, where the virtue is mentioned of as a priority, by 'virtue first' (以德为先) (Xinhua News, 2019) in '*Regulations on the Selection and Appointment of Party and Government Cadres*'.

The dominance of these ethics in China can also be reflected by the promotion and strengthening of the CPC at its party school training. As indicated in Section 3.3.3, there is an extensive national network of party schools (appropriately 2,700 numbering as of 2008), and '*[that] they train all party cadres, some military officers and selected businessmen…*' (Shambaugh, 2008, p.2). In addition, '*it is often the first post-secondary education many local cadres receive*' (ibid, p.147). Figure 3.24 (Section 3.3.3) indicates the role that different levels of party schools play in cadre training covering university, party schools (from central, provincial and municipal levels), as well as minority college and radio/TV colleges. Figure 3.25 (Section 3.3.3) illustrates the function of the Central Party School. Among this training, the Communist governance ethics are important contents, such as the '*Three Stricts and the Three Steadies*' by Xi (CPC NEWS, 2015) and other norms listed in Table 4.12 (in Section 4.5.2).

This ideology is dominant in current managerial training practices and can be mirrored by a training summary from middle-level management staff in Company E (Table 3.13 in Section 3.3.1), where ideological training is marked as 'regular'. The summary of both internal and external training (Figure 3.14 in Section 3.3.1) indicates this element in both in-house

training in the company and outsourced to professional training centres and different levels of party schools. Non-party members are also indicated to attend other forms of regular ideological learning such as '*Li Lun Xue Xi*' (Theoretical learning). Governance norms such as the '*Eight Honours and Eight Shames*' (People, 2005) and the '*Three Stricts and the Three Steadies*' (CPC NEWS, 2015a) are not only trained among cadres, but nationally as well.

In terms of training, there are drawbacks, some of which have been raised as inefficiencies, in Section 3.4:

1) There is a lack of awareness of non-coercive moral value ethics. Most training focuses on Communist loyalty, political integrity, or cadres' ideological governance, which is forced from the government (indicated as a deficiency in Section 3.4.1).

2) There is a lack of awareness of a transferred impact of Communism on moral learning and engineering ethics. This dominance of Communism has demonstrated that its strength can be permeated and transferred into working practices to improve working ethics. This practice is illustrated in training practices in Table 3.4 (Section 3.2.4) and acknowledged academically by scholars such as Cao (2015). However, both trainers and trainees lack such awareness (indicated as a deficiency in Section 3.4.4).

9.4.1.2 The impact of Confucian ethics

High responses were also given to Confucianism, indicating its strong impact in ED in the CAI, which is consistent with the literature about its strong historical and current impact in Chinese culture and moral values (Feng, 2004).

As indicated in Section 4.5.3, cultural inheritance has exerted a positive impact and constituted competitive advantages for a successful business. Confucianism is regarded as the ethical root of both Chinese and management ethics (Miles and Goo, 2013) due to its impact on the ruling class and state ideology since Qin Dynasty and Han Dynasty (Vallor, 2016). Confucian ethics have been recognised as contributing to the economic rise of East Asia (Hofstede and Bond, 1988) as well as being the dominant culture and philosophy in China (Yan and Hafsi, 2015), Confucianism is a better fit for business compared with other indigenous philosophies such as Buddhism and Taoism. It concerns the '*transcendent issues in the human condition*' and is '*deeply this-world-oriented and concerned about how they*

affect the wellbeing of human society' (Ip, 2009b, p.464). Moreover, Confucianism is believed to be a unification of virtues and norms (Liu, 2011a; Liu, 2011b) and can instruct businesses. This nature is similar to normative ethics in rationalising morality (Figure 4.18 in Section 4.4.2).

The dominance and strength of Confucianism can be credited to its inner virtues. Confucianism is regarded as a kind of virtue ethics; some of its virtues are similar to the WNE (Rothlin and McCann, 2015). For example, as indicated in Section 3.5.3, this Confucian virtue stresses self-cultivation and self-governance, based on cardinal values, such as *Ren* (benevolence), *Yi* (righteousness), *Li* (propriety) and *zhong shu* (the Golden Rule), working together to achieve *Harmony* and to be an exemplary moral leader of *Junzi*, which symbolises the virtuous of the virtuous (Feng, 2004). *De*, a Confucian ethic from which other virtues derive, is a capacity for benevolence towards fellow humans and its exercise results in *Ren* (Ip, 2009b). More virtues are listed in Table 4.13 (Section 4.5.3) and Appendix 4.6.

Thus, these attributes articulated in the *Analects* can help cultivate managers' intrinsic goodness and non-coercive ethics. These Confucian core values and contributions to business management, such as being virtue-based, humanistic, obligation-based, and collectivistic (Han, 2008b), are listed in Table 4.13 and Figure 4.21 (Section 4.5.3). Its advantage, in a unification of norms and virtues (Liu, 2011a; Liu, 2011b) as stated in Section 4.5.3, also indicates its feasibility and effectiveness in business decisions.

The high level of responses is also consistent with training practices. Chapter 3 indicates that in both in-house and outsourced training, cultural elements, and particularly Confucianism, is embedded in managerial or leadership training. Figure 3.17 (Section 3.3.2) indicates the internal training at Company C, in which traditional Chinese cultures, such as Confucianism, Taoism and Western philosophy are embedded. Section 3.3.3 indicates that the external training programmes embed '*Eastern traditional philosophic wisdom*' such as '*Confucianism, Buddhism and Taoism*' and aims to '*Utilise the quintessence of eastern culture to enhance the overall development of management competence*' (Wuhan University, 2018) (Table 3.13, Figures 3.20 and 3.21, in Section 3.3.3).

Currently, this cultural element is widely accepted and endorsed by the CPC. One of the reasons for this is due to its effectiveness in resolving ethical degrading in China (Ip, 2009b).

This recognition by the CPC can be evidenced in a speech by President Xi (Section 3.2.5) that '*the cultural legacy has become part of Chinese people's genetic makeup, deeply rooted in the inner heart of the Chinese people, intrinsically and unconsciously impacting Chinese people's thinking style and behaviour*' (Xi, 2017). The establishment of the 'Confucian Academy' to train cadres' traditional culture is also a promotional measure (Page, 2015). Figure 4.23 (Section 4.5.3) also illustrates the Confucianism revival promoted by the CPC.

Compared with Communism, the response to Confucianism is relatively low (third out of the four, in Chapter 8), reflecting a less important role in decisions. This situation is consistent with the insufficient inclusion of Confucianism in current managerial training in the CAI. As identified in Section 4.5.3, this traditional cultural legacy is promoted nationwide by the CPC (Xi, 2017) and some elements have been integrated with cadre's governance norms; such as 'integrity', 'honesty' and 'harmony' as listed in Table 4.13 (Section 4.5.3). However, there is no data that indicates that this element is prevalent in this industry. Most training programmes focus on techniques or ideology such as those by CATARC (2018) in Section 3.3.3 (Figure 3.18), CATTC (2018) (Figure 3.19) and the CCPS (2017) (Figure 3.25).

In addition, Figures 3.20 and 3.21 (Section 3.3.3) indicate that there is an exclusive embedding of cultural elements in the training programme by Wuhan University (2018) but without indicating a systematic analysis of their inner nature or association with the ethics features and dimensions of the industry. The new form of training for cadres in '*kongxuetang*' (KXT) is focused locally on the fact that '*KXT provides activities to Guiyang city or Guizhou*', thus resulting in a limited impact on the CAI (Figure 3.26). Therefore, this low ranking and training situation reflect drawbacks that need to be paid attention to in training:

1) This relatively low ranking indicates a correspondingly low awareness of Confucianism and insufficient inclusion of Confucianism in training. As Confucianism is a kind of non-coercive moral value, this low awareness also reflects the low awareness of non-coercive moral values and a transferred impact on engineering ethics through its unique moral learning style (indicated as a deficiency in Section 3.4.1).

2) This cultural element in managerial training is arbitrary and fragmented, and remains mainly at the personal appreciation or cultivation level but is not associated with decision-making (indicated as a deficiency in Section 3.4.2).

9.4.2 Adding Western normative ethics

Compared with other ethical elements, the ranking of the positive response of WNE is the lowest. However, these positive responses still recognise its presence and indispensable role in the CAI for EI enhancement.

Its indispensable role in the CAI is consistent with the industry background and ownership situation. As indicated in Section 3.2.1, there is approximately a 55% level of foreign investment (China Statistical Yearbook, 2017), which might bring with it foreign values in decision-makings. This situation also fits policies in China. The Chinese government is promoting globalisation in the CAI, which has been stated in its 13th 5-Year Plan (MMTA, 2017) (stated in Section 1.1 and Sections 3.2.1 - 3.2.3). These policies have driven a global development of JVs and added to ownership complexity. Tables 3.1 - 3.3 (Section 3.2.2) indicate this impact from JVs and a wide range of foreign partners. The strong impact of external investment on ownership is also shown in Figures 3.1 -3.3 (Section 3.2.3).

Its non-coercive nature can underpin the necessity of WNE in CAI for EI enhancement. As stated in Sections 4.4.2 and 4.5.1, this type of ethics is regarded as a global hypernorm with its intrinsic goodness nature (Ferrell and Fraedrich, 2014; Crane and Matten, 2016). For example, indicated in Table 4.8 (Section 4.4.2) and Table 4.11 (Section 4.5.1), the WNE ethics such as deontology focuses on the rights of individuals and on intentions rather than consequences, stressing equal respect to all persons (Ferrell and Fraedrich, 2014). There is no compromise even for maximising utility (ibid). Goodness theories of virtue ethics, including justice, believe that ethical behaviour not only adheres to conventional moral standards but also considers a mature person with 'good' moral character in a given situation (Table 4.11 in Section 4.5.1). These principles can empower managers in the CAI addressing issues like product liability and environment, thus reducing or avoiding scandals like the Volkswagen emission scandal (Burki, 2015; Lane, 2016) and Pinto Memo (De George, 1981; Lee, 1998; Lee and Emann, 1999).

However, there is an indicated neglect of this ethical element in managerial training (Section 3.4.3). For example, some training programmes do contain this element, such as the internal training programmes of Company C (Figure 3.17 in Section 3.3.2) and the external training programmes such as those at Wuhan University (Figures 3.20 and 3.21 in Section 3.3.3). However, these training programmes do not indicate their association with the ethics in the

CAI. They are also not prevalent in the industry.

The neglect of moral values from the West in the CAI was identified as a research gap (Section 1.2). For example, the identified ethical elements by Zhu and Jesiek (2015), 'Confucianism, Marxism, and pragmatism' from intellectual ethics do not fit the moral values in the CAI context due to the lack of elements from the West. The significance of recognising these Western ethical elements was also indicated in the rationale (Section 1.1), and this neglect within training programmes was indicated as a deficiency in Section 3.4.3.

Based on the discussion, two aspects need to be considered in future training:

1) There is low awareness of non-coercive moral values in the CAI (also indicated as a deficiency in Section 3.4.1);

2) There is a lack of moral value elements from the West (also indicated as a deficiency in Section 3.4.3);

3) The current weighting fits the actual situation. However, the discussion has also mentioned the change of policies on ownership restriction (The Economic Times, 2018; Xinhuanet, 2018) in Section 1.1. This change might have an impact in considerations of ethical elements from the West. Therefore, the inclusion of ethical elements and their weighting in future training needs to be contingent.

9.4.3 EPE and impacts of Chinese moral learning and education

Positive responses to the EPE were highest when compared with other ethical elements (ranking first out of the four ethical elements, in Chapter 8), which is a recognition of its highest impact in ED in the CAI. Different from the other three ethical elements, the high responses cannot be physically validated, due to the lack of a nationally codified EPE in the CAI (Zhu, 2010) and its unique engineering ethics feature (Cao, 2015). However, this significance with unique features has been underpinned by the literature.

The unique feature of EPE is discussed in Section 3.4.4 indicating the differences in engineering ethics and education style between the West and China. One of the typical examples was suggested by Cao (2015) who compared engineering ethics in the U.S. and

China and pointed out '*lack of codes of engineering ethics*' in China. The main principles behind this phenomenon can be seen in Table 3.14 (Section 3.4.4), that the Western philosophy of technology stemmed from *Logos* and is regarded as the universal principle of order and knowledge; thus emphasising rationality, which has resulted in a form of a unified code of ethics or ethical principles for engineers (ibid).

Meanwhile, the Chinese philosophy of technology emphasises an invisible moral spirit, which is impacted by ideology, traditional culture, and moral learning style (ibid). Accordingly, engineering ethics in the CAI should be strongly impacted by Communism and Confucianism. Therefore, the high positive responses to the two moral value elements have confirmed the close connection between engineering ethics with Communism and Confucianism in the CAI in ED.

This finding has also recognised the phenomenon in managerial training regarding the dominance of Communism and has called for the necessity to enhance the prevalence of Confucianism in managerial training in the future due to its relatively low ranking (Section 9.4.1.2). However, the fragmented cultural ethics and lack of association with the industry of the two moral values have indicated a low awareness of this phenomenon, which contrasts with the high response on EPE.

In upholding this query, this research has carried out further clarifying activities in the form of in-depth non-standardised communication (Section 8.4). The positive responses have indicated their recognition of the importance of EPE and the transformative impact from culture and ideology. However, there is no indication to show they could rationalise this phenomenon. These discussions can offer implications for future managerial training in the following ways:

1) There is low awareness of EPE and its features in the CAI both for the managers and the trainers (also identified as a deficiency in Section 3.4.4).

2) There is insufficient rational education of engineering ethics in managerial training in the CAI, and there is a necessity to rationalise this unique engineering ethics in China and its transformed impact from moral learning.

9.5 Six approaches and mechanisms: Managerial training for EI enhancement

This section discusses the application of ethical elements and mechanisms in the managerial training for EI enhancement. As this is the final aim of this research, therefore, they comprise the core discussion of this section. In addition, mechanisms also facilitate the training effect; therefore, five mechanisms based on the survey results are discussed. Figure 9.2 demonstrates the whole structure.

Figure 9-2: The structure of approaches and mechanisms in managerial training in the CAI for EI enhancement

Source: Author (2019)

9.5.1 Embedding non-coercive ethical elements

As demonstrated in Section 9.2, these four ethical elements with non-coercive natures and from three-layered modified moral value dimensions have been derived and implemented under rigorous theoretical conceptualisation and research methods. Individual research variables that have received positive responses have been validated in the four key themes in Section 9.3. Section 9.4 further discussed their specific weighting and ranking in relation to their corresponding impact in managerial training for EI. These data have congruously confirmed the importance and dispensable role of the four non-coercive ethical elements in

managerial training in the CAI in terms of EI enhancement.

Correlations were also discussed among the four ethical elements in relation to their inclusion in management training and impact on EI. The result indicates a valid correlation from a managerial perspective, thereby impacting their ethical awareness, judgment, and training. This result has further reinforced their mutual compatibility and contribution to EI enhancement in managerial training.

Therefore, these four non-coercive ethical elements which are from a justified moral value dimension framework (global, societal and industrial levels) are appropriate for the CAI and its managerial training. These elements can meet the rationale presented in Section 1.1 and can fill the research gap mentioned in Section 1.2 to empower managerial knowledge to address complex ethical and moral value issues in the CAI. Their inclusion with their non-coercive nature and complete dimensions will also be able to rectify drawbacks as summarised from current training programmes in Section 3.4: A low awareness of non-coercive moral values, fragmented cultural elements; lacking Western elements and due awareness of engineering ethics features and impacts from indigenous ideology and traditional culture in China.

9.5.2 Enhancing moral value inclusion at managerial training

This invalid correlation result between the managerial level and the inclusion of these ethical elements in training, as well their impact on EI, also indicate an insufficient inclusion of these elements (Sections 6.3.1, 7.3.1, 8.3.1). The training programmes in Section 3.3 have demonstrated a limitation which indicates that the specialised training on moral values is confined to very few senior management staff. This can be evidenced in the training given by Wuhan University (2018), targeting 'leaders' at senior level (Table 3.13 and Figures 3.20 and 3.21, in Section 3.3.3) (for more details see Appendix 3.8). The new cultural training centre for cadres, *KXT*, is indicated to focus on local areas (Figure 3.26 in Section 3.3.3). In contrast, as presented in Table 3.12 (Section 3.3.3), a training program for a middle-level manager in Company E indicated more functional and operational contents; most of them were closely related to technique and management issues. These indicate a necessity to enhance moral value elements for all levels of managerial training.

9.5.3 The ED process

Results from managers' perspectives have identified a valid correlation on EI between awareness, judgment, intentions, training and impact in all ethical elements, while in the trainers' survey they were only partially significant (Table 8.14 in Section 8.3.3). According to the literature, there are four stages of ED: awareness, judgment, intent (EI) and behaviour (ED) (Elango et al., 2010; Craft, 2013) (presented in Table 4.1, Section 4.2.1). This questionnaire survey was designed based on this ED process (Appendix 5.1 and 5.2). Therefore, these results indicate a necessity to follow the ED process in designing training programmes to improve managers' EI gradually. This partially insignificant phenomenon fits trainers' perspectives.

This concept also echoes with the literature mentioned in Section 4.7.5. This ED process in training for ethical enhancement can be evidenced by Kohlberg's (1985) cognitive moral value development stages, in its application in business decisions (Ferrell and Fraedrich, 2013) (Table 4.14 in Section 4.7.5) and in the engineering sector for engineers' ethical decision-making (Vesilind and Gunn, 2016) (Table 4.15 in Section 4.7.5).

9.5.4 Tailoring programmes by management levels

The quantitative data indicated that there was no valid crosstabulation between management level, training contents or impact on EI (Sections 6.3.1, 7.3.1 and 8.3.1). However, the non-numerical data in the dual-perspective surveys suggest a necessity to tailor training programmes by management levels, particularly for senior management (Sections 6.2.6, 7.2.6 and 8.2.6, Appendices 6.16 and 7.11).

This seeming contradictory data can be verified from current training practices. As indicated in Sections 3.3 and 3.4, there is low awareness and insufficiently systematic embedding of ethical elements, such as Confucianism and WNE. Their insufficient embedding might have resulted in their insignificance in the training effect, thus impacting the correlation.

However, the training practice outlined in Section 3.3 indicates a phenomenon that there are more elements from religion, culture and philosophy, particularly for senior management. This can be evidenced in the training summary for senior management in Company B, where Buddhism (*Fuo Xue*), traditional culture (*Guo Xue*), Taoism, and management philosophies

were focused (Figure 3.21 in Section 3.3.3). The training programmes were explicitly targeted '总裁' or '董事长' (president level senior management).

This phenomenon can be underpinned by the literature (Section 1.1), which shows that managers as moral agents should take on more responsibilities and need more strategic level ethics and moral values in decisions (De George, 2011). According to the Ethics Research Center (ERC) when top management personnel show ethical behaviour, employees are 50% less likely to act unethically (Ethics Research Center, 2005). The literature from Chapter 4 also indicates that these non-coercive ethical elements,such as culture and religion carry an intrinsic nature, which should be effective to help these senior management deal with complex ethics to a certain level and breadth (Crane and Matten, 2016; Ferrell and Fraedrich, 2014). Therefore, it is reasonable to tailor managerial training by their level, particularly for those at the senior level.

9.5.5 Developing and embedding industry-led vignettes

The non-numerical data indicates the necessity to embed vignettes for a better understanding of ethical issues (Appendices 6.16 and 7.11). This is consistent with the literature, and has been stated as a unique feature for effective ethics-sensitive research. As discussed under the Research Methods (Chapter 5.9.4), vignettes are regarded as an important tool for ethics subjects (Mudrack and Mason, 2013), and therefore, widely utilised in business ethics research (Cavanagh and Fritzsche, 1985). It is also recognised in engineering and technology ethics in reasoning for better decisions, such as the techno-moral vignettes, which associate scenarios with specific industries, and is thereby believed to be a useful tool for critical ethical issues in this industry (Ruijter, 2013; Slegers, 2014).

This survey design has embedded a vignette scenario from the Volkswagen emission scandal (Hutton, 2015; Krall and Peng, 2015; Terry-Armstrong, 2016), and the result has indicated its success in eliciting in-depth feedback. However, as indicated in Chapter 3, there is no indication of such vignettes in training programmes. Therefore, in the future, more industry-led vignettes should be designed and embedded in authentic training programmes to enhance the effect of ethics- sensitive training.

9.5.6 Developing and embedding EPE in the CAI

The literature such as from Cao (2015) and the survey feedback both indicate the physical absence of codes of ethics and ethical principles for engineers in the CAI. However, literature discussed in Section 3.4.4 indicates the limitation of codes of ethics, in that '*ethics cannot, therefore, be reduced to a code*' (Vesilind and Gunn, 2016, p.15). Compared with codes of ethics, ethical principles embedding philosophy and culture can render individuals knowledge '*to see beyond the norms, laws, and authority of groups or individual*' (Ferrell and Fraedrich, 2013, p.169). Due to this benefit, the current ethical principle has been a new trend in the industry, thereby being developed and abided by, such as in the engineering sector.

These ethical principles are also believed '*capable of generating other reasonable norms and rules of human conduct*' and can be '*morally justifiable*' (Ip, 2009a, p.129). A typical example is the *Statement of Ethical Principles* jointly created by the *Royal Academy of Engineering* and the *Engineering Council* in the UK, developed by being based on applied ethics and philosophies (see Figure 4.24 in Section 4.5.4) and utilised in professional training (The Engineering Council, 2017). Section 4.7 has also proved the mutual compatibility between this *Statement of Ethical Principles* and the moral values of Communism, Confucianism and WNE in the CAI in ED (Xiao et al., 2018). Therefore, it would be beneficial to develop a nationally unified Ethical Principles framework for the CAI and embed it into its managerial training for EI enhancement.

Chapter 10 Conclusions and Recommendations

10.1 Introduction

This research has assessed ethical elements of managerial training within the Chinese Automotive Industry (CAI), investigating how they impact EI in decision-making. The outcomes indicate a number of suggestions for future training programmes.

The concept of EI has become an important aspect of managerial training in the CAI. This concept, playing a significant role in making ethical decisions, sets high standards of ethics for management. It requires people to uphold moral values, enabling them to prioritise key moral values for more ethical decision-makings. As a pillar of China's economy, and characterised by its high number of JVs, the CAI operates in a complex ethical and moral sphere. Multiple stakeholders require operators in the CAI to be capable of upholding the concept of EI and to implement ethically-informed decisions in complex situations. This is particularly important for managers, who are moral agents in their organisations and are most likely to encounter situations requiring high-level EI. However, managerial scandals reflect significant lapses in real-life situations.

Managerial training has been one of the most effective ways for improving managers' competence, and training for ethical decisions is no exception. The pedagogic basis for enhancing ethical decision-making has been confirmed in both wider management training, and more specifically in training within the engineering sector. The inclusion of ethical elements is a key factor for effective training. However, research suggests that the ethical elements found in existing training programmes for managers in the CAI are at best superficial, exclusively embedding coercive and codified ethical elements; or that they embed fragments of moral values from an indigenous culture such as Confucianism. There also appears to be an absence of infusion of ethical elements from the West, which, the findings suggest, are indispensable given the joint venture environment of the CAI. A lack of professional knowledge is also reflected in training programmes, with low awareness of how to rationalise the transformed impacts inherent in Chinese moral learning to maximise training impact. Furthermore, there is a corresponding gap in existing research, which is limited to ideological and technological aspects or intellectual contexts rather than intrinsic goodness or the moral value context. Such research as exists also focuses exclusively on indigenous ethical elements of culture and ideology, neglecting the Western elements.

Consequently, this research has explored ethical elements in managerial training in the CAI that may rectify these limitations, and may lead to more ethically informed decision-making. In its implementation, this work is innovative, accommodating the many complex features of the CAI, as well as being multidisciplinary and ethically sensitive. During the stage of theoretical conceptualisation, underpinned by the concept of EI, a series of narrowing-down processes were conducted, including the modification of moral value dimensions appropriate to the CAI and effective ethics to fit its ethics context. A particular innovation was the modification of the 'Exploratory Sequential Multi-phase Mixed Research Method' [ESMMRM approach]. This was supported by a research philosophy of pragmatism and appropriateness to the research, with mechanisms such as an internet-mediated all-process communication tool to ensure methodological rigour.

By using the two key approaches of theoretical conceptualisation and methodological adaptation, as well as key conceptual themes that emerged during the research, which uphold the concept of EI, four non-coercive ethical elements were identified. These had different weighting from the modified three-fold moral value dimensions (global, social and industrial). In order of ranking, they were: Ethical principles for engineers (EPE), Communism, Confucianism and Western normative ethics (WNE). Specific contributions were also made around these ethical elements. These non-coercive ethical elements, which were identified during the analysis of data, embody both Chinese and Western perspectives appropriate to the CAI and have rectified the limitations and gaps in both research and practice. The findings have also reflected the necessity of embedding ethics-sensitive techniques into training, incorporating ED processes and industry-led vignettes.

Pedagogically, therefore, these ethical elements, along with the concept of EI and professional knowledge of ethics, such as a rationalised interpretation of Chinese Engineering Ethics, and techniques for this ethics-sensitive subject, will cultivate managers' EI by improving their training. By integrating the concept of EI with the resulting four non-coercive ethical elements, a contribution has also been made to the pedagogy of training for EI.

The research has suggested areas for future research in this field, either in different industries or across cultures. During the whole process, the achievements and contributions outlined above and detailed below have also been recognised via official publication, international awards and high-level research activities.

10.2 Contributions to knowledge

Achievements and contributions are brought together in Chapter 10 and structurally sequenced, as shown in Figure 10.1.

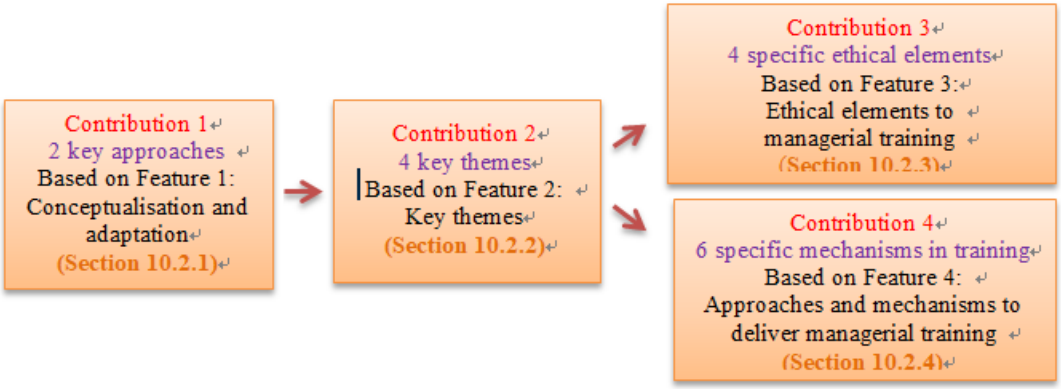


Figure 10-1: Construction of achievements and contributions

10.2.1 Two key approaches: theoretical conceptualisation and methodological adaptation

This research highlighted key challenges in identifying the effective nature of ethical elements and their complete dimensions to empower managers' knowledge to address the complexities of ethics in the CAI. In exploring these ethical elements, this work demonstrated innovations in approaches of the theoretical conceptualisation and methodological adaptation.

1) Its multi-disciplinary subjects in theoretical conceptualisation challenged this research. In dealing with related aspects, discussions in Section 9.2 indicated success by upholding an EI concept. Underpinned by the EI concept, this work focused on moral values that are internally effective in addressing any ethical issues and modifying the CAI-specific moral value dimensions that are pertinent to the CAI management perspective. Therefore, a contribution was made concerning theoretical conceptualisation.

   More specifically, this theoretical conceptualisation was able to derive research variables through a series of logical narrowing - down processes (Figure 4.1 in Section 4.1). These included importing the concept of EI; evaluating the nature of ethics; modifying a three-fold moral value dimension framework to avoid traditional stereotyped bias from a Western perspective and duplications; critically deriving ethical elements; and being

verified by compatibility discussion with transferable approaches from related areas to underpin this research. These underpinning theories, such as 'glocalisation', 'pluralism', 'value congruence' and 'adaptation' are from fields of international business, management, culture and philosophy. All disciplines related to this research are regarded as challenges (Section 4.7). This verification also included a published '*Ethical principles for engineers*' framework for the CAI (Xiao et al., 2018), which is closely associated with ethical issues in the CAI and its moral values (Appendix 10.6).

2) There were also challenges in obtaining natural and in-depth data due to the subject being very ethically sensitive. Research targeted management staff and their decisions. Some ethical elements such as WNE are sensitive in China due to the suspicion of being considered contradictory to the socialist ideology in China. However, discussions in Section 9.2.2 showed how adapting and implementing mixed research methods led to success in overcoming these difficulties.

This adaptation process followed the principles that governed the construction of the mixed methods approach and addressed these challenges from obtaining abundant and natural data. Underpinned by the research philosophy to allow the existence of multiple methods, such as pragmatism and pluralism (Creswell, 2015; Bryman, 2016; Saunders et al., 2016), the resulting ESMMRM was 'exploratory' in nature; adopted the 'building' integration relationship; and prioritised the main quantitative stage for data generalisation and high data reliability. ESMMRM was preceded by an initial stage with scoping reviews and prelimnary research to become familiar with the research context, followed by a refinement stage to clarify key features of EPE. In addition, this adaptation not only adapted two fundamental mixed research methods (the Exploratory Sequential Design [ESD] and the Multi-phase Sequential Design [MPSD]) but also adopted features from an advanced model (the Multistage Evaluation Design [MED]) to enhance rigour. The whole process was further supported by projective techniques for ethics research, such as internet-mediated communications for instant information delivering and verification, and industry-led vignettes in data collection (see Figure 5.4 in Section 5.7.6).

Consequently, contributions to knowledge were made on methodology approaches and mechanisms of training. This adapted exploratory and sequential design with mechanisms fit both the ethics-sensitive and multidisciplinary features. The feature from the advanced model has further amplified the main quantitative stage, enhancing the

effect of quantifying qualitative data and avoiding potential drawbacks by relying on small numbers of qualitative ethical data. Thus, this approach to training and associated mechanisms facilitated rigorous research and met the requirements stated in Section 5.2.

10.2.2 Four key conceptual themes

Contributions from the key approaches in theoretical conceptualisation and methodological adaptation have also reflected specific contributions to four key themes:

1) This research was able to uphold the concept of EI and consider ethical elements from complete moral value dimensions appropriate to the CAI. This concept of EI in fundamental ED models was successfully integrated into this research in addressing the challenges confronted by the CAI in its moral value and ethical complexities. In introducing the concept of EI into the context of ethical decision-making situations and training, this research has realised the closing of the identified research gap. This complements the existing literature which focuses on the intellectual context, bringing it to the moral value context, which the findings indicate is more effective.

2) Concerning the complexities of ethical and moral values in the CAI, this research is innovative in identifying the effectiveness of moral values and their non-coercive nature. This type of moral value in the form of normative ethics is proven to carry the nature of intrinsic goodness that can empower managers with the knowledge to non-coercively address ethical dilemmas in the CAI. This type of ethics, which derives from universal hypernorms and cultural legacy, fits any culture and sector, including the CAI (discussed in Sections 4.2.3, 4.4.2 and 4.5).

3) A common issue for individual values in a certain context might be their mutual compatibility and synergy; this was previously not identified, but this research highlighted the need to consider values from both indigenous culture and ideology, and values from the CAI's global partners. This research has also brought to light the importance of considering their mutual compatibility and association with the industry. Theories from interrelated disciplines and multiple perspectives were imported to underpin the analysis, including cultural equality and hyper norm-compatibility (Ip, 2009a), pluralism (Ferrell and Fraedrich, 2014) and glocalisation (Hollensen, 2016) from cultural, philosophical and international business and management perspectives. By

utilising this approach, this research led to the development of an innovative compatibility framework in the form of a '*Statement of Ethical Principles for Engineers*' in the CAI which was published in an international journal (Xiao et al., 2018). This framework or *Statement* considered the mutual compatibility of the four ethical elements, ethical issues features in the CAI, the pedagogic feasibility and the new trend in the *UK Statement of Ethical Principles for Engineers* (Appendix 10.6), which has the benefit of being based on applied ethics (The Engineering Council, 2018). Therefore, by rationalising their compatibility, opportunities for improving training were identified. It is anticipated that in the future, the application of this framework to CAI training will greatly enhance the managers' EI.

4) This unique approach has the potential to bring new concepts to the CAI and beyond. Currently, the literature reveals a deficit within the training as it does not consider the values in the whole framework. Limitations identified during this research were that current training is superficial and unprofessional, embedding codified rules or fragmented value elements. It has been impossible to consider ethical issues from all aspects outlined in the framework until this research. By incorporating the concept of EI and the four derived non-coercive ethical elements, and the concept of their compatibility into training in the future, this research has the potential to make contributions to managerial training in the CAI and other industries even across cultures, through considering ethics internally and comprehensively, to rectify the limitations of existing training programmes.

10.2.3 Four specific ethical elements to managerial training

Four value elements emerged from the four key themes; this discovery will make contributions to specific training and ethical decision practice. The discussion in Chapters 6 and 7 and comparison in Chapter 8 indicated their importance in ethical decision-making in the CAI. The analysis also identified different rankings for the four ethical elements: EPE, Communism, Confucianism, and WNE. Further discussions in Section 9.4 recognised their weighting in ED and explored their prevalence in managerial training. This being so, contributions have been made in three aspects:

1) Stressing the importance of ethical elements from existing indigenous cultural and ideological perspectives in managerial training. The derived ethical elements of

Communism and Confucianism are representative of Chinese ideology (Section 4.5.2) and traditional culture (Section 4.5.3), which are compatible with each other in being non-coercive in nature (Section 4.7). In present training, these indigenous elements are fragmented with more emphasis on ideology.

2) The research identified that WNE, previously neglected in training, can fit into the authentic moral value context of the CAI. The literature indicated a strong joint venture feature with diversified values from Western cooperative partners (Sections 3.2.1 and 3.2.2), which necessitates the recognition of ethics from the West in decision-making.

3) Rationalising the unique features and importance of EPE in CAI managerial training, by differentiating it from its Western origin and highlighting the impact of the Chinese moral value context. A series of research activities led to the finding that EPE is impacted by the historical-cultural context in China, with transformative influences from Confucianism and Communism. This finding was achieved by literature review, the quantitative data and following up responses to clarify participants' understanding. This interpretation is different from the traditional views believing there to be an 'absence' in the engineering sector in China (Zhu, 2010; Zhu and Jesiek, 2015). This rationalised knowledge of EPE in the CAI and the clarification of its association with cultural and ideological ethics in China should facilitate training improvements and results.

10.2.4 Six specific training approaches and associated mechanisms

Based on the previous achievement, pedagogically, this research makes contributions by proposing the four-fold non-coercive ethics framework and applying it in a management training programme for EI enhancement. This being so, contributions are made in six areas:

1) To overcome the lack of an appropriate concept in ethical training, the introduction of the concept of EI with a focus on non-coercive ethical features and dimensions would be effective for cultivating managers' EI knowledge to address ethics. This approach in training can rectify present limitations, including exclusive reliance on ideological norms or technique-related policies and standards (Sections 3.3 and 3.4). The literature also indicated a gap in research in this area (Sections 1.2 and 4.8). Thus, this approach fills in the current gap in practice and research.

2) Data from the open questions also indicated a necessity to embed moral value elements at all levels of managerial training. This should help improve the limitations caused by embedding such elements in training for very few senior management staff (Section 3.4.5), while most elements for general management are at the functional and operational levels, such as CSR and sustainability concepts (Sections 2.4, 3.3 and 3.4).

3) This research has identified the necessity to incorporate principles that follow the stages of the ED process in managerial training. This approach is similar to Kohlberg's (1985) cognitive moral value development stages and its application in a business context (Ferrell and Freadrich, 2013) (Table 4.14 in Section 4.7.5) and the engineering sector for engineers' ED (Vesilind and Gunn, 2016) (Table 4.15 in Section 4.7.5).

4) This research has also been innovative in realising the different roles different levels of management play, proposing a programme that is tailored to the managerial level. Data indicated it is particularly important for senior management to be seen as moral agents in the corporations (De George, 2011). Literature also indicated the progressive development in moral levels through training, moving to the highest stage of universal ethical principles (Table 4.15 in Section 4.7.5). This training has proven particularly effective for senior managers (Frell and Freadrich, 2016).

5) This research also identified the needs to embed industry-led vignettes in managerial training. This approach was utilised in the survey questionnaires and provided rich data from open questions. These responses, in addition to the literature reviewed, suggest that this approach will enhance training for ethical decision-making.

6) Based on the interpretation of the transformed impact from moral learning on EPE in China, this research has been innovative in proposing the increased embedding of Chinese cultural and ideological values into managerial training in the CAI. In addition, to align with the international engineering community, it is also proposed to develop and embed EPE with Chinese characteristics that would be compatible with existing values and also appropriate for the industry. This innovation has already been received positively and acknowledged by the academic community through the publication of a paper on the ethical principle framework for the CAI (Appendix 10.6).

10.3 Visualisation

Visualisation is an important methodological tool (Saunders et al., 2016), and this research has been innovative in visualising important outcomes.

- The theoretical conceptualisation process to focus on moral values is shown in Figure 4.1 (Section 4.1).

- The adapted mixed research method, ESMMRM, is demonstrated in Figure 5.4 (Section 5.7.6). This figure displays the sequential research process and techniques of ethics-sensitive research, such as in-depth all-process internet-mediated communications.

- The first research poster depicts the research background and indicates the success in focusing on dimension concepts (see Figure 10.2).

Figure 10-2: 2016 A Poster for Research
Source: Author (2016)

- The second research poster depicts the three key exploratory research processes; starting from the bottom. It also includes the research rationale, background, research methods and the specific weighting of the four non-coercive ethical elements (see Figure 10.3).

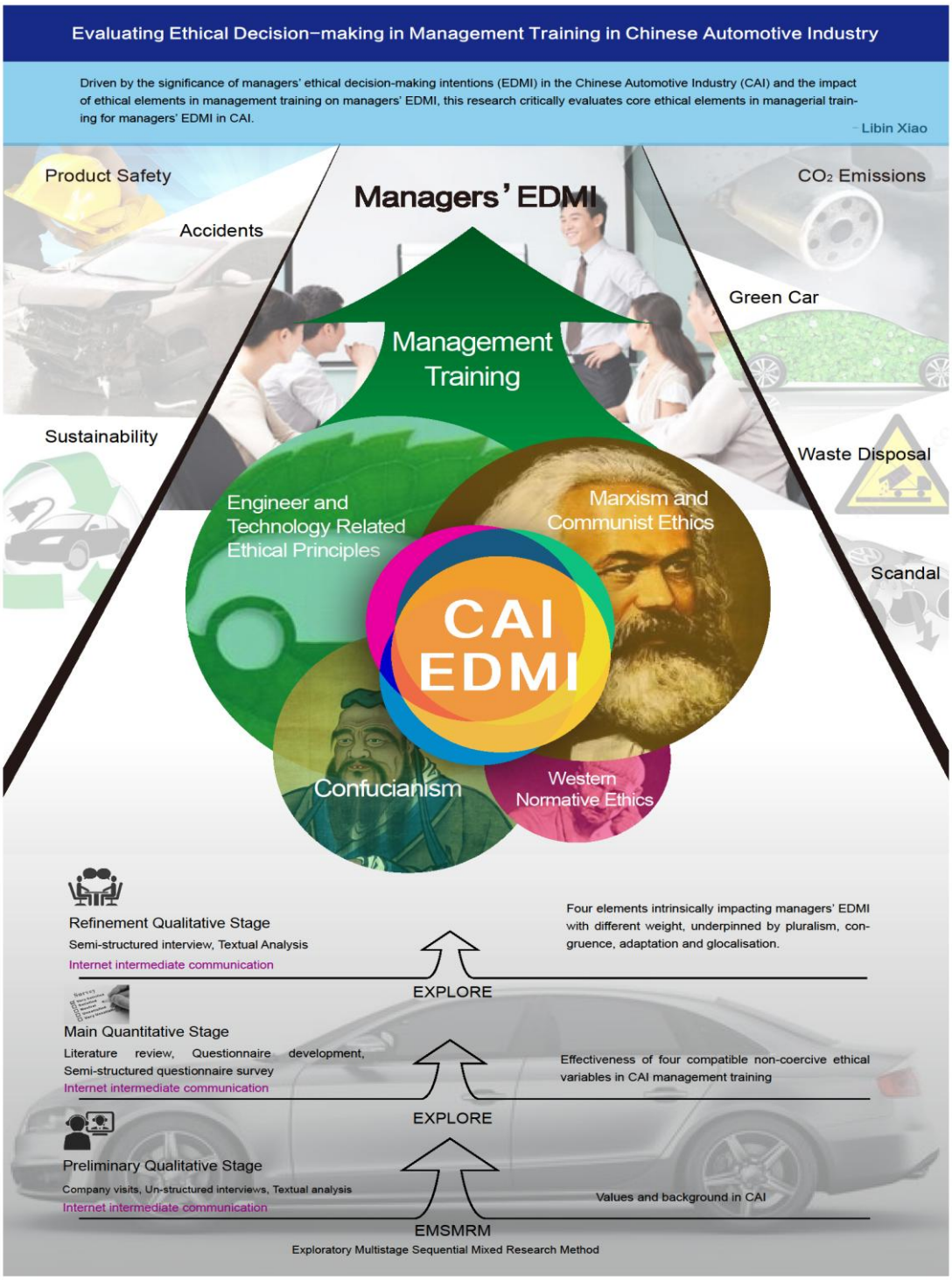


Figure 10-3: A research poster evaluating EI in managerial training in the CAI
Source: Author (2017)

- The third research poster depicts the final research process and achievements based on the second poster, changes were justified in Section 8.4 (please see Appendix 10.1).

- The fourth research poster displays the whole research concept and achievements (see p. ii).

10.4 Recommendations for future work and training practice

The outcomes of the research guide recommendations. The key research focus and the main finding are the four non-coercive ethical elements applicable to CAI management training. Therefore, the core recommendation is the introduction of these four elements to training. The findings also suggested appropriate mechanisms or techniques for training practice. These constitute the outer layers of the recommendations for training and are presented in order.

These recommendations also meet the aim of the research, which is to improve the ethical elements of management training in the CAI. Therefore, recommendations focus on nature (Section 10.4.1) and dimensions (Section 10.4.2) of these ethical elements in training. Suggestions on individual elements are offered, based on their weighing and ranking in ED from data.

Recommendations are also offered on pedagogy in training. It is suggested that ethics-sensitive mechanisms be embedded in training design in order to improve training impact (Section 10.4.3). The literature and data from research also indicated neglect of this approach. Chapter 8 reflected upon trainers' low awareness of ethical concepts. Thus, recommendations are offered to inform trainers' perspectives (Section 10.4.4), which will impact programme design. Furthermore, the contingency concept needs to be held that the training content should be subject to the changing contexts of the ethical and moral value environment (Section 10.4.5).

Figure 10.4 shows its whole structure, moving from the core of non-coercive ethical elements to the outside layers of mechanisms.

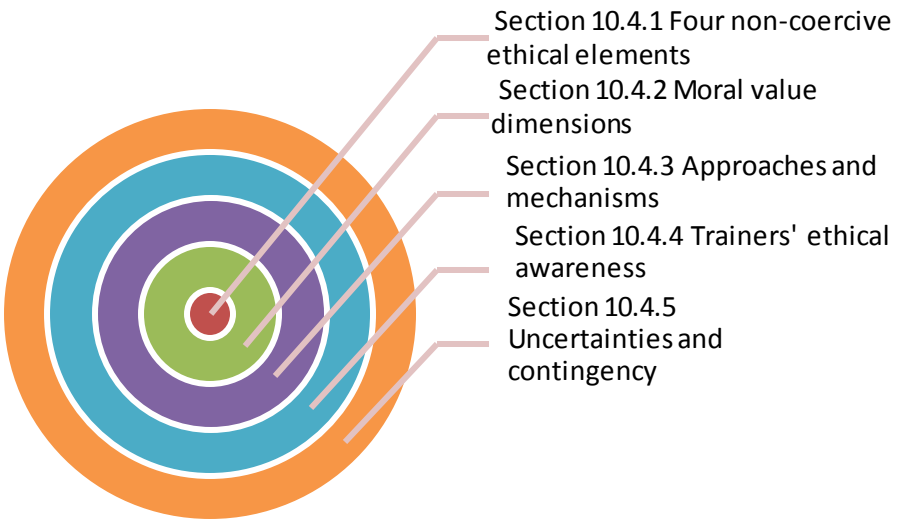


Figure 10-4: Recommendation structure
Source: Author (2019)

10.4.1 Four non-coercive ethical elements specific to the CAI

It is suggested that the four ethical elements with non-coercive nature should be embedded at all levels of managerial training in the CAI. Their intrinsic goodness would help managers improve their ED internally. Furthermore, more detailed suggestions are offered for the embedding process.

Due to the high ranking of EPE, Communism and Confucianism, it is strongly suggested that these elements be embedded in training. However, Confucianism needs to be systematically designed into the programme, and the non-coercive nature of the two ethical elements of Confucianism and Communism needs to be associated with specific ethical issues in the industry. Due to the ethics feature of EPE, which according to the literature is affected by the transformative impact of culture and ideology, it is necessary to rationalise this impact to facilitate managers' awareness of the transferred synergy and improve their moral spirit at work. The data also indicated positive attitudes towards the influence of WNE on EI; however, their weighing in training needs to be consistent with the authentic situation and the government policy.

10.4.2 Moral value dimension concept specific to the CAI

The success of the theoretical conceptualisation and the identification of four non-coercive ethical elements were based on the concept of moral value dimensions. These dimensions

were modified from fundamental ED models and appropriate for managerial ED dimensions in the CAI. These ethical elements from the complete dimensions have the potential to address the deficiency of fragmented training elements, particularly the neglect of Western elements. Therefore, it is important to reinforce this concept of training.

10.4.3 Approaches and associated mechanisms to training

- It is suggested that the stages of ethical decisions (awareness, judgment, intent and decision) to be followed in designing programmes. The survey for this research was designed on the stages already identified in the ethical decision-making literature. Findings indicated a valid correlation between ethical elements in the four stages, therefore, suggesting that training programmes can be designed to follow stages in this ED process to improve managers' EI gradually. This approach in progressive movement to higher stages is also consistent with literature such as Kohlberg's (1973) cognitive moral development concept and the moral development of engineers (Vesilind and Gunn, 2016) (Section 4.7.5).

- It is suggested that projective mechanisms in training should be utilised by developing and embedding industry-led vignettes in training to facilitate managers' understanding of ethical issues specific to the CAI. This can rectify the deficiency in existing training as, currently no information from the training indicates the inclusion of industry-led vignettes; however, it was suggested in the survey.

- It is suggested that training be differentiated by management levels, particularly for seniors. The information from the training programmes indicates a difference between general management and senior management. As moral agents, senior management shoulder more responsibilities than general managers and are involved in more uncertainties or larger scale ethical issues, their roles are more strategic and need more intrinsic and transferable ethics and principles, such as culture and philosophy, to guide their actions internally and flexibly. This is also consistent with the literature in Section 4.7.5, that these ethical principles were the highest stage and by upholding them, managers are more likely than others at lower stages to consider ethics when making decisions (Ferrell and Fraedrich, 2013). Therefore, it is suggested that training should be tailored by management level, particularly for senior management.

10.4.4 Trainers' ethical awareness

It is suggested that trainers' awareness of the four non-coercive ethical elements and the concept of EI should be improved. Assessment of trainers' responses indicated a more functional and ideological engagement with ethics, which fits their working environment but reflects their limitation in approaching ethics features in this industry and in designing corresponding training programmes. Therefore, improving trainers' perception and knowledge about the effectiveness of non-coercive ethical elements and the concept of EI would enable them to design a training programme that would be more appropriate to the moral value context of the CAI.

10.4.5 Uncertainties and contingency

It is suggested that a contingency approach and dynamic observation of ethical uncertainties and moral value context be adopted in the CAI. As indicated in Chapter 1, uncertainties arise due to the advancement of technology such as AI in automotive design; and in the future additional similar issues might arise. Therefore, contents in training need to reflect these changes.

In addition, the external environment such as the recent change of policy on ownership restriction might impact the weighting of ethical elements and the contents of training. The change of ownership structure might result in more consideration of values from the West. Therefore, it is necessary to observe these changes and to adjust ethical elements and their weighting in training promptly.

10.5 Achievement of aim and objectives

This research has achieved the research aim and objectives, summarised in Table 10.1.

Table 10-1: Achievements of Aim and Objectives
Source: Author (2019)

Achievements of Aim and Objectives		Chapter(s)
Aim	This research aims to critically evaluate the ethical elements in management training that effectively influence ethical intentions (EI) in decision-making in the Chinese Automotive Industry (CAI)	
Achievement	Have critically evaluated four non-coercive ethical elements in managerial training that effectively influence managers' EI in the CAI.	Chapters 1-10
Objective 1	To investigate the features of ethics in the CAI and current approach to EI in its managerial training in the CAI.	
Achievement	Have investigated ethics features in the CAI, identified benefits of non-coercive ethics and limitations in its managerial training in the CAI in terms of EI.	Chapters 1 - 3
Objective 2	To identify the moral value dimensions underpinning EI in the CAI.	
Achievement	Have critically developed a three-fold moral value dimension framework specific to the managerial EI in the CAI, based on the assessment of the moral value context in the CAI, fundamental managerial ED models, and limitations of ethical elements in current managerial training.	Chapters 3 and 4
Objective 3	To assess the effectiveness of non-coercive ethics underpinning EI in the CAI.	
Achievement	Have critically assessed normative ethics and their non-coercive nature regarding their effectiveness to address complexities of ethics and moral values in the CAI, underpinned by fundamental compatibility theories, and verified by formal publication.	Chapters 3 and 4
Objective 4	To critically evaluate effective ethical elements within managerial training, appropriate to empower managers to address ethics and value challenges specific to the CAI.	
Achievement	Have critically evaluated ethical elements and derived four non-coercive ethical elements about their existence and impact on managers' EI in managerial training in the CAI, through theoretical conceptualisation and data implementation and analysis.	Chapters 5-9
Objective 5	To offer recommendations for EI enhancement in managerial training in the CAI and suggest implications for potential future related studies.	
Achievement	Have offered recommendations for EI enhancement in managerial training in the CAI and suggested implications for potential future related research.	Chapter 10

On reflection, this project has overcome the challenges stated in Sections 2.2 and 5.2 and implemented rigorous research. This research has been able to conceptualise theoretically by focusing on non-coercive ethics and moral values and has developed an adapted ESMMRM research methodology with mechanisms to accommodate multidisciplinary and ethics-sensitive features and facilitate research.

10.6 Limitations and opportunities for future research

Having considered the outcomes of the research, there are a number of areas whose scope can be further developed for future research. The success of critically evaluating the four non-coercive ethical elements in managerial training has introduced many contributions and innovations, which have opened a new direction that has created more opportunities for further research.

It is recognised that this research has been successful in developing a research method to fit this multidisciplinary and ethics-sensitive subject. This resulting method, ESMMRM, is innovative in adapting two fundamental mixed research methods and incorporated partial features of an advanced research method, MED. Based on this experience, future research might be able to imitate this model and incorporate more features from the advanced methodology.

This work is successful in theoretical conceptualising and focusing on non-coercive ethics out of multiple perspectives. This work was complex and multidisciplinary, covering the nature of ethics, Chinese and Western philosophy and culture, fundamental theories of ED, management ED models, and background and ethics in the CAI (Sections 2.2 and 5.2). It was successful and innovative in considering all these perspectives in one work. Based on this experience, future work can expand the perspective to construct more complicated comparisons, such as a comparison of the same industry in other cultures or with similar cultures in different industries.

This research has been efficient in handling multidisciplinary subjects. Based on the success of knowledge integration in this individual work, future similar work can attempt larger scale collaborative research with specialists within these areas.

This research is instrumental in offering suggestions for training, consisting of the core content of ethical elements and the mechanisms to facilitate training. Future training can consider more from this research.

10.7 External recognition of this research

During the past five years, the author has been awarded a number of achievements which

have been recognised internationally. Table 10.2 summarises these achievements and contributions, including background and management research in Stage 1; research mode, theoretical basis, training practices and ethics in the CAI, and findings in Stage 2; and achievements in ethics and training in Stage 3.

Table 10-2: Summary of research activities, publications and impact

Stage	Focus	Research activities and publications, associating with training centres and auto companies	Impact
Stage 1	Background research	Guest speaker and presented at research seminars in the Automotive Engineering Department in WUT on ethics in this industry.	Highly recognised
		Consulting and communicating on managerial training with people in automotive companies.	Highly recognised
		Participating by application '*The First International Conference on Modern Auto Technology and Services (MATS2014) Wuhan University of Technology October 2014*'. Publication: L. Xiao and J. Venus. (2014) '*Policy Scenarios: Analysis and Implications for the Chinese Automotive Industry regarding Vehicle Fuel Economy and Greenhouse Gas Emission*'. The First International Conference on Modern Auto Technology and Services (MATS2014). Wuhan University of Technology. October 2014.	Academic recognition
	Management research	Participating CIM and management research seminars in the Swansea Business School and the Research seminars in UWTSD.	Highly recognised with certificates. (Appendix 10.1)
Stage 2	Research mode and findings	Participating in the research competition by demonstrating research poster (Figure 10.2).	Nominated as 'Excellent'
		Awarded as 'Emerging Scholar' at Fifteenth International Conference on New Directions in the Humanities. Presented at the conference: '*A Multidisciplinary Research of the Effective Factors in Managerial Training that Impact Managers' Ethical Intentions in Decision-making in the Chinese Automotive Industry.*' Demonstrated the research poster: *'Evaluating Ethical decision-making in Management Training in the Chinese Automotive Industry*' (Figure 10.3). Peer reviewer for journals related to ethics and decision-making in the CAI (Figure 10.5).	International award in Imperial College London, UK (Appendix 10.2)
		L, Xiao. (2017). 'Six Strategies for Multi-disciplinary Research in Humanities'. *China Youth Daily Academic Column*. [N], 2. Published and republished by *Chinese Academy of Social Sciences, The China Youth Daily (Academic Column); Guangming Daily (Theoretical Column); Opinion China, China Education and Research*	Republished by leading academic sources. Also taken by universities as a guideline for multidisciplinary

		Network (CERNET). This publication demonstrates my theoretical conceptualising approach and research methodology in dealing with this multidisciplinary research.	research in humanities and social science. (Appendix 10.3)
	The theoretical basis of applied ethics	M. Chen and L. Xiao (2017). 'Three Research Fields and Its Ethical Enlightenments in Principlism Debates of Contemporary Applied Ethics'. *Journal of Kunming University of Science and Technology Social Science Edition*. No. 17(3).	Published by the influential journal at Social Science Edition on ethics. (Appendix 10.4)
		By application, the author attended the world-leading academic summer school, entitled *'Wuhan University-University of Arizona Contemporary Issues in Political Philosophy Summer School'*.	Highly recognised with a certificate. (Appendix 10.5)
	Training practice and ethics in the CAI	Guest speaker and consultant of training centres and auto companies.	Highly recognised.
Stage 3	Achievements in ethics and training in the CAI.	Participating at '*2018 5th ICSSH Conference on Economic Development and Management (ICSSH-EDM 2018)*' in London, UK. Xiao et al. (2018). 'The Challenge of Developing Ethical Principles in the Chinese Automotive Manufacturing Industry', *Advances in Education Research* (ISSN: 2160-1070).	Developed ethical principles for the CAI with the publication. Highly recognised as 'innovative' in peer reviews. (Appendix 10.6)
		Wrote a chapter in the book '*Automotive Culture*': L, Xiao. (2018). *Automotive Ethical Culture* (Chapter six). Beijing: People Transportation Press, p.171-203. Innovative to introduce from philosophical aspect ethics specific to the CAI, including concepts of EI, benefits of non-coercive ethics and their application in the CAI in enhancing EI.	The core coursebook on ethical culture in the automotive industry for all university-level students majoring auto engineering in China. (Appendix 10.7)
	Disseminate to other areas	 Sci MDPI Review **Endocrine Disrupting Compounds Removal Methods from Wastewater in the United Kingdom: A Review** China K. Gadupudi [1,*], Louis Rice [2], Libin Xiao [3] and Komali Kantamaneni [4] Received: 29 January 2019; Accepted: 19 February 2019; Published: 21 March 2019 (Version 1, doi: 10.3390/sci1010015.v1)	The high ethical concept developed through this research has been assimilated to other areas, such as environmental issues in wastewater, as evidenced by the most recent publication. (Appendix 10.8)
	Training practice and ethics in the CAI	Guest speaker and consultant of these training centres and auto companies.	Highly recognised

Source: Author (2019)

Based on Table 10.2, some of the research activities are demonstrated in Figure 10.5.

COMMON GROUND

3 May 2018

To Whom It May Concern,

This letter certifies that Libin Xiao of the University of Wales Trinity Saint David, Lampeter, Wales, UK, successfully completed a peer-review report for an article in consideration for publication by Common Ground Research Networks. We express gratitude for Libin Xiao's contribution to the peer-review process. Libin Xiao's expertise as a reviewer has enriched the value of The Interdisciplinary Social Sciences collections.

COMMON GROUND

04 March 2019

To Whom It May Concern,

This letter certifies that Libin Xiao of the University of Wales Trinity Saint David, Lampeter, Wales, UK, successfully completed a peer-review report for an article in consideration for publication by Common Ground Research Networks. We express gratitude for Libin Xiao's contribution to the peer-review process. Libin Xiao's expertise as a reviewer has enriched the value of The On Sustainability Journal Collection.

Stage 3

Economic Development and Management

2018 5th ICSSH Conference on Economic Development and Management (ICSSH-EDM 2018)

July 22-24, 2018, London, UK

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The Challenge of Developing Ethical Principles in the Chinese Automotive Manufacturing Industry

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Keywords: Ethical principles; The Chinese automotive manufacturing industry; Hyper norms; Chinese moral learning; Chinese moral value context.

Abstract. Ethical principles are more effective in guiding professional practitioner behavior than rigid codes and regulations and this recent trend in Western engineering has not been developed in the Chinese Automotive Manufacturing Industry (CAMI). In response to increased demands from the international automotive community for shared norms and from CAMI's professional practitioners for ethical guidance, this work develops nationally uniformed ethical principles for CAMI. This is initiated by the evaluation of its appropriate feasibility in the context of the industry feature, Chinese moral value, moral learning and ethical governance practice. The context of CAMI is also assessed alongside issues of product integrity, environmental degradation and corruption. Finally, based on the UK practice, the universal hyper norms, the indigenous cultural and ideological heritage of Confucianism and Communism are critically evaluated. This paper also aims to initiate similar research and more thinking of Western practice in CAMI on unified ethical principles.

13th Five-Year-Plan core coursebook for university students majoring automotive engineering.

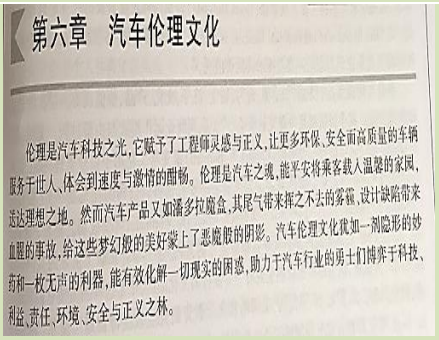
Automotive Culture (Third edition)

Libin Xiao (Chapter 6)

参加本书编写的人员有(按章节顺序排列):李江天(第一章的第一节至第三节)、宋景芬(第二章、第三章第三节、第四章)、闫树(第三章的第一节和第二节)、张国方(第一章第四节、第五章)、肖礼彬(第六章)、杨瑞(第七章),

Chapter 6 Automotive Ethical Climate (Forward)

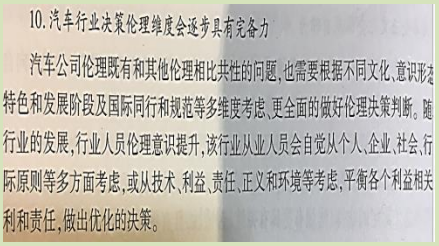
Ethics is the light of automotive science and technology, which renders engineers inspiration and justice, resulting in more environmentally-friendly, safe and high-quality vehicles to serve the world, with speed and passion. Ethics is the


第六章 汽车伦理文化

伦理是汽车科技之光,它赋予了工程师灵感与正义,让更多环保、安全而高质量的车辆服务于世人,体会到速度与激情的酣畅。伦理是汽车之魂,能平安将乘客载入温馨的家园,送达理想之地。然而汽车产品又如潘多拉魔盒,其尾气带来挥之不去的雾霾,设计缺陷带来血腥的事故,给这些梦幻般的美好蒙上了恶魔般的阴影。汽车伦理文化犹如一剂隐形的妙药和一枚无声的利器,能有效化解一切现实的困惑,助力于汽车行业的勇士们博弈于科技、利益、责任、环境、安全与正义之林。

(p.171)

soul of the car, which can safely load passengers into a warm home and ideal places. However, cars are like Pandora's Box, where lingering smog from exhaust fumes and bloody accidents from design flaws cast a demonic shadow over this dreamy beauty. As an invisible medicine and a silent weapon, automobile ethical culture can effectively address these practical issues and provide practitioners with concepts of responsibilities and justice.


10. 汽车行业决策伦理维度会逐步具有完备力

汽车公司伦理既有和其他伦理相比共性的问题,也需要根据不同文化、意识形态特色和发展阶段及国际同行和规范等多维度考虑、更全面的做好伦理决策判断。随行业的发展,行业人员伦理意识提升,该行业从业人员会自觉从个人、企业、社会,行际原则等多方面考虑,或从技术、利益、责任、正义和环境等考虑,平衡各个利益相关利和责任,做出优化的决策。

(p.202)

10. The complete ethical decision-making dimensions in the automobile industry are forceful.
… It is necessary to make ethical decisions and judgment according to different cultures, ideologies, industry characteristics and development stages, international peers and international norms. …

Figure 10-5: Demonstration of achievements
Source: Author (2019)

These achievements record various aspects of the recognition and utilisation of this PhD research and also document its external impact and contributions to academic knowledge. Table 10.2 and Figure 10.5 demonstrate wide and high-level research activities, indicating the researcher's strong and transferable skills in this field. The researcher's expertise has developed through conducting the research, and the researcher has been able to widely disseminate findings and also contribute to relevant scholarly activities, in addition to meeting all of the aims and objectives and filling the gap in existing research and practice.

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Appendices

Summary of the characteristics of companies and organisations involved in this research

This research took measures to ensure anonymity and confidentiality of information and data from participated companies and organisations; their characteristics are:

Company A	This is a state-owned auto company is. It has joint ventures with SAIC Motor and General Motors, producing engines; special purpose vehicles, namely mini electric cars; people movers; trucks and buses; and auto parts.
Company B	It is a joint venture, one of the largest manufacturers of microvans in China.
Company C	It is a Sino-French joint venture.
Company D	It is a Sino-Taiwan Joint Venture.
Company E	This is a state-owned Auto Group Corporation. It is China's first automobile manufacturer, one of the 'Big Four' Chinese automakers alongside Chang'an Automobile, Dongfeng Motor, and SAIC Motor. Its principal products are automobiles; buses; light, medium, and heavy-duty trucks; and auto parts.
Company F	This is a stated-owned Auto Group, the tenth largest in volume and the sixth-largest producer of passenger cars among Chinese automakers. It sells passenger cars, passenger cars and commercial vehicles. The company has five foreign partners—more than most Chinese automakers.
Company G	This Auto Group Corporation is a global automotive components manufacturer. Currently, it ranks the second largest auto parts supplier in the world.
Company H	It is a state-owned Auto Group Corporation. Traditionally, it is one of the 'Big Three' Chinese automakers, currently in the top four in terms of output along with Chang'an Motors, FAW Group, and SAIC Motor. In addition to commercial and consumer vehicles, it also manufactures parts and cooperates with foreign companies, with joint ventures with international partners. The company was the second-largest Chinese vehicle maker in 2014 by production volume.
Company I	It is a joint venture, producing engines, special purpose vehicles, people movers, trucks and buses, and auto parts.
Company J	It is a joint venture. Its produced cars are well-liked by consumers, and its brand received one of the highest scores in a 2014 customer satisfaction survey done by JD Power in China. The company has CSR efforts that include education sponsorship.
Government Auto Research Centre A	It is an Automotive Technology and Research Centre, a central government-level enterprise as well as a comprehensive science and technology corporate group with extensive influence in the automotive industry. It also provides services to the industry and government, such as standardisation and technical regulations, industrial policy research, quality system certification and training.
University A	The university is famous and specialised in its automotive engineering education and training.
Auto Association A	It is an official automobile manufacturing association in China, proving research, statistics and training to the industry.
Party School A	It is a party school holding training for management staff.

Chapter 1 Appendices

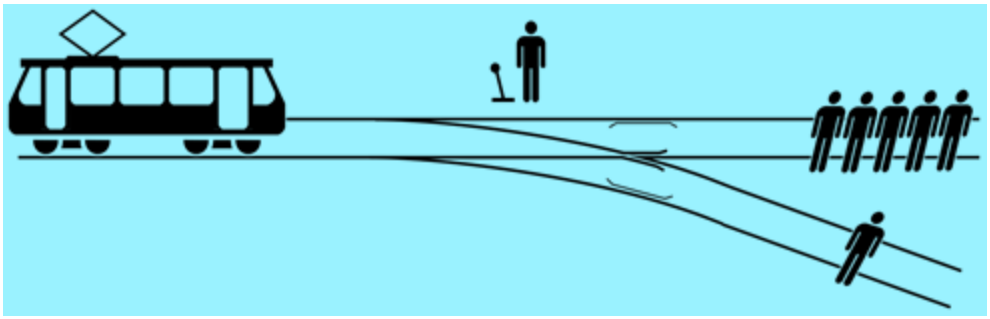
Appendix 1.1: The Trolley Problem

The Trolley Problem is a thought experiment in ethics. The general form of the problem is this:

You see a runaway trolley moving toward five tied-up (or otherwise incapacitated) people lying on the tracks. You are standing next to a lever that controls a switch. If you pull the lever, the trolley will be redirected onto a side track, and the five people on the main track will be saved. However, there is a single person lying on the side track. You have two options:

- Do nothing and allow the trolley to kill the five people on the main track.
- Pull the lever, diverting the trolley onto the side track where it will kill one person.

Which is the more ethical option?



The modern form of the problem was first introduced by Philippa Foot in 1967, but also extensively analysed by Judith Thomson, Frances Kamm, and Peter Unger. However an earlier version, in which the one person to be sacrificed on the track was the switchman's child, was part of a moral questionnaire given to undergraduates at the University of Wisconsin in 1905.

Beginning in 2001, the trolley problem and its variants have been used extensively in empirical research on moral psychology. The problem often arises in the discussion of the ethics of the design of autonomous vehicles.

The doctrine of this ethics by Philippa Foot is the Double Effect in Virtues and Vices. It is an algorithm for solving all moral disputes in which an action will have two effects, one good and the other bad. The doctrine says, roughly, that it is always wrong to do a bad act intentionally to bring about good consequences, but that it is sometimes permissible to do a good act despite knowing that it will bring about bad consequences.

A utilitarian view asserts that it is obligatory to steer to the track with one man on it. Such a decision would be not only permissible, but, morally speaking, the better option (the other option being no action at all). An alternate viewpoint is that since moral wrongs are already in place in the situation, moving to another track constitutes a participation in the moral wrong, making one partially responsible for the death when otherwise no one would be responsible.

Source: Goodall (2017)

Chapter 2 Appendices

Appendix 2.1: The 1st interview outline

The name of the company: _____
The product area: _____
The volume of products (parts /vehicles): _____
Interviewee: Name:_____Job title: _____Department: _____

Contents and main purpose:
The PhD research is entitled 'A Critical Evaluation of the Ethical Elements in Managerial Training that Impact Ethical Intentions in Decision-making in the Chinese Automotive Industry'. This preliminary research is for the background information in the Chinese automotive industry. All the information is confidential. The research is divided into three main parts.

Note: The Chinese Automotive Industry (the CAI), ethical decision-making (ED), ethical intention in decision-making (EI)

Part One: Background issues relating to managers' EI

1. What is the consideration in terms of sustainable development in your company?
2. How does your company enhance its public image?
3. Do you think joint ventures have any dilemmas or challenges to confront in terms of ethics?
4. How does management balance between profit-seeking and ethical decisions?
5. Can managers recognise ethical issues inherent in their workplace?
6. Do you think managers have sufficient knowledge of business ethics rather than to consider it as an 'oxymoron'?
7. Do they have systematic literature or guidance in conducting management ethics?
8. Did their previous education emphasise ethics in their curriculum?
9. Do you think there is a gap between theory and practice that hinders managers to address real-life management practice?
10. Are managers aware of any ethics unique in the CAI?
11. How will auto companies respond to challenges in economic development, environmental regulations, and technological change?

Part Two: Multiple dimensions for managers' EI

This part includes external and internal factors that might impact managers' EI:

1. The external environment influencing managers' ethical decision-making
1.1 Influence from the organisation
1.1.1 Organisational climate/culture

a. How does your organisation establish an ethical climate and avoid unethical

behaviours, such as unethical actions at work, including cheating on expense accounts, discriminating against coworkers, paying or accepting kickbacks, fixing prices and other forms of fraud?

b. Do you think rewards or punishment will influence your ethical decision-making? And how do you realise your corporate mission?

c. Do you think your corporate culture is influenced by social background, traditional culture, or international environment?

e. How does the parent company behave in their home country in terms of ethics?

1.1.2 Ethics during the whole life-cycle of products: Is there is any consideration from management in terms of economic, social and environmental pressures during the whole life-cycle of its product?

1.1.3 Product design concept

a. Is product safety prioritised in design?

b. Is there consideration of the environment in product design, such as the emission to local or regional air quality in urban areas, and contribution to global warming?

c. Are there standards or politics in the company that protect the safety of employees, customers and other stakeholders?

1.1.4 Manufacturing

a. Is there any consideration of the environment in product manufacturing such as natural resource usage and solid waste disposal?

b. Are there any measures in addressing product recycling?

c. Is there any consideration of safety in the product manufacturing process?

1.1.5 Supply chain management:

a. Is there any consideration of environmental protection in the supply chain management in the CAI?

b. Is the concept of green supply chain management (GSCM) encouraged in your company?

1.1.6 Marketing: Is there any obvious violation of ethics in car marketing, such as bundle sales, hiding potential dangers of vehicles or unfair competition?

1.1.7 Disposal：Is there any consideration of the environment in terms of treatment of scrapped vehicles or solid waste disposal?

1.2. The requirement from the industry：Are there ethical requirements in the auto industry?

1.3. Ethical demand from the society：Are there any laws, regulations or measures by the Chinese government upon the scarcity of resources and environmental burden?

1.4. Economic aspect: Are there any economic requirements for ethics?

1.5. International requirement：

1.5.1 Are there any international hypernorms in the auto industry?

1.5.2 Are there any pressures from international customers or partners to develop environmental management systems, e.g. Ford, GM and Toyota require that the domestic auto companies should be consistent with ISO 14001?

1.6. Culture or ideological background

1.6.1 Is there any Chinese culture or religion that influences managers' ED?
1.6.2 Do you think Confucianism influence managers' ED? If yes, to what extent?
1.6.3 Do you think Communism influence managers' ED? If yes, to what extent?
1.6.4 Do any other values exist in the joint venture companies that impact managers' ED?

2. Internal or personal characteristics

2.1 Do you believe in religion? Do you think it influences personal moral values?
2.2 Are you deontological or teleological when dealing with ethical dilemmas?
2.3 Are you morally right or legally right when dealing with ethical dilemmas?
2.4 Do you intend to adopt a balanced thinking style or just in a linear way by relying on one ethical perception when dealing with ethical dilemmas?
2.5 What other personal factors do you think will influence managerial EI?

Part Three: Management training

1. Is there any training for managers in the company on ED?
2. Is there any training for managers in the industry or society on their ED?
3. Was there any previous training or education for managers that might impact managers' ED before they went to the company?
4. Is there any training or education for managers in the current company that impacts their ED?
5. Are there any values that influence managers' ED in the CAI, such as Chinese traditional culture Confucianism, Communism and Western philosophy?
6. What kind of training or education do you think is vital in influencing managers' ED in the CAI?

Appendix 2.2: Summary of interviews with managers from Company F

Background: Company F is one of the main auto corporations in the CAI, with many subsidiary companies, including joint ventures. This interview was based on the outline in Appendix 2.1.

Purpose: To understand the ethical perception of the managers and their corporate culture.

Participants: Managers in Company F.

Excerpts of some interview feedbacks were displayed:

Excerpt 1

a. It is vital for the company to consider sustainable development strategy, and they have tried to demonstrate this concept via company websites, exhibitions, magazines or newspapers to achieve 'Honesty, foresight and win-win' purpose.
b. The collective interest is important than individual interest, and managers should consider and balance interests between state, area and their corporate.
c. The company has a CSR report.
d. Around 80% of senior managers hold an ethical stance.
e. The learning of ethics knowledge might influence decisions.
f. There are gaps between theories and practice in moral standard.
g. Managers understand the importance to develop ethical standards but need more knowledge to guide them in practice.
h. There is managerial training in and outside the companies.
i. The company has taken measures to improve managers' ED level.

Excerpt 2

a. As a joint venture, it has some connection with its parent company cultures, such as in rules, regulations, manufacturing process and management. However, the company tries to find shared values and allows for different variations.
b. The awareness of social responsibility affects managers' ED.
c. There is no ethical dilemma in the company now.
d. Corporate culture can positively influence members of staff.
e. There might be the unprofessional way in the treatment of scrapped vehicles or solid waste disposal in China. Some foreign companies such as Toyota have this system, such as in air conditioner, but there is none in China for it does not make the profit.
f. Some ethical elements in training in University A influence the participants' current ED, such as the course *Eastern Management Philosophy*.
g. Managers should try to be morally right but not just legally right.
h. A balanced thinking style is practised in the CAI.
i. Companies take staff as family members.
j. There is training from auto associations.
k. There is an insufficient education on ethics for university students, universities should teach students to be socially responsible citizens, and young people should cultivate personal characteristics and social responsibility.

Excerpt 3

a. The company tries to make materials environmentally-friendly, such as to find an alternative environmentally-friendly substitute in making chairs
b. The company tries to make vehicles lighter for fewer fumes.
c. The company is strict with suppliers in the green chain
d. The company considers staff safety
e. The company controls CO_2 emissions and follows ISO 14001 standards in sewage and other waste.
f. It is believed in identifying difficult ethical issues, human respect and morality are prioritised. In daily operation, to be legal should be first.
g. It is believed that cultural effect influences more than education for managers' ED. Within the company, internal training is important.
h. Economy interest will influence the managers' ED.
i. There is internal training currently, about corporate culture, human resource, and finance. Some external training includes automobile associations.
j. It is necessary to stress the traditional culture for the enhancement of EI.
k. The company offers help for staff's life-long plan

Appendix 2.3: Summary of an interview meeting at University A

Objective: To hold a meeting with staff in the Automotive Engineering Dept. in University A, and get information about their perception of ethics and information in teaching or training practices.

Participants: Four people were involved, involved in automotive culture and ethics teaching and training.

Details: A wide range of issues was discussed, such as auto service, ISO standards, car insurance, car marketing, CSR, sustainability and environmental protection.

Key points from the interviews:

1. There are ethical considerations in teaching, such as ISO standards, car insurance and car marketing in auto service and other related subjects.
2. Some policies on auto are introduced in lectures, such as the international standard of ISO 16949.
3. It was feedback that some companies produced a CSR report.
4. It was believed significant to stress CSR in China.
5. It was believed training and standardisation of legislation were solutions to address the current ethical situation.
6. Currently, in China, people are talking about environmental protection and ethics in corporations or society; however, they consider these from the technique and functional aspects without realising these from a moral level.

Appendix 2.4: An interview outline in Government Auto Research Centre A

Objective: This interview was conducted in Auto Association A, which is the policy and state regulation issuing centre for the automotive industry. This interview was to understand Government policies, which is a driver of ethics.

This outline consists of two parts; the discussion was centred on these questions but also expanded as needed.

Part I Background information

1. What is the function of Auto Association A?
2. What is your perception of ethics in the auto sector?
3. Are there any ethical aspects in Auto Association A? If there is, please specify.
4. Does this Government Auto Research Centre A offer any training for auto companies?
5. If yes, are there any contents related to ethics?
6. Are there any aspects you would like to specify that would be important in ethical decision making for auto companies?

Part II Focus on energy reservation and emission standard

1. What are the key policies since the issue of the auto industry policy in 1994 about the standards for emission, and what are the reasons?
2. What are the CO_2 standards for vehicles in China?
3. Are there any requirements for design safety in China?
4. Are there any requirements for lightening in China?
5. What are the policies for new energy automobiles in China?
6. Are there any policies for supply chain in China?
7. Is there any requirement for recycling in China?
8. Are the standards in China consistent with the international norms?

Appendix 2.5: An interview question outline in Company D/F

Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

Interview Questions for Managers
in the Chinese Motor Vehicle Manufacturing Industry-
Doctor's Degree at the University of Wales Trinity Saint David

Information Sheet for Managers

My name is Libin Xiao, and I am studying at the University of Wales Trinity Saint David, Wales, UK.

I would like to invite you to participate in my research project. This project will critically evaluate the influence of management training on the ethical decision- making intentions among managers in the Chinese Motor Vehicle Manufacturing Industry (CAI) and aims to offer practical guidance for some training providers about effective managers' ethical decision-making.

Attached to this letter are a number of questions I developed which will further assess the responses in the previous questionnaires about the management training situation and the influence on managers' ethical decision-making in the CAI. When I begin the interview, I will discuss which of the indicative questions your interview will focus on. I believe your opinions will be extremely helpful to me.

Through your participation in the interview, I hope to ascertain the ethical elements and dimensions influencing managers' ethical decision making, the practical measures being taken in the industry, and the training containing some elements on managers' ethical decision-making enhancement in the CAI.

All interviews will be kept strictly confidential to the researcher involved and at NO time will individual interviews be released to the general public. This gives you a chance to express your views on your programme in a confidential and anonymous forum and still be

able to make a difference. Your participation in this study is completely voluntary so you can withdraw from the interviews at any stage.

Our interview should take about between 30 minutes to an hour to complete, but there is no time constraint. There are also no right or wrong answers. Attached to this letter along with the interview questions are a consent form and an instruction sheet. As this is a new project, your feedback is also important to me, and I would be much obliged if you could be available for an interview. I understand that your time is at a premium, but your opinions are very valuable to me.

After careful and precise analysis of the data obtained from this interview, I will be happy to provide you with a copy of the findings at your request. The results of this interview will hopefully further enhance my understanding of the ethical dimensions and elements influencing managers' ethical decision-making and the practical management training situation. Data will be stored on my private mobile hard disk. The results of the research will be fed back to the research office at my university to be kept confidential.

You may decline to participate in this study. You may end your participation in this study at any time. If you decide to remain anonymous, maintaining your anonymity will be a priority, and every practical precaution will be taken to disguise your identity. If you prefer anonymity, there will not be any identifying information on audiotapes or transcripts of this or any interview. No-one will hear any audiotapes or see any transcripts without your prior consent. All materials generated from this or any interview will remain confidential.

I thank you in advance for your time and participation. If any questions do arise, feel free to contact me at your convenience.

Libin Xiao
Date XXXX

TEITL Y PROSIECT: / PROJECT TITLE:

The Critical Evaluation of the Influence of Management Training on Ethical Intentions in Decision-Making among Managers in the Chinese Motor Vehicle Manufacturing Industry

Instructions:

Dear Automotive Professional:

I am very grateful for your help in providing information on the ethical elements and the impact of training on ethical decision-making in your industry.

To help you answer the questions, here are some explanations:

The concept of managerial ethical decision-making refers to the specific or abstract decision or measures taken by the management, including any decisions (long or short term), especially those that may affect the environment, the user's safety in the whole product life cycle or labour rights in the Chinese Motor Vehicle Manufacturing Industry (the CAI).

This meeting will focus on further communication in identifying some ethical elements in management training programmes and evaluating its impact on managers' ethical decision-making in the CAI for a PhD project. All the information will be anonymous and kept confidential.

The whole research consists of three main parts, but before Part I there are some icebreaker questions, the following are some of the examples:

It is very nice to meet you, and what department are you in? How many years have you worked in this industry? Today I would like to listen to your opinion about ethical decision-making and training that may contain some ethical elements in the CAI.

I understand each of you are interes inted in or have expertise in specific areas covered in the following questions. Therefore, when I begin the interview, I will discuss which of the indicative questions interest you, and on which your interview will then focus.

Part I. Five-level ethical dimensions in the CAI

1. Could you please talk about any individual elements influencing ethical decision-making in the CAI? Are there any examples?
2. Could you please talk about any organisational elements influencing ethical decision-making in the CAI? Are there any examples?
3. Could you please talk about any cultural/social elements such as Confucianism or national policies influencing ethical decision-making in the CAI? Are there any examples?
4. Could you please talk about any industry norms or standards influencing ethical decision-making in the CAI? Are there any examples?
5. What do you think of international standards or norms, and what roles do you think they may play in ethical decision-making in the CAI? Are there any examples?

Part II. Specific ethical elements (ethical theories, norms or management tools) in the CAI

6. Can you think of any examples of the concept of sustainable development in the CAI? Could you please talk about the concept by linking your answer to the department you are in?
7. Can you think of any examples of the concept of eco-management (EM) in the CAI? Could you please talk about the concept by linking your answer to the department you are in?
8. Can you think of any examples of the concept of Cycle Economy in the CAI? Could you please talk about the concept by linking your answer to the department you are in?
9. Which of the following eco-management (EM) standards are applied in the CAI, ES7750, EMAS or ISO series? If ISO is widely used, could you please give examples of the specific series?
10. Are there any codes or international norms that help establish the norms related to workers' rights in some local companies doing business with the outside world (such as MNCs)? How much do you know Social Accountability 8000 (SA8000)?
11. Are there any codes of conduct/ethics in CAI or codes of conduct in engineering? If yes, are these important; please give some reasons with examples.
12. Is the concept of product life cycle applied in the CAI? If yes, please give some examples.
13. Are there any ethical considerations in the supply chain in the CAI? If yes, please give some examples and explain how you understand 'green supply chain'?

14. Are the concepts of Total Quality Control, Lean Management and Agile Management important in the CAI? If yes, please state some reasons and give some examples respectively.
15. Are there any ethical considerations in purchasing practice? If yes, please give some examples.
16. Are there any ethical considerations in engineering/manufacturing? If yes, please give some examples.
17. What do you think of product integrity? Can you give some examples?
18. Are there any ethical considerations in design specification? If yes, please give some examples.
19. Are there any ethical considerations in labour rights? If yes, please give some examples.
20. Do you think business ethics and Corporate Social Responsibility are important ethical theories in enhancing manger's ethical decision-making in the CAI? Have you got any examples?

Part III. Ethical elements in management training that impact managers' ethical decision-making in the CAI

21. As a manager or member in the management team in the CAI, do you think there are any ethical elements mentioned above (Part I & Part II) that managers should master in training? If yes, what are they?
22. As a manager or member of the management team, besides the ethical elements discussed above (Part I & Part II), do you think there are any other ethical elements that managers should master in training? If yes, what are they?
23. Are there any management training programmes in your company which are related to any ethical elements? If yes, what are they?
24. Among all the ethical elements discussed above, which one/ones do you think is/are more important in influencing managerial ethical decision-making? What are they and what is the reason?
25. What kind of ethical elements do you think are the most important to be embedded in management training to enhance the managers' ethical intentions in decision-making in the CAI?

26. What kind of training do you expect in the future to enhance managerial ethical intentions in decision-making?

Appendix 2.6: A questionnaire outline of Company B/C/E/I/J

In accordance with the PhD research entitled "The Critical Evaluation of the Influence of Management Training on Ethical Intentions in Decision-Making among Managers in Chinese Motor Vehicle Manufacturing Industry"; the research is carried out for the dimensions in ethical decision making, the managerial ethical training conditions and relevant comments for further improvement in Chinese automotive manufacturing industry. The whole research is divided into four main parts. All the information is confidentially used only for this dissertation.

Thank you for completing the questionnaire. Please place a tick √ in a box to indicate your answer

Part I Demographic information

Q1. Gender (√one only)

□1. Male □2. Female

Q2. How old are you? (√one only)

□1. 25-30 □2. 31-35 □3. 36-50 □4. 51 and above

Q3. From which company do you come from? (√one only)

□1. SAIC GM 50 Corp. □2. GAC Component Co., Ltd.

□3. Dongfeng Liuzhou Motor Co., Ltd. □4. Dongfeng Motor Company

□5. DonFeng Peugeot Citroen Automobiles Co. Ltd.

□6. Shanghai Volkswagen Co. Ltd. □7. Liuzhou Wuling Motors Co., Ltd.

□8. National Technical Committee of Auto Standardisation (NTCAS)

□9. Changchun Automobiles Co., Ltd.

Q4. Where is your company located in China? (√one only)

□1. Northern China □2. Central China □3. Western China □4. Southern China

□5. Northeast China □6. Eastern China

Q5. What department are you in? (√one only)

□1. President □2. Vice president □3. Strategic Development

□4. CSR/Ethics Office □5. HR Management □6.Marketing

□7. Supply chain and Logistics □8. Finance/Auditing □9. Manufacturing(all process)

□10.New energy development □11.New technology development

□12. Security and environment protection □13.Waste disposal

□14. Quality Inspection □15.Other (please specify)_____

Q6. What is your education background? (√one only)

□1. Higher education diploma □2. Bachelor's degree □3. Master's degree □4. PhD

□5. Post-Doctoral □6. Other (please specify)_____

Part II Dimensions affecting managers' ethical decision making the in the Chinese auto industry

Q7. Is there any cultural environment influencing managers' ethical decision making in the auto industry?

□ Yes □ No (√one only)

Please specify with examples_____

Q8. Are there any social environment influence managers' ethical decision making the in the auto industry?

□ Yes □ No (√one only)

Please specify with examples_____

Q9. If there are any economic environment affect managers' ethical decision making in the auto industry?

□ Yes □ No (√one only)

Please specify with examples_____

Q10. If there are any organisational environment influence managers' ethical decision making in the auto industry? (√one only)

□ Yes □ No

Please specify with examples_____

Q11. If there are any professional environment influence managers' ethical decision making in the auto industry?

□ Yes □ No (√one only)

Please specify with examples _____

Q12. If there are any industry environment influence managers' ethical decision- making in

The auto industry?

□ Yes □ No (√one only)

Please specify with examples_____

Q13. If there are any personal characteristics such as religion, value or belief that will influence managers' ethical decision making in the auto industry

□ Yes □ No (√one only)

Please specify with examples_____

Part III Management training on the ethical decision- making

Q14. Do you think management training affect managers' ethical decision- making? (√one only)

□ Yes □ No

Please specify with examples_____

Q15.What kind(s) of management training you have taken part in? (You can √ more than one?)

□ Organisation □ Association □ Government □ University

If there is more than one, please specify which is the most influential _____

16. What kind(s) of management training that you have taken part in involve(s) ethical decision- making? (You can √ more than one)

□ Organisation □ Association □ Government □ University

If there is more than one, please specify which is the most influential _____

Q17 Please specify the reasons (specific contents) in Q16 why it is the most influential in ethical decision- making?

_____

Q18. What other training or contents do you recommend for the managerial training to improve their ethical decision- making?

_____

Part IV. Ethical vignettes (√only one)

Q19. Does the company you work for stress ethics?

Definitely | 0 | 1 | 2 | 3 | 4 | 5 | 6 | would not Definitely would

Q20. To what extent will you choose ethics versus profit?

Definitely | 0 | 1 | 2 | 3 | 4 | 5 | 6 | would not Definitely would

Q21. Do you sacrifice quality in an effort to reduce cost such as the hidden danger in brakes in Nissan?

Definitely | 0 | 1 | 2 | 3 | 4 | 5 | 6 | would not Definitely would

Q22. To what extent you will choose to recall if there is a hidden dander in the brakes in one of your products, between recall and wait to pay for the accidents to reduce cost?

Definitely | 0 | 1 | 2 | 3 | 4 | 5 | 6 | would not Definitely would

Q23. Have you considered ethics in the product life cycle, such as a green supply chain and required the suppliers to comply?

Definitely | 0 | 1 | 2 | 3 | 4 | 5 | 6 | would not Definitely would

Q24. Do you put the solid, gas or water waste into public without measures?

Definitely | 0 | 1 | 2 | 3 | 4 | 5 | 6 | would not Definitely would

Q25. Do you have a safety measurement for workers?

Definitely | 0 | 1 | 2 | 3 | 4 | 5 | 6 | would not Definitely would

Q26. Have you considered taking measures to reduce exhaust emission and improve energy-efficiency and green fuel?

Definitely | 0 | 1 | 2 | 3 | 4 | 5 | 6 | would not Definitely would

Q27. To what extent do you think Confucianism influences your ethical decision making?

Definitely | 0 | 1 | 2 | 3 | 4 | 5 | 6 | would not Definitely would

Q28. To what extent do you deal with ethical issues in a balanced thinking style?

Definitely | 0 | 1 | 2 | 3 | 4 | 5 | 6 | would not Definitely would

Please comment on anything else you believe important in managerial ethical decision and training.

Appendix 2.7: An interview outline of Company B/D/F

Instructions:

The definition of ethical decision-making refers to the specific or abstract decision or measures taken by the management, including any decisions (long or short term) that may affect the environment or user's safety in the whole product life cycle in motor vehicle manufacturing industry.

Objective: This meeting will focus on communicating ethical elements in the Chinese Automotive Industry (CAI) for a PhD project; all the information will be anonymous and kept confidential.

Component: The whole research consists of three parts:

Part I. General aspects at five levels of ethics in the CAI

1. Could you please talk with examples about some international standards or norm influencing ethical decision-making in the CAI?
2. Could you please talk with examples about any industry norms or standards influencing ethical decision-making in the CAI?
3. Could you please talk with examples about any national policies influencing ethical decision-making in the CAI?
4. Could you please talk with examples about any cultural elements influencing ethical decision-making in the CAI?
5. Could you please talk with examples about any individual elements influencing ethical decision-making in the CAI?

Part II. Specific ethical theories, elements or tools in the CAI

1. Have you got an example of the concept of sustainable development in the CAI? Could you please talk about concepts by combining with the department you are in?
2. Have you got an example of the concept of eco-management (EM) in the CAI? Could you please talk about concepts by combining with the department you are in?
3. Have you got an example of the concept of Cycle Economy in the CAI? Could you please talk about the concept by combining with the department you are in?
4. Which of the following eco-management (EM) standards are applied in the CAI,

ES7750, EMAS or ISO series? If ISO is widely used, could you please give examples of the specific series?

5. Are there any codes of conduct/ethics in the CAI or codes of conduct in engineering? If yes, are there important, please give some reason with examples.

6. Is the concept of product life cycle applied in the CAI? If yes, please give examples.

7. Are there any ethical considerations in the supply chain in CAI? If yes, please give some examples and explain how to understand the green supply chain?

8. Are Total Quality Control and Lean Management important in the CAI? If yes, please state some reasons and give some examples respectively.

9. Are there any ethical considerations in purchasing practice? If yes, please give some examples.

10. Are there any ethical considerations in engineering/manufacturing? If yes, please give some examples.

11. What do you think of product integrity by giving some examples?

12. Are there any ethical considerations in design specification? If yes, please give some examples.

Part III. Some ethical elements in management training in the CAI

1. As a manager or member in management in the CAI, do you think there are any **ethical** elements mentioned above (Part I & Part II) that they should master in training? If yes, what are they?

2. Do you think there are any other ethical elements that they should master in training As a manager or member in management, besides the ethical elements mentioned above (Part I & Part II)? If yes, what are they?

3. Is there any management training including some of the ethical elements in your company? If yes, what are they?

4. Among all the ethical elements above, which one/ones do you think is/are more important in influencing managerial ethical decision-making? If yes, what are they and what is the reason?

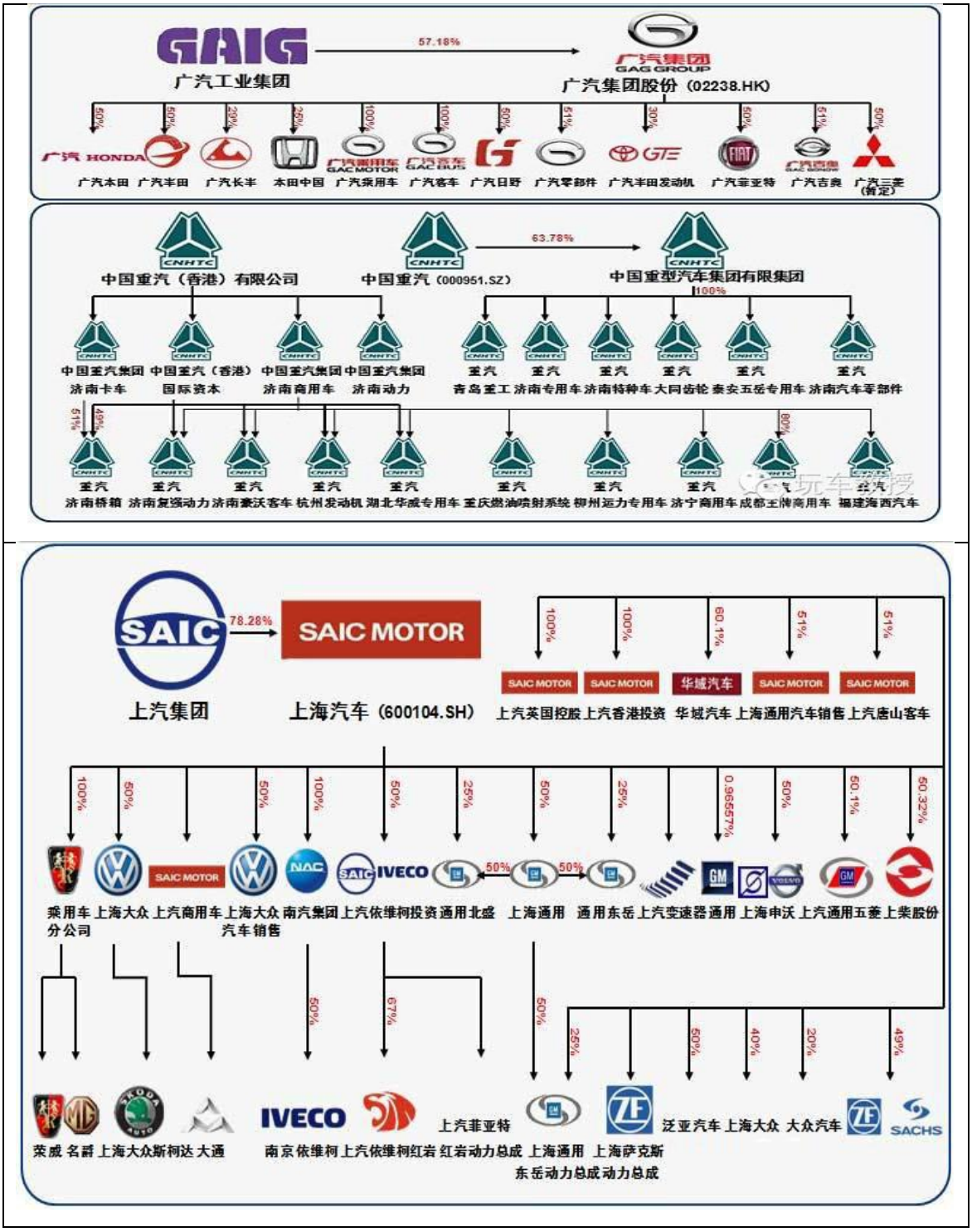
5. What kind of ethical elements do you think is the most important to be embedded in management training to enhance the managers' ethical intentions in decision-making?

6. What kind of training do you expect in the future to enhance the managerial ethical intentions in decision-making?

It is the end of the meeting, thanking for participating.

Chapter 3 Appendices

Appendix 3.1: Ownership structure of GAIG and SAIC



Source: Sohu Auto (2017)

Appendix 3.2: Communist Norms: Three Stricts and Three Steadies

History	The principles of '*Three Stricts and Three Steadies*' (三严三实). It was from a speech for the General Secretary Xi Jinping at the *Three Plenary Session of The 18th Session of the Central Commission* for Discipline Inspection on 14th January 2014 (CPC NEWS, 2015).
Significance	Since then it is a nationwide requirement for Chinese civil officials above county level (Xinhuanet, 2015).
Contents (Chinese)	既严以修身，严以用权，严以律己，又谋事要实，创业要实，做人要实
Translation	be strict in cultivating one's moral character; be strict in preventing abuse of power; be strict in disciplining oneself; be steady in planning matters; be steady in starting undertakings; be steady in conducting oneself.
Amplified principles	Strengthen Communist ethics, faithful to Marxism, enhance moral character. Obey the mechanism and policy, utilise power for people without abusing for privacy. Obey the Communist law. Be steady in planning matters: practical and scientific in practice and planning. Be steady in starting undertakings, dare to take responsibility to resolve problems for people. Be steady in conducting oneself: faithful to the Communist Party, people and colleagues, be open and just.

Source: Author (2019), based on CPC NEWS (2015); Xinhuanet (2015)

Appendix 3.3: Communist Norms: Eight Honors and Eight Shames

History	The 'Eight Honours and Eight Shames' (八荣八耻) also known as the 'Eight Honours and Disgraces', is a set of moral concepts developed by former General Secretary Hu Jintao for the citizens of the People's Republic of China. It is also known as 'Eight Virtues and Shames', or Hu Jintao's 'Eight-Step Programme'. Its formal name in China is 'Socialist concepts on honours and disgraces' (社会主义荣辱观).
Significance	On March 4, 2006, Hu released this list calling it the 'new moral yardstick to measure the work, conduct and attitude of Communist Party officials.' It is being promulgated as the moral code for all Chinese, especially the Communist Party cadres.
Contents (Chinese)	以热爱祖国为荣, 以危害祖国为耻; 以服务人民为荣, 以背离人民为耻; 以崇尚科学为荣, 以愚昧无知为耻; 以辛勤劳动为荣, 以好逸恶劳为耻; 以团结互助为荣, 以损人利己为耻; 以诚实守信为荣, 以见利忘义为耻; 以遵纪守法为荣, 以违法乱纪为耻; 以艰苦奋斗为荣, 以骄奢淫逸为耻.
Translation	In October 2006 the *Xinhua News Agency* posted an English translation: Honour to those who love the motherland, and shame on those who harm the motherland; Honour to those who serve the people, and shame on those who betray the people; Honour to those who quest for science, and shame on those who refuse to be educated; Honour to those who are hardworking, and shame on those who indulge in comfort and hate work; Honour to those who help each other, and shame on those who seek gains at the expense of others; Honour to those who are trustworthy, and shame on those who trade integrity for profits; Honour to those who abide by law and discipline, and shame on those who break laws and discipline; Honour to those who uphold plain living and hard struggle, and shame on those who wallow in extravagance and pleasures;

Source: Author (2019), based on *People* (2005)

Appendix 3.4: Company Ethics: The CSR in DFG

Source: DFG (2016)

Appendix 3.5: Company Ethics: Sustainability reports in FAW

Source: FAW (2018)

Appendix 3.6: Excerpts of a managerial training programme for Company C

公司领导力提升培训方案(文化部分)
Training plan for leadership enhancement (Cultural Section)

培训对象 Trainees	课 程 名 称 Course title	课 程 大 纲 Curriculum
To provide the office managers and division directors with the ability improvement training with the following course modules (translation).	《国学智慧与领导力》 *Guoxue Wisdom and Leadership*	1、 领导力自我醒觉与认知 2、 认识中国文化 3、 领导者洞察、思维、决策 4、 儒家思想与领导 5、 道家思想与领导 6、 纵横家与领导 7、 法家思想与领导 8、 兵家思想与领导 9、 国学智慧的具体运用
	《领导者处世智慧》 *Leaders' Wisdom*	1、 西方哲学的智慧 2、 儒家思想的用世智慧 3、 随遇而安的潇洒：道家智慧的启发 4、 面对命运的态度：《易经》对现代人的启示
	《稻盛和夫的经营哲学》 *Kazuo Inamori's Business Philosophy*	一、管理即是做人 1、 领导力的五个层次 2、 员工愿意追随什么样的领导人？ 3、 影响力的六个方面 4、 绩效=思维方式×热情×能力 二、"利他"人生态度 1、 利己与利他 2、 克己复礼为仁 3、 不受节制的欲望，是失败的根源 4、 用工作利他来丰富人生 三、"和谐共生"经营理念 1、 企业经营原则； 2、 争执是由利己心态所衍生 3、 "和谐共生"经营理念 4、 高效沟通力 四、"敬天爱人"京瓷社训； 1、 感应天之道义 2、 正向思维即是善心 3、 磨炼心智，提升心性 4、 感恩之心 5、 谦虚之心 6、 真诚之心 五、"德量才"用人标准 1、 领导者可以无才，绝不能无德 2、 功者有禄，德者任官 3、 勇气和心胸 4、"兼收并蓄"任用人才

Source: Company C documentation (2014)

Appendix 3.7: A management training programme in CATTC for Company E

Note: The following is an excerpt of a training programme focusing on technical aspects.

中汽培训 CHINA AUTOMOTIVE TECHNOLOGY TRAINING

高端 · 专业 · 专注
CHINA AUTOMOTIVE TECHNOLOGY TRAINING CENTER

2014 年中汽培训中心课程安排表

月份	课程代码	项目名称	项目类别	时 间	天数	地点
3 月	CA14T01	第三届车辆机构运动学与多体动力学技术高级培训班	研发设计	17－19	3 天	北京
	CA14T02	车身结构设计与优化技术培训班	研发设计	17－19	3 天	北京
	CA14T03	汽车制造业几何尺寸与公差（GD&T）技术培训班	工艺工程	20－22	3 天	北京
	CA14T04	第二届汽车声学包装设计分析和试验技术培训班	研发设计	20－22	3 天	北京
4 月	CA14T05	第九届汽车碰撞安全性设计技术培训班	研发设计	18－22	5 天	北京
	CA14T06	汽车儿童安全座椅设计开发技术培训班	研发设计	20－22	3 天	北京
	CA14T07	第八届板材冲压成形技术专题培训班	工艺工程	21－24	4 天	北京
	CA14T08	第二届现代汽车制造总装工程技术培训班	工艺工程	22－24	3 天	北京
5 月	CA14T09	车身防腐设计应用技术培训班	工艺工程	26－27	2 天	武汉
	CA14T10	第三届汽车整车性能开发与集成技术高级培训班	研发技术	26－28	3 天	武汉
	CA14T11	第二届混合动力汽车开发技术高级培训班	新能源	23－25	3 天	武汉
	CA14T12	第二届整车总体布置设计与开发技术培训班	研发设计	23－25	3 天	武汉
6 月	CA14T13	汽车尺寸工程设计与分析技术培训班	工艺工程	23－25	3 天	长春
	CA14T14	第七届现代汽车疲劳耐久性技术交流培训班	研发技术	23－25	3 天	长春
	CA14T15	第二届整车开发热管理技术培训班 包括车辆热管理系统(VTMS)、发动机热管理系统(ETMS)	研发技术	26－28	3 天	长春
8 月	CA14M01	第十届中国 CAE 工程分析技术年会（CCAC 2014）	技术交流	7－8	2 天	贵阳
	CA14T17	第十届全国非线性有限元高级讲习班	学术讲习	4－6	3 天	贵阳
9 月	CA14T18	第七届汽车 NVH 开发技术高级培训班	研发设计	8－10	3 天	青岛
	CA14T19	第二届现代汽车制造焊接工装设计技术培训班 （工艺设计、工艺分析、焊接自动化、品质管理）	工艺工程	9－10	3 天	青岛
	CA14T20	第四届汽车轻量化设计技术高级培训班	研发技术	11－13	3 天	青岛
	CA14T21	第二届汽车动力总成匹配与优化技术培训班	研发技术	11－13	3 天	青岛

中国汽车工程高端培训第一品牌，
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Http://www.cattc.org E-mail: service@cattc.org，

1

Source: CATTC (2014)

Appendix 3.8: A training programme for leadership in Wuhan University (Selected pages)

合一领袖学院
原武汉大学总裁班

报名咨询：

首页 中心概况 招生信息 新闻中心 课程信息 名师名家

国学与领导智慧领袖班第16期开学时间：2018年11月

发布时间：2018-09-27 浏览量：117

一、课程背景

社会主义核心价值观是当代中国精神的集中体现，凝结着全体人民共同的价值追求。要以培养担当民族复兴大任的时代新人为着眼点，强化教育引导、实践养成、制度保障，发挥社会主义核心价值观对国民教育、精神文明创建、精神文化产品创作生产传播的引领作用，把社会主义核心价值观融入社会发展各方面，转化为人们的情感认同和行为习惯。深入挖掘中华优秀传统文化蕴含的思想观念、人文精神、道德规范，结合时代要求继承创新，让中华文化展现出永久魅力和时代风采。

——节选自习近平总书记《十九大报告》

听总书记的话，跟共产党走！

中国企业家，根植于华夏土地之上，在中国文化语境和熏陶下成长。学习和传承中国传统文化，创造性地开拓事业、完善人生，是成为具有文化情怀的企业家的必由之路。把握中国社会与文化的发展历史，领悟中国哲学智慧，力行人格追求和修身之道，是企业家积淀文化底蕴的应有之义。一个民族的文化与世界文化、人类文明已紧密联系在一起。中国文明的发展历史、思想脉络、哲学智慧，成为具有文化情怀的企业家所选的必修课。

二、课程特色

1、专为中国企业家全面提升人文素养量身定制，从培育文化情怀、积淀文化底蕴、涵养文化精神的角度，致力于帮助企业家修炼“内圣”工夫，从而成就企业家的“外王”理想；

2、由授课教授带队进行国内名寺古刹游学，通过寺院禅修方式，释放压力、放松身心，从内心深处感悟国学智慧。

3、采用综合传统授课、互动分享、亲证体验等多种学习形式，激发学员思想和灵感，增进同窗之间高层次沟通，构筑融会贯通的交流平台。

三、课程收获

开启管理智慧，拓宽战略视野

西方成熟企业管理制度的广泛应用，对于指导企业发展起到良好作用，但不足以成为企业的核心竞争力并引领企业脱颖而出，容易出现“水土不服”症状。本课程从中国古典智慧中汲取营养，助学员拓宽视野，构建文化战略，重塑企业竞争战略。从中国企业经营管理的实际需要出发，带领学员纵览中国历代王朝诸侯立业、兴业、衰落和执政者更迭传承，总结得失成败，以古籍今，探索企业家成长、企业传承及可持续发展的独特有效路径。

提升修养格局，培养领袖气质

通过对历史及文化经典哲学的深入研究，增广心量，品味其中的微言大义，进而全面提升个人品行、文化修养与格局。研读哲学经典，把握规律，增强哲学思辨能力，将哲学的思辨能力运用于企业用人之道、企业经营之道和企业谋略之道之中，提升个人的决策直觉、悟性、洞察力，从容把握从商之道，展现超凡气魄，锻造自我魅力，成就时代儒商。

四、课程设置

“国学与领导智慧领袖班”是专为“中国儒商”量身定制的一套课程。本课程将展现儒、道、释融合的思想成果；天、地、人三才之道等国学的基本要义。以易、医、儒、道、禅为核心教学模块，通过解读历史历程，领悟国学智慧；通过名家真传，领略古今中外之大智慧，形成高瞻远瞩的战略思维，为社会的跨越式发展培养有哲学思想、有中国历史纵深思维的人才。此外，还将涉及国学体验、公共课、专题沙龙等精彩模块，并辅以游学方式帮助大家体悟国学智慧。

(To be continued)

主　题	授课内容	学时
《周易智慧与思辨思维》	解读“阴阳之道”、“天人合一”、“变易推演”等周易的基本要义，以及对太极、八卦等周易原理、周易思维的理解，充分开发人的天赋与潜能，实现思辨、直觉、顿悟、灵性的思维境界。	16
《阴阳平衡之法一解读<黄帝内经>》	重点介绍《黄帝内经》和丹道养生功。医家养生的核心是“法于阴阳，和于数术”，注重四时调神、五行平和，有一套调和气血、调畅情志、调理五脏的系统理论方法；丹家养生蕴涵“炼精化气、炼气还神、炼神还虚”三层境界，分天、地、人三元丹法；儒家养生则注重“善养吾之浩然正气”；道家养生注重“致虚守静”、“道法自然”；禅宗养生注重“清静无住，明心见性”……全面了解生命与自然的关系及中国的生命哲学思想。	16
《儒家修身与企业文化》	儒家以“仁”为核心的价值理念，以及提出的一整套修身工程，对“心”、“身”、“物”及其关系做了深入的研究与论证，这些思想内涵对今日社会管理仍有指导意义。法家则认为治人理事，应以条文为依归，讲究势、术、法三者予以结合。法是公司的结构，术就是各部门的运作体系，势是内外环境与形势，要建立一个有生命的活动的组织，必须将三者有机结合在一起。儒法并行、明儒暗法是中国社会机制的特有现象，其奥妙值得深思。	16
《老子人生智慧一道法自然》	老子的自然无为之道，是一种高度的人生智慧，反复体味这一思想，领悟流传千年的《道德经》之思想真谛，体会有无为而无所不为的至高管理境界。《庄子》是继《老子》之后道家学说的又一部极其重要的思想结晶，也是中国文化史上的经典之作，它以汪洋恣肆的文笔，以不拘常理的观念向人们展现了一个完全不同于先秦诸子的独特思想世界。	16
《禅宗寻访与人生》	禅宗是佛教中国化的重大思想成果，在儒、佛、道三教合一的融合中有着举足轻重的地位，对中国哲学的集成及文学、美学的风格形成有着特殊的意义。禅宗所蕴含对本性的关怀，以及由此出发而展开的处世方式、人生追求、审美情趣、超越精神，凸现着人类精神澄明高远的境界，从而体现一种圣洁灵魂的魅力。	16
《太极与养生》	武当太极是汉族武术之一。并非指目前所见单纯的太极拳套路，而是由太极、两仪、无极，等不同层次的拳术、功法组合而成的一套由外至内，由动至静，从初级到高级，动静结合，内外兼修完整的太极体系。武当太极拳，内含其气，外含其形，位居其中，形气相含，神形俱妙，容武术养身于一体，偕称绝妙玄学。	16
《兵法与商战》	“兵者，诡道也”，商场如战场，都存在着众多的不确定因素，时势变化多端，机遇、和挑战复杂多变。《孙子兵法》作为天下第一奇书，百家兵法之始祖。当孙子兵法对应到企业经营时，得天独厚的超级战略、决战经典，成为企业界不可或缺商战参谋。	16
《纵横捭阖一鬼谷子谋略魅力》	旷世奇人鬼谷子，旷世奇书《鬼谷子》。从政经商，为人处事的旷世奇书；谋略权术，纵横捭阖的智慧禁果。如今商场如战场，谁是对手？谁是伙伴？为什么有些企业名噪一时昙花一现？为什么有些企业家各领风骚三五年？韬略作为古今之大术，会给我们启示。了解鬼谷子的智慧，体会智慧型领导的魅力，掌握鬼谷谈判谋略。	选修
《苦难的辉煌-犹太文明的发展之路》	政治现代化的失败与犹太共同体的毁灭，这场毁灭的规模却远远超出了德国本身。在人类现代文明史上，再也没有哪个民族的悲剧比犹太民族的这场悲剧更加惨烈了，因为这场具有逻辑连贯性的毁灭进程，不仅带来了德意志犹太共同体的毁灭，还同时带来了整个欧洲，无论是西欧犹太共同体，还是东欧犹太共同体的毁灭。犹太人的这场悲剧已经过去了70多年了，但“犹太人问题”直到今天也没有得到真正的解决，这一点人们能从极为紧张的“巴以矛盾冲突”中看到。而它最后能否得到真正的解决，则是对全人类智慧的一场严峻考验。	选修

Source: Wuhan University (2018)

Appendix 3.9: Total consumption of energy in China

9-2 Total Consumption of Energy and Its Composition

Year	Total Energy Consumption (10 000 tons of SCE)	As Percentage of Total Energy Consumption (%)			
		Coal	Crude Oil	Natural Gas	Primary Electricity and Other Energy
1978	57144	70.7	22.7	3.2	3.4
1980	60275	72.2	20.7	3.1	4.0
1985	76682	75.8	17.1	2.2	4.9
1990	98703	76.2	16.6	2.1	5.1
1991	103783	76.1	17.1	2.0	4.8
1992	109170	75.7	17.5	1.9	4.9
1993	115993	74.7	18.2	1.9	5.2
1994	122737	75.0	17.4	1.9	5.7
1995	131176	74.6	17.5	1.8	6.1
1996	135192	73.5	18.7	1.8	6.0
1997	135909	71.4	20.4	1.8	6.4
1998	136184	70.9	20.8	1.8	6.5
1999	140569	70.6	21.5	2.0	5.9
2000	146964	68.5	22.0	2.2	7.3
2001	155547	68.0	21.2	2.4	8.4
2002	169577	68.5	21.0	2.3	8.2
2003	197083	70.2	20.1	2.3	7.4
2004	230281	70.2	19.9	2.3	7.6
2005	261369	72.4	17.8	2.4	7.4
2006	286467	72.4	17.5	2.7	7.4
2007	311442	72.5	17.0	3.0	7.5
2008	320611	71.5	16.7	3.4	8.4
2009	336126	71.6	16.4	3.5	8.5
2010	360648	69.2	17.4	4.0	9.4
2011	387043	70.2	16.8	4.6	8.4
2012	402138	68.5	17.0	4.8	9.7
2013	416913	67.4	17.1	5.3	10.2
2014	425806	65.6	17.4	5.7	11.3
2015	429905	63.7	18.3	5.9	12.1
2016	436000	62.0	18.3	6.4	13.3

Source: China Statistical Yearbook (2017)

Chapter 4 Appendices

Appendix 4.1: Four key literature reviews on ethical decision-making

Variables	Craft (2013)	O' Fallon & Buttetfield (2005)	Loe et al. (2000)	Ford & Richardson (1994)
Duration and studies in total	Summarises 84 publications (2004 – 2011)	Summarises 174 studies (1996- 2003)	Summarises 123 empirical studies (1972-1996)	Summarises 62 articles (1978- 1992)
Findings	357	384	188	103
The categorisation of individual factor group	16	18	10	7
The categorisation of organisational factor group	15	13	5	9
Feature	A decline of codes of ethics, Continued support exists for the impact of moral intensity on ethical decision-making. Jones' (1991) six moral intensity factors continue to impact ethical decision-making. Research on the role of nationality and cultural dimensions and ethical decision-making was suggested by several authors.	Moral philosophy /value continue to be among the main themes, Codes of ethics and ethical climate/culture continued to occupy top spots in the organisational factor, followed by judgment and intent. Judgment, behaviour, and intent as the top three dependent variables.	More individual factors, a significant increase in research in moral philosophy and value orientation such as deontological and teleological philosophies; professional values; relativism; and the changing of moral philosophies in different situations.	Non-empirical, the majority of research involved individual factors: aspects of ethical decision-making uniquely associated with an individual decision maker.
Empirical results on intent	131 findings	8 (86 findings)	4	N/A
The organisational factor of Codes of ethics	5	20	17	(Codes of conducts) 10

Source: Author (2019), based on Ford and Richardson (1994); Loe et al. (2000); O'Fallon and Butterfield (2005) and Craft (2013).
Note: Total numbers indicated the number of findings of each independent factor, not the number of articles.

Appendix 4.2: Sources of Craft's (2013) review on ethical decision-making (2004 – 2011)

No	Abbreviation	Journal	Studies
1	AAAJ	*Accounting, Auditing and Accountability*	1
2	AE	*Accounting Eduction*	2
3	AMJ	Academy of Management Journal	2
4	B&S	Business & Society	1
5	BEER	Business Ethics: A European Review	6
6	BEQ	Business Ethics Quarterly	3
7	BSR	Business and Society Review	2
8	DSJ	Decision Sciences Journal	1
9	E&B	Ethics and Behaviour	3
10	IJB	International Journal of Behaviour	1
11	IJM	International Journal of Managemnt	1
12	JAAB	The Journal of American Academy of Business	1
13	JAP	Journal of Applied Psychology	1
14	JBE	Journal of Business Ethics	52
15	JMI	Journal of Management Issues	1
16	JSBM	Journal of Small Business Management	2
17	MAJ	Managerial Auditing Journal	4
		Total	84

Source: Aothor (219), based on Craft (2013)

Appendix 4.3: Empirical research examining the direct effects on the dependent variable: Intent (Selected pages)

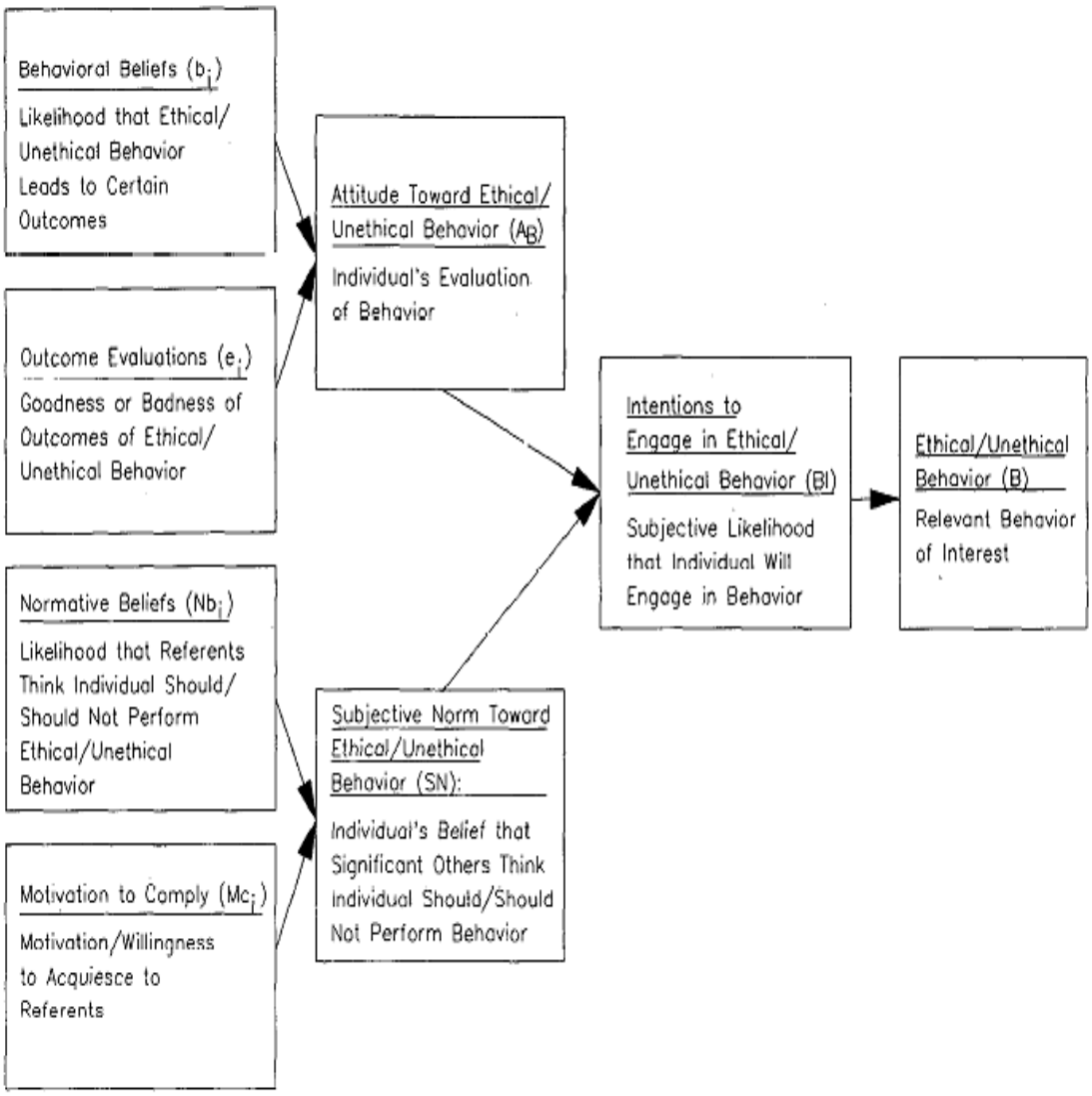
Author(s)	Year	Pub	Factor	Finding
Individual factors				
Elango et al.	2010	JBE	Age	Younger managers were more likely to be influenced by organizational ethics than older managers. Older managers were more likely to make ethical choices.
Valentine and Rittenburg	2007	JBE	Age	Ethical intention was positively related to age and business experience, and negatively related to the sex of an individual, suggesting that greater ethical intentions were associated with increased age and experience, as well as being female.
Haines et al.	2008	JBE	Awareness	The perceived importance of an ethical issue was a predictor of moral intent.
Haines et al.	2008	JBE	Awareness	Moral obligation was directly related to moral intent.
Guidice et al.	2008	JBE	Behavior	Participants who thought bluffing was a beneficial tactic did so more often than those who did not.
Guidice et al.	2008	JBE	Behavior	Participants were more willing to mislead competitors than their own company, distributors or customers.
Rabl and Kuhlmann	2008	JBE	Behavior	The intention to act corruptly was a very strong predictor of corrupt action.
Zhang et al.	2009	JBE	Behavior	There was a significant correlation relationship between whistleblowing judgment and whistleblowing intention in the decision-making process of whistleblowing.
Zhang et al.	2009	JBE	Behavior	No support was found for the relationship between whistleblowing judgment and whistleblowing intent with moderation of a positive effect. The relationship was not stronger for employees with more positive effect.
Zhang et al.	2009	JBE	Behavior	Confirmed: the prediction that if people are in a whistleblowing dilemma, and if they judge blowing the whistle to be the acceptable, fair, ethical and right choice, then they are more likely to form an intention to blow the whistle.
Chang and Yen	2007	JBE	Cognitive moral development	Agency theory and cognitive moral development theories were confirmed: U.S. and Taiwanese managers were more likely to continue a failing project under conditions of adverse selection than when they were not under such conditions.
Chang and Yen	2007	JBE	Cognitive moral development	U.S. and Taiwanese managers were more likely to discontinue failing projects when they had high level of moral reasoning when a low level of moral reasoning existed.
Beekun et al.	2010	BE:ER	Cultural values/nationality	Women's intention to behave was significantly affected by two national culture dimensions: uncertainty avoidance and individualism.
Beekun et al.	2010	BE:ER	Cultural values/nationality	Men's decisions were not related to national culture dimensions.
Flaming et al.	2010	E&B	Cultural values/nationality	Cultural differences remained strong between the U.S. and Philippines, enough to affect decision making.
Flaming et al.	2010	E&B	Cultural values/nationality	Strong approval for questionable ethical actions was not found. Many questionable actions were perceived negatively, even when country differences were found, indicating there was common ground in ethical perceptions across cultures.
Hwang et al.	2008	MAJ	Cultural values/nationality	U.S. firms and their U.S. auditors operating in Confucian cultures must be aware that the majority of the respondents with no creed are more likely to allow personal relationships to reduce their intention to whistleblow.
Oumlil and Balloun	2009	JBE	Cultural values/nationality	The degree of relationship between perceived ethical intentions and behaviors varied strongly between countries and by the ethical situation/scenarios tested.
Oumlil and Balloun	2009	JBE	Cultural values/nationality	U.S. managers were more variable on the CEV scale than Moroccan managers.
Oumlil and Balloun	2009	JBE	Cultural values/nationality	Moroccan managers tended to be more homogenous on the CEV scale; therefore, managers from an individualistic society indicated less dependence on the business organization.

Schweitzer and Gibson	2008	JBE	Situation	When explanations for an action violated community standards of fairness individuals were significantly more likely to engage in unethical behavior than when explanations for the same action did not violate community standards of fairness. Individuals believed that unethical behavior was more justified if they perceived they had been the target of "unfair" behavior.
Schweitzer and Gibson	2008	JBE	Situation	Participants in the unfair condition viewed the use of unethical behavior as more justifiable and they claimed that they would be more likely to engage in unethical behavior. Specifically, when people perceived that they had been treated unfairly, they felt more satisfied, happier, less angry, and less guilty when they engaged in unethical behavior toward their counterpart.
Schweitzer and Gibson	2008	JBE	Situation	Perceptions of justifiability were significantly related to ethical intentions, and perceptions of justifiability fully mediated the relationship between fair explanations and ethical intentions.
Spicer et al.	2004	AMJ	Situation	The type of norm present in a situation—hypernorm or local norm—moderated the effect of national context on ethical attitudes.
Spicer et al.	2004	AMJ	Situation	The type of norm present in a situation—hypernorm or local norm—moderated the effect of national context on intended behavior.
Valentine and Bateman	2011	JBE	Situation	Individuals were more likely to have moral intention in a sales context when they perceived that a social consensus existed and having ethical intentions is right.
Organizational factors				
Guidice et al.	2008	JBE	Competitiveness	Men were more willing to mislead competitors than women.
Guidice et al.	2008	JBE	Competitiveness	Strategic decision makers were more willing to engage in a questionable practice like bluffing when the target of misleading communication was a competitor rather than another organizational stakeholder.
Guidice et al.	2008	JBE	Competitiveness	Participants were more willing to mislead competitors than their own company, distributors, or customers.
Valentine and Bateman	2011	JBE	Competitiveness	Individuals were more likely to have moral intention in a sales context when they perceived less competitive intensity in relation to the sales context.
Elango et al.	2008	JBE	Ethical culture	Younger managers were more likely to be influenced by organizational ethics than older managers. Older managers were more likely to make ethical choices.
Hwang et al.	2008	MAJ	Ethical culture	U.S. firms and their U.S. auditors operating in Confucian cultures must be aware that the majority of the respondents agreed that if they have good personal relationships with the person or businesses involved in fraud, their intention to whistleblow would be reduced.
Shafer and Simmons	2011	AAAJ	Ethical culture	The ethical norms/incentives factor had a highly significant effect on both measures of behaviors intent. Specifically, an organizational culture that emphasized and rewarded ethical behavior, and in which organizational leaders served as positive role models, reduced the likelihood that tax practitioners will engage in overly aggressive actions.
Zhang et al.	2009	JBE	Ethical culture	Employee's perception of their organizational ethical culture positively interacted with their whistleblowing judgment to produce whistleblowing intention. People who perceived their organizations as highly ethical had less concern about retaliation and had more confidence that their reporting would be considered legitimate and appropriate by the management.
Marta et al.	2008	JSBM	Organization size	Managers in a larger organization tended to have a more ethical intention than those in a smaller organization.
Sweeney et al.	2010	JBE	Organization size	Firm size was not generally significant in explaining ethical evaluations but respondents from Big 4 firms reported significantly lower intentions of engaging in over-reliance on unethical decisions than respondents from other firms.

Hwang et al.	2008	MAJ	Professional relationships	U.S. firms and their U.S. auditors operating in Confucian cultures must be aware that the majority of the respondents agreed that if they had good personal relationships with the person or business involved in fraud, their intention to whistleblow would be reduced.
Hwang et al.	2008	MAJ	Rewards/sanctions	CPA holders were less likely than non-CPA's to agree they would be affected by monetary reward to promotion or by personal relationships in regard to whistleblowing.
Shafer and Simmons	2011	AAAJ	Rewards/sanctions	In a relativity low moral intensity context, the rewards for unethical behavior factor had a significant effect on behavioral intentions, but the ethical norms/incentives factor was not significant.
Shafer and Simmons	2011	AAAJ	Rewards/sanctions	The ethical norms/incentives factor had a highly significant effect on both measures of behaviors intent. Specifically, an organizational culture that emphasized and rewarded ethical behavior, and in which organizational leaders served as positive role models, reduced the likelihood that tax practitioners would engage in overly aggressive actions.
Valentine and Bateman	2011	JBE	Rewards/sanctions	Individuals were more likely to have moral intention in a sales context when they perceived greater moral intensity in the situation.
Buchan	2005	JBE	Subjective norms	No positive relationship was found between subjective norms (should/ should not do) and attitude.
Shafer and Simmons	2011	AAAJ	Subjective norms	In a relativity low moral intensity context, rewards for unethical behavior had a significant effect on behavioral intentions, but the ethical norms/incentives factor was not significant
Spicer et al.	2004	AMJ	Subjective norms	The type of norm present in a situation—hypernorm or local norm—moderated the effect of national context on ethical attitudes.
Spicer et al.	2004	AMJ	Subjective norms	The type of norm present in a situation— hypernorm or local norm—moderated the effect of national context on intended behavior.
White and Lean	2008	JBE	Team	As perceptions of team leader integrity increased, team members' intentions to engage in unethical activity adversely affected other team members and the team as a whole.
Moral intensity				
Karacaer et al.	2009	JBE	Perceptions of moral intensity influenced behavioral intentions.	
Leitsch	2004	JBE	Various accounting issues had an influence on students' moral intention and moral intensity.	
Leitsch	2006	AE	The dimensions of moral intensity and moral judgment were significant predictors of moral intention.	
Shafer and Simmons	2011	AAAJ	In a relativity low moral intensity context, rewards for unethical behavior had a significant effect on behavioral intentions, but ethical norms/incentives were not significant	
Valentine and Bateman	2011	JBE	Individuals were more likely to have moral intention in a sales context when they perceived greater moral intensity in the situation.	

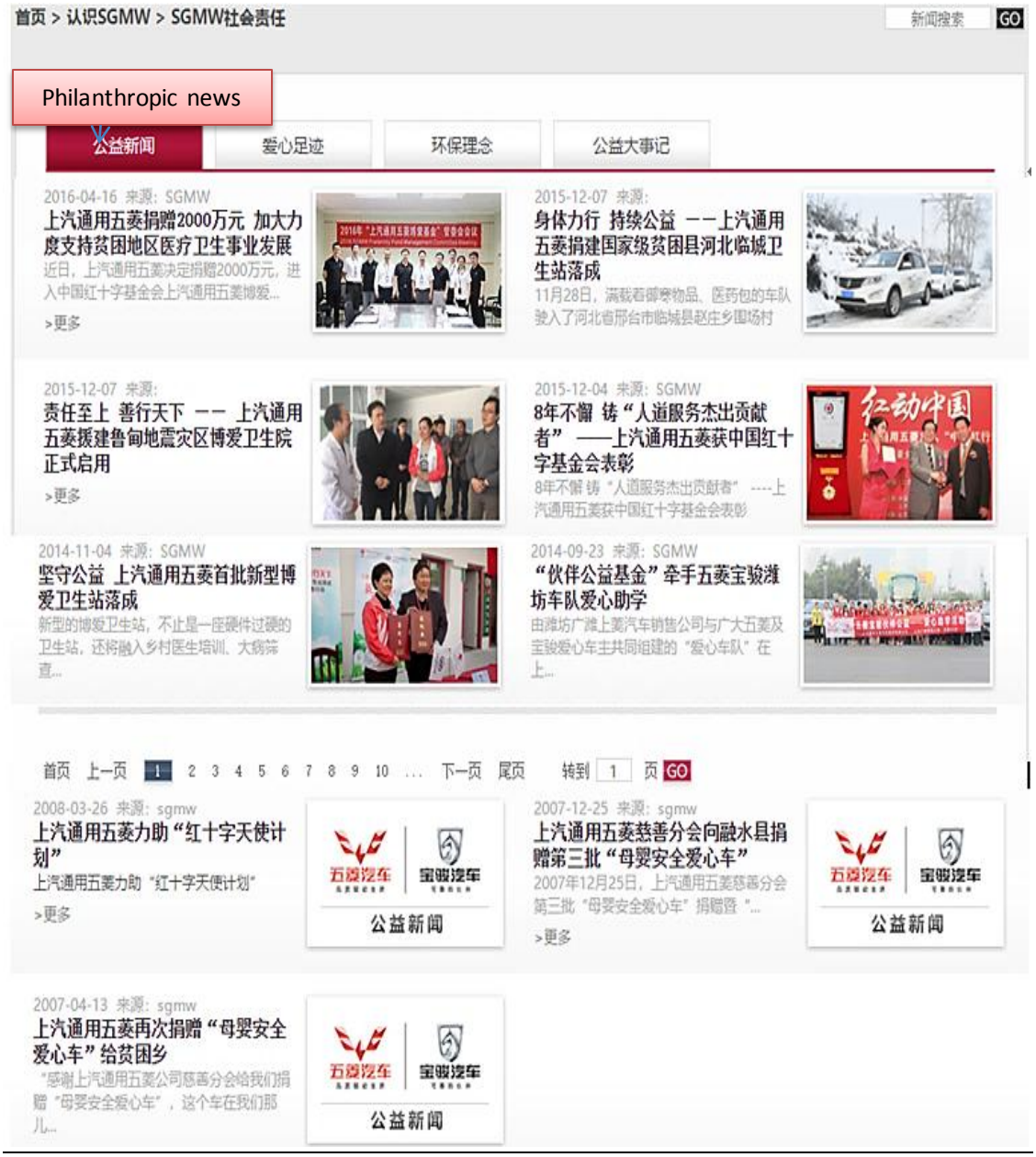
Source: Craft (2013)

Appendix 4.4: A model of analysing ethical decision- making in marketing



Source: Dubinsky and Loken (1989)

Appendix 4.5: Company Ethics: The CSR in SGMW



Source: SGMW (2016)

Appendix 4.6: Confucian values in management ethics

Confucian values	Values in management ethics
Humanistic	Its primary concern is the human condition (Ip, 2004).
Collectivistic	It places the importance of collective values and interests over and above individual values and interests and by extension; social relationships and their harmony are of utmost importance in human society (Ip, 2009).
Obligation-based	The morality of human conduct is primarily articulated in terms of obligations and obligation exchanges, which require an extensive practice of virtues (Yang, 1957).
Ren	*Ren* is a capacity of compassion or benevolence for fellow humans. The exercise of this capacity results in *ren* acts and conducts, as well as mindsets and moral sentiments, which are also seen as the acts of *de*, Confucianism virtues; so, *ren* is also a *de*, where other virtues are derived (Ip, 2009).
Yi	*Yi* is of equal importance in moral status, basically a sense of moral rightness, a capacity to discern appropriateness and the right direction in acts, relationships, and other human matters. *Ren* and *yi* often work in unison to define morality and to guide actions. Like *ren*, *yi* is another Confucian mega-virtue (Ip, 2009).
Li	*Li* represents the many etiquettes, norms, and protocols in both personal and institutional lives. The legitimacy of *li* is based on *ren* and *yi*, and only under this condition are people obligated to follow it. It means that people do not have an obligation to observe a *li* which violates *ren*. Though *li* is not in itself a virtue, observing li is a basic virtue (Ip, 2009).
Zhong shu	The quintessence of *ren*, the capacity of compassion was articulated by Confucius as *zhong shu* – an act and attitude of dealing with people, the Confucian formulation of the Golden Rule. There are two senses of *zhong shu*. The weak sense says that people should not do to others things that they do not want others to do to them. There is, however, a strong sense of *zhong shu* that goes beyond even varieties of the Golden Rule in other cultures. To practice *zhong shu* in the strong sense means that one is obligated to help others to develop morally in the process of developing one's moral self, which is seen as a major life goal of a person. Thus, *zhong shu* requires people to co-develop their moral selves together with others, to morally co-flourish themselves with others. Thus seen, *zhong shu* entails a positive act of moral engagement in others' moral welfare and development (Ip, 2009).
Ren, yi, li	Together, *ren*, *yi*, and *li* form a moral core intricate web of behaviour guiding moral virtues that effectively serve as a normative system governing the ethics of an individual's personal and social lives (Ip, 2009).
Guanxi	A person's relational self fits comfortably with the collectivism and guanxi, a modern-day version of Confucian relationalism and reciprocity.
Harmony	A robust moral life should connect the moral self with the lives of others in a benign and harmonious manner (Ip, 2009).

Source: Autor (2019), based on Tsang (1998); Yang (1957); Ip (2004, 2009)

Appendix 4.7: 2014 CPC key activities indicating the revival and endorsement of Confucius

Report from the *Wall Street Journal*	
2014	President Xi told the party's Politburo that 'To solve China's problems, we can only search in the land of China for the ways and means that suit it,' and 'We need to fully make use of the great wisdom accumulated by the Chinese nation over the last 5,000 years.'
2014	Mr Xi explicitly endorsed the cultural revival and formalised it in schools and Party training.
2014	Mr Xi became the first Communist leader to attend celebrations marking Confucius' birthday.
2014	The party has publicly ordered its officials nationwide to attend lectures on Confucius and other classical Chinese thinkers.
2013-2014	*Confucius Academy* opened in 2013. In 2014, this traditional-culture training centre was opened for local officials lecturing 'Traditional culture and official ethics.'
2014	For the first time, the education ministry has decreed that traditional culture, including classical literature to be taught in schools. Schoolbooks are being revised to include ancient texts promoting respect for elders and traditional moral values. The education ministry has mandated that primary-school children be taught to understand Chinese festivals, honour their parents and 'know they are part of the Chinese nation.'
2014	High school students should take up a traditional Chinese sport, do calligraphy and recite ancient poetry.
2014	University students should study 'important books of ancient Chinese thought and culture.'
2014	The *China National Culture Art Centre*, a civic organisation, has produced new traditional-culture textbooks used in pilot schemes in places such as the Beijing suburb of Tongzhou, where 51 schools hold daily traditional-culture classes.
https://www.wsj.com/articles/why-china-is-turning-back-to-confucius-1442754000	

Source: Reproduced from Page (2015)

Chapter 5 Appendices

Appendix 5.1: The questionnaire for managers (19/07/2016)

Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

Cyfranogwr Rhif Adnabod: Participant Identification Number:	

CWESTIYNAU CYFWELIAD SAMPL	**PROVISIONAL QUESTIONNAIRE**

TEITL Y PROSIECT: / PROJECT TITLE:

A Critical Evaluation of the Influence of Ethical Elements in Management Training on Ethical Intentions in Decision-Making among Managers in the Chinese Automotive Industry.

Key terms:

The CAI: Chinese Automotive Industry

EI: Ethical Intentions in Decision-Making

CATARC: Chinese Automotive Technology and Research Centre

Instructions:

Dear Automotive Professional:

I am very grateful for your help in providing information on non-coercive ethical elements, and their compatibility, in management training, and the degree to which these elements influence managers' ethical intentions in decision-making (EI) in your industry.

To help you answer the questions, here is an explanation of the key concepts in this project:

The concept of managerial ethical decisions refers to the specific or abstract decisions or

measures taken by management, including any decisions (long or short-term) - especially those that may affect the environment or the motor vehicle user's safety - throughout the whole product life cycle in the CAI.

The ethical elements include three macro dimensions of ethics from global, societal and industry perspectives. Within these dimensions, the project only focuses on non-coercive and "intrinsic goodness" ethics theories and their compatibility with each other. To be specific, non-coercive ethics may involve Western Ethics (normative ethics and justice), Confucianism, Communist Ethics and Ethical Principles for Engineers; the discussion also includes whether these different value systems are mutually compatible.

Some terms are used interchangeably according to Chinese people's understanding. For example, Confucianism is different from neo-Confucianism, but Chinese people commonly refer to both as Confucianism. Another example is that the notions of Communism, socialism, Marxism and Leninism are all different; moreover, there are also some further nuances such as the difference between Communism and neo-Communism. However, the project does not aim to differentiate precise variations, as most of the time Chinese people use these terms interchangeably. Therefore, for easy understanding and convenience, these terms are used in this project interchangeably.

This questionnaire is designed for a PhD project. The questionnaire focuses on identifying effective non-coercive ethical elements, and their mutual compatibility, in management training programmes in the CAI from within the three macro ethics dimensions, and evaluating the impact of these elements on managers' ethical intentions in decision-making. All the information will be anonymous and kept confidential.

The questionnaire consists of six parts.

Questionnaire for Managers in the Chinese Automotive Industry (CAI)

In accordance with the PhD research, entitled "A Critical Evaluation of the Influence of Ethical Elements in Management Training on Ethical Intentions in Decision-making (EI) among Managers in the Chinese Automotive Industry (CAI)", the research is carried out to identify effective non-coercive ethical elements and their compatibility in management training in CAI within three macro dimensions of ethics (global, societal and industry) and

to evaluate their influence on managers' ethical intentions in decision-making. Based on this research, recommendations will be provided for further improvement and effective enhancement automotive industry and for different training providers in this sector.

The questionnaire is divided into six parts. All the information is confidential and will be used only for this dissertation.

Thank you for completing the questionnaire.

Please place a tick √ in a box to indicate your answer or answer in written words.

Part I Demographic information

This part will gather background information about the participants.

Q1. What is your gender? (√one only)

□ 1. Male □ 2. Female

Q2. How old are you? (√one only)

□1. 25-30 yrs □ 2. 31-35 yrs □ 3. 36-40 yrs □ 4. 41-45 yrs

□ 5. 46-55 yrs □ 6. 56-60 yrs □ 7. 61 yrs and above

Q 3. What is your nationality? (√one only)

□ 1. Chinese (Mainland) □ 2. Chinese (Taiwan) □ 3. American □ 4. German

□ 5. Japanese □6. British □ 7. Other (please specify)_____

Q4. Which company do you work for?

□ 1. SAIC GM Wuling Automobile Company Limited

□2. Liuzhou Wuling Automobile Industry Co., Ltd.

□ 3. Dongfeng Liuzhou Motor Co., Ltd.

□ 4. Dongfeng Special Purpose Vehicle Co., Ltd.

□ 5. Wuhan No. 1 Manufacturing Factory, DONGFENG PEUGEOT CITROEN AUTOMOBILE COMPANY LTD.

□ 6. Wuhan No. 2 Manufacturing Factory, DONGFENG PEUGEOT CITROEN AUTOMOBILE COMPANY LTD.

□ 7. Guangzhou Automobile Group Co., Ltd Automotive Engineering Institute

□ 8. China FAW Co. Ltd.

□ 9. Guangzhou GAC-ULLITEC Auto Interiors R&D Co., Ltd.

□ 10. Other (please specify)_____

Q5. What is the ownership structure of your company? (√one only) (If you choose Option 3 please continue answering Q6, otherwise, jump to Q7 directly)

□ 1. State-owned □ 2. Private □ 3. Joint-venture

□ 4. Other (please specify)_____

Q6. Please choose the nationality/nationalities of your partner/partners. (√ more than one)

□ 1. Chinese (Taiwan) □ 2. The USA □ 3. German □ 4. Japanese

□ 5. French □ 6. Other (please specify) _____

Q7. What is your position in the company? (√one only)

□1. President □2. Vice President □3. Executive General Manager

□4. Deputy General Manager □5. Factory Manager □6.Deputy Factory Manager

□7. Administrative Director □8. Vice Administrative Director

□9. Research Centre Director □10. Deputy Research Centre Director

□11. Other (please specify)_____

Q8. What department are you in? (√one only)

□ 1. Senior management □ 2. Administrative/factory management

□ 3. Strategic Development □ 4. HR Management □ 5. Finance/Auditing

□6.Marketing □ 7.CSR/Ethics Office □ 8. Security

□9.Manufacturing (all processes) □ 10. Supply chain or Logistics

□ 11. New energy development □ 12. New technology development

□ 13. Company research centre □ 14. Auto Research Institute/Centre

□ 15. Other (please specify) _____

Q9. What is your level in management? (√one only)

□1. Lower □2. Medium □3. Senior

Q10. What is your current highest level of educational attainment? (√one only)

□ 1. Senior High School □ 2. Technical Institute □ 3. Bachelor degree

□ 4. Masters' degree □ 5. Doctorate /PhD □ 6. Post-Doctoral

□ 7. Other (please specify)

Part II Managers' awareness of non-coercive ethical elements

This part aims to determine the degree of CAI managers' awareness of non-coercive ethical elements in three macro ethical dimensions (global, societal and industry). The concept of "non-coercive" ethical elements can be simply defined as "intrinsic goodness" ethics that are not enforced by any external factors such as government regulations or laws.

Q11.Rate your awareness of the following ethical traditions or ethical elements (√one only for each)

Statement	7	6	5	4	3	2	1
Q11.1 Western normative ethics (such as Plato and Aristotle' virtue ethics, Kant's deontology, Mill's utilitarianism or Raw justice)							
Q11.2 Confucian teachings (e.g. *ren* (仁, benevolence) and *yi* (义, righteousness))							
Q11.3 Communist ethics (e.g. "serving the people soul and l in Chairman Mao's ethical thoughts or: "to build a socialist harmonious society" in modern Chinese thought)							
Q11.4 Ethical principles/Codes of Ethics for Engineers (e.g. honesty and integrity)							
Other elements, please specify							

7. Very aware 6. Aware 5.Somewhat aware 4.Neutral 3. Somewhat unaware 2. Unaware 1.Very unaware

If you have chosen Option 1 (Very unaware) for three or all items, please jump to Q13 & Q14. Otherwise please continue answering Q12.

Q12. Rate the mutual compatibility of the ethical elements listed in Q11. (√one only)

Statement	7	6	5	4	3	2	1
In your opinion, to what degree are any two or more elements listed in Q11mutually compatible?							

7. Very compatible 6.Compatible5.Somewhat compatible **4**.Neutural **3**.Somewhat incompatible
2. Incompatible **1**. Very incompatible

Q13. Rate the importance in CAI of the following non-coercive ethical values (√one only for each)

Statement	7	6	5	4	3	2	1
Q13.1 Western Normative Ethics (such as Plato and Aristo virtue ethics, Kant's deontology, Mill's utilitarianism or R justice)							
Q13.2 Confucian teachings (e.g. *ren* '仁', benevolence) and *yi* '义', righteousness))							
Q13.3 Communist ethics (e.g. 'serving the people soul and in Chairman Mao's ethical thoughts or: "to build a socialist harmonious society" in modern Chinese thought)							
Q13.4 Codes of Ethics for Engineers (e.g. honesty and inte							
Other elements, please specify							

7. Very important 6. Important 5.Somewhat important 4.Neutral 3. Somewhat unimportant
2. Unimportant 1.Very unimportant

Q14. Rate the importance in CAI of the following non-coercive ethical values in helping managers enhance their ethical intentions (EI) (√one only for each)

Statement	7	6	5	4	3	2	1
Q14.1 Western normative ethics (such as Plato and Aristot virtue ethics, Kant's deontology, Mill's utilitarianism or R justice)							
Q14.2 Confucian teachings (e.g. *ren* (仁, benevolence) and *yi* (义, righteousness))							
Q14.3 Communist ethics (e.g. "serving the people soul an in Chairman Mao's ethical thoughts or: "to build a socialist harmonious society" in modern Chinese thought)							
Q14.4 Codes of Ethics for engineers (e.g. honesty and inte							
Other elements, please specify:							

7. Very important 6. Important 5.Somewhat important 4.Neutral 3. Somewhat unimportant
2. Unimportant 1.Very unimportant

Part III. The judgment-formulation of non-coercive ethical elements in the Volkswagen story

This part probes ethical intentions in decision-making using the Volkswagen incident as an ethical scenario or story to determine the degree of managers' understanding of non-coercive ethical elements and their application in real practice. The judgment assessment consists of two parts.

First, please look at Image 1 from BBC News coverage of the Volkswagen incident and answer Q15.

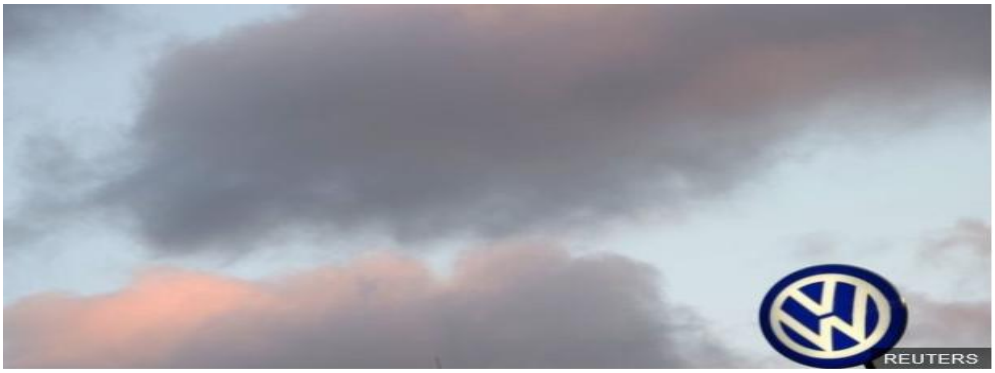


Image 1

Source: BBC News (Hutton, 2015)

Q15. What kind(s) of ethical issue(s) do you perceive from Image 1?

Now look at Image 2 and answer Q16.

Image 2

Source: BBC News (Hutton, 2015)

Q16. Rank the importance of the management of Volkswagen of the following ethical aspects that might be conveyed by the damaged image? (√only one for each)

Statement	7	6	5	4	3	2	1
Q16.1 Profit loss							
Q16.2 Violation of "Harmony"							
Q16.3 Ensuing legal action							
Q16.4 Violation of justice							
Q16.5 Affects Image /Brand honesty and integrity							
Q16.6 Violation of Western "utilitarianism"							
Q16.7 Affects "Guanxi"							
Q16.8 Affects Western "deontology"							
Q16.9 Affects customers' trust							
Q16.10 Violation of Western "teleology"							
Other influences, please specify:							

7. Very important 6. Important 5.Somewhat important 4.Neutral 3. Somewhat unimportant
2. Unimportant 1.Very unimportant

Now, please read the BBC report about the Volkswagen incident. Imagine that it were to happen in a Chinese automotive company, and answer Q17-Q19.

What is Volkswagen accused of?

The German car giant has since admitted cheating emissions tests in the US.

VW has had a major push to sell diesel cars in the US, backed by a huge marketing campaign trumpeting its cars' low emissions. However, in September, the Environmental Protection Agency (EPA) found that many VW cars being sold in America emitted nitrogen oxide pollutants up to 40 times above what is allowed in the US. The EPA's findings cover 482,000 cars (including Jetta, Beetle, Golf, Passat and Audi A3). This is because VW had a "defeat device" - or software - in diesel engines. When the cars were operating under controlled laboratory conditions - which typically involve putting them on a stationary test rig - the device appears to have put the vehicle into a sort of safety mode in which the engine ran below normal power and performance. Once on the road, the engines switched out of this test mode.

Source: BBC News (Hutton, 2015)

Q17. According to the story, please choose from the ethical theories below, indicating which of the theories the incident has violated (√ more than one). (If you choose Option 6, please jump to Part IV; otherwise, continue answering Q18 & Q19).

N.B. In Western Normative Ethics, Virtue Ethics is initiated by Socrates and followed and developed by his pupils, Plato and Aristotle, believing that goodness is a thing in itself. Kant's deontology emphasizes the centrality of the means behind achieving action, and Mill's utilitarianism focuses on the ends, proposing the greatness happiness for the maximum number of people. Rawls emphasises the importance of justice.

□ 1. Non-coercive Western ethics (e.g. virtue ethics, deontology, utilitarianism and justice)
□ 2. Confucianism (e.g. *ren* (benevolence), *yi* (righteousness), or *hexie* (harmony))
□ 3. Communism (e.g. ethical thinking of Chairman Mao: "serving the people heart and soul" and the current Chinese Communist Party (CCP)'s notion of "building a harmonious socialist society")
□ 4. Codes of Ethics for engineers (e.g. honesty and integrity)
□ 5. Other (please specify) _____
□ 6. None

Q18. Please provide an explanation for your choice in Q17 in relation to the Volkswagen Diesel incident, focusing on the first four ethical elements in Q17.

_____

_____

Q19. To what extent do you agree that you would recommend utilising the four non-coercive ethical elements (listed in Q17) in management training to help CAI managers enhance their ethical intentions in decision-making and resolve similar ethical issues such as those encountered by Volkswagen? (√ only one)

7. Strongly agree 6. Agree 5. Somewhat agree 4.Neutral 3. Somewhat disagree 2. Disagree 1. Strongly disagree

7	6	5	4	3	2	1

Part IV. The practice of non-coercive ethical elements in management training and the effect on EI

This part deals with non-coercive ethical elements in the three macro dimensions (global, societal and industry) in terms of their pedagogic application and impact in the training that you have attended. CARARC is short for the China Automotive Technology and Research Centre. EI is short for ethical intentions in decision-making.

Q20. Have you attended any management training within or outside of your company, which included non-coercive ethical elements from Western Normative Ethics, such as Plato's virtue ethics, Kant's deontology, Mill's utilitarianism or Rawls' justice? (For more explanations, please refer to Q17). (√ only one).

□ 1. Yes □ 2.No (jump to Q21)

Q20.1. If Yes, please indicate your level of agreement that the training has influenced your EI? (√ only one)

7. Strongly agree 6. Agree 5. Somewhat agree 4.Neutral 3. Somewhat disagree 2. Disagree 1. Strongly disagree

7	6	5	4	3	2	1

Q20.2 If Yes, please indicate where the training took place (√ more than one)

□ 1. Within company □ 2. Automotive Association (e.g. CATARC)

□ 3. Party School (company level) □ 4. Party School (provincial level)

□ 5. Central Party School □ 6. University training

□ 7. Confucian Academy □ 8. Other (please specify)_____

Q21. Have you taken any management training within or outside of your company which included Confucian thought? (√ only one)

□ 1.Yes □ 2.No (jump to Q22)

Q21.1. If Yes, please indicate your level of agreement that the training has influenced your EI? (√ only one)

7. Strongly agree 6. Agree 5. Somewhat agree 4.Neutral 3. Somewhat disagree 2. Disagree 1. Strongly disagree

7	6	5	4	3	2	1

Q21.2. If Yes, please where the training took place (√ more than one)

□ 1. Within company □ 2. Automotive Association (e.g. CATARC)

□ 3. Party School (company level) □ 4. Party School (provincial level)

□ 5. Central Party School □ 6. University training

□ 7. Confucian Academy □ 8. Other (please specify)_____

Q22. Have you taken any management training in and out of your company which included Communist ethics? (√ only one)

□ 1.Yes □ 2.No (jump to Q23)

Q22.1 If Yes, please indicate your level of agreement that the training has influenced your EI? (√ only one)

7. Strongly agree 6. Agree 5. Somewhat agree 4.Neutral 3. Somewhat disagree 2. Disagree 1. Strongly disagree

7	6	5	4	3	2	1

Q22.2 If Yes, please indicate where the training took place (√ more than one)

□ 1. Within company □ 2. Automotive Association (e.g. CATARC)

□ 3. Party School (company level) □ 4. Party School (provincial level)

□ 5. Central Party School □ 6. University training

□ 7. Confucian Academy □ 8. Other (please specify)_____

Q23. Have you taken any management training in and out of your company which included Ethical principles for engineers? (√ only one)

□ 1.Yes □ 2.No (jump to Part V)

Q23.1 If Yes, please indicate your level of agreement that the training has influenced your EI. (√ only one)

7. Strongly agree 6. Agree 5. Somewhat agree 4.Neutral 3. Somewhat disagree 2. Disagree 1. Strongly disagree

7	6	5	4	3	2	1

Q23.2 If Yes, please indicate where the training took place (√ more than one)

□ 1. Within company □ 2. Automotive Association (e.g. CATARC)

□ 3. Party School (company level) □ 4. Party School (provincial level)

□ 5. Central Party School □ 6. University training

□ 7. Confucian Academy □ 8. Other (please specify)_____

Part V. Practical utilisation of mutually compatible ethical elements in CAI management training and impact on EI

This part aims to determine pedagogic aspects of training practices and to ascertain your opinion on the effectiveness of using mutually compatible non-coercive ethical elements. As already stated, these elements come from both historic and current Chinese and Western ethical models.

Q24. What kind of management training that you have participated in has included a discussion regardingthe the mutual compatibility of the four non-coercive ethical elements in the three macro dimensions? (√ more than one) (If you choose Option 9, please jump to Part VI. Otherwise continue answering Q25, Q26 & Q27)

□ 1. Within company □ 2. Automotive Association (such as CATARC)

□ 3. University □ 4. Party School (provincial level)

□ 5. Central Party School □ 6. Party school in the automotive company

□ 7. Confucian Academy □ 8. Other (please specify)_____

□ 9. None

Q25. Please state the key points of any discussions regarding mutual compatibility of non-coercive ethical elements.

_____

_____

_____

Q26. Please indicate your level of agreement that these mutually compatible elements have influenced your EI. (√ only one)

7. Strongly agree 6. Agree 5. Somewhat agree 4.Neutral 3. Somewhat disagree 2. Disagree 1. Strongly disagree

7	6	5	4	3	2	1

Q27. Please indicate your level of agreement that you would recommend embedding these mutually compatible elements in management training in order to enhance managers' EI. (√ only one)

7. Strongly agree 6. Agree 5. Somewhat agree 4.Neutral 3. Somewhat disagree 2. Disagree 1. Strongly disagree

7	6	5	4	3	2	1

Part VI. Suggestions for Chinese automotive companies and their training providers

This part offers you the opportunity to freely express opinions on CAI management training and the enhancement of ethical decision-making.

Q28. Would you like to provide any suggestions for training program providers and CAI companies that will enhance managers' ethical decision-making abilities through the use of non-coercive ethical elements in the three macro dimensions (global, societal and industry)?

Thank you very much for taking time to complete this questionnaire. Now please forward to Libin Xiao by email at: xiao.121264@student.uwtsd.ac.uk or hand in in person.

Appendix 5.1 (Chinese version)

Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

中国汽车行业管理层问卷表
英国威尔士三一圣大卫大学博士学位
致参与问卷的经理们

我叫肖礼彬，在英国威尔士三一圣大卫大学攻读博士学位。

在此真诚地邀请您参与本人博士项目调研。该项目旨在于辩证评价中国汽车行业管理培训中影响经理伦理决策动机的关键伦理要素及其兼容性。本次调研的结果会给汽车行业及其他培训组织提供实际地指导，以有效提高该行业管理层伦理决策动机。

随该说明的是本人所设计的问卷，用于收集相关数据。内容包括本人论文界定的三个宏观维度中（国际、中国社会和汽车行业）非强制性伦理要素（西方规范伦理、儒家思想、共产主义思想及汽车行业伦理准则）和他们之间的兼容性在企业内部和外部管理培训的状况，及这些要素对于中国汽车行业管理层伦理决策动机的影响。我相信您的意见对我非常重要。

通过您在本次问卷中的参与，我希望能确切获得以上信息或数据。本次调研给您提供了关于您对中国汽车行业管理培训提供意见的机会，所有信息会严格保密且匿名，任何时候**不会**向外界公布。

本次问卷将占用您 30 分钟完成，但没有具体时间限制。每个问题没有统一答案。随问卷调查表的是一封授权信和一份问卷填写说明。由于本人博士课题为全新领域，您的反馈非常重要。如果您能完成本问卷我将不胜感激。我深刻理解您的时间非常重要，但我更感激您对我博士项目所提供的宝贵意见。

该研究成果将建立在对该问卷所收集的数据进行详尽而精确的分析之上，根据您的需要我会很乐意给您提供一份成果报告。希望由本问卷所取得的成果会提高我对中国汽车行业伦理维度的理解，同时能识别相应的有效伦理要素和他们的兼容性对于中国汽车行业管理层伦理决策动机的影响。所有数据将会安全保存在我的个人移动硬盘。研究结果将会反馈给我所在大学的研究办公室且会严格保密。

您可以决定拒绝参与本次调研。你可以在任何时候终止本次调研。如果您决定匿名，我将会在第一时间考虑您的要求，会采取所有的措施避免您的身份暴露，且对于您在问卷中的反馈不会有任何识别信息。没有您的事先授权没有人会看到该问卷的结果。所有来自问卷的材料都会严格保密。在此，我提前对您的参与及宝贵时间表示感谢。如有任何疑问请随时在您方便的时间与我联系。

邮箱：xiao.121264@student.uwtsd.ac.uk

参与者授权表

博士课题： 辩证评价中国汽车行业管理培训中影响伦理决策动机的关键伦理要素

研究者姓名：肖礼彬　　请在后面方框内打勾

1. 我确认我已阅读并了解了日期为_____年____月_____日的信息页。我也由此获得机会探讨相关信息、询问有关问题并能获得满意答案。 ☐

2. 我了解我的参与是自愿的，我可以在自愿的情况下随时退出该研究，无需提供相关理由。.

3. 我了解我所给予的信息会由研究团队用于他们将来的报告、文章及成果展示。 ☐

4. 我了解我的姓名不会出现在任何的报告、文章或成果展示中。 ☐

5. 我同意参与以上研究。 ☐

_____	_____	_____
参与者姓名	日期	签名
_____	_____	_____
研究者姓名	日期	签名

您可以拒绝参加这项研究。您可以随时结束参与这项研究。如果您决定保持匿名，此要求会优先考虑，为此会采取每一步实际的预防措施以免您的身份泄露。如果您希望匿名，不会有任何数据包含您个人的识别信息。没有您事先的同意，没有人会看到任何数据。从本问卷或任何调查问卷产生的所有材料将保密。

完成后，请将问卷放入所提供的信封寄回调研者（如不能现场收回）。一份副本将会提供给予参与者，原始版本将会作为档案保存于研究团队。地点为：

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问卷	
题目: 辩证评价中国汽车行业管理培训中影响经理伦理决策动机的关键伦理要素	

说明:

亲爱的汽车行业专家您好:

非常感谢您能协助提供关于中国汽车行业管理培训中的非强制性伦理因素及各因素之间的兼容性的信息。

以下提供几个本论文中关键概念的解释以助于您完成本问卷:

管理的伦理决策概念指的是任何管理中采取的具体或抽象的决策或措施(长期或短期),尤其是在汽车行业整个产品生命周期可能影响环境或车辆使用者安全的因素。

本论文中的伦理要素主要包括国际、社会及本行业三个伦理维度。在这些维度中本论文主要侧重了解非强制伦理要素。这些要素是单纯"内在良好的品质",不同于法律或企业管制等通过外力实施的伦理要素,他们包括西方伦理里的规范伦理及公平原则、儒家思想、共产主义伦理思想及汽车工程行业伦理准则。他们之间的兼容性也是本次调研的重点。

本文主要按照中国人的理解设计。根据中国人的理解文中有些用词具有相通性和互换性。如,虽然儒家思想和新儒家具有不完全相同的特征,但大多数中国人已经习惯将这两者同时称呼为儒家思想或儒学。再如共产主义、社会主义、马克思列宁主义在理论上具有一定的差异,但本文的重点不在于对其差异性做精确分析,故在本文中这些概念也具有互换性。总之,为了方便理解这些概念会在本文中有多种表达。

本问卷仅用于博士调研。该问卷侧重于识别在中国汽车行业管理培训中在三个宏观维度方面一些有效的非强制性的伦理要素及他们在的融合性,同时会评估他们在管理培训中的运用及对于中国汽车行业管理层伦理决策动机的影响。所有信息会匿名且严格保密。

问卷共分六个部分:

中国汽车行业管理培训问卷调查表(管理层填写)

该博士论文题为"辩证评价中国汽车行业管理培训中影响伦理决策动机的关键伦理要素"。本论文旨在于了解中国汽车行业管理培训中涉及的三个宏观维度中(国际、中国社会及汽车行业)有效的非强制性伦理要素,同时评估他们对于管理层伦理决策动机的影响。本研究成果也会对汽车公司和相应的培训机构或部门提供建议,以便他们改善培训内容和提高培训效果。问卷调研分为六部分,所有调研信息会匿名且将严格保密。
博士学生:肖礼彬

感谢您完成本问卷。请您按要求在所选项相应的方框里打√或用文字说明。

第一部分 个人信息

本部分主要了解参与者的个人背景信息。

Q1. 您的性别。（仅选一项，并在该选项前的方框内打√）
□1. 男 □2. 女

Q2. 您目前的年龄。（仅选一项，并在该选项前的方框内打√）
□1. 25-30 □ 2. 31-35 □ 3. 36-40 □ 4. 41-45
□ 5. 46-55 □ 6. 56-60 □ 7. 61 及以上

Q 3.您的国籍。（仅选一项，并在该选项前的方框内打√）
□1. 中国 □2.中国(台湾) □3.美国 □4.德国
□5. 日本 □6.法国 □7.其他的国籍 (请说明)_____

Q4. 您目前所在的公司。（仅选一项，并在该选项前的方框内打√）

Q5.您所在公司的所有权结构状况。（仅选一项，并在该选项前的方框内打√）
如果您选择第 3 项，请按顺序完成 Q6 及后面的问题, 如果选择其它选项请跳至 Q7）
□1. 国有 □2. 私有 □3. 合资 □4. 其他所有权（请说明）_____

Q6.如果您的公司有合资伙伴，请从以下选项中选出该合资伙伴的国籍。（仅选一项，并在该选项前的方框内打√）
□1.中国 (台湾) □2. 美国 □3. 德国 □4.日本
□5. 法国 □6.其他合资伙伴（请说明）_____

Q7. 您所在公司的职位。（仅选一项，并在该选项前的方框内打√）
□1.董事长 □2. 副董事长 □3. 总经理 □4. 副总经理
□5.厂长 □6. 副厂长 □7.行政/厂部主任 □8.厂部副主任
□9.研究中心主任 □10. 研究中心副主任 □11. 其他 (请说明)_____

Q8. 您所在的部门。（仅选一项，并在该选项前的方框内打√）
□ 1.高管 □ 2. 行政办 □ 3.战略发展部 □ 4. 人力资源
□ 5.财务/审计 □6. 市场营销 □ 7.社会责任/伦理办公室 □ 8. 安全科
□ 9. 制造（所有过程） □ 10. 供应链或物流 □ 11.新能源开发 □ 12.新技术开发
□ 13. 公司内部研究中心 □ 14. 集团汽车研究中心
□ 15. 其他 (请说明) _____

Q9.您所在管理层的级别。（仅选一项，并在该选项前的方框内打√）
□1. 基层 □2. 中层 □3. 高层

Q10. 您目前所获得的最高教育背景。（仅选一项，并在该选项前的方框内打√）
□1. 高中 □ 2.大专、高职 □3. 本科 □4. 硕士
□5. 博士 □6. 博士后 □6.其他文凭(请说明)_____

Part II 管理层对非强制性伦理因素的认识

该部分旨在于了解在中国汽车行业管理培训中所涉及的三个宏观维度中(国际、中国社会及汽车行业)管理层对于其非强制伦理因素的认知情况。"非强制"伦理因素的意义可以简单解释为'内在良好品质"，这些是与政府及法律这些外力不同的因素。

Q11. 请您说明以下传统伦理文化或非强制性伦理要素的了解程度。
仅选一项，并对相应的选项打√）
7.非常了解 6.了解 5.有些了解 4.不确定/不清楚 3.有些不了解 2. 不了解 1.非常不了解

具体内容	7	6	5	4	3	2	1
Q11.1 西方规范伦理（如柏拉图和亚里士多德的美德伦理，康德的道义论，米尔的结果论及 Rawl 的公平原则）							
Q11.2 儒家思想 （如“仁”和“义”）							
Q11.3 共产主义的伦理观（如毛泽东思想“全心全意为人民服务”和当今“建设社会主义和谐社会”）							
Q11.4 工程行业的伦理准则 (如诚实、严谨和正直)							
其他，请说明							

如果您有 3 项或全部选择了**选项 1**，那么请您直接回答 Q13 & Q14。如果没有请您继续回答 Q12。

Q12.请您说明以下伦理要素的可兼容性程度。（仅选一项，并对相应的选项打√）
7. 非常兼容 6 兼容 5.有些兼容 4.不清楚/不确定 3. 有些不兼容 2.不兼容 1.非常不兼容

具体内容	7	6	5	4	3	2	1
请说明以上 Q11 中传统伦理文化或非强制性伦理要素之间的可兼容性程度							

Q13. 请您说明以下非强制性伦理要素在中国汽车行业的重要性程度。
（仅选一项，并对相应的选项打√）
7. 非常重要 6. 重要 5.有些重要 **4**. 不清楚/不确定 **3**.有些不重要 **2**.不重要 **1**. 非常不重要

具体内容	7	6	5	4	3	2	1
Q13.1 西方规范伦理（如柏拉图和亚里士多的美德伦理康德的道义论，米尔的结果论及 Rawl 的公平原则）							
Q11.2 儒家思想（如“仁”和“义”）							
Q13.3 共产主义的伦理观（如毛泽东思想“全心全意为人民服务”和当今“建设社会主义和谐社会”）							
Q13.4 工程行业的伦理准则 （如诚实、严谨和正直）							
其他，请说明							

Q14. 请您说明以下非强制性伦理要素对于中国汽车行业经理伦理决策动机的重要性程度。
（仅选一项，并对相应的选项打√）
7. 非常重要 6. 重要 5.有些重要 **4**. 不清楚/不确定 **3**.有些不重要 **2**.不重要 **1**. 非常不重要

具体内容	7	6	5	4	3	2	1
Q14.1 西方规范伦理（如柏拉图和亚里士多的美德论康德的道义论，米尔的结果论及 Rawl 的公平原则）							
Q14.2 儒家思想 (如“仁”和“义”)							
Q14.3 共产主义的伦理观 (如毛泽东思想“全心全意为人民服务”和当今“建设社会主义和谐社会”）							
Q14.4 工程行业的伦理准则 (如诚实、严谨和正直)							
其他，请说明							

Part III.伦理要素情景判断

本部分引用德国大众事件作为情景，深层了解中国汽车行业管理者对于非强制性伦理要素在实践中的应用。本故事由两个部分组成。

首先，请您观察图一，他们均来自英国广播公司 BBC。然后请您回答 Q15。

图一

*来源：*BBC 新闻 (Hutton, 2015)

Q15. 由以上图一您可以感知到该事件涉及到哪种或哪几种方面的伦理问题?

现在请您看图二，然后回答 Q16

图二

*来源：*BBC 新闻 (Hutton, 2015)

Q16. 请您观察图二中的德国大众标志，然后说明对于其管理层可能产生影响的重要性程度（每个方面仅选一项，并对相应的选项打√）

7. 非常重要 6. 重要 5.有些重要 4. 不清楚/不确定 3.有些不重要 2.不重要 1. 非常不重要

具体内容	7	6	5	4	3	2	1
Q16.1 企业利润损失							
Q16.2 违反“和谐”							
Q16.3 法律诉讼							
Q16.4 违反商业活动的公正性							
Q16.5 影响工程行业产品品牌的严谨、正直性							
Q16.6 违反西方“功利论”原则							
Q16. 7 影响“关系”							
Q16.8 违反“道义论” 伦理原则							
Q16.9 影响消费者的信任度							
Q16.10 违反“结果论”伦理原则							
请他影响，请说明。							

然后，请您阅读以下来自英国广播公司 BBC 对于德国大众事件的报道, 且假想如果类似事件发生在中国汽车行业，请您回答问题 Q17 & Q18.

为什么大众公司被指控？

德国大众汽车承认在美国排放测试中作弊。

在大型的营销活动中大众宣传自己的柴油汽车排放低而得到美国消费者认可，因此其在美国的销售有了很大的增长。但是美国环保局 EPA 通过对在美国使用的 482000 辆大众柴油车（捷达、甲壳虫、高尔夫、帕萨特、奥迪 A3）进行调查，发现发动机排放的氮氧化合物排放超出美国允许的 40 倍以上。这是因为大众在相关汽车上安装了一个设备，该设备放在一个固定的试验台上，在受控实验室条件下运行便进入一种测试模式，使发动机在正常的功率和性能下运行。一旦上路，发动机就切换出了这个测试模式。

来源: BBC 新闻 (2015)

Q17.您认为该事件违反了以下哪种或哪几种伦理理论？（可以选多项，并在这些选项前的方框内打√） （如果选择第 6 项，那么请您直接跳到 Part IV, 如果选择其他选项请您继续回答

问题 Q18 & Q19）

说明：在西方伦理中，美德伦理由苏格拉底提出，并且得到他的门徒柏拉图和亚里士多德的继承与进一步发展，这种思想相信内在的美德。康德的道义论强调行为过程的道义，而米尔的功利主义则强调行为的结果为了大多数人的道义。Rawl 则强调公平原则。

□1. 西方伦理中的非强制伦理要素 (如道德论、 结果论、 公平论等)
□2. 儒家思想 (如“仁”、“义”、“和谐”)
□3. 共产主义的伦理观 (如毛泽东思想“全心全意为人民服务”和当今“建设社会主义和谐社会”)
□4. 工程行业伦理准则
□5. 其他思想 (请列出)_____
□6. 以上都不是

Q18. 请您对 Q17 题中您的选项给出理由。（如有多个选择请逐一说明，请结合 Q17 中选项 1-4 中的 4 种主要伦理理论及大众事件谈）。

_____
_____
_____

Q19. 请您说明在多大程度上您认同会推荐在管理培训中纳入以上 Q17 题中所列出的 4 种非强制性伦理因素，协助提高管理层在中国汽车行业伦理决策中类似的非伦理动机，来解决类似以上德国大众事件中的伦理问题。
7.非常认同 6.认同 5.有些认同 4.不确定/不清楚 3.有些不认同 2.不认同 1.非常不认同

7	6	5	4	3	2	1

Part IV.中国汽车行业管理培训中非强制性伦理要素的实践应用与反馈

该部分讨论在三个宏观维度（国际、中国社会及汽车行业）中非强制性伦理要素及他们在管理层培训中的应用与反馈。

Q20.作为管理层，在您所参加过的公司内部和外部培训中是否涉及到西方的规范伦理，如柏拉图的美德论、康德的道义论、Mill 的结果论或 Rawl 的公平原则等？
（可参看 Q17 中的解释）（二者选一，并在该选项前的方框内打√）
□1.涉及到 □2.不涉及到

如果涉及到,请继续回答 Q20.1 & Q20.2.如果没有涉及到请直接回答 Q21。

Q20.1 请说明在多大程度上您认同这些要素影响了您在中国汽车行业的伦理决策动机。
7.非常认同 6.认同 5.有些认同 4.不确定/不清楚 3.有些不认同 2.不认同 1.非常不认同

7	6	5	4	3	2	1

Q20.2 请说明您在什么地方接受过该培训。（可以选多项，并在这些选项前的方框内打√）
□1. 本公司 □2. 行业协会
□ 3.本公司内部党校 □ 4.省委党校
□ 5.中央党校 □6.大学培训
□ 7. 孔子研究院 □8.其他地方（请说明）_____

Q21. 作为管理层，在您所参加过的公司内部和外部培训中是否涉及到儒家伦理思想？
（仅选一项，并在该选项前的方框内打√）
□1.涉及到 □2.不涉及到

如果涉及到,请继续回答 Q21.1 & Q21.2。 如果没有涉及到请直接回答 Q22。

Q21.1 请说明在多大程度上您认同这些要素影响了您在中国汽车行业的伦理决策动机。
7.非常认同 6.认同 5.有些认同 4.不确定/不清楚 3.有些不认同 2.不认同 1.非常不认同

7	6	5	4	3	2	1

Q21.2 请说明您在什么地方接受过该培训。（可以选多项，并在这些选项前的方框内打√）
□1. 本公司 □2. 行业协会 □ 3.本公司内部党校
□ 4.省委党校 □ 5.中央党校 □6. 大学培训
□ 7.孔子研究院 □8.其他地方（请说明）_____

Q22. 作为管理层，在您所参加过的公司内部和外部培训中是否涉及到共产主义思想？
（仅选一项，并在该选项前的方框内打√)
□1.涉及到 □2.不涉及到

如果涉及到,请继续回答 Q22.1 & Q22.2。如果没有涉及到请直接回答 Q23。

Q22.1 请说明在多大程度上您认同这些要素影响了您在中国汽车行业的伦理决策动机。
7.非常认同 6.认同 5.有些认同 4.不确定/不清楚 3.有些不认同 2.不认同 1.非常不认同

7	6	5	4	3	2	1

Q22.2 请说明您在什么地方接受过该培训。(可以选多项，并在这些选项前的方框内打√)
□1. 本公司 □2. 行业协会 □ 3.本公司内部党校
□ 4.省委党校 □ 5.中央党校 □6. 大学培训
□ 7. 孔子研究院 □8.其他地方（请说明）_____□9. 都没有涉及

Q23. 作为管理层，在您所参加过的公司内部和外部培训中是否涉及到工程伦理准则？
（仅选一项，并在该选项前的方框内打√）
□1.涉及到 □2.不涉及到

如果涉及到,请您继续回答 Q23.1 & Q23.2。如果没有涉及到请直接回答 Part V。

Q23.1 请说明在多大程度上您认同这些要素影响了您在中国汽车行业的伦理决策动机。
7.非常认同 6.认同 5.有些认同 4.不确定/不清楚 3.有些不认同 2.不认同 1.非常不认同

7	6	5	4	3	2	1

Q23.2 请说明您在什么地方接受过该培训。(可以选多项，并在这些选项前的方框内打√)
□1. 本公司 □2. 行业协会 □ 3.本公司内部党校
□ 4.省委党校 □ 5.中央党校 □6. 大学培训
□ 7. 孔子研究院 □8.其他地方（请说明） □9. 都没有涉及

Part V. 中国汽车行业管理培训中非强制性伦理要素的可兼容性的应用与反馈
本部分旨在于了解在中国汽车行业管理培训实践中，您对于来自古今中外的非强制性伦理要素及其可兼容性是否有效的意见与反馈。

Q24. 在您参加过的哪种或哪些种类培训中涉及到本论文所界定的三种宏观伦理维度中的非强制性伦理要素的可兼容性讨论? （可以选多项，并在这些选项前的方框内打√）
（如果选第 9 项, 请跳至 Part VI。 如果选择其他选项请您按顺序完成 Q25、Q26 & Q27）
□1. 本公司 □2. 行业协会 □ 3.本公司内部党校
□ 4.省委党校 □ 5.中央党校 □6. 大学培训

□ 7. 孔子研究院 □8.其他地方（请说明）_____ □9. 都没有涉及

Q25.请说明这些非强制性伦理要素的兼容性如何讨论的。

Q26. 请说明在多大程度上您认同这些非强制性伦理要素的可兼容性质会影响您的伦理决策动机。

7.非常认同 6.认同 5.有些认同 4.不确定/不清楚 3.有些不认同 2.不认同 1.非常不认同

7	6	5	4	3	2	1

Q27. 请说明在多大程度上您认同会推荐在管理培训中纳入这些可兼容性的非强制性伦理要素以提高管理者的伦理决策动机。

7.非常认同 6.认同 5.有些认同 4.不确定/不清楚 3.有些不认同 2.不认同 1.非常不认同

7	6	5	4	3	2	1

Part VI. 对中国汽车公司及相关的培训组织的建议

本部分给您提供机会自由表达关于在中国汽车行业管理层培训中伦理动机提高的建议。

Q28. 您愿意对培训组织者及汽车公司提出相应的管理培训提出相关建议吗，主要关于在中国汽车行业三个伦理维度（国际、中国社会和行业）中可兼容性的非强制性伦理要素在培训中对于管理层伦理决策动机的提高？

非常感谢占用您宝贵时间完成本问卷；现在请您将完成的问卷发送至学生邮箱 xiao.121264@student.uwtsd.ac.uk （如不能现场回收问卷）

Appendix 5.2: The questionnaire for trainers (19/07/2016)

Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

Cyfranogwr Rhif Adnabod: Participant Identification Number:	

CWESTIYNAU SAMPL CYFWELIAD	**PROVISIONAL QUESTIONNAIRE**
TEITL Y PROSIECT: / PROJECT TITLE: A Critical Evaluation of the Influence of Ethical Elements in Management Training on Ethical Intentions in Decision-Making among Managers in the Chinese Automotive Industry.	

TEITL Y PROSIECT: / PROJECT TITLE:
A Critical Evaluation of the Influence of Ethical Elements in Management Training on Ethical Intentions in Decision-Making among Managers in the Chinese Automotive Industry.

Key terms:
CAI: Chinese Automotive Industry
EI: Ethical Intentions in decisions- making
CATARC: Chinese Automotive Technology and Research Centre

Instructions:

Dear Trainers:

I am very grateful for your help in providing information on non-coercive ethical elements, and their compatibility, in management training, and the degree to which these elements influence managers' EI in your industry.

To help you answer the questions, here is an explanation of the key concepts in this project:

The concept of managerial ethical decisions refers to the specific or abstract decisions or measures taken by management, including any decisions (long or short-term) - especially those that may affect the environment or the motor vehicle user's safety - throughout the whole product life cycle in the Chinese Automotive Industry (CAI).

The ethical elements include three macro dimensions of ethics from global, societal and industry perspectives. Within these dimensions, the project only focuses on non-coercive and "intrinsic goodness" ethics theories and their compatibility with each other. To be specific, non-coercive ethics may involve Western Ethics (normative ethics and justice), Confucianism, Communist Ethics and Codes of Ethics for Engineers. The discussion will focus on whether these different value systems are mutually compatible.

Some terms are used interchangeably according to Chinese people's understanding. For example, Confucianism is different from neo-Confucianism, but Chinese people commonly refer to both as Confucianism. Another example is that the notions of Communism, socialism, Marxism and Leninism are all different; moreover, there are also some further nuances such as the difference between Communism and neo-Communism. However, the project does not aim to differentiate precise variations, as most of the time Chinese people use these terms interchangeably. Therefore, for easy understanding and convenience these terms are used in this project interchangeably.

This questionnaire is designed for a PhD project. The questionnaire focuses on identifying effective non-coercive ethical elements, and their mutual compatibility, in management training programmes in CAI from within the three macro ethics dimensions, and evaluating the impact of these elements on managers' ethical intentions in decision-making. All the information will be anonymous and kept confidential.

The questionnaire consists of six parts.

Questionnaire for CAI Trainers in the Chinese Automotive Industry (CAI)

In accordance with the PhD research, entitled "A Critical Evaluation of the Influence of Ethical Elements in Management Training on Ethical Intentions in Decision-making (EI) among Managers in the Chinese Automotive Industry (CAI)", the research is carried out to identify effective non-coercive ethical elements and their compatibility in management

training in CAI within three macro dimensions of ethics (global, societal and industry) and to evaluate their influence on managers' ethical decision-making intentions. Based on this research, recommendations will be provided for the further improvement and effective enhancement of training within the automotive industry and for different training providers in this sector. The questionnaire is divided into six parts. All the information is confidential and will be used only for this dissertation.

Thank you for completing the questionnaire.

Please place a tick √ in a box to indicate your answer *or answer in written words.*

Part I Demographic information

This part will gather background information about the participants

Q1. What is your gender? (√one only)

□1. Male □2. Female

Q2. How old are you? (√one only)

□1. 25-30 yrs □ 2. 31-35 yrs □ 3. 36-40 yrs □ 4. 41-45 yrs

□ 5. 46-55 yrs □ 6. 56-60 yrs □ 7. 61 yrs and above

Q3. What is your nationality? (√one only)

□1. Chinese □2. Chinese (Taiwan) □3. American □4. Germany

□5. Japanese □6. British □7. Other (please specify)

Q4. Which training centre (company/university/association/party school/Confucian Academy) do you represent? (√one only)

□1. SAIC GM Wuling Automobile Company Limited

□2. Liuzhou Wuling Automobile Industry Co., Ltd.

□3. Dongfeng Liuzhou Motor Co., Ltd.

□4. Dongfeng Special Purpose Vehicle Co., Ltd.

□5. Guangzhou GAC-ULLITEC Auto Interiors R&D Co., Ltd.

□6. The Automotive Engineering Dept., Wuhan University of Technology (WUT)

□7. Guangzhou Automobile Group Co., Ltd Automotive Engineering Institute.

□8. Wuhan No. 1 Manufacturing Factory, DONGFENG PEUGEOT CITROEN AUTOMOBILE COMPANY LTD.

□9. Wuhan No. 2 Manufacturing Factory, DONGFENG PEUGEOT CITROEN AUTOMOBILE COMPANY LTD.

□10. China FAW Co. Ltd

□11. Party school (Municipal) □12. Party school (provincial)

□13. Central Party School □14. Party school within company

□15. Confucian Academy □16. Association

□17. Other (please specify)_____

Q5. What department are you in? (√one only)

□1. Management □2. Teaching □3. Research □4. Human Resource (HR)

□5. Training □6. Other (please specify) _____

Q6. What is your level in management? (√one only)

□1. Lower □2. Medium □3. Senior

Q7. What is your highest level of educational attainment? (√one only)

□ 1. Senior High School □ 2. Technical Institute □ 3. Bachelors' degree

□ 4. Masters' degree □ 5. Doctorate /PhD □ 6. Post-Doctoral

□ 7. Other (please specify) _____

Part II Trainers' awareness of non-coercive ethical elements

This part aims to determine the degree of CAI trainers' awareness of non-coercive ethical elements in three macro ethical dimensions (global, societal and industry). The concept of "non-coercive" ethical elements can be simply defined as "intrinsic goodness" ethics that are not enforced by any external factors such as government regulations or laws.

Q8. Rate your awareness of the following ethical traditions or ethical elements (√one only for each)

Statement	7	6	5	4	3	2	1
Q8.1 Western normative ethics (such as Plato and Aristotle's virtue ethics, Kant's deontology, Mill's utilitarianism or Rawl's justice)							
Q8.2 Confucian teachings (e.g. *ren* '仁', benevolence) and *yi* '义', righteousness))							
Q8.3 Communist ethics (e.g. "serving the people soul and heart" in Chairman Mao's ethical thoughts or: "to build a socialist harmonious society" in modern Chinese thought)							
Q8.4 Ethical principles for engineers (e.g. honesty and integrity)							
Other elements, please specify							

7.Very aware 6. Aware 5.Somewhat aware 4. Neutral 3. Somewhat unaware 2.Aware 1.Very unaware

If you have chosen Option 1 (Very unaware) for three or all items, please jump to Q10 & Q11. Otherwise please continue answering Q9

Q9. Rate the mutual compatibility of the ethical elements listed in Q8. (√one only)

Statement	7	6	5	4	3	2	1
In your opinion, to what degree are any two or more elements listed in Q8 mutually compatible?							

7. Very compatible 6. Compatible 5. Somewhat compatible 4.Neutural 3.Somewhat incompatible 2. Incompatible 1. Very incompatible

Q10. Rate the importance in CAI of the following non-coercive ethical values (√one only for each)

Statement	7	6	5	4	3	2	1
Q10.1 Western normative ethics (such as Plato and Aristot virtue ethics, Kant's deontology, Mill's utilitarianism or Rawl's justice)							
Q10.2 Confucian teachings (e.g. *ren* '仁', benevolence) and *yi* '义', righteousness))							
Q10.3 Communist ethics (e.g. "serving the people soul an heart" in Chairman Mao's ethical thoughts or: "to build a socialist harmonious society" in modern Chinese thought)							
Q10.4 Ethical principles for engineers (e.g. honesty and integrity)							
Other elements, please specify							

7. Very important 6. Important 5. Somewhat important 4. Neutral 3. Somewhat unimportant 2. Unimportant 1. Very unimportant

Q11. Rate the importance in CAI of the following non-coercive ethical values in helping trainers enhance EI (√one only for each)

Statement	7	6	5	4	3	2	1
Q11.1 Western normative ethics (such as Plato and Aristotl virtue ethics, Kant's deontology, Mill's utilitarianism or Rawls' justice)							
Q11.2 Confucian teachings (e.g. *ren* '仁', benevolence) and *yi* '义', righteousness))							
Q11.3 Communist ethics (e.g. "serving the people soul and heart" in Chairman Mao's ethical thoughts or: "to build a socialist harmonious society" in modern Chinese thought)							
Q11.4 Ethical principles for engineers (e.g. honesty and integrity)							
Other elements, please specify:							

7. Very important 6. Important 5. Somewhat important 4.Neutral 3. Somewhat unimportant 2. Unimportant 1. Very unimportant

Part III. Judgment-formulation of the non-coercive ethical elements in the Volkswagen story

This part probes ethical intentions in decision-making using the Volkswagen incident as an ethical scenario or story to determine the degree of the trainers' understanding of non-coercive ethical elements and their application in real practice. The judgment assessment consists of two parts.

First, please look at Image 1 from BBC News' (2015) coverage of the Volkswagen incident and answer Q12.

Image 1

Source: BBC News (Hutton, 2015)

Q12. What kind(s) of ethical issue(s) do you perceive from Image 1?

Now look at Image 2 and answer Q13.

Image 2

Source: BBC News (Hutton, 2015)

Q13. Rank the importance upon some ethical consequences for the management of Volkswagen of the following ethical aspects that might be conveyed by the damaged logo? (√only one for each)

Statement	7	6	5	4	3	2	1
Q13.1 Profit loss							
Q13.2 Violation of "Harmony"							
Q13.3 Ensuing legal action							
Q13.4 Violation of justice							
Q13.5 Affects Image /Brand honesty and integrity							
Q13.6 Violation of Western "utilitarianism"							
Q13.7 Affects "Guanxi"							
Q13.8 Affects Western "deontology"							
Q13.9 Affects customer trust							
Q13.10 Violation of Western "teleology"							
Other influences, please specify:							

7. Very important 6. Important 5. Somewhat important 4.Neutral 3. Somewhat unimportant
2. Unimportant 1. Very unimportant

Now, please read the BBC report about the Volkswagen Incident. Imagine that it were to happen in a Chinese automotive company, and answer Q14-Q16.

What is Volkswagen accused of?

The German car giant has since admitted cheating emissions tests in the US.

VW has had a major push to sell diesel cars in the US, backed by a huge marketing campaign trumpeting its cars' low emissions. However, in September, the Environmental Protection Agency (EPA) found that many VW cars being sold in America emitted nitrogen oxide pollutants up to 40 times above what is allowed in the US. The EPA's findings cover 482,000 cars (including Jetta, Beetle, Golf, Passat and Audi A3). This is because VW had a "defeat device" - or software - in diesel engines. When the cars were operating under controlled laboratory conditions - which typically involve putting them on a stationary test rig - the device appears to have put the vehicle into a sort of safety mode in which the engine ran below normal power and performance. Once on the road, the engines switched out of this test mode.

Source: BBC News (Hutton, 2015)

Q14. According to the story, please choose from the ethical sources below, indicating which of the theories you think the incident has violated (√ more than one). (If you choose Option 6, please jump to Part IV; otherwise continue answering Q15 & Q16).

N.B. In Western ethics, virtue ethics is initiated by Socrates and followed and developed by his pupils, Plato and Aristotle, believing that goodness is a thing in itself. Kant's deontology emphasizes the centrality if the means behind any action and Mill's utilitarianism focuses on the ends, proposing the greatness happiness for the maximum number of people. Rawls emphasizes the importance of justice.

□ 1. Non-coercive Western ethics (e.g. virtue ethics, deontology, utilitarianism and justice)
□ 2. Confucianism (e.g. *ren* (benevolence), *yi* (righteousness), or *hexie* (harmony))
□ 3. Communism (e.g. ethical thinking of Chairman Mao: "serving the people heart and soul" and the current Chinese Communist Party (CCP)'s notion of "building a socialist harmonious society")
□ 4. Codes of Ethics for engineers (e.g. honesty and integrity)
□ 5. Other (please specify) _____
□ 6. None

Q15. Please provide an explanation for your choice in Q14 in relation to the Volkswagen Diesel Incident, focusing on the first four ethical elements in Q14.

Q16. To what extent do you agree that you would recommend utilising the four non-coercive ethical elements (listed in Q14) in management training to help CAI managers enhance their ethical decision making intentions and resolve similar ethical issues such as those encountered by Volkswagen? (√ only one)

7. Strongly agree 6. Agree 5. Somewhat agree 4.Neutral 3. Somewhat disagree 2. Disagree 1. Strongly disagree

7	6	5	4	3	2	1

Part IV. The practice of non-coercive ethical elements in management training in CAI.
This part deals with non-coercive ethical elements in the three macro dimensions (global, societal and industry) in terms of their pedagogic application and impact in the training you have provided. CARARC is short for the China Automotive Technology and Research Centre.

Q17. Have you provided any CAI management training which includes non-coercive ethical elements from Western ethics, such as Plato's virtue ethics, Kant's deontology, Mill's utilitarianism or Rawls' justice? (√ only one). (For more explanations, please refer to Q14).
□1. Yes □2.No (jump to Q18)

Q17.1 If YES, please indicate your level of agreement that these ethical elements have influenced CAI managers' ethical intentions in decision-making ? (√ only one)

7. Strongly agree 6. Agree 5. Somewhat agree 4.Neutral 3. Somewhat disagree2. Disagree 1. Strongly disagree

7	6	5	4	3	2	1

Q17.2 If YES, please indicate where you provided the training. (√ more than one)

□ 1. Within company □ 2. Automotive Association (e.g. CATARC)

□ 3. Party School (company level) □ 4. Party School (provincial level)

□ 5. Central Party School □ 6. University training

□ 7. Confucian Academy □ 8. Other (please specify)_____

Q18. Have you provided any CAI management training which included Confucianism? (√ only one)

□1. Yes □2. No (jump to Q19)

Q18.1 If YES, please indicate your level of agreement that the training has influenced CAI mangers' ethical intentions in decision-making . (√ only one)

7. Strongly agree 6. Agree 5. Somewhat agree 4.Neutral 3. Somewhat disagree 2. Disagree 1. Strongly disagree

7	6	5	4	3	2	1

Q18.2 If YES, please answer where you provided this kind of training. (√ more than one)

□ 1. Within company □ 2. Automotive Association (e.g. CATARC)

□ 3. Party School (company level) □ 4. Party School (provincial level)

□ 5. Central Party School □ 6. University training

□ 7. Confucian Academy □ 8. Other (please specify)_____

Q19. Have you provided any CAI management training which included Communist ethics? (√ only one)

□1. Yes □2.No (jump to Q20)

Q19.1 If YES, please indicate your level of agreement that the training has influenced mangers' ethical intentions in decision-making . (√ only one)

7. Strongly agree 6. Agree 5. Somewhat agree 4.Neutral 3. Somewhat disagree 2. Disagree 1. Strongly disagree

7	6	5	4	3	2	1

Q19.2 If YES, please indicate where you provided this kind of training. (√ more than one)

□ 1. Within company □ 2. Automotive Association (e.g. CATARC)

□ 3. Party School (company level) □ 4. Party School (provincial level)

□ 5. Central Party School □ 6. University training

□ 7. Confucian Academy □ 8. Other (please specify)_____

Q20. Have you provided any CAI management training which includes Codes of Ethics for engineers? (√ only one)

□1. Yes □2.No (jump to Part V)

Q20.1 If YES, please indicate your level of agreement that the training has influenced mangers' ethical intentions in decision-making . (√ only one)

7. Strongly agree 6. Agree 5. Somewhat agree 4.Neutral 3. Somewhat disagree 2. Disagree 1. Strongly disagree

7	6	5	4	3	2	1

Q20.2 If YES, please answer where you provided this kind of training. (√ more than one)

□ 1. Within company □ 2. Automotive Association (e.g. CATARC)

□ 3. Party School (company level) □ 4. Party School (provincial level)

□ 5. Central Party School □ 6. University training

□ 7. Confucian Academy □ 8. Other (please specify)_____

Part V. Utilisation of mutually compatible ethical elements in CAI management training

This part aims to determine pedagogic aspects of training practices, and to ascertain your opinion on the effectiveness of using mutually compatible ethical elements in training. As already stated, these elements come from both historic and current Chinese and Western ethical models.

Q21. What kind of CAI management training have you provided that included a discussion of the compatibility of non-coercive ethical elements in the three macro dimensions? (√ more than one. If you choose Option 9, please jump to Part VI. Otherwise continue answering Q22, Q23 & Q24.)

□ 1. Within company □ 2. Automotive Association (e.g. CATARC)

□ 3. Party School (company level) □ 4. Party School (provincial level)

□ 5. Central Party School □ 6. University training

□ 7. Confucian Academy □ 8. Other (please specify)_____

□ 9. None

Q22.Please state the key points of any discussions regarding mutual compatibility of non-coercive ethical elements.

Q23. Please indicate your level of agreement that these compatible elements influence CAI managers' ethical intentions in decision-making ? (√ only one)

7. Strongly agree 6. Agree 5. Somewhat agree 4.Neutral 3. Somewhat disagree 2. Disagree 1. Strongly disagree

7	6	5	4	3	2	1

Q24. Please indicate your level of agreement that you would recommend embedding these mutually compatible elements in CAI management training in in order to enhance managers' ethical intentions in decision-making? (√ only one)

7. Strongly agree 6. Agree 5. Somewhat agree 4.Neutral 3. Somewhat disagree 2. Disagree 1. Strongly disagree

7	6	5	4	3	2	1

Part VI. Suggestions for Chinese automotive companies and their training providers

This part offers opportunity for you to freely express opinions on management training.

Q25. Please provide suggestions for CAI training program providers and CAI companies how managers' ethical intentions in decision-making may be enhanced through the introduction of non-coercive ethical elements in the three dimensions (global, societal and industry)?

Thank you very much for taking time to complete this questionnaire. Now please forward to Libin Xiao email at xiao.121264@student.uwtsd.ac.uk or hand in in person.

Appendix 5.2 (Chinese version)

Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

中国汽车行业管理层问卷表
英国威尔士三一圣大卫大学博士学位
致参与问卷的培训者

我叫肖礼彬，在英国威尔士三一圣大卫大学攻读博士学位。

在此真诚地邀请您参与本人博士项目调研。该项目旨在于辩证评价中国汽车行业管理培训中影响经理伦理决策动机的关键伦理要素及其兼容性。本次调研的结果会给汽车行业及其他培训组织提供实际地指导，以有效提高该行业管理层伦理决策动机。

随该说明的是本人所设计的问卷，用于收集相关数据。内容包括本人论文界定的三个宏观维度中（国际、中国社会和汽车行业）非强制性伦理要素（如西方规范伦理、儒家思想、共产主义思想及汽车行业伦理准则）和他们之间的兼容性在企业内部和外部管理培训的状况，及这些要素对于中国汽车行业管理层伦理决策动机的影响。我相信您的意见对我非常重要。

通过您在本次问卷中的参与，我希望能确切获得以上信息或数据。本次调研给您提供了关于您对中国汽车行业管理培训提供意见的机会，所有信息会严格保密且匿名，任何时候**不会**向外界公布。

本次问卷将占用您 30 分钟完成，但没有具体时间限制。每个问题没有统一答案。随问卷调查表的是一封授权信和一份问卷填写说明。由于本人博士课题为全新领域，您的反馈非常重要。如果您能完成本问卷我将不胜感激。我深刻理解您的时间非常重要，但我更感激您对我博士项目所提供的宝贵意见。

该研究成果将建立在对该问卷所收集的数据进行详尽而精确的分析之上，根据您的需要我会很乐意给您提供一份成果报告。希望由本问卷所取得的成果会提高我对中国汽车行业伦理维度的理解，同时能识别相应的有效伦理要素和他们的兼容性对于中国汽车行业管理层伦理决策动机的影响。所有数据将会安全保存在我的个人移动硬盘。研究结果将会反馈给我所在大学的研究办公室且会严格保密。

您可以决定拒绝参与本次调研。你可以在任何时候终止本次调研。如果您决定匿名，我将会在第一时间考虑您的要求，会采取所有的措施避免您的身份暴露，且对于您在问卷中的反馈不会有任何识别信息。没有您的事先授权没有人会看到该问卷的结果。所有来自问卷的材料都会严格保密。在此，我提前对您的参与及宝贵时间表示感谢。如有任何疑问请随时在您方便的时间与我联系。
邮箱：xiao.121264@student.uwtsd.ac.uk

问卷	
题目： 辩证评价中国汽车行业管理培训中影响经理伦理决策动机的关键伦理要素	

说明：

亲爱的汽车行业培训专家您好：

非常感谢您能协助提供关于中国汽车行业管理培训中的非强制性伦理因素及各因素之间的兼容性的信息。
以下提供几个本论文中关键概念的解释以助于您完成本问卷：

管理的伦理决策概念指的是任何管理中采取的具体或抽象的决策或措施（长期或短期），尤其是在汽车行业整个产品生命周期可能影响环境或车辆使用者安全的因素。

本论文中的伦理要素主要包括国际、社会及本行业三个伦理维度。在这些维度中本论文主要侧重了解非强制伦理要素。这些要素是单纯“内在良好的品质”，不同于法律或企业管制等通过外力实施的伦理要素，他们包括西方伦理里的规范伦理及公平原则、儒家思想、共产主义伦理思想及汽车工程行业伦理准则。他们之间的兼容性也是本次调研的重点。

本文主要按照中国人的理解设计。根据中国人的理解文中有些用词具有相通性和互换性。如，虽然儒家思想和新儒家具有不完全相同的特征，但大多数中国人已经习惯将这两者同时称呼为儒家思想或儒学。再如共产主义、社会主义、马克思列宁主义在理论上具有一定的差异，但本文的重点不在于对其差异性做精确分析，故在本文中这些概念也具有互换性。总之，为了方便理解这些概念会在本文中有多种表达。

本问卷仅用于博士调研。该问卷侧重于识别在中国汽车行业管理培训中在三个宏观维度方面一些有效的非强制性的伦理要素及他们在的融合性，同时会评估他们在管理培训中的运用及对于中国汽车行业管理层伦理决策动机的影响。所有信息会匿名且严格保密。

问卷共分六个部分：

中国汽车行业管理培训问卷调查表(培训者填写)

该博士论文题为“辩证评价中国汽车行业管理培训中影响伦理决策动机的关键伦理要素”。本论文旨在于了解中国汽车行业管理培训中涉及的三个宏观维度中（国际、中国社会及汽车行业）有效的非强制性伦理要素，同时评估他们对于管理层伦理决策动机的影响。本研究成果也会对汽车公司和相应的培训机构或部门提供建议，以便他们改善培训内容和提高培训效果。问卷调研分为六部分，所有调研信息会匿名且将严格保密。
博士学生：肖礼彬

感谢您完成本问卷。请您按要求在所选项相应的方框里打√或用文字说明。

第一部分 个人信息
本部分主要了解参与者的个人背景信息。
Q1. 您的性别。（仅选一项，并在该选项前的方框内打√）
□1. 男　　□2. 女

Q2. 您目前的年龄。（仅选一项，并在该选项前的方框内打√）

□1. 25-30 □ 2. 31-35 □ 3. 36-40 □ 4. 41-45
□ 5. 46-55 □ 6. 56-60 □ 7. 61 及以上

Q 3.您的国籍。（仅选一项，并在该选项前的方框内打√）
□1. 中国 □2.中国(台湾) □3.美国 □4.德国
□5. 日本 □6.法国 □7.其他的国籍 (请说明)_____

Q4. 你目前所在的培训部门（公司，大学，行业协会，党校或孔子研究院等）
(仅选一项，并在该选项前的方框内打√)
□1.上汽通用五菱汽车股份有限公司 □2. 柳州五菱汽车工业有限公司
□3. 东风柳州汽车有限公司 □4. 东风专用汽车有限公司
□5. 广州广汽优利得汽车内饰系统研发有限公司
□6. 武汉理工大学汽车学院 □7. 广汽研究院
□8. 东风神龙汽车有限公司武汉一厂 □9. 东风神龙汽车有限公司武汉二厂
□10. 中国第一汽车股份有限公司 □11. 党校 (市级)
□12. 党校 (省级) □13. 中央党校
□14. 公司党校 □15.孔子研究院
□16. 汽车协会 □17. 其他(请说明)_____

Q5. 您所在的部门 (仅选一项，并在该选项前的方框内打√)
□ 1. 行政办 □ 2. 教学 □ 3.研究 □ 4. 人力资源
□ 5.培训部 □6.其他 (请说明) _____

Q6. 您所在管理层的级别。（仅选一项，并在该选项前的方框内打√）
□1. 基层 □2. 中层 □3. 上层

Q7. 您目前所获得的最高教育背景。（仅选一项，并在该选项前的方框内打√）
□1. 高中 □ 2.大专、高职 □3. 本科 □4. 硕士
□5. 博士 □6. 博士后 □6.其他文凭(请说明)_____

Part II 培训者对非强制性伦理因素的认识

该部分旨在于了解在中国汽车行业管理培训中相应的培训者对所涉及的三个宏观维度中（国际、中国社会及汽车行业）非强制伦理因素的认知情况。"非强制"伦理因素的意义可以简单解释为"内在良好品质"，这些是与政府及法律这些外力不同的因素。

Q8. 请您说明对以下传统伦理文化或非强制性伦理要素的了解程度。
（仅选一项，并对相应的选项打√）

7.非常了解 6.了解 5.有些了解 4.不确定/不清楚 3.有些不了解 2. 不了解 1.非常不了解

具体内容	7	6	5	4	3	2	1
Q8.1 西方规范伦理（如柏拉图和亚里士多的美德伦理，康德的道义论，米尔的结果论及 Rawl 的公平原则）							
Q8.2 儒家思想 （如"仁"和"义"）							
Q8.3 共产主义的伦理观（如毛泽东思想"全心全意为人民服务"和当今"建设社会主义和谐社会"）							
Q8.4 工程行业的伦理准则 (如诚实、严谨和正直)							
其他，请说明							

如果您有 3 项或全部选择了**选项 1**，那么请您直接回答 Q10 & Q11。如果没有请您继续回答 Q9。

Q9.请您说明以下伦理要素的可兼容性程度。（仅选一项，并对相应的选项打√）
7. 非常兼容　6 兼容　5.有些兼容　4.不清楚/不确定　3. 有些不兼容　2.不兼容　1.非常不兼容

具体内容	7	6	5	4	3	2	1
请说明以上 Q11 中传统伦理文化或非强制性伦理要素之间的可兼容性程度							

Q10. 请您说明以下非强制性伦理要素在中国汽车行业的重要性程度。
（仅选一项，并对相应的选项打√）
7. 非常重要 6. 重要 5.有些重要 **4**. 不清楚/不确定 **3**.有些不重要 **2**.不重要 **1**. 非常不重要

具体内容	7	6	5	4	3	2	1
Q10.1 西方规范伦理（如柏拉图和亚里士多的美德伦理康德的道义论，米尔的结果论及 Rawl 的公平原则）							
Q10.2 儒家思想（如“仁”和“义”）							
Q10.3 共产主义的伦理观（如毛泽东思想“全心全意为人民服务”和当今“建设社会主义和谐社会”）							
Q10.4 工程行业的伦理准则 （如诚实、严谨和正直）							
其他，请说明							

Q11. 请您说明以下非强制性伦理要素对于中国汽车行业管理者伦理决策动机的重要性程度。
（仅选一项，并对相应的选项打√）
7. 非常重要 6. 重要 5.有些重要 **4**. 不清楚/不确定 **3**.有些不重要 **2**.不重要 **1**. 非常不重要

具体内容	7	6	5	4	3	2	1
Q11.1 西方规范伦理（如柏拉图和亚里士多的美德论康德的道义论，米尔的结果论及 Rawl 的公平原则）							
Q11.2 儒家思想 (如“仁”和“义”)							
Q11.3 共产主义的伦理观 (如毛泽东思想“全心全意为人民服务”和当今“建设社会主义和谐社会”）							
Q11.4 工程行业的伦理准则 (如诚实、严谨和正直)							
其他，请说明							

Part III.伦理要素情景判断

本部分引用德国大众事件作为情景，以深层了解中国汽车行业相关的管理培训举办者对于非强制性伦理要素在实践中的应用。本故事由两个部分组成。

首先，请您观察图一，他们均来自英国广播公司 BBC。然后请您回答 Q12。

图一

*来源：*BBC 新闻(Hutton, 2015)

Q12. 由以上图一您可以感知到该事件涉及到哪种或哪几种方面的伦理问题?

现在请您看图二，然后回答 Q13

图二

来源： BBC 新闻(Hutton, 2015)

Q13. 请您观察图二中的德国大众标志，然后说明对于其管理层可能产生影响的重要性程度（每个方面仅选一项，并对相应的选项打√）

7. 非常重要 6. 重要 5.有些重要 4. 不清楚/不确定 3.有些不重要 2.不重要 1. 非常不重要

具体内容	7	6	5	4	3	2	1
Q13.1 企业利润损失							
Q13.2 违反“和谐”							
Q13.3 法律诉讼							
Q13.4 违反商业活动的公正性							
Q13.5 影响工程行业产品品牌的严谨、正直性							
Q13.6 违反西方“功利论”原则							
Q13. 7 影响“关系”							
Q13.8 违反“道义论” 伦理原则							
Q13.9 影响消费者的信任度							
Q13.10 违反“结果论”伦理原则							
请他影响，请说明。							

然后，请您阅读以下来自英国广播公司 BBC 对于德国大众事件的报道, 且假想如果类似事件发生在中国汽车行业，请您回答 Q14 & Q15.

为什么大众公司被指控？

德国大众汽车承认在美国排放测试中作弊。

在大型的营销活动中大众宣传自己的柴油汽车排放低而得到美国消费者认可，因此其在美国的销售有了很大的增长。但是美国环保局 EPA 通过对在美国使用的 482000 辆大众柴油车（捷达、甲壳虫、高尔夫、帕萨特、奥迪 A3）进行调查，发现发动机排放的氮氧化合物排放超出美国允许的 40 倍以上。这是因为大众在相关汽车上安装了一个设备，该设备放在一个固定的试验台上，在受控实验室条件下运行便进入一种测试模式，使发动机在正常的功率和性能下运行。一旦上路，发动机就切换出了这个测试模式。

来源: BBC 新闻 (2015)

Q14.您认为该事件违反了以下哪种或哪几种伦理理论？（可以选多项，并在这些选项前的方框内打√）（如果选择第 6 项，那么请您直接跳到 Part IV, 如果选择其他选项请您继续回答问题 Q15 & Q16）

说明：在西方伦理中，美德伦理由苏格拉底提出，并且得到他的门徒柏拉图和亚里士多德的继承与进一步发展，这种思想相信内在的美德。康德的道义论强调行为过程的道义，而米尔的功利主义则强调行为的结果为了大多数人的道义。Rawl 则强调公平原则。

□1. 西方伦理中的非强制伦理要素 (如道德论、 结果论、 公平论等)
□2. 儒家思想 (如“仁”、“义”、“和谐”)
□3. 共产主义的伦理观 (如毛泽东思想“全心全意为人民服务”和当今“建设社会主义和谐社会”)
□4. 工程行业伦理准则
□5. 其他思想 (请列出)_____
□6. 以上都不是

Q15. 请您对 Q14 题中您的选项给出理由。（如有多个选择请逐一说明，请结合 Q14 中选项 1-4 中的 4 种主要伦理理论及大众事件谈）。

_____
_____
_____

Q16. 请您说明在多大程度上您认同会推荐应用以上 Q14 题中所列出的 4 种非强制性伦理因素在管理培训中，协助提高管理层在中国汽车行业伦理决策中类似的非伦理动机，以解决类似以上德国大众事件中的伦理问题，。
7.非常认同 6.认同 5.有些认同 4.不确定/不清楚 3.有些不认同 2.不认同 1.非常不认同

7	6	5	4	3	2	1

Part IV.中国汽车行业管理培训中培训者对非强制性伦理要素的实践应用与反馈
该部分讨论在三个宏观维度（国际、中国社会及汽车行业）中非强制性伦理要素及不同的培训者在中国汽车行业管理层培训中的应用与反馈。

Q17.作为培训者，在您所参与举行过的培训中是否涉及到西方的规范伦理，如柏拉图的美德论、康德的道义论、Mill 的结果论或 Rawl 的公平原则等？（可参看 Q14 中的解释）
（二者选一，并在该选项前的方框内打√）
□1.涉及到 □2.不涉及到

如果涉及到,请继续回答 Q17.1 & Q17.2.如果没有涉及到请直接回答 Q18。

Q17.1 请说明在多大程度上您认同这些要素影响了中国汽车行业管理者的伦理决策动机。
7.非常认同 6.认同 5.有些认同 4.不确定/不清楚 3.有些不认同 2.不认同 1.非常不认同

7	6	5	4	3	2	1

Q17.2 请说明您在什么地方参与举行过该培训。（可以选多项，并在这些选项前的方框内打√）
□1. 本公司 □2. 行业协会
□ 3.本公司内部党校 □ 4.省委党校
□ 5.中央党校 □6.大学培训
□ 7. 孔子研究院 □8.其他地方（请说明）_____

Q18. 作为培训者，在您所参与举行过的培训中是否涉及到儒家伦理思想？
（仅选一项，并在该选项前的方框内打√）
□1.涉及到 □2.不涉及到

如果涉及到,请继续回答 Q18.1 & Q18.2。 如果没有涉及到请直接回答 Q19。

Q18.1 请说明在多大程度上您认同这些要素影响了中国汽车行业管理者的伦理决策动机。
7.非常认同 6.认同 5.有些认同 4.不确定/不清楚 3.有些不认同 2.不认同 1.非常不认同

7	6	5	4	3	2	1

Q18.2 请说明您在什么地方参与举行过该培训。（可以选多项，并在这些选项前的方框内打√）
□1. 本公司 □2. 行业协会 □ 3.本公司内部党校
□ 4.省委党校 □ 5.中央党校 □6. 大学培训
□ 7.孔子研究院 □8.其他地方（请说明）_____

Q19. 作为培训者，在您所参与举行的培训中是否涉及到共产主义思想？（仅选一项，并在该选项前的方框内打√)
□1.涉及到 □2.不涉及到

如果涉及到,请继续回答 Q19.1 & Q19.2。如果没有涉及到请直接回答 Q20。

Q19.1 请说明在多大程度上您认同这些要素影响了中国汽车行业的管理者的伦理决策动机。
7.非常认同 6.认同 5.有些认同 4.不确定/不清楚 3.有些不认同 2.不认同 1.非常不认同

7	6	5	4	3	2	1

Q19.2 请说明您在什么地方参与举行过该培训。(可以选多项，并在这些选项前的方框内打√)
□1. 本公司 □2. 行业协会 □ 3.本公司内部党校
□ 4.省委党校 □ 5.中央党校 □6. 大学培训
□ 7. 孔子研究院 □8.其他地方（请说明）_____

Q20. 作为培训者，在您所参与举行的培训中中是否涉及到工程伦理准则？
（仅选一项，并在该选项前的方框内打√）
□1.涉及到 □2.不涉及到

如果涉及到,请您继续回答 Q20.1 & Q20.2。如果没有涉及到请直接回答 Part V。
Q20.1 请说明在多大程度上您认同这些要素影响了中国汽车行业管理者的伦理决策动机。
7.非常认同 6.认同 5.有些认同 4.不确定/不清楚 3.有些不认同 2.不认同 1.非常不认同

7	6	5	4	3	2	1

Q20.2 请说明您在什么地方参与举行过该培训。(可以选多项，并在这些选项前的方框内打√)
□1. 本公司 □2. 行业协会 □ 3.本公司内部党校
□ 4.省委党校 □ 5.中央党校 □6. 大学培训
□ 7. 孔子研究院 □8.其他地方（请说明）_____

Part V. 中国汽车行业管理培训中培训者对非强制性伦理要素的可兼容性的应用与反馈
本部分旨在于了解在中国汽车行业管理培训实践中，培训者对于来自古今中外的非强制性伦理要素及其可兼容性是否有效的意见与反馈。

Q21. 在您所参与举行过的哪种或哪些种类培训中涉及到本论文所界定的三种宏观伦理维度中的非强制性伦理要素的可兼容性? （可以选多项，并在这些选项前的方框内打√）
（如果选第 9 项, 请跳至 Part VI。 如果选择其他选项请您按顺序完成 Q22、Q23 & Q24）
□1. 本公司 □2. 行业协会 □ 3.本公司内部党校
□ 4.省委党校 □ 5.中央党校 □6. 大学培训
□ 7. 孔子研究院 □8. 其他地方（请说明）_____
□9. 都没有涉及

Q22.请说明您如何讨论这些非强制性伦理要素的兼容性的。

Q23. 请说明在多大程度上您认同这些非强制性伦理要素的可兼容性质会影响中国汽车行业管理管理层的伦理决策动机。

7.非常认同 6.认同 5.有些认同 4.不确定/不清楚 3.有些不认同 2.不认同 1.非常不认同

7	6	5	4	3	2	1

Q24. 请说明在多大程度上您认同会推荐在中国汽车行业管理培训中纳入这些可兼容性的非强制性伦理要素以提高管理者的伦理决策动机。

7.非常认同 6.认同 5.有些认同 4.不确定/不清楚 3.有些不认同 2.不认同 1.非常不认同

7	6	5	4	3	2	1

Part VI. 对中国汽车公司及相关的培训组织的建议

本部分给您提供机会自由表达关于在中国汽车行业管理层培训中伦理动机提高的建议。

Q25. 您愿意对培训组织者及汽车公司提出相应的管理培训的建议吗，主要关于在中国汽车行业三个伦理维度（国际、中国社会和行业）中可兼容性的非强制性伦理要素在培训中对于管理层伦理决策动机的提高?

非常感谢占用您宝贵时间完成本问卷；现在请您将完成的问卷发送至学生邮箱 xiao.121264@student.uwtsd.ac.uk （如不能现场回收问卷）

德国大众事件新闻来源：

BBC NEWS. 2015. *Volkswagen: The scandal explained* [Online]. Available: http://www.bbc.co.uk/news/business-34324772 [Accessed 4th June 2016].

Appendix 5.3 Major types of question design and applicability to this research

Questions	Features	Advantages	Disadvantages	Application in this thesis
Open-ended question	Respondents can reply however they wish.	Answer in own terms, allow unusual responses/ variability, no hint, exploring new areas.	Greater efforts in "coded" answers for analysis, difficulty in recording.	Yes
Closed-ended question	Presented with a series of alternatives to choose one appropriate answer.	Easy to answer and analyse, enhance the comparability of answers, clarify the meaning of a question.	Difficult to make a forced-choice answer exhaustive, irritating to respondents.	Yes
Vignette questions	Closed-ended questions, examining normative standards; presenting scenarios and asking their response to the circumstance.	Anchor choice in a situation and reduce the possibility of an unreflective reply.	Sensitive area may be seen threatening, Feeling being judged by replies, questions must be believable.	Yes
Open questions	Encourage participants to provide an extensive and developed answer.	Useful to reveal attitudes or obtain facts.	Difficult to code and analyse.	Yes
Probing question	To explore responses to the research topic	With a particular focus.	Difficult to code and analyse.	Yes
Specific/ closed questions	Used as introductory questions to commence a particular interview theme, confirm a fact.		Difficult to code and analyse.	Yes

Source: Reproduced from Bryman (2016); Saunders et al. (2016)

Chapter 6 Appendices

Appendix 6.1: Q2 Age

Q2 Age (yrs)		Frequency	%
Valid	1.25-30	25	11.7
	2.31-35	69	32.4
	3.36-40	54	25.4
	4.41-45	40	18.8
	5.46-55	25	11.7
	6.56--60 yrs	0	0
	7.61 yrs and above	0	0
	Total	213	100.0

Appendix 6.2: Q3 Nationality

Q3 Nationality		Frequency	%
Valid	1.Chinese (Mainland)	210	98.6
	2.Chinese (Taiwan)	1	.5
	3.American	1	.5
	4. German	0	0
	5. Japanese	0	0
	6. British	0	0
	7.Other (Singapore)	1	.5
	Total	213	100.0

Appendix 6.3: Q4 Participants' companies

Q4 Company sources		Frequency	%
Valid	.1.SAIC GM Wuling Automobile Company Limited	26	12.2
	2. Liuzhou Wuling Automobile Industry Co., Ltd.	37	17.4
	3. Dongfeng Liuzhou Motor Co., Ltd.	29	13.6
	4. Dongfeng Special Purpose Vehicle Co., Ltd.	6	2.8
	5. Wuhan No. 1 Manufacturing Factory, DONGFENG PEUGEOT CITROEN AUTOMOBILE COMPANY LTD.	4	1.9
	6. Wuhan No. 2 Manufacturing Factory, DONGFENG PEUGEOT CITROEN AUTOMOBILE COMPANY LTD.	2	0.9
	7. Guangzhou Automobile Group Co., Ltd Automotive Engineering Institute	12	5.6
	8. China FAW Co. Ltd	32	15.0
	9. Guangzhou GAC-ULLITEC Auto Interiors R&D Co., Ltd.	15	7.0
	10. Others	50	23.5
	10.1.Guangzhou Quansheng Auto Parts Co., Ltd.	4	1.8
	10.2.Guangzhou Johnson Auto Interior System Co., Ltd.	9	4.2
	10.3.Guangzhou Bridgestone Chemical Products Co., Ltd.	5	2.3
	10.4.Guangzhou Automobile Group Component Co., Ltd.	2	0.9
	10.5.Guangzhou HUADE Automobile Spring Co., Ltd.	19	9.3
	10.6.Guangzhou Xing Bridge Polymer Materials Science and Technology Co., Ltd.	7	3.3
	10.7.Dongfeng Motor Group Co. Ltd.	2	0.9
	10.8.Dongfeng (Shiyan) Engine Parts Co. Ltd.	2	0.9
	10.9.Dongfeng Zhengmeng (Shiyan) Special Purpose Vehicle Co., Ltd.	1	0.4
	Total	213	100.0
	Missing or non-respondent	0	0

Appendix 6.4: Q5 The ownership structure of participants' company

Q5 Ownership		Frequency	%
Valid	1.State-owned	109	51.2
	2.Private	4	1.9
	3.Joint-venture	98	46.0
	4.Other (Unspecified)	1	.5
	Total	212	99.5
Missing	System	1	.5
Total		213	100.0

Appendix 6.5: Q6 The cooperative company's nationality/nationalities

Q6 Nationality		Frequency	%
	1.Chinese (Taiwan)	23	10.8
	2.The USA	36	16.9
	3.German	28	13.1
	4.Japanese	11	5.2
	5.French	6	2.8
	6.Other	38	17.8
	1.Canadian	7	3.3
	2. Hongkongnese	31	14.5
	Total	142	66.7
Missing	System	71	33.3
Total		213	100.0

Appendix 6.6: Q7 Participants' positions in the company

Q7 Position		Frequency	%
Valid	1.President	0	0
	2. Vice President	0	0
	3.Executive General Manager	2	.9
	4.Deputy General Manager	5	2.3
	5.Factory Manager	10	4.7
	6.Deputy Factory Manager	6	2.8
	7.Administrative Director	14	6.6
	8.Vice Administrative Director	1	.5
	9.Research Center Director	3	1.4
	10.Research Center Deputy Director	5	2.3
	11. Other	166	77.9
	Management (Categorised based on 10 positions)	104	49
	Chief Inspector	20	9.4
	Technique Management (Categorised based on 3 positions)	15	7.9
	Unstated	27	11.6
	Total	212	99.5

Non-respondent	System	1	.5
Total		213	100.0

Appendix 6.7: Q8 Participants' work department

Q8 Department		Frequency	%
Valid	9.Manufacturing (all processes)	40	18.8
	14.Auto Research Institute/Center	35	16.4
	13.Company Research Centre	32	15.0
	4.HR Management	16	7.5
	12.New Technology Development	14	6.6
	5.Finance/Auditing	11	5.2
	6.Marketing	9	4.2
	1.Senior Management	7	3.3
	10.Supply Chain or Logistics	7	3.3
	3.Strategic Development	4	1.9
	2.Administrative/Factory Management	3	1.4
	8.Security	3	1.4
	7.CSR/Ethics Office	0	0
	11.New Energy Development	0	0
	15.Other	28	13.1
	Quality Department	7	3.3
	Party Management/ Product Development	6	2.8(each 1.4)
	Equipment Management	4	1.9
	11 departments (Procurement, Security, Material, Production and Technique, Project, Product Project, Production, Storage, Commodity Planning and Operation, Operation Management and IT Department)	11	5.5 (each 0.5)
	Total	209	98.1
Non-respondent	System	4	1.9
Total		213	100.0

Appendix 6.8: Q9 Participants' level in management

Q9 Level		Frequency	%
	Lower	43	20.2
	Medium	160	75.1
	Senior	10	4.7
	Total	213	100.0

Appendix 6.9: Q10: Participants' current highest level of educational attainment

Q10 Education		Frequency	Percent	Valid Percent
	1.Senior High School	1	.5	.5
	2.Technical Institute	28	13.1	13.1
	3.Bachelor degree	115	54.0	54.0
	4.Master degree	67	31.5	31.5
	5.Doctorate /PhD	2	.9	.9
	6.Post-Doctoral	0	0	0
	7. Other	0	0	0
	Total	213	100.0	100.0

Appendix 6.10: Q12: Mutual compatibility awareness of four ethical elements

Q12 Compatibility awareness			
		Frequency	%
Valid	1.Very incompatible	0	0
	2.Incompatible	0	0
	3.Somewhat incompatible	13	6.1
	4.Neutral	55	25.8
	5.Somewhat compatible	77	36.2
	6.Compatible	56	26.3
	7.Very compatible	4	1.9
	Total	205	96.2
Non-respondent	System	8	3.8
Total		213	100.0

Appendix 6.11: Q15 Category divisions for perceived ethical issues in Image I

Q15 category divisions for perceived ethical issues from Image I		
6 macro categories from axial coding	9 micro categories from open coding	
A. WNE	1. Violating WNE, such as virtue ethics, deontology, and utilitarianism.	
B. Confucianism	2. Violating Confucianism, such as harmonious society, benevolence '*Ren*'.	
C. Communism	3. Violating communism, such as 'harmonious society' or 'serving people heart and soul'.	
D. EPE	4. Violating codes of ethics or ethical principles for engineers such as in engineering integrity.	
E. An integration of four ethical constructs (A, B, C, and D)	5.Violating justice	6. Violating CSR
	7. Cost-benefit utility driven	8.Impacting environment
F. Unclear reasons	9. Need further exploration	

Appendix 6.12: Qualitative information in 'Other' option in Q20.2, Q21.2, Q22.2, Q23.2

Q20.2, Q21.2, Q22.2, Q23.2					
Further information in 'Other' option	Frequency/ Percent				Information validity
Qs	Q20.2	Q21.2	Q22.2	Q23.2	Yes/No
The parent company training from Japan	2/2.9 %			1/0.7 %	Yes, fitting joint venture feature
Party school at the city level		2/1.4 %	2/1.4 %		Yes, a level of the party school
Jingangshan Cadre's Training School			1/0.7 %		Yes, training centre for ideology.
Outside company training centre/ Professional training organisation	5/7%	4/2.8 %		3/2.1 %	No, repetition of the list options.
Within company training		2/1.4 %		2/1.4 %	The same as above.
Book, self-study	1/1.4 %	1/0.7 %		2/1.4 %	No, irrelevant.
Web	1/1.4 %	2/1.4 %	2/1.4 %	1/0.7 %	The same as above.
Absent	1/1.4 %	5/3.5 %	2/1.4 %	3/2.1 %	No.
Total	10/14 %	16/11. 5%	7/4.8 %	12/8.8 %	

Appendix 6.13: Further information in the 'Other' option in Q24

Q24 Frequency	Percent	Further information in 'Other Option'	Information validity
2	0.9	External training organisations	No, repetition of the listed options.
2	0.9	Internal company training	The same as above.
1	0.5	Group company	Yes, fitting the Chinese automotive industry
1	0.5	The local party school	Yes, fitting the ideological training system in the CAI.
3	1.4	Web, book	No, irrelevant.
1	0.5	Absent	No.
Total 10	4.7 %		

Appendix 6.14: Q25 Explanation to choice in Q24 (open coding categories)

Q25		98 valid (according to Q24)		
6 macro categories due to axial coding	25 micro categories	Properties	Frequency	Valid Percent
A. No idea	1.	No idea of compatibility	5	5.1
B. Not compatible	2.1	Hard to be compatible	1	1.0
	2.2.	Confucianism and Communism are not compatible	1	1.0
C. Some ethical elements are compatible	3.1.	Morality, honesty, justice, integrity and harmony are mutually compatible.	4	4.1
	3.2.	Integrity, justice and sustainability are compatible.	1	1.0
	3.3.	Engineering principles/codes of ethics, Confucianism and communist ethics are compatible regarding integrity and honesty.	4	4.1
	3.4.	Western Normative Ethics, Confucianism and engineering principles/codes of ethics are compatible.	3	3.1
	3.5.	The Western morality such as deontology, Confucian benevolence and communist harmony are compatible.	2	2.0
	3.6.	Some ethical elements in Confucianism and communist ethics are compatible regarding social harmony and serving the people.	2	2.0
	3.7.	Ethics, honesty and integrity are closely related to Confucian ethics.	5	5.1
	3.8.	The ethical elements of "justice" and "integrity" are compatible.	1	1.0
	3.9.	CSR, management codes of ethics and laws and regulations are compatible with each other.	5	5.1
D. Some ethical elements in auto companies are compatible	4.1.	JVs social environment and company regulations are impacted by and compatible with Chinese social environment.	1	1.0
	4.2.	In automotive industry management, all moral values such as deontology, justice, or Confucian harmony can be reflected as humanistic spirit, they all have the same goal to serve consumers.	4	4.1
	4.3.	Company culture, professional codes of conducts, codes of ethics and professional duties are compatible.	4	4.1
	4.4.	All companies stress morality	2	2.0
E. All ethical elements are mutually compatible	5.1.	The four ethics are based on justice, integrity and CSR.	2	2.0
	5.2.	The utmost purpose of all the ethical elements is the same in nature, such as in kindness, humanistic spirit, and harmony with nature.	15	15.3
	5.3.	All no-coercive elements are compatible in nature; they are compatible with morality such as benevolence.	6	6.1

	5.4.	The four elements are mutually compatible with the basis of Marxism. Communist ethics is based on Marxism; Confucius Ethics is similar to Marxism and engineering principles/codes of ethics and Western ethics also compatible with Marxism.	1	1.0
	5.5.	The four elements are mutually compatible. WNE stresses intrinsic goodness, which is compatible with benevolence in Confucius ethics; WNE is also compatible with communist harmonious society concept and ethics of justice and integrity in engineering.	4	4.1
	5.6	Fairness, justice and integrity are the ethical basis for any country, which is also consistent with the concepts of self-cultivation, family harmony, country management and world peace in traditional Confucian ethics.	3	3.1
F. Ethical dimensions are compatible	6.1.	Dimensions from profession, society and global domains are overlapped with each other, professional elements may also contain societal elements, and societal elements may include international elements.	1	1.0
	6.2.	Concepts of morality, CSR and legal regulations are consistent and compatible with individuals, companies and organisations dimensions.	1	1.0
	6.3.	The value concepts from different dimensions such as virtues, harmony, integrity and honesty are compatible with nature.	3	3.1
	Total valid		81	83
	Non-respondent		17	17
Total			98	100

Appendix 6.15: Data of Q25 (Macro axial coding categories)

Q25	98 valid (According to Q24)		
6 macro categories	25 micro categories	Frequency	%
A. No idea of compatibility.	1.	5	5.1
B. Not compatible.	2.1, 2.2.	2	2.0
C. Some ethical elements are compatible.	3.1, 3.2, 3.3, 3.4 , 3.5 , 3.6, 3.7, 3.8, 3.9.	27	28
D. Some ethical elements in auto companies are compatible.	4.1, 4.2, 4.3, 4.4.	11	11
E. All ethical elements are mutually compatible.	5.1,5.2,5.3,5.4,5.5,5.6	31	32
F. Ethical dimensions are compatible.	6.1,6.2,6.3	5	5.1
	Total valid	81	83
	Non-respondent	17	17
Total		98	100

Appendix 6.16: Q28 Suggestions for the future training (Micro Categories from open coding)

Q28 Suggestions for future training on EI in the CAI (Micro categories)			
7 macro categories	28 micro categories	Frequency	%
A. Not suggested	1.1 The effect to cultivate this competence is hard to achieve.	8	3.8
	1.2 The effect cannot be achieved by training.	1	0.5
B. Have no idea	2. Have no idea.	13	6.1
C. Pay attention to different dimensions of ethical elements in training	3.1 Embed training with three dimensions (global, Chinese societal and industry).	13	6.1
	3.2 Embed international ethical norms and enhance CAI global competitiveness.	4	1.9
D. Strengthen some ethical elements in training	4.1 Popularise the knowledge of non-coercive ethics.	12	5.6
	4.2 Carry out Chinese traditional cultural discussion.	5	2.3
	4.3 Strengthen Engineering Codes of Ethics	4	1.9
	4.4 Strengthen training of CSR	1	0.5
	4.5 Increase and reinforce integrity, laws and regulations.	3	1.41
E. Stress element compatibility in training	5.1Training contents should fit Chinese characteristics and ethical levels.	1	0.5
	5.2 Stress the Chinese and Western culture.	3	1.41
	5.3 Stress Confucian ethics and Engineering Codes of Ethics.	2	0.9
	5.4 Stress Confucianism and Communism.	1	0.5
	5.5 Stress organisational culture, offering a more ethical environment and achieve more benefits.	2	0.9
	5.6 Combine organisational situation	1	0.5
	5.7 Stress Confucianism, Communism and international norms of Engineering Codes of Ethics, suitable for CAI development.	2	0.9
	5.8 Stress Communist ethics and engineering ethics, close to Chinese culture and industry feature.	1	0.5
F. Offer suggestions on training approaches and effects improvement	6.1 Tailor training content and fit attendee's levels and posts for personal long-term cultivation in the automotive companies.	2	0.9
	6.2 Target more on the senior management.	6	2.8

	6.3 Use some typical ethical cases in automotive industry in China.	2	0.9
	6.4 More ethical training to guide practical behaviour.	1	0.5
	6.5 A way to elevate professional quality.	3	1.41
	6.6 Before training, it is suggested to diagnose ethical levels of attendees and carry out ethical training gradually from lower to higher.	1	0.5
	6.7 After training, it is suggested to carry out appraisal or evaluation for training effect.	1	0.5
	6.8 Ethics should be embedded into engineer qualification assessment.	1	0.5
	6.9 Stress ethics and culture contents that are unique in the automotive industry, to offer some instructive opinions for managerial EI.	1	0.5
G. Agree	7 . With no further information	51	23.9
	Total valid	149	70
	Non-respondent	64	30
Total		213	100

Appendix 6.17: Q28 Suggestions for future training (Macro categories from axial coding)

Q28 Suggestions for the future training (Macro categories form axial coding)			
7 macro categories	28 micro categories	Frequency	%
A & B	1.1, 1.2, 2	22	10.4
C. Pay attention to different dimensions of ethical elements in training.	3.1, 3.2	17	8
D. Strengthen some non-coercive ethical elements in training.	4.1, 4.2,4.3,4.4, 4.5	25	11.7
E. Stress element compatibility discussion in training.	5.1,5.2,5.3,5.4,5.5,5.6 5.7,5.8	13	6.1
F. Offer suggestions on training approaches and effects improvement.	6.1,6.2,6.3,6.4 ,6.5,6.6, 6.7,6.8,6.9	18	8.5
G. Agree	7 . But with no comments	51	23.9
	Total valid	149	70
	Non-respondent	64	30
Total		213	100

Appendix 6.18: Chi-Square Tests (Q9 management level*Q14 awareness)

Chi-Square Tests (Q9*Q14.1)

Level * Importance of Western normative ethics in EDMI

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	11.974[a]	12	.448
Likelihood Ratio	13.453	12	.337
Linear-by-Linear Association	.790	1	.374
N of Valid Cases	195		

a. 13 cells (61.9%) have expected count less than 5. The minimum expected count is .05.

Chi-Square Tests (Q9*Q14.2)

Level * Importance of Confucianism in EDMI in CAI

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	8.301[a]	12	.761
Likelihood Ratio	12.530	12	.404
Linear-by-Linear Association	1.014	1	.314
N of Valid Cases	200		

a. 13 cells (61.9%) have expected count less than 5. The minimum expected count is .05.

Chi-Square Tests (Q9*Q14.3)

Level * Importance of Communist ethics in EDMI in CAI

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	4.376[a]	10	.929
Likelihood Ratio	5.563	10	.851
Linear-by-Linear Association	1.181	1	.277
N of Valid Cases	196		

a. 9 cells (50.0%) have expected count less than 5. The minimum expected count is .26.

Chi-Square Tests (Q9*Q14.4)

Level * Importance of Engineering ethical principles/codes in EDMI in CAI

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	9.487[a]	10	.487
Likelihood Ratio	8.644	10	.566
Linear-by-Linear Association	.231	1	.631
N of Valid Cases	202		

a. 12 cells (66.7%) have expected count less than 5. The minimum expected count is .05.

Appendix 6.19: Cross tabulation Level (Q9) * Awareness (Q14)

Crosstab Q9 & Q14.1 Level * Awareness of WNE on managers' EI									
		Count							
		Level of awareness on managers' EI of WNE							
Q9*Q14.1		1	2	3	4	5	6	7	Total
level	Lower	0	2	2	21	4	7	0	36
	Medium	2	6	6	68	37	29	1	149
	Senior	0	1	1	1	5	2	0	10
Total		2	9	9	90	46	38	1	195

Crosstab Q9 & Q14.2 Level * Awareness of Confucianism on managers' EI									
		Level of awareness on managers' EI of Confucianism							
Q9*Q14.2		1	2	3	4	5	6	7	Total
level	Lower	0	0	2	7	14	13	0	36
	Medium	1	3	5	24	52	61	8	154
	Senior	0	0	0	0	6	4	0	10
Total		1	3	7	31	72	78	8	200

Crosstab Q9 & Q14.3 Level * Awareness of Communism on managers' EI									
		Level of awareness on managers' EI of Communism							
Q9*Q14.3		1	2	3	4	5	6	7	Total
level	Lower	0	1	1	6	14	12	2	36
	Medium	0	4	6	22	45	48	25	150
	Senior	0	0	0	2	3	3	2	10
Total		0	5	7	30	62	63	29	196

Crosstab Q9 & Q14.4 Level * Awareness of EPE on managers' EI									
		Level of awareness on managers' EI of EPE							
Q9*Q14.4		1	2	3	4	5	6	7	Total
level	Lower	0	0	1	1	4	15	18	39
	Medium	0	1	1	6	21	67	57	153
	Senior	0	0	1	0	0	4	5	10
Total		0	1	3	7	25	86	80	202

1= Very unimportant, 2 =Unimportant, 3= Somewhat unimportant, 4 =Neutral, 5= Somewhat important, 6= Important, 7 =Very important

Appendix 6.20

Cross-tabulation of Q9 & Q19, Level * Ethical judgment agreeing to utilise non-coercive ethical elements for managers' EI

Cross-tabulation of Q9 & Q19, Level * Agreement in utilising non-coercive ethical elements									
		Count (204 valid, one non-respondent)							
		Level of agreement in utilising non-coercive ethical elements							
Q9*Q19		1	2	3	4	5	6	7	Total
Level	Lower	0	2	0	8	8	19	5	40
	Medium	0	0	4	16	42	71	20	153
	Senior	0	0	0	0	3	4	3	10
Total		0	0	4	24	53	94	28	203

1= Strongly disagree, 2 = Disagree, 3= Somewhat disagree, 4 = Neutral, 5= Somewhat agree, 6= Agree, 7= Strongly agree

Chapter 7 Appendices

Appendix 7.1: Q2. Age

Q2 Age (yrs)		Frequency	%
Valid	1. 25-30	26	32.1
	2.31-35	12	14.8
	3.36-40	24	29.6
	4.41-45	7	8.6
	5.46-55	11	13.6
	6.56--60 yrs	0	0
	7.61 yrs and above	1	1.2
	Total	81	100.0

Appendix 7.2: Q3. Nationality

Q3 Nationality		Frequency	%
Valid	1.Chinese (Mainland)	80	98.8
	2.Chinese (Taiwan)	1	1.2
	3.American	0	0
	4. German	0	0
	5. Japanese	0	0
	6. British	0	0
	7.Other (Singapore)	0	0
	Total	81	100.0

Appendix 7.3: Q4. Training modes

Q4 Training modes		Frequency	%
Valid	1.SAIC GM Wuling Automobile Company Limited	6	7.4
	2.Liuzhou Wuling Automobile Industry Co., Ltd.	19	23.5
	3.Dongfeng Liuzhou Motor Co., Ltd.	8	9.9
	4. Dongfeng Special Purpose Vehicle Co., Ltd.	1	1.2
	5.Guangzhou GAC-ULLITEC Auto Interiors R&D Co., Ltd.	3	3.7
	6.The Automotive Engineering Dept., WUT	5	6.2
	7. Guangzhou Automobile Group Co., Ltd Automotive Engineering Institute.	2	2.5
	8. Wuhan No. 1 Manufacturing Factory, DPCA.	5	6.2
	9. Wuhan No. 2 Manufacturing Factory, DPCA	0	0
	10.China FAW Co. Ltd	11	13.6
	11.Party school (Municipal)	3	3.7
	12. Party school (provincial)	1	1.2
	13. Central Party School	0	0
	14. Party school within company	1	1.2
	15.Confucian Academy	0	0
	16. Association	1	1.2
	17.Other	15	21.0
	17.1.Guangzhou Quansheng Auto Parts Co., Ltd.	2	2.5
	17.2.Guangzhou Johnson Auto Interior System Co., Ltd.	3	3.7
	17.3.Guangzhou Bridgestone Chemical Products Co., Ltd.	2	2.4
	17.4.Guangzhou Automobile Group Component Co., Ltd.	1	1.2
	17.5. Jiangling Motors Co., Ltd.	2	2.5
	17.6.Dongfeng Zhengmeng (Shiyan) Special Purpose Vehicle Co., Ltd.	5	6.2
	Total in Other	15	21.0
	Total	81	100.0
Missing or non-respondent		0	0

N.B. The external training accounted for 11.9% in total.

Appendix 7.4: Q5 Department

Q5 Department		Frequency	%
Valid	1.Management	5	6.2
	2.Teaching	7	8.6
	3.Research	13	16.0
	4.Human Resource (HR)	26	32.1
	5.Training	14	17.3
	6.Other	16	19.8
	6.1 Technology department	1	1.2
	6.2 Manufacturing department	4	4.9
	6.3 Product R&D and planning Dept.	5	6.2
	Without specified	6	7.4
	Total	10	12.3
	Total	81	100.0

Appendix 7.5: Q6. Management level

Q6 Management Level		Frequency	%
Valid	1.Lower	57	70.4
	2.Medium	23	28.4
	3.Senior	1	1.2
	Total	81	100.0

Appendix 7.6: Q7. Participants' current highest level of educational attainment

Q7 Highest level of education		Frequency	%
Valid	1.Senior High School	0	0
	2.Technical Institute	8	9.9
	3.Bachelor degree	52	64.2
	4.Master degree	16	19.8
	5.Doctorate /PhD	4	4.9
	6.Post-Doctoral	1	1.2
	7.Other	0	0
	Total	81	100.0

Appendix 7.7: Q9. Mutual compatibility awareness of ethical elements in CAI management training

Q9 Compatibility rating		Frequency	%
Valid	1.Very incompatible	0	0
	2.Incompatible	3	3.7
	3.Somewhat incompatible	4	4.9
	4.Neutral	32	39.5
	5.Somewhat compatible	24	29.6
	6.Compatible	18	22.2
	7.Very compatible	0	0
	Total	81	100.0

Appendix 7.8: Q12. Category divisions for perceived ethical issues in Image I (Axial coding category responses)

Q12		Axial coding category responses		
Axial coding categories	Open coding categories	Properties	Frequency	%
A WNE	1	Violating WNE	17	20.9
B Confucianism	2	Violating Confucianism	13	16.0
C Communism	3	Violating Communism	11	13.6
D EPE	4	Violating EPE	41	50.6
E. An integration of all ethical constructs (A, B, C, and D)	5	Violating justice	31	38.3
	6	Violating CSR		
	7	Cost-benefit utility driven		
	8	Impacting environment		
F. Unclear reasons	9	Need further exploration	2	2.5
		Total	62	76.5
		Non-respondents	19	23.5
Total			81	100

Appendix 7.9: Non-numerical information in 'Other' option in Q17.2, Q18.2, Q19.2 and Q20.2

Q17.2, Q18.2, Q19.2 and Q20.2					
Further information in 'Other' option	Frequency/ Percent				Information validity
Qs	Q17.2	Q18.2	Q19.2	Q20.2	Yes/No
The parent company training from Japan					
Party school at the city level					
Jingangshan Cadre's training school					
Outside company training centre/ Professional training organisation				1/1.9 %	No, repetition of the list options.
Within company training					The same as above.
Book, self-study	2/7.4%				No, irrelevant.
Web					The same as above.
Absent	3/11.1 %	1/2.6 %	1/2.1 %	3/5.7 %	No.
Total	5/18.5 %	1/2.6 %	1/2.1 %	4/7.5 %	

Appendix 7.10: Explanations in Q22 (open coding categories)

Q22		35 valid (According to Q21)		
6 macro categories due to axial coding	13 micro types	Properties	Frequency	Valid Percent
A. No idea of compatibility	1.	Having no idea	1	2.8
B. Not compatible	2.1	Hard to be compatible	1	2.8
C. Some ethical elements are compatible, with condition	3.1.	It must be prerequisite to guarantee the enterprise can make surviving profits, should non-coercive ethical elements and their compatibility be considered.	1	2.8
	3.2.	These moral values are all based on goodness nature and lead people to be humane and kind but not totally cost-benefit driven.	1	2.8
	3.3.	Everyone needs to obey laws, non-coercive ethical elements should be integrated into legislations.	2	5.7
D. Some ethical elements in auto companies are compatible	4.1.	All ethical elements are similar in pursuing trustworthiness, kindness and beauty. It is the same for companies, which is a critical ideological basis, but for these elements, the industry should pay attention to its priority, according to its industry feature and geographical location.	1	2.8
E. All ethical elements are mutually compatible	5.1.	The four ethics are based on justice, integrity and CSR.	3	8.6
	5.2.	The utmost purpose of all the ethical elements is the same in nature, such as in kindness, humanistic spirit, and harmony with nature.	3	8.6
	5.3.	All no-coercive elements are compatible in nature. Good nature and kindness is compatible.	4	11.4
	5.4.	All cultures are compatible in nature.	1	2.8
	5.5.	The good values can be complimentary with each other.	1	2.8
	5.6	Fairness, justice and integrity are	1	2.8

		essential.		
F. Ethical dimensions are compatible	6.1.	It is important to learn from values in different dimensions, learn the global management experiences and concepts in MNC, but should be based on domestic situation.	1	2.8
	Total		21	60
	Non-respondent		14	40
Total			35	100

Appendix 7.11: Q25 Suggestions for future training (Micro categories from open coding)

Q25 (additional information from trainers' responses was highlighted)			
7 Micro categories from open coding	21 Macro categories from axial coding	Frequency	Percentage
A. Not suggested	None	0	0
B. Have no idea	None		
C. Pay attention to different dimensions of ethical elements in training	3.1 Embed training with three dimensions (global, Chinese societal and industry).	1	1.2
	3.2 Embed international ethical norms and enhance CAI global competitiveness/	1	1.2
D. Strengthen some ethical elements in training	4.1 Popularise the knowledge of non-coercive ethics.	1	1.2
	4.2 Carry out Chinese traditional cultural discussion, with the focus on harmony.	1	1.2
	4.3 Strengthen EPE.	1	1.2
	4.4 Strengthen training of CSR, sustainable development and enhance their awareness of decision making.	3	3.6
	4.5 Increase and reinforce integrity, laws and regulations.	3	1. 41
	4.6 Reinforce training on integrity, fairness, honesty, and comply with common values.	4	4.8
	4.7 Reinforce training on environmental protection.	1	1.2
E. Stress element compatibility in training	5.1 Stress the Chinese and Western culture.	2	2.4
	5.2 Stress Confucian ethics and Engineering Codes of Ethics.	1	1.2
	5.3 Stress Confucianism and Communism.	1	1.2
	5.4 Stress organisational culture, offering a more ethical environment and achieve more benefits.	1	1.2
F. Offer suggestions on training approaches and effects improvement	6.1 Tailor training content and fit attendee's levels and posts for personal long-term cultivation in the automotive companies.	2	0.9
	6.2 Target more on the senior management, and practical behaviours.	1	1.2
	6.3 Use some typical ethical cases in training.	1	1.2
	6.4 Train from the management economy perspective on the current	1	1.2

	situation and future trend.		
	6.5 Train from basic theories.	2	2.4
	6.6 Train from school education on business ethics and keep on to management training.	2	2.4
	6.7 Some training is necessary to highlight the importance of ethical elements; the exaggerating of stakeholder's profit maximization in the past training was dangerous.	1	1.2
G. Agree	7 . No further information	24	29.6
No valuable information therefore was discounted		2	2.4
	Total	48	59.3
	Non-respondent	33	40.7
Total		81	100

Appendix 7.12: Q25 Suggestions for future training (Macro categories form axial coding)

Q25 Training suggestion (Macro axial coding categories)		Yes	
Negative or uncertain responses		Frequency	%
A & B		0	0
4 macro and 25 micro training suggestions from different angles		Frequency	Percentage
C. Pay attention to different dimensions of ethical elements in training.	3.1, 3.2	2	2.4
D. Strengthen some ethical elements in training.	4.1,4.2,4.3,4.4, 4.5,4.6,4.7	14	17.3
E. Stress element compatibility in training.	5.1,5.2,5.3,5.4,	5	6.2
F. Offer suggestions on training approaches and effects improvement.	6.1,6.2,6.3,6.4 ,6.5,6.6 6.7,	10	12.3
G. Agree	7 . But with no comments	24	29.6
No valuable information		2	2.4
	Total	48	59.3
	Non-respondent	33	40.7
Total		81	100

Appendix 7.13: Cross-tabulation: Level Q6 * Ethical awareness Q11

Chi-Square Tests (Q6*Q11.1)
Level * Importance of WNE in managers' EI

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	16.696[a]	12	.161
Likelihood Ratio	17.978	12	.116
Linear-by-Linear Association	.430[b]	1	.512
N of Valid Cases	76		

a. 16 cells (76.2%) have expected count less than 5. The minimum expected count is .01.

Chi-Square Tests (Q6*Q11.2)
Level * Importance of Confucianism in managers' EI

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	6.506[a]	10	.771
Likelihood Ratio	6.410	10	.780
Linear-by-Linear Association	.034[b]	1	.854
N of Valid Cases	76		

a. 14 cells (77.8%) have expected count less than 5. The minimum expected count is .04.

Chi-Square Tests (Q6*Q11.3)
Level * Importance of Communism in managers' EI

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.385[a]	10	.864
Likelihood Ratio	6.341	10	.786
Linear-by-Linear Association	.825[b]	1	.364
N of Valid Cases	76		

a. 12 cells (66.7%) have expected count less than 5. The minimum expected count is .03.

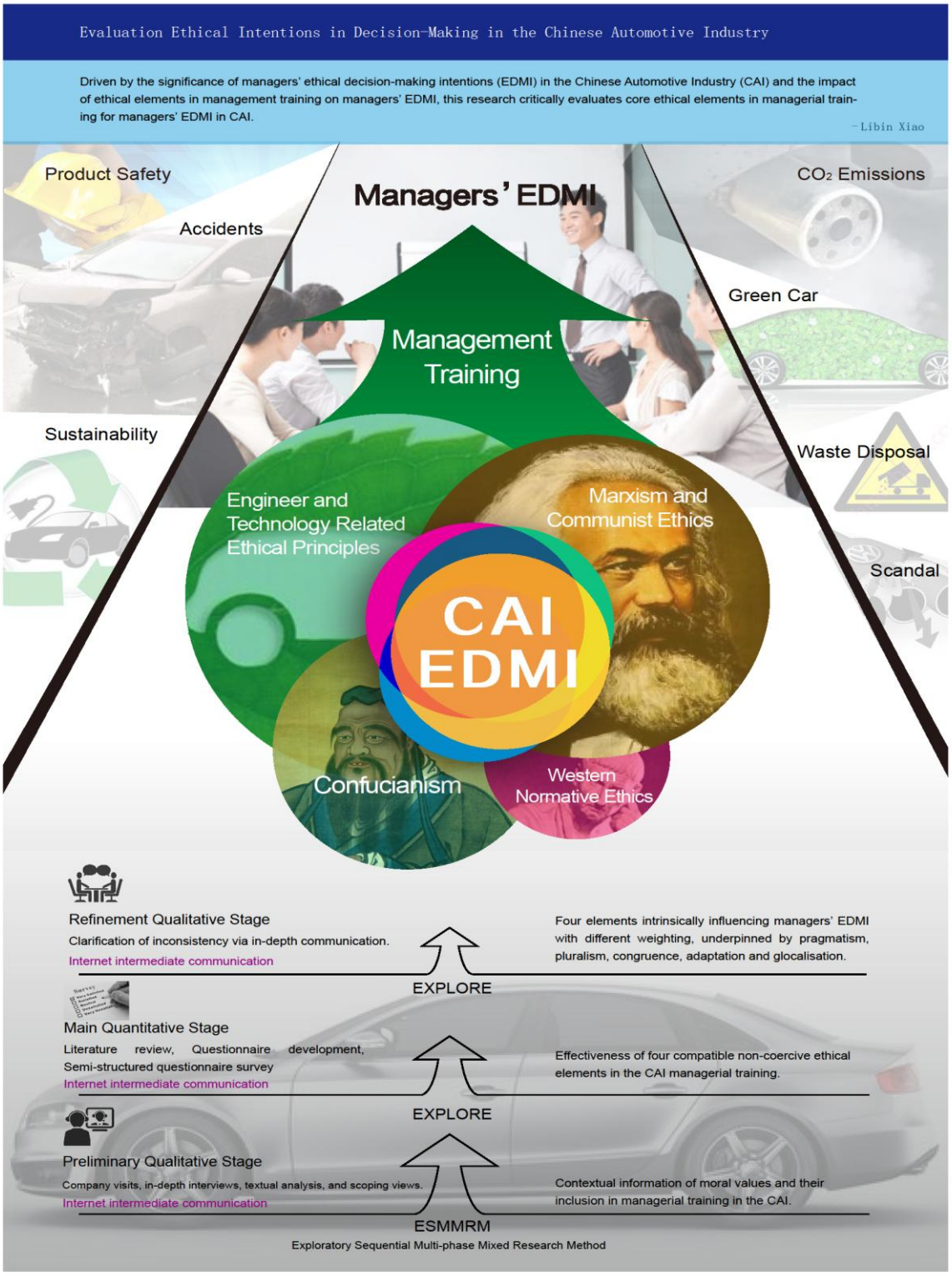
Chi-Square Tests (Q6*Q11.4)
Level * Importance of EPE in managers' EI

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	2.931[a]	8	.939
Likelihood Ratio	4.418	8	.818
Linear-by-Linear Association	.364[b]	1	.546
N of Valid Cases	78		

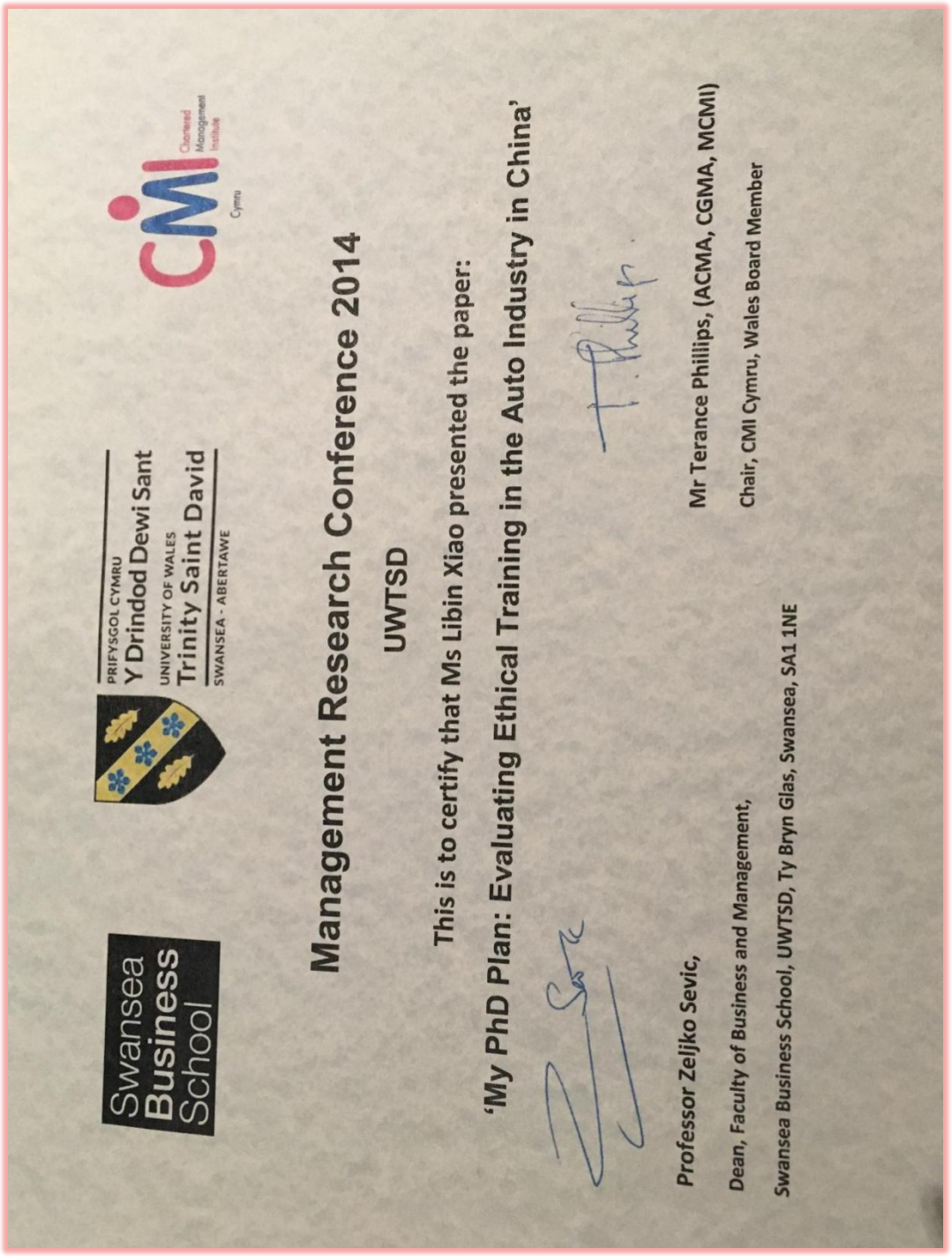
a. 12 cells (66.7%) have expected count less than 5. The minimum expected count is .03.

Chapter 10 Appendices

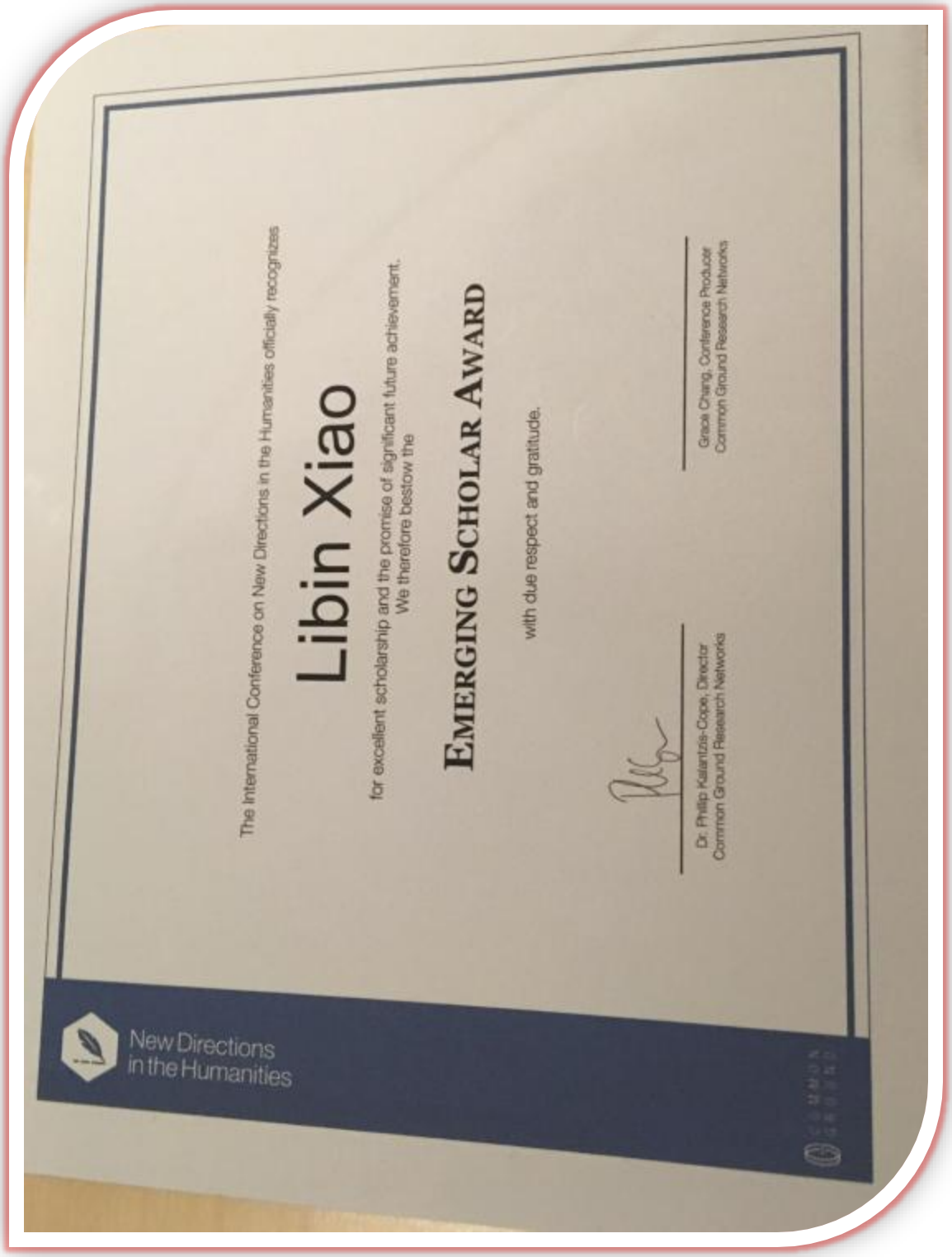
Appendix 10.1: A final poster evaluating EI in managerial training in the CAI

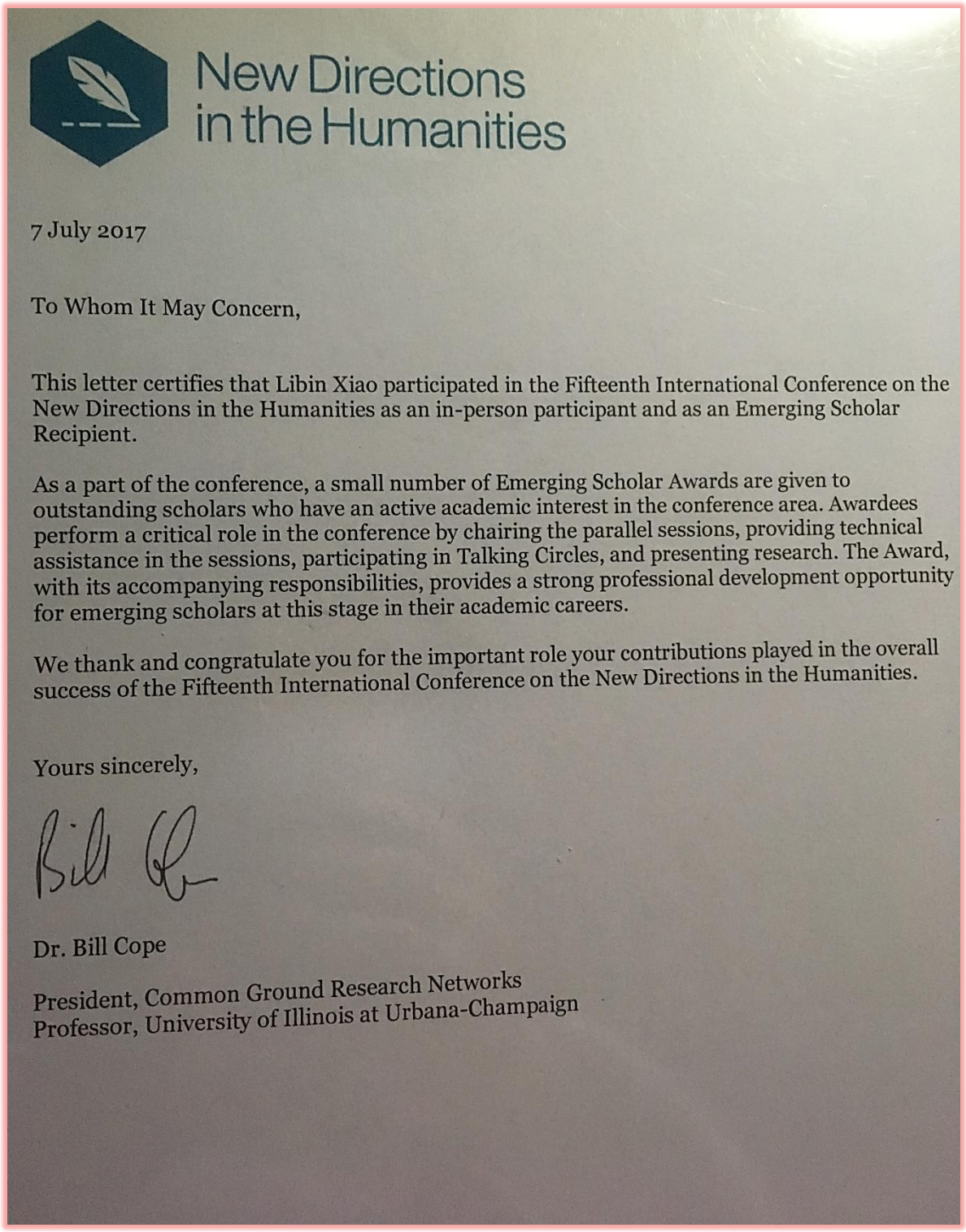


Appendix 10.2: Management research conference certificate 2014



Appendix 10.3: International award of Emerging Scholar for multidisciplinary research in humanities





New Directions in the Humanities

7 July 2017

To Whom It May Concern,

This letter certifies that Libin Xiao participated in the Fifteenth International Conference on the New Directions in the Humanities as an in-person participant and as an Emerging Scholar Recipient.

As a part of the conference, a small number of Emerging Scholar Awards are given to outstanding scholars who have an active academic interest in the conference area. Awardees perform a critical role in the conference by chairing the parallel sessions, providing technical assistance in the sessions, participating in Talking Circles, and presenting research. The Award, with its accompanying responsibilities, provides a strong professional development opportunity for emerging scholars at this stage in their academic careers.

We thank and congratulate you for the important role your contributions played in the overall success of the Fifteenth International Conference on the New Directions in the Humanities.

Yours sincerely,

Dr. Bill Cope

President, Common Ground Research Networks
Professor, University of Illinois at Urbana-Champaign

Appendix 10.4: Academic article at *Chinese Academy of Social Science*

Six Strategies in Conducting Multidisciplinary Research in Humanities

中国社会科学网
www.cssn.cn 中国社会科学院主办
中国社会科学杂志社承办
2019年3月20日 星期三

做好人文科学跨学科研究的六点要诀

2017年09月05日 12:39 来源：中国青年报 作者：肖礼彬

近期，由美国同心学术联合会举办的第十五届跨学科人文科学国际会议在伦敦帝国理工学院隆重召开，本届会议从今年开始提供了双语的中文会场，来自华中科技大学的欧阳康教授作为唯一的中文与英文大会演讲嘉宾作了中英文演讲，我现场聆听了这一大会主题发言《世界的复杂性、人性悖论与人文学术的当代使命——人类社会困境的反思与超越》，与其他世界各国与会的专家学者也有着广泛交流，深刻感受到国内人文科学本土研究的严谨与深度，也感受到国内同行对国际人文知识及跨学科研究理论方法的渴求。笔者对国内学者如何更好地利用跨学科国际会议加强与国际人文世界及其他交叉学科的交流，有下述几点想法。

第一，现代人文学者必须具有跨学科的知识与国际视角。比如，有些哲学与伦理思想广泛应用于管理、经济以至于工程行业，美国电器和电子工程师协会2014年和2016年分别举行了两次学术研讨会，探究伦理在工程行业的应用，规范伦理中的德性伦理（virtue ethics）就被推崇和应用于工程行业尤其是提高管理人员素养。哲学与文化也广泛应用于各领域尤其是跨文化的商业与管理实践，如国际人力与国际营销对于多元文化背景的员工及市场的处理上，就大量用到了荷兰心理学家霍夫斯泰德的跨文化的维度分析，“儒家动力论”正是其中概括中国文化特征的一个维度，这些维度与其他文化理论为跨文化交流、国际商务、管理等实践与研究提供了大量思路和借鉴。还有些心理学的理论也应用于其他领域，如美国心理学家科尔伯格的儿童道德认知发展理论，在现代伦理决策研究中就有应用。

纵览当下国外大学的课程设置即可看到，除了普通的单一学科，有的大学还在本科阶段明确设置了交叉学科，如哲学与工程、哲学与经济、英语与哲学、英语与历史以及哲学、工程与法语、工程与管理等，为交叉学科的研究与发展奠定了基础。

第二，人文学科的研究需要具备跨文化的国际先进理论与模型。本届与会代表中有人谈到中小学教育的理念、中外心理学研究等，有些理论如全球本土化理论（glocalization）即“全球视角，本土行为（Think globally, act locally）”，正可以用来部分支撑这些以本土为主但同时接纳全球元素的研究。当然，在具体应用中应该分析具体情况，不能全盘照搬这些全球跨文化的理论。

在全球化的国际背景下，人文研究各领域对于跨文化核心理论的应用缺失，会在一定程度上影响先进模式的构建及彼此的认同感，导致拉大与国际人文研究的距离。学术研究的每一步均需要详实的论证和说明，这些有国际认同的跨文化理论的应用会增强论证的信度和效度。

第三，人文学科跨学科研究需要界定好相互的兼容点。比如，谈到道教与森林养生时，既需要大量文献来说明它们兼容的可行性，同时也要具体分析二者，尝试从不同的角度通过某些共性找到兼容点。道教里的一些与养生相关的要素，可以从整体里提炼出来，配合森林养生的特点，逐一辩证地探讨和分析。其衍生的变量，需要用实证研究或其他方法来证明它们的兼容性。

工程伦理与医学伦理等方面的研究也一样，也需要了解哪些特征的伦理要素能有效应用于这些特定行业解决相关问题。有时，一个兼容点的探讨可能考虑了哲学、文化、管理、行业等多个视角。由于国际会议的开放性，与会的国内同行可以锁定自己感兴趣的方面，有目的地探讨以增强相关研究。

第四，人文科学跨学科研究要明确其研究目的、构建完整的研究框架。本届会议上，有与会的国内学者探讨自媒体的产生与发展，这就需要提供一个前提以明确其研究目的，以此为指导构建符合该研究的框架。

24小时排行
1 理直气壮开好讲好思政课的根本实践
2 高培勇：正确把握当前宏观政策取向
3 吕忠梅 俞金尧 刘宁等：立足实践回
4 环境伦理视域下的太空荒野观
5 高校党委如何抓好思政课建设
6 规范全要素生产率测算推进经济高质
7 文艺社科界迎来大有作为新机遇
8 媒体融合需要内容技术双驱动

第五，人文科学跨学科研究需要有合适的研究方法。一名人文科学研究者既要了解常见的单一研究方法，如定量和定性研究，借助于统计工具如SPSS进行分析。也应注意到，近年来出现的综合研究方法，已被看作第三种研究方法并广泛应用于国际人文研究。

第六，人文科学跨学科研究需要具备国际权威的参考文献。研究者应当尽量引用这些文献，对于国内有些来源权威但仍是汉语的文献，确有必要的也需要做好翻译，保证所有相应文献的一致性和准确性。

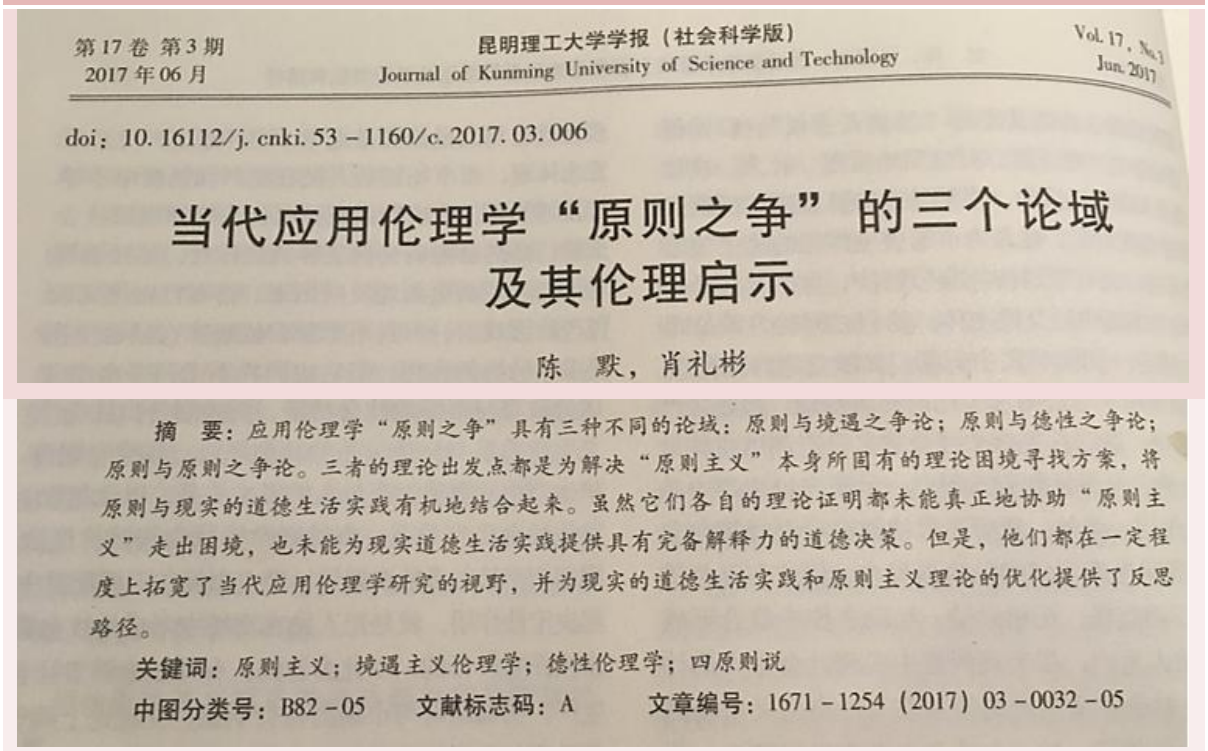
总之，作为一名当代人文学者，应当努力具备国际学者跨学科的知识与能力，以更好地被国际学术共同体认同，进而更有效地传播人文知识、创建良好的人文环境。类似本届跨学科人文科学国际会议这样的高层次国际会议，是一种极好的平台，有助于让国内学者大胆展示自己的学术成果，加深与海外学者的交流。

（作者：英国威尔士三一圣大卫大学博士研究人员、英国高等教育学会会员 肖礼彬）

Source: Xiao (2017)

Online: http://www.cssn.cn/zx/xshshj/xsnew/201709/t20170905_3630257.shtml

Appendix 10.5: Journal paper on applied ethics



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当代应用伦理学“原则之争”的三个论域及其伦理启示

陈　默，肖礼彬

摘　要：应用伦理学“原则之争”具有三种不同的论域：原则与境遇之争论；原则与德性之争论；原则与原则之争论。三者的理论出发点都是为解决“原则主义”本身所固有的理论困境寻找方案，将原则与现实的道德生活实践有机地结合起来。虽然它们各自的理论证明都未能真正地协助“原则主义”走出困境，也未能为现实道德生活实践提供具有完备解释力的道德决策。但是，他们都在一定程度上拓宽了当代应用伦理学研究的视野，并为现实的道德生活实践和原则主义理论的优化提供了反思路径。

关键词：原则主义；境遇主义伦理学；德性伦理学；四原则说

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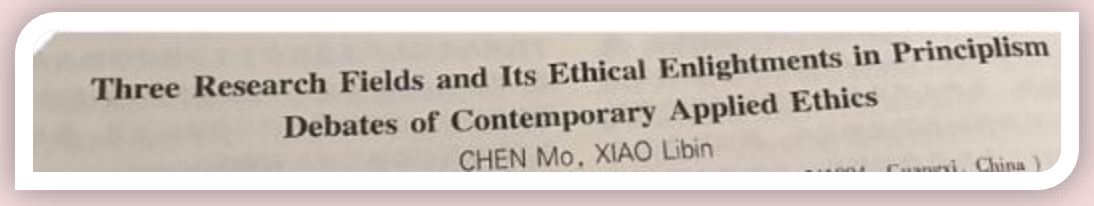
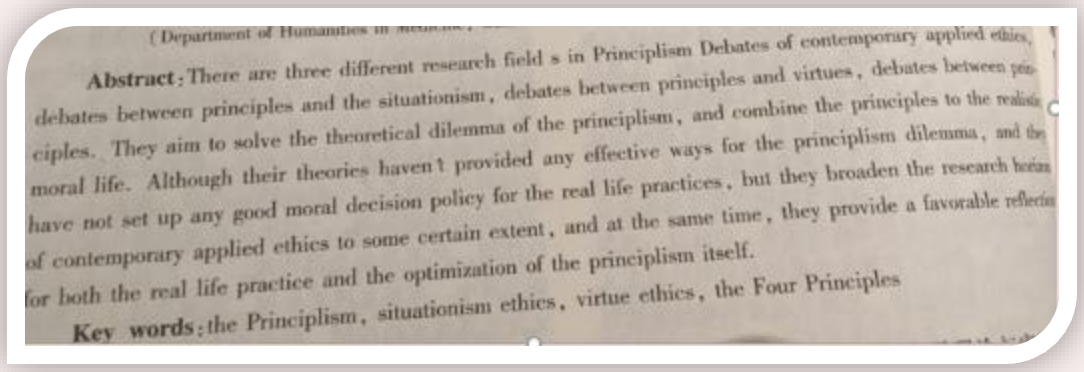


Three Research Fields and Its Ethical Enlightments in Principlism Debates of Contemporary Applied Ethics

CHEN Mo, XIAO Libin



Abstract: There are three different research field s in Principlism Debates of contemporary applied ethics, debates between principles and the situationism, debates between principles and virtues, debates between principles. They aim to solve the theoretical dilemma of the principlism, and combine the principles to the realistic moral life. Although their theories haven't provided any effective ways for the principlism dilemma, and they have not set up any good moral decision policy for the real life practices, but they broaden the research horizon of contemporary applied ethics to some certain extent, and at the same time, they provide a favorable reflection for both the real life practice and the optimization of the principlism itself.

Key words: the Principlism, situationism ethics, virtue ethics, the Four Principles

Appendix 10.6: A certificate of attending a high-level Summer School in Wuhan University on Philosophy 2017

结业证书

This is to certify XIAO,Libin who participated in Wuhan University–University of Arizona "Contemporary Issues in Political Philosophy" Summer School hosted by Wuhan University from August 1 to 7 of 2017.

肖礼彬同学，于2017年8月1日至2017年8月7日，在武汉大学——美国亚利桑那大学"当代政治哲学前沿"暑期学校中，表现良好，准予结业。

武汉大学哲学学院
2017年8月7日
哲学学院

Appendix 10.7: Research paper

2018 5th ICSSH Conference on Economic Development a

Management (ICSSH-EDM 2018)

July 22-24, 2018, London, UK

Edited by

Garry Lee

Co-sponsored by Information Engineering Research Institute, USA and

Singapore Management and Sports Science Institute, Singapore

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Foreign Studies, South Korea and Southern Taiwan University of Science

Technology, Taiwan

IERI INFORMATION ENGINEERING RESEARCH INSTITUTE, U

2018 5th ICSSH Conference on Economic Development and Management (ICSSH-EDM 2018)

The Challenge of Developing Ethical Principles in the Chinese Automotive Manufacturing Industry

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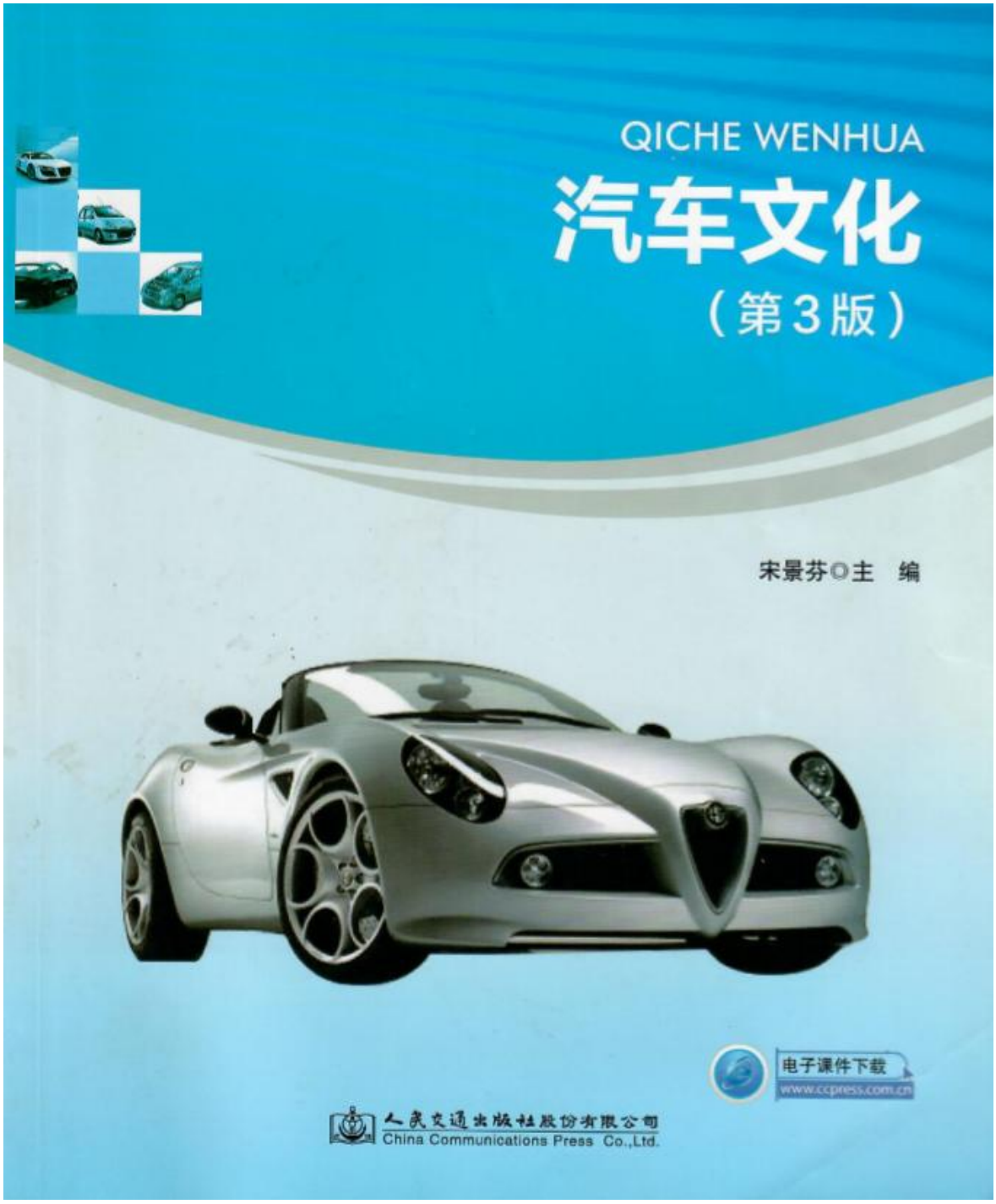
Keywords: Ethical Principles, The Chinese Automotive Manufacturing Industry, Hypernorms, Chinese moral learning, Chinese moral value context.

Abstract. Ethical principles are more effective in guiding professional behaviour than rigid codes and regulations and this recent trend in Western engineering has not been developed in the Chinese Automotive Manufacturing Industry (CAMI). In response to increased demands from the international automotive community for shared norms and from CAMI's professional practitioners for ethical guidance, this work develops nationally uniformed ethical principles for CAMI. This is initiated by the evaluation of its appropriate feasibility in the context of the industry feature, Chinese moral value, moral learning and ethical governance practice. The context of CAMI is also assessed alongside issues of product integrity, environmental degradation and corruption. Finally, based on the UK practice, the universal hypernorms, the indigenous cultural and ideological heritage of Confucianism and Communism are critically evaluated. This paper also aims to initiate similar research and more thinking of Western practice in CAMI on unified ethical principles.

Appendix 10.8: Academic book on 'Automotive ethical climate' 2018



前 言

Qianyan

五千年前，车诞生了，颠簸的车轮承载着人类改造世界的梦想跌跌撞撞地前进着，在漫漫长夜中不断摸索着。直到一百多年前，汽车问世了，它把人类引入到一个飞速旋转的世界，世界变小了，人与人更近了，生活节奏更快了。汽车彻底改变了人们的生活，使世界以风驰电掣的速度变化着。汽车对于人类不仅是一种交通工具、一项科技，更是一种象征、一种理想的寄托，从“操吴戈兮被犀甲，车错毂兮短兵接”的肆意疆场，“公车千乘，朱英绿縢，二矛重弓”的极尽奢华，“彼路斯何，君子之车”的芳心暗许，到“车到山前必有路”的达观态度，“还似旧时游上苑，车如流水马如龙”的追忆似水流年……汽车文化已经深深植入了人类的文化底蕴，很难想象没有汽车的世界会变成什么样子。汽车工业是国民经济的支柱产业，汽车文化也在人类的历史文明中谱写了浓墨重彩的一笔。

2017 年，我国的汽车产销量已超过 2888 万辆，成为了名副其实的汽车大国，伴随着汽车工业的腾飞，我国的经济发展与社会地位稳步提高，人们的生活状态和文化素质也被汽车改变了。汽车时代的到来，随之而来的是人们对汽车的喜爱、依赖和人们对深深扎根于民族文化中的汽车文化的眷恋。编写《汽车文化》的目的，不仅仅是对汽车知识的介绍和普及，更是对浓郁的汽车文化氛围的提炼和升华，愿越来越多的读者通过《汽车文化》爱上汽车，享受汽车文化带给我们的精神熏陶。

参加本书编写的人员有（按章节顺序排列）：李江天（第一章的第一节至第三节）、宋景芬（第二章、第三章第三节、第四章）、闫树（第三章的第一节和第二节）、张国方（第一章第四节、第五章）、肖礼彬（第六章）、杨瑞（第七章），宋景芬对全书进行了统稿。

第六章　汽车伦理文化

伦理是汽车科技之光，它赋予了工程师灵感与正义，让更多环保、安全而高质量的车辆服务于世人、体会到速度与激情的酣畅。伦理是汽车之魂，能平安将乘客载入温馨的家园，送达理想之地。然而汽车产品又如潘多拉魔盒，其尾气带来挥之不去的雾霾、设计缺陷带来血腥的事故，给这些梦幻般的美好蒙上了恶魔般的阴影。汽车伦理文化犹如一剂隐形的妙药和一枚无声的利器，能有效化解一切现实的困惑，助力于汽车行业的勇士们博弈于科技、利益、责任、环境、安全与正义之林。

第一节　概　　述

一、企业伦理文化的发展与内涵

企业管理首先经历了由经验管理到科学管理的演变。1769 年世界第一家现代意义上的企业在英国诞生，其标志是建立了经验管理，即凭经验对企业进行管理。1911 年科学管理诞生，将企业管理由经验变成了科学，使之逐步趋向理性，建立了健全的企业规章制度和人事安排系统。科学管理时期，杰出代表人物美国工程师弗雷德里克·温斯洛·泰勒（Frederick Winslow Taylor）被称为“科学管理之父”，法国企业家亨利·法约尔（Henri Fayol）被称为“行政管理之父”。

然而，随着社会的进步，重物轻人的科学管理理念已不能满足现代企业需求。所以以人为本的管理理念应运而生，成为现代管理主流。但以人为本的管理理念的实现单纯通过制度难以完成，它需要建立企业的价值观，并将其转变为每位员工和管理者的思维习惯，而这些需要企业文化来支持，关注其每位员工，以达到员工与企业共同的价值取向。这种以人为中心的现代管理企业文化激发了员工工作热情，给企业带来无限推动力，实现了超越制度管理的飞跃。该阶段也被称为文化管理阶段，其主要特征是“文治”，即企业文化建设。1981 年以来，世界 500 强企业相继进入了该阶段。

纵观这三阶段的管理理念演变，一个很值得关注的现象是：前两者在管理中无论是企业控制、还是激励方式都侧重于外部控制和外部激励，力求从员工外部行为上达到管理的一致；而文化管理理念则关注的是人的自我控制、内在激励的作用，更多的是从思想层面来进行有效管理，从而最终达到一种非理性和理性的完美结合。由于文化的“软”化作用，文化管理被视为一种软实力，软化过程中，“人”的地位越来越突出，人与人的行为成为企业管理的核心。

现代企业文化（Corporate Culture）被定义为是企业在一定的社会历史条件下，在生产经

成为怎样性质的人的问题。人们常常会面临后果论和目的论这两种理论形态的选择，要么计算后果以发现正确的行为路径，要么依据道德规则以肯定或否定的形式来指导行为。对于一些无法量化过程和结果的伦理困惑，美德论似乎能提供超越现实的从内在考虑的道德途径。

这种强调行为者本身的德性理念适用于企业，以“行为者”的“德性”为核心对于企业自律伦理提升有很大启发意义。企业伦理的最终实施在于企业家和员工及道德主体身上，由他们来体现经济美德。企业家伦理主要涉及诚实、公平、信任、对员工的友善、关爱等，员工伦理也涉及忠诚、诚实、廉耻等。而这些也可属于德性伦理。亚里士多德在《尼各马可伦理学(Nicomachean Ethics)》一书中尤其强调对于领导力可以通过内在德性培养达到，这点与儒家思想趋同。

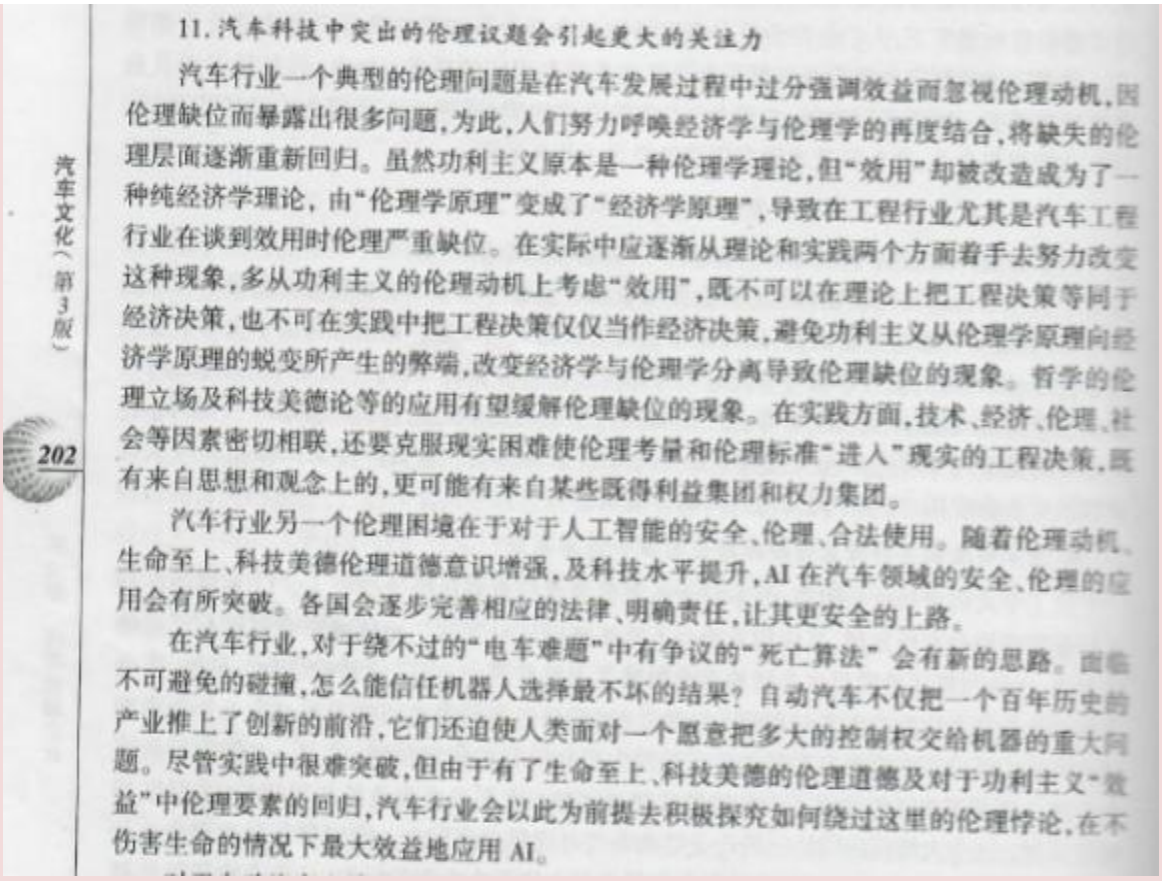
这种德性也利于企业伦理文化的建设。现代以人为本的管理制度主要在于如何调动人的积极性推动企业的发展，美德作为一种力量，能作用于人的内心，具有超越性和自律性的特点。这两个特点会使企业能正确理解美德与自身利益的关系，不会局限于狭隘的私利而行动。但美德并不牺牲自身的利益，而会促进自身利益，因为自律的企业能正确理解美德与竞争的关系，不以有限、僵化的道德为原则和束缚，而是自觉、自愿地践行美德。美德也不排斥竞争，相反强调公平、健康的竞争，因为竞争既包含了才能也包含了品德、人格，在正当、公平的竞争中，参与者的智慧、人格等会得到充分的展现，从而利于提高企业的效率，实现伦理和卓越的双赢。

儒家美德论(Confucian virtues)与亚里士多德的美德论在很多地方有相同之处，尤其是更接近人的内在品德。儒家思想追求完人，就是以人的内在的道德为砥柱的。其中“仁”代表了儒家最主要的伦理思想，即“道”，再由“道”推及到人的行为即人与人之间的关系准则，达到人类大同和谐的境界。这种以“仁”的思想为核心的伦理直接与人的道德品质及内在美德紧密相关。所以近代儒商、徽商的优秀品质都深受儒家思想影响，强调诚信、质量、信誉、法律等道德经商观念。儒家除了作为社会伦理的“三纲”还有作为个人品德的“五常”，即用以表达儒家崇奉的五种德行：仁、义、礼、智、信。“纲常”过去泛指道德和道德规范。人的自然法则应当依循道德规范的方向，这也是文化和文明的主要内涵。

儒家价值观一直是中国民众最基本的主流价值观，“礼、义、廉、耻、仁、爱、忠、孝”等一直指导绝大部分中国人民的日常行为。中华民族礼貌友善、温良忠厚、坚守孝道、吃苦耐劳等品质，也在儒家的教化下逐渐养成。儒家思想关注“人”强调理想的性格特质(Character traits)，也关注“社会现实”。当下，儒家思想转化为了一种宝贵的民族精神，达到了“先天下之忧而忧，后天下之乐而乐”，“家事、国事、天下事，事事关心”及“天下兴亡，匹夫有责”的企业家精神和东方文化特征。

科技美德论(Technomoral virtue ethics)，是一种将德性伦理、科技和人类繁荣结合在一起的新型伦理理念。它完美地将科技伦理与德性伦理结合，以协助解决当今复杂的伦理议题。该伦理理念源于古希腊哲学家苏格拉底(Socrates)所推崇的“ethics”理念，也被称为“good life”，即人类最值得的一种生活，它来自对生存的各种可能的不同生活方式的选择。作为一种应用伦理，德性的美德被用来指导科技工作者的工作实践。

现实生活中，人类的社会实践，包括道德实践，总是和科技呈现错综复杂的关系。科技实践塑造了人类的各个方面，当今社会生活也以一种无法感知的程度倚仗于科技的发展。伦理与科技相互关联，因为科技活动可以提供或引发某种思考模式、产生某种行为且可以提



11. 汽车科技中突出的伦理议题会引起更大的关注力

汽车行业一个典型的伦理问题是在汽车发展过程中过分强调效益而忽视伦理动机，因伦理缺位而暴露出很多问题，为此，人们努力呼唤经济学与伦理学的再度结合，将缺失的伦理层面逐渐重新回归。虽然功利主义原本是一种伦理学理论，但"效用"却被改造成为了一种纯经济学理论，由"伦理学原理"变成了"经济学原理"，导致在工程行业尤其是汽车工程行业在谈到效用时伦理严重缺位。在实际中应逐渐从理论和实践两个方面着手去努力改变这种现象，多从功利主义的伦理动机上考虑"效用"，既不可以在理论上把工程决策等同于经济决策，也不可在实践中把工程决策仅仅当作经济决策，避免功利主义从伦理学原理向经济学原理的蜕变所产生的弊端，改变经济学与伦理学分离导致伦理缺位的现象。哲学的伦理立场及科技美德论等的应用有望缓解伦理缺位的现象。在实践方面，技术、经济、伦理、社会等因素密切相联，还要克服现实困难使伦理考量和伦理标准"进入"现实的工程决策，既有来自思想和观念上的，更可能有来自某些既得利益集团和权力集团。

汽车行业另一个伦理困境在于对于人工智能的安全、伦理、合法使用。随着伦理动机、生命至上、科技美德伦理道德意识增强，及科技水平提升，AI 在汽车领域的安全、伦理的应用会有所突破。各国会逐步完善相应的法律、明确责任，让其更安全的上路。

在汽车行业，对于绕不过的"电车难题"中有争议的"死亡算法"会有新的思路。面临不可避免的碰撞，怎么能信任机器人选择最不坏的结果？自动汽车不仅把一个百年历史的产业推上了创新的前沿，它们还迫使人类面对一个愿意把多大的控制权交给机器的重大问题。尽管实践中很难突破，但由于有了生命至上、科技美德的伦理道德及对于功利主义"效益"中伦理要素的回归，汽车行业会以此为前提去积极探究如何绕过这里的伦理悖论，在不伤害生命的情况下最大效益地应用 AI。

70 年代作为一门学术课程和独立的学科开始兴起。此后出现于德国、荷兰、瑞典、法国、英国、加拿大、澳大利亚、日本、俄罗斯、中国和其他国家。于 20 世纪 80 年代工程伦理开始作为一个相对较新的教育和研究领域。同时，与汽车相关的行业协会、高校、企业等会越来越关注该行业的伦理培训。未来在与汽车相关的企业培训和工程教育中将会更多地将伦理作为重要的要素，让伦理教育及培训成为一种行业必需。中国汽车行业伦理道德培训要素会受到文化及意识形态的影响。

总之，汽车公司任何一个环节都既经受着企业与社会责任的考量以完成社会给予的一种信托责任，协调各种利益冲突，完成企业在经济、社会和环境等方面的责任底线；同时也在科技、法律与伦理等要素之间博弈，寻求一种超越科技、超越法律及底线更高境界的自律的道德文化，以此应对汽车科技及企业发展进程中一些棘手的道德难题，进而推动汽车文化向更可持续、更长久的未来发展。为此，有必要在汽车行业构建一种自上而下的企业伦理文化，培训该行业工作人员，将非强制性伦理理念及正义、公平、人伦、人本的观念植入汽车行业的土壤，赋予这些管理人员及工程师新的力量，让他们能在经济、社会和环境压力下，创建可持续、伦理、环保、安全的未来汽车行业。相信汽车伦理文化也会发挥出璀璨的光芒引领汽车行业随着历史的车轮走向下一个辉煌。

Appendix 10.9: Journal Paper-dissimilation of ethics concepts to environment issues in water

Sci **2019**, *1*(1), 15; https://doi.org/10.3390/sci1010015.v1

Open Access Review
Post Publication Peer Review

Endocrine Disrupting Compounds Removal Methods from Wastewater in the United Kingdom: A Review

China K. Gadupudi [1,*], Louis Rice [2], Libin Xiao [3] and Komali Kantamaneni [1,4]

Version 1
Published: 21 March 2019
DOI: 10.3390/sci1010015.v1
PDF [486 KB, uploaded 21 March 2019]

Abstract

Endocrine disrupting compounds (EDCs) are contaminants with estrogenic or androgenic activity that negatively impact human and animal communities. These compounds have become one of the significant concerns for wastewater treatment in recent decades. Several studies have evaluated EDC removal methods from wastewater across the globe including the United Kingdom (UK). Accordingly, the current study reviews EDC removal methods from municipal/domestic wastewater in the United Kingdom (UK) for the period of 2010–2017. The research highlights that despite the relative efficacy of existing chemical and physical methods for removing certain EDCs from wastewater there is emerging evidence supporting the need for more widespread application of nature-based and biological approaches, particularly the use of biofilms. The analysis reveals that there have been relatively few research studies on EDC removal methods have been carried out in the UK in the 2010–2017 period and none of the research focused on EDC removal using biofilms. Finally, this review suggests that more research is needed to remove EDCs, particularly through the application of biofilms, from municipal wastewater in current scenarios.

Keywords: wastewater treatment; temperatures; systematic review; biofilms; endocrine disrupting compounds