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Overcoming Barriers to Digital Transformation in Pakistan's Public Sector: A Change Management Perspective.

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Abstract

This study identifies the key barriers to digital transformation within Pakistan's public sector and examines how these can be effectively managed through structured change management frameworks, insights from government officials, and lessons from successful case studies. The research is driven by the recognised need for public organisations to adapt to rapid technological, economic, and social changes while overcoming cultural resistance, systemic inefficiencies, and institutional inertia.

The study draws on detailed literature review of barriers to digital transformation, change management in the public sector, and both national and international case studies from comparable contexts. These findings were complemented by analyses of semi-structured interviews with public sector officials, providing first-hand perspectives on challenges, experiences, and successes.

It addresses a critical gap by highlighting the role of structured change management, a concept that is largely unknown within the public sector in Pakistan. The findings also show how the challenges and strategies identified resonate closely with principles of change management frameworks.

The research recognises the complex nature of digital change within the public sector, extending beyond a purely technological lens to encompass deeply ingrained cultural, leadership, systemic, and structural barriers, including issues of policy, accountability, and continuity, alongside critical constraints such as IT infrastructure and financial capacity. To address these, the study proposes a combination of strategies from established change management frameworks to address human and organisational dynamics, while leveraging institutional strategies and context-specific approaches from case studies to overcome external challenges.

The dissertation concludes by recommending a tailored approach that emphasises a human-centric approach, the critical role of leadership, continuous stakeholder engagement, capacity building, coherent policy frameworks, pilot projects, and well-designed integrated systems. Collectively, these strategies are essential for navigating barriers to digital transformation and ensuring transparency, efficiency, and citizen trust in public services.

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List of Abbreviations

ADKAR	Awareness, Desire, Knowledge, Ability, Reinforcement
AI	Artificial Intelligence
DPI	Digital Public Infrastructure
ERP	Enterprise Resource Planning
EPRS	European Parliamentary Research Service
FBR	Federal Board of Revenue
FIA	Federal Investigation Agency
GDPR	General Data Protection Regulation
GDS	Government Digital Service
ICTs	Information and Communication Technologies
KPIs	Key Performance Indicators
NADRA	National Database and Registration Authority
NHMP	National Highways and Motorway Police
NITB	National Information Technology Board
OSET	Office of the United Nations Secretary-General's Envoy on Technology
SBP	State Bank of Pakistan
UK	United Kingdom
UN	United Nations
UNDP	United Nations Development Programme
UPPCS	Uttar Pradesh Public Service Commission

Chapter 1: Introduction

1.1 Overview

Change management has been defined as 'the process of continually renewing an organization's direction, structure, and capabilities to meet the evolving needs of external and internal customers' (Moran and Brightman, 2001: 111). According to Burnes (2004), organisations face continuous pressure from technology, globalisation, economic shifts, and competition, requiring them to adapt in order to remain effective and achieve their goals. The ability of an organisation to identify its future strategic direction and effectively manage the change required to achieve it is crucial for long-term success.

While there is extensive research on public sector reform, its challenges, and on change management as separate subjects, relatively little work combines the three, and only a few studies specifically examine how public organisations manage change. A literature review by Fernandez and Rainey, (2006, cited in Kuipers et al., 2014) found that few studies focused specifically on management of change processes in public sector organisations. According to Vans, (2004) there is a gap in change management research from a public sector's perspective.

To address this gap, this study aims to identify key barriers to digital transformation within Pakistan's public sector and propose a roadmap for overcoming these challenges through established change management frameworks. The research further incorporates interviews with public sector officials to capture practical insights into the challenges and strategies of digital transformation efforts. In addition, national and international case studies, as well as institutional strategies, are assessed to demonstrate how similar barriers have been successfully managed elsewhere. The introduction chapter of the study will outline the background and context, the aim and objectives, the rationale, and the limitations of the research.

1.2 Background

Rapid technological advancements have increased the need for governance systems to evolve, enhancing their effectiveness and transparency through digital transformation. While the private sector has made significant strides, the public sector has been slow to adopt these technologies for improved efficiency and public service delivery. In Pakistan, digital transformation within public sector organisations have gained significant attention and despite the government's efforts to digitize services, the process remains slow, particularly considering the country's large, young population (Malik, W. 2021). According to the United Nations (UN) E-Government Development Index 2024, Pakistan ranks 136th out of 193 member states, reflecting the scale of challenges and the urgency of addressing barriers to digital transformation.

Key challenges to digital transformation within Pakistan's public sector include departments working in silos, organizational structures and culture, bureaucratic resistance, lack of skilled labour, insufficient financial resources, and reluctance to shift from traditional methods to more progressive approaches that reduce human interaction (Siddiqui and Mehmood, 2021). The public sector in Pakistan has long been criticized for inefficiency, outdated systems and procedures, and a lack of transparency. A critical step to enhance both transparency and efficiency is for government departments to fully embrace digital transformation (Batool et al., 2023).

Realising the benefits of digital transformation is only possible if these barriers are effectively addressed. Resistance to change, in particular, poses a significant obstacle in Pakistan's public sector. A study by Habib et al. (2018) focused on a public sector organisation in Pakistan found several causes for this resistance such as uncertainty, non-cooperation, lack of skills, poor communication, fear of losing power and authority, and limited employee engagement. Addressing these underlying causes is therefore essential to reduce resistance and facilitate reform.

Successful change implementation requires employee involvement and ownership, clear communication, strong leadership support, and well-defined goals and outcomes. Many change initiatives fail because they neglect its psychological impact on individuals. Therefore, in addition to structural and technological changes it is essential

to manage employee's psychological transition and organisational culture, and workplace practices to succeed (Asian Productivity Organization, 2021).

This is where change management plays a key role. According to Miller, (2020) "Change management is the process of guiding organizational change to fruition, from the earliest stages of conception and preparation, through implementation and, finally, to resolution". Widely used change management models to guide such initiatives include Lewin's 3-step model, Kotter's 8-step model, McKinsey's 7-S framework, and the ADKAR model. Each has its own strengths and are typically adopted based on the organization's culture and the nature of the change (Hamdo, 2021). These models will be examined in more detail in the following chapters.

1.3 Research problem

Digital transformation is widely recognized as a useful tool to enhance governance, improve service delivery and efficiency globally. The United Nations Department of Economic and Social Affairs (2024) E-Government Survey 2024 highlights the increasing role of e-government in supporting sustainable development and making public administration more efficient and responsive. In line with this, many nations, together with the United Nations, are promoting e-governance to strengthen public sector delivery and facilitate inclusive, sustainable development.

In Pakistan, numerous studies have examined the barriers to digital transformation within the public sector, highlighting key issues such as organizational culture and structure, bureaucratic resistance, financial limitations, lack of technical skills, and political influences (Kundi et al., 2008; Siddiqui and Mehmood, 2021; UNFPA Pakistan, 2024).At the same time, in today's rapidly changing organisational environment, change management has become a core organisational function, like finance, human resources, or marketing. It is considered an essential part of organisations, supporting them in adapting to changes related to modernization and digitalisation. Change management frameworks are increasingly utilised to manage resistance and addressing the human, structural and cultural dimensions of transformations. (Hamdo, 2021; Khalil Ibrahim and Benabdelhadi, 2022).

While there is extensive research on the importance and challenges of digital transformation in the public sector, as well as on change management separately, there is a notable gap in research that integrates both aspects specifically within the context of Pakistan's public sector. Change management is a relatively new concept in Pakistan's public sector. According to Ibrahim and Benabdelhadi (2022), digitalisation has been acknowledged as a key element for modernizing public organisations, but limited research exists on how to effectively manage digital transformation processes within public organisations.

Kuipers et al., (2014) in his literature review on change management in public organisations mentions that, with few exceptions (e.g., Robertson and Seneviratne, 1995), literature typically has not distinguished between change management in private and public organisations, as noted by Stewart and Kringas (2003) and Klarner, Probst, and Soparnot (2008). Kuipers further emphasizes the gap in literature regarding change management in public administration (Vann, 2004, cited in Kuipers et al., 2014). Although there is some limited global research on managing change related to digital transformation in the public sector, the area remains largely unexplored in the specific institutional and cultural context of Pakistan.

Despite ongoing government efforts and numerous studies highlighting both the benefits and barriers of digital transformation, Pakistan's public sector continues to face challenges, preventing its full potential from being realized. This presents an opportunity to examine the issue from a change management perspective to see whether these barriers can be mitigated through such an approach. Currently, without effective change management, Pakistan's public sector may continue to struggle and face resistance. The lack of awareness on change management and a clear actionable roadmap leaves public institutions ill-equipped to manage the complexities of digital transformation, resulting in wasted resources and gaps in service delivery and governance.

This study therefore addresses this gap by integrating change management theories, institutional strategies, and experiences of public sector officials with the challenges of digital transformation in Pakistan's public sector. In doing so, it offers a novel

perspective and aims to develop practical recommendations for overcoming barriers to digital transformation within the public sector.

1.4 Aim, Objectives and Questions

1.4.1 Aim

The aim of the research is to identify key barriers to digital transformation within the public sector in Pakistan and to provide a roadmap for overcoming those barriers through change management frameworks.

1.4.2 Research Objectives

- To critically review the relevant literature on the key barriers to digital transformation within the public sector in Pakistan and analyse its impact on governance, service delivery, and institutional efficiency.
- To conduct interviews with government officials and public sector employees to explore the successes, challenges, and potential strategies for achieving digital transformation.
- To propose solutions and develop a strategic roadmap for overcoming barriers to digital transformation through a change management perspective
- To analyse case studies of successful digital transformation within public sectors in Pakistan and globally, identifying key success factors

1.4.3 Research Questions

1. What are the key barriers to digital transformation within Pakistan's public sector?
2. What are the perceptions and experiences of government officials and public sector employees regarding digital transformation efforts?
3. How can change management frameworks help overcome these barriers to digital transformation?

4. What lessons can be learned from successful digital transformation initiatives in Pakistan and globally?

1.5 Significance

This study aims to offer a new perspective on managing digital transformation within Pakistan's public sector, with a focus on change management. By providing a roadmap to overcome digital transformation barriers through effective change management practices, the research will provide real-world value to public sector organisations in Pakistan. This will have practical implications for both the public sector organisations and its citizens, in improving governance, public service delivery, and institutional efficiency. Additionally, the study will contribute to advancing academic understanding of change management in public sector organisations, particularly within the context of Pakistan, by addressing the existing research gap in this area.

1.6 Limitations

The study focuses on the public sector in Pakistan, examining the specific barriers faced within the country and exploring how they might be addressed through change management. Therefore, the context-specific nature of these findings may not be directly generalizable to other countries or sectors. It also recognizes that political or economic factors may hinder digital transformation, which may not be fully addressed through change management alone.

Methodologically, the study adopts a qualitative approach, relying primarily on interviews with government officials and public sector employees, to explore their perceptions of digital transformation. While it may provide useful insights, the findings may be subjective and reflect only the views of the individuals interviewed, potentially overlooking broader challenges and strategies. Additionally, the selection of participants for interviews may be limited, primarily identified through personal connections or professional networks, as it is challenging to access key stakeholders such as high-level government officials or decision makers.

Moreover, government officials may be reluctant to discuss the reasons for slow or failed initiatives due to sensitivities around public sector inefficiencies, internal challenges, political influences, and cultural factors like fear of job loss, which could lead to biased responses.

1.7 Dissertation Structure

Chapter One serves as the introduction, covering the background, the research problem, its aim and objectives, and discussing the limitations.

Chapter Two reviews the existing literature on digital transformation and change management within the public sector, highlighting key barriers, strategies, and gaps, as well as the main contributions to the field.

Chapter Three will present the theoretical framework and provide a justification for the use of qualitative, inductive research approach. It will also discuss the broader research design, including the methods used to collect and analyse data, as well as any limitations of the research design.

Chapter four will present and critically analyse the research findings, and how they align with the theoretical framework, existing literature and the research questions.

Chapter five will provide an overall conclusion and recommendations based on the research findings, discussing its implications, policy recommendations, and potential areas for future research.

Chapter 2: Literature review

2.1 Introduction

This study critically analyses the literature on digital transformation within the public sector, focusing specifically on Pakistan, examining both its benefits and the challenges it presents. Additionally, it explores how change management frameworks can address these challenges within the unique context of Pakistan's public sector. The review incorporates an analysis of relevant global and national case studies to identify key success factors. By examining the relationship between digital transformation and change management, the study highlights key factors that can help support successful digital transformation in the public sector. It presents findings from various academic authors, offering a comparative perspective on these topics, as well as relevant models, theories, and themes.

2.2 Benefits of Digital Transformation in the Public Sector

The term e-government emerged in the 1990s, initially referring to the use of information technology (IT) within government departments. Overtime, it has evolved into the use of digital technologies to improve public sector services and governance. While e-government focuses on improving internal operations and service delivery, e-governance is a broader concept that involves how the government interacts with citizens, businesses and other organisations (Grönlund and Horan, 2005).

According to Deane and Bhatnagar (2004), a World Bank report highlighted the potential of e-government to improve public sector performance by reducing corruption, increasing efficiency and transparency, enhancing revenue, and lowering operational costs through information and communication technologies (ICTs). Similarly, the European Parliamentary Research Service (EPRS) reported that e-government initiatives across EU member states enhanced service delivery by improving efficiency,

transparency, cost effectiveness, and convenience, while also reducing corruption (Davies, 2015).

In Pakistan, an Electronic Government Directorate was established in 2002 and later merged with the Pakistan Computer Bureau to form the National Information Technology Board (NITB). The NITB primary role is to assist federal ministries in implementing e-governance programmes to improve service delivery, operational efficiency, and transparency. However, despite notable efforts, overall progress has been limited, with persistent gaps in the scope, quality, and reach of digitalisation initiatives (Farooq, 2021).

Beyond administrative improvements, e-government in Pakistan holds significant potential for stimulating economic growth, creating jobs, and driving digital innovation. It can strengthen internal government communication, enhance interdepartmental coordination, expand citizen participation, and project a modern, transparent government image that enhances global competitiveness (Arfeen, 2004).

In the broader developing-world context, Aritonang (2017) highlights the impact of e-government on public service quality in Indonesia, emphasising its potential to transform service delivery. However, the study notes that e-government alone is insufficient, and that additional factors such as financial support, organisational culture, and effective monitoring and maintenance systems are equally essential in achieving meaningful improvements.

While the benefits of e-government are widely acknowledged by scholars and global organisations such as the UN and World Bank, several challenges persist. A key issue is the digital divide, particularly in rural and low-income areas with limited internet access. Implementing and maintaining digital systems is also costly, while risks around data privacy, surveillance, and low levels of digital literacy further complicate adoption (GO-ITC GmbH, n.d.). Similarly, Davies (2015) highlights the importance of addressing privacy and security, organisational resistance, and the critical role of strong leadership.

Farooq (2021) further argues that e-governance is not only about the adoption of technology, but it also requires a fundamental shift in organisational culture and

mindset. Deane and Bhatnagar (2004) reinforce this by stressing that e-government initiatives should be embedded within broader public sector reforms. Essential factors that must be considered include adequate technical infrastructure, bureaucratic willingness, information-sharing mechanisms, digital accessibility, a supportive legal framework, and strong political commitment.

In Pakistan, digitisation has the potential to transform core government functions such as healthcare, education, land management, and tax collection. However, it could also lead to unintended consequences. For example, the digitisation of land records in Punjab led to reduced tax collection due to changes in bureaucratic behaviour and reduced influence. This highlights the importance of planning reforms carefully, adapting bureaucratic roles, motivating officials effectively, and adopting a holistic approach that integrates technology across interconnected administrative areas (Aman-Rana and Minaudier, 2025).

In conclusion, e-government has evolved from the basic adoption of technology to a transformative mechanism for improving governance and public service delivery. Its potential to improve efficiency, transparency, cost-effectiveness, and citizen engagement is well documented in both developed and developing contexts (Deane & Bhatnagar, 2004; Davies, 2015; Arfeen, 2004). International experiences, particularly in the EU and parts of Asia, alongside evidence from the World Bank and the UN, demonstrate that e-government can drive efficiency and accountability when supported by strong political will, committed leadership, institutional reform, and an enabling infrastructure (Grönlund and Horan, 2005; Aritonang, 2017).

However, to fully achieve these benefits, Pakistan must examine and address the political, economic, technological, and institutional barriers that continue to limit its scale and impact. The following section explores these challenges in detail, highlighting the key factors constraining digital transformation in the public sector.

2.3 Challenges of Digital Transformation in the Public Sector

Despite its recognised benefits and institutional efforts, digital transformation in Pakistan's public sector has progressed slowly. Most internal processes remain

manual, and many citizen services still require physical visits. Although the Digital Pakistan Policy outlines ambitious strategic goals for digital transformation (Ministry of IT & Telecom, 2018) a lack of committed, tech-savvy leadership and weak internet infrastructure continue to limit the impact of e-government initiatives (Siddiqui and Mehmood, 2021).

A study by Ullah et al. (2024), based on surveys and interviews with senior officials from key federal organisations including the National Database and Registration Authority (NADRA), Federal Investigation Agency (FIA), Federal Board of Revenue (FBR), and State Bank of Pakistan (SBP) revealed that although many departments have been pursuing digitalisation for over a decade, outcomes remain below expectations. Figure 1 below illustrates the number of years these departments have been working on digitalisation.

Figure 1: Number of Years These Departments Have Been Working on Digitalization

Source: Ullah et al. (2024)

Multiple factors hinder progress, including economic constrains such as limited funding, political issues including inconsistent policies, weak regulations, and instability. Along with social challenges such as low digital literacy, digital divide, and technological limitations related to infrastructure, cybersecurity, and data protection (Arfeen, 2004).

Implementation is further obstructed by bureaucratic resistance. Many officials lack the digital skills required and are reluctant to abandon traditional practices. This resistance

is often linked to a bureaucratic culture that discourages transparency, values hierarchical control, and fears loss of influence. Additionally, limited technical support and the absence of clear performance metrics to evaluate IT projects further undermine accountability and sustainability (Siddiqui and Mehmood, 2021).

Resistance also occurs at the individual level. Based on interviews with public sector employees in Pakistan, Amjad and Rehman (2018) identified key factors contributing to resistance, including inadequate planning, weak communication of change objectives, lack of involvement in decision-making, and limited awareness of upcoming reforms. Outdated procurement rules and rigid processes further impede the development, testing, and maintenance of digital systems. Many systems are poorly supported, unreliable, or fail to meet user needs. In addition, the absence of clear regulatory frameworks for data sharing, storage, and inter-agency collaboration creates significant bottlenecks (Rasool and Malik, 2020).

Systemic challenges extend beyond bureaucracy and technology. Fragmented and uncoordinated strategies between federal and provincial governments slow down unified progress. Many digital services offer only basic information rather than integrated, end-to-end solutions. Trust deficits fuelled by weak cybersecurity, data breaches, and insufficient data protection laws further undermine public confidence in digital platforms (Sear, 2021). Building on their survey findings illustrated in Figure 1, Ullah et al. (2024) also identified major challenges faced in Pakistan’s public sector digitalisation, summarized in Table 1 below:

Table 1: Major Barriers Identified by Federal Officials in Public Sector Digitalization

Source: Ullah et al. (2024)

Factor of Failure	Percentage of Effect
Lack of interest of donors	3.4%
Poor Coordination among stakeholders	10.3%
Weak supporting policies	10.3%
Old IT and infrastructure/compatibility	6.9%
Unwilling staff	6.9%
Untrained staff	10.3%
Change in political government	10.3%
Transfer of senior officials	10.3%
Financial constraints	13.8%
Red tape/bureaucracy	17.2%

Vann (2004) offers an alternative perspective, suggesting that resistance to digital transformation in the public sector often arises from cultural and linguistic differences rather than mere opposition to change. Unfamiliar IT terminology can overwhelm staff. These issues are further complicated by institutional pressures, reliance on external IT firms, and frequent organisational restructuring.

In conclusion, despite national policies and department level initiatives, digital transformation in Pakistan's public sector continues to face a mix of structural, political, social, and technological barriers. Research consistently points to limited funding, inconsistent leadership, weak infrastructure, and low digital literacy as major barriers (Arfeen, 2004; Rasool and Malik, 2020; Sear, 2021). Institutional and individual resistance to change also remains a major obstacle (Amjad and Rehman, 2018). Moreover, bureaucratic inertia, fragmented governance, and lack of citizen trust contribute to slow adoption and limit effectiveness (Siddiqui and Mehmood, 2021; Ullah et al., 2024).

These challenges reflect deep-rooted structural and cultural issues within Pakistan's public institutions. The lack of coherent policies, citizen-centric design, stakeholder trust, and inter-agency coordination severely limits the transformative potential of digitalisation. Overcoming these barriers requires more than just technological

investment. It demands structured, people focused interventions that strengthens organisational readiness, cultural alignment, and leadership-driven reform.

The next section examines the role of change management frameworks in addressing these barriers by supporting institutional reform, aligning stakeholder interests, and building organisational capacity for effective implementation.

2.4 The Role of Change Management Frameworks in Overcoming Digital Transformation Barriers

Given the various barriers constraining digital transformation in Pakistan's public sector, effective change management is essential to facilitate organisational reform, align stakeholder interests, and ensure successful implementation. Change management has become a central component within organisations, aimed at preparing, equipping, and enabling employees to adapt to and sustain change. Beyond the technological aspects, digital transformation relies on managing people and processes, areas where change management plays a vital role. Without it, many digital initiatives have failed.

Effective change management minimises risk, enhances organisational readiness and flexibility, and improves stakeholder engagement. It provides a structured approach through leadership support, a clear vision, training, and recognition. It also involves aligning proposed changes with organisational goals and assessing institutional readiness by evaluating existing conditions, stakeholder attitudes, and available resources. Importantly, it offers methodologies and tools to monitor progress and evaluate the effectiveness of transformation efforts (Mukhlis and Prasetyoning Tyas, 2024).

2.5 Theoretical Frameworks for Managing Change

To support the implementation and managing reforms, a range of change management frameworks have been developed to help organisations address the human and organisational dimensions of complex transitions. The following section outlines several widely recognized frameworks that public institutions can adopt to manage change more effectively.

2.5.1 ADKAR Model

According to Hayes and Fix (2024), the ADKAR model (Awareness, Desire, Knowledge, Ability, Reinforcement) provides a strategic approach to managing the human side of change. It guides employees through each stage of transition by creating awareness of the need for change, developing the desire to support it, and providing the required knowledge and training. Furthermore, it also develops the ability to implement the change and reinforces the change over time to ensure it is sustained. This approach helps reduce resistance and is particularly relevant in public sector settings, where aligning diverse stakeholders and addressing institutional reluctance are critical to success.

2.5.2 Kurt Lewin's Force Field Analysis

While the ADKAR model focuses on individual behaviour, Lewin's Force Field Analysis (1951) provides a broader organisational perspective. It examines both the driving forces that promote change and the resisting forces that hinder it. By mapping these forces organisations can assess whether the overall environment is conducive to successful transformation.

In the context of Pakistan's public sector, this model is especially relevant as it enables decision makers and implementation leaders to identify the sources of resistance such as bureaucratic hurdles, fear of the unknown, limited digital literacy while simultaneously strengthening support through leadership, training, and stakeholder engagement.

2.5.3 McKinsey 7-S Framework

While the ADKAR and Lewin models address behavioural and resistance dynamics, the McKinsey 7-S Framework expands the scope by emphasising internal alignment across seven key organisational elements including strategy, structure, systems, shared values, skills, staff, and style (Malik, 2024). Suwanda and Nugroho (2022) argue that this framework is applicable to both public and private sector organisations. Their review of public sector case studies revealed recurring weaknesses particularly in strategy,

systems, staff skills, and leadership style and emphasized alignment across all seven elements for effective organisational management.

Building on this, Abouaomar and Alhaderi (2024) used the McKinsey 7-S Framework to identify and categorise key barriers public sector digital transformation. They identified challenges such as lack of vision, planning, and budget under Strategy, bureaucratic rigidity under Structure, outdated infrastructure under Systems, and ineffective leadership and communication under Style. Furthermore, they noted low staff readiness, insufficient technical skills, and an absence of shared vision, which were categorized under Staff, Skills, and Shared Values. Demir and Kocaoğlu (2019) also demonstrated the model's utility in a Turkish software firm, highlighting strategy and shared values as key enablers.

These findings demonstrate the framework's value in diagnosing both structural and human challenges of digital reform and in guiding targeted interventions. The framework is therefore a useful tool for public sector organisations, as it provides a multi-faceted approach to analyse and successfully manage digital transformation initiatives.

2.5.4 Burke-Litwin Model of Organizational Change

Building on the internal focus of the 7-S Framework, the Burke-Litwin Model offers a comprehensive understanding of both the internal and external factors that drive change. The model links the external environment such as policy or financial pressures to internal elements like leadership, culture, mission, and structure. It distinguishes between transactional factors which are related to day-to-day operations, and transformational factors that involve deeper structural and cultural aspects of the organisation, making it particularly suitable for managing complex public sector reforms (Boone, 2012).

Tambusay and Aisyah (2024) used the Burke–Litwin model to assess the performance of a government department in Indonesia. Their study showed that transformational elements such as leadership, culture, and mission directly influenced organisational performance. They identified key barriers, including lack of strategic direction, non-inclusive policies, unsupportive leadership, and an unfavourable external environment.

These findings underline the relevance of the model not only in evaluating organisational performance but also in enhancing internal capabilities critical for digital transformation in the public sector.

Taken together, these frameworks demonstrate that effective change management is essential for sustainable digital transformation. While ADKAR and Lewin's models provide valuable guidance on managing individual behaviour and overcoming resistance, McKinsey 7S and Burke–Litwin frameworks offer broader organisational insights into alignment, culture, and external influences. Collectively, they underscore the need for a multidimensional approach that integrates leadership, structural alignment, stakeholder engagement, institutional readiness to enable meaningful reform in the public sector.

2.6 Institutional and Policy-Level Strategies for Public Sector Transformation

While change management models provide valuable guidance on internal organizational reforms, public sector transformation especially in complex environments like Pakistan also requires broader governance and policy-level strategies. Haug, Dan, and Mergel (2023) distinguish between incremental and transformative digital change, emphasising that true transformation involves more than technological adoption. Their framework identifies external drivers such as regulations, economic conditions, and citizen expectations, as well as internal enablers like leadership, organisational capacity, and infrastructure. They argue that transformation emerges through long-term, cumulative processes driven by citizen engagement, policy alignment, and inter-organisational collaboration. This highlights the importance of addressing institutional and policy-level constraints alongside technical interventions.

To support such transformation, institutional and strategic frameworks developed by organisations like the United Nations Development Programme (UNDP), the Uttar Pradesh Public Service Commission (UPPCS) Magazine, and IBM complement traditional change models by addressing political, systemic, and contextual barriers. For instance, the UPPCS (2025) outlines strategies to overcome resistance, including creating urgency, engaging stakeholders early, continuous communication, and

adapting based on feedback. These strategies are particularly relevant in public organisations where institutional inertia and rigid hierarchies hinder innovation (UPPCS Magazine, 2025).

Similarly, UNDP's integrated approach to change management combines organisational theory with broader socio-economic considerations. It promotes leadership-driven momentum, in-depth analysis of legal, social, and policy contexts, coalition-building, and consultation. This approach proposes practical tools such as stakeholder analysis, advocacy, and consensus-building to navigate institutional power dynamics. UNDP also recommends a flexible, results-based approach to planning, budgeting, and implementation, supported by skilled facilitators with both technical and mentoring expertise (UNDP, 2006). In countries like Pakistan, where development and governance challenges are deeply interlinked, such approaches can be particularly effective. UNDP additionally highlights several tools including Change Forecasting, the Open Systems Model, the McKinsey 7-S Framework, SWOT analysis, Balanced Scorecards, Process Consultation, and Business Process Reengineering that can support transformation efforts (UNDP, 2006).

Recent innovations also emphasize the importance of digital safeguards. The Universal Safeguards for Digital Public Infrastructure (DPI), launched in 2023 by the Office of the United Nations Secretary-General's Envoy on Technology (OSET) and UNDP, recommend a lifecycle-based approach to DPI covering scoping, design, development, deployment, and maintenance, while identifying and mitigating risks at each stage. Key to this approach are principles of inclusivity, transparency, and human rights, supported by legal safeguards such as data protection, grievance redressal mechanisms, and continuous monitoring. The approach is further strengthened by sustained and adaptive governance with strong stakeholder engagement, to maintain a trusted, equitable digital infrastructure (OSET and UNDP, 2024).

Complementing these institutional strategies, IBM offers a tech-driven approach to change management that prioritizes agility, empathy, and user-centered transformation over rigid planning. The approach focuses on three core enablers that include personalisation, amplification, and measurement. Personalisation refers to tailoring

change experience to employee's specific needs. Amplification leverages collaboration and feedback to promote adoption, and measurement uses key performance indicators (KPIs) to assess progress and impact. These enablers guide IBM's five state change cycle that are used to prepare, discover, deliver, transition, and realise and sustain change (Iacoviello et al., 2024). This agile model is well-suited to dynamic public sector environments requiring flexibility, responsiveness, and ongoing learning.

Supporting these views, Connolly (2008), in his review of Managing Change in the Public Services, emphasises the complex and political nature of public sector reform. He argues that coping, collaboration, and adaptability are more effective than rigid, hierarchical approaches, and stresses the need for flexible, context-sensitive policies that reflect power dynamics and manage ambiguity and competing interests. Connolly emphasizes that effective application of complexity theory, must be grounded in real-world evidence, integrating both theoretical and practical dimensions.

Together, these strategies demonstrate that public sector transformation requires more than internal restructuring. Integrated, policy-driven strategies must account for institutional, political, social-economic dynamics. Insights from UNDP, OSET, and IBM, alongside broader public administration literature, emphasize the value of adaptive, evidence-based approaches. The DPI framework highlights the importance of inclusivity, trust, risk mitigation, and human rights. For Pakistan, successful transformation will depend on aligning these strategies with national priorities, local contexts, strengthening institutional coordination, addressing resistance, and the complex realities of digital governance.

2.7 Localized Strategies and Insights from Pakistan

While international frameworks provide valuable guidance, the success of change management efforts ultimately depends on how well they are tailored to local political, institutional, and cultural contexts. This section explores localized strategies and lessons from Pakistan in greater detail.

Drawing from firsthand experience in Pakistan's IT and public sectors, Khurshid (2024) highlights that effective change management relies on building understanding and trust

rather than enforcement. In reforming the admissions system of a major educational institution, success was achieved through regular communication, stakeholder engagement, targeted training, and strong leadership. Common barriers such as limited digital readiness, cybersecurity concerns, and staff resistance were mitigated by customizing tools to regional needs and celebrating small wins to maintain momentum. Streamlining financial processes also proved essential in preventing delays that commonly disrupt digital initiatives.

At the national level, the digital transformation of the National Assembly illustrates both the opportunities and fragility of reform. While it demonstrated the potential of technology to improve processes, it also highlighted vulnerabilities such as political turnover and lack of policy continuity. Due to these vulnerabilities past initiatives often failed, demonstrating that coordinated, long-term planning that integrates technological interventions with human-centered approaches, and robust change management are essential (Bússola Tech, 2023).

Barriers identified by Khalil Ibrahim and Benabdelhadi (2022), resonate closely with challenges commonly seen in Pakistan's public sector, such as political risks, resistance to change, institutional compartmentalization, rigid bureaucratic structures, and a lack of digital readiness. The authors propose a phased approach based on trust-building, stakeholder engagement, and a clear understanding of institutional dynamics. They emphasize the importance of communication, recognition, participation, and targeted training. Additionally, they recommend starting with small, manageable projects backed by adequate resources, and maintaining flexibility to adapt to evolving political and organizational conditions.

Complementing these localized insights, Bhatnagar and Deane (2004) draw on experiences from developing countries, noting similar challenges such as resistance from civil servants, limited capacity, and weak project ownership. They note that even partial automation as seen in Chile's procurement reforms can lead to substantial cost savings and increased transparency. High-impact services like licensing, certification, and tax collection have been successfully digitized in other developing countries, however, replicating these efforts requires a phased, context-sensitive implementation

approach. It should be further supported by strong leadership and systematic evaluation by independent agencies to ensure sustainability, particularly in politically unstable environments (Deane and Bhatnagar, 2004).

Collectively, these localized experiences highlight the importance of political stability, committed leadership, sensitivity to local contexts, and a strong focus on human factors. Sustainable progress must be gradual, inclusive, and adaptable, supported by policy continuity, effective communication, and trust-building.

The next section analyses several digital initiatives globally and within Pakistan that have successfully navigated similar challenges, offering practical lessons to guide future reforms.

2.8 Successful Digital Transformation Initiatives in Pakistan and Globally

Building on localized insights, this section reviews national and global case studies that provide practical lessons and strategies to address key challenges in digital transformation.

Sear (2021) identifies six major challenges to digital transformation and presents international case studies that offer practical solutions. To overcome fragmented digital efforts, the United Kingdom's (UK) Government Digital Service (GDS) created a centralized digital transformation unit that introduced unified standards, centralized oversight, and platforms like GOV.UK. This platform replaced over 2,000 government websites with a single, user-friendly portal. Strong leadership support and spending control authority enabled coordinated, cross-government reform. In France, the "New Deal Mobile" initiative leveraged public-private partnerships to improve rural connectivity, offering license renewals without competition in exchange for 4G coverage expansion, which resulted in 96% territorial coverage by 2020.

To bridge the digital skills gap, Singapore's SkillsFuture program provided accessible training opportunities especially targeting seniors. This program was supported through state funding and collaboration with the private sector. Estonia, following a major 2007 cyberattack, became a global leader in cybersecurity through national strategies, dedicated institutions, and robust legal frameworks that reinforced public trust.

Meanwhile, South Korea's participatory budgeting platform "MyBudget" empowered citizens to directly influence public spending, strengthening transparency, engagement, and trust in governance.

The experiences of China, Estonia, Singapore, and South Korea reveal that successful digital transformation depends on political will, long-term vision, policy continuity, and strong institutional frameworks. Estonia's benefited through early investment in IT education and cross-party consensus. China's rapid fintech expansion was driven by coordinated policy and regulatory innovation. South Korea and Singapore achieved success through strategic planning, talent development, and infrastructure investment. Pakistan can learn from these examples by committing to a long-term digital agenda, ensuring policy continuity beyond election cycles, investing in digital infrastructure and literacy, encouraging private sector participation, and leveraging emerging technologies such as AI to seize leapfrogging opportunities (Mian, 2024).

Within Pakistan, the National Highways and Motorway Police (NHMP) is a notable example of public-sector excellence, overcoming systemic challenges such as weak governance, low morale, job insecurity, and public mistrust. Since its establishment in the late 1990s, NHMP has prioritised merit-based recruitment, continuous training, and adoption of modern technologies such as radar guns and digital violation records, which enhanced transparency and public confidence. Its regularly updated website offers real-time traffic, weather, and road information, facilitating citizens directly. With strong political backing and competitive compensation, NHMP is widely recognized as a citizen-friendly and relatively corruption-free institution (Asian Productivity Organization, 2021).

Similarly, National Database and Registration Authority (NADRA) represents one of the most successful examples of digital transformation within Pakistan's public sector. Beyond revolutionizing Pakistan's national citizen registration system, NADRA has supported several international projects, including national identity systems for Sudan, Somalia, and Nigeria, an election management system for Fiji, and a re-admission case management system for the EU. These initiatives reflect its capacity to deliver secure, scalable digital identity infrastructure (Baloch, 2023). Alam (n.d.) uses the Kotter's 8-

Step Model to explain NADRA's shift from a fragmented, politically constrained entity to a centralized, tech-driven organisation. Key elements identified included establishing urgency, forming a coalition of internal and external experts, communicating a clear vision, flattening hierarchies, and promoting participatory management. Early wins in software development enabled broader biometric and identity system expansion.

NADRA's transformation reflects key success factors rooted in cultural and structural shifts, evolving from a bureaucratic body into a dynamic, customer-centric, and technology-driven organisation. This change was enabled by a revised mission, redefined business model, and strategic investment in internal technical capacity. A comprehensive overhaul of organisational mindset, structure, and operations fostered wide acceptance of change, supported by long-term planning and agile short-term execution. Participative management and flatter hierarchies particularly in tech departments encouraged openness and collaboration. Transparency was reinforced through stringent control systems, while a culture of innovation, calculated risk-taking, and continuous learning enhanced adaptability. By blending bureaucratic discipline with entrepreneurial agility, NADRA sustained transformation and responded effectively to evolving governance and technological demands (Jan, 2006).

While most literature on NADRA's transformation emphasizes internal change management practices such as leadership, coalition-building, and vision alignment, Ali et al. (2016) highlights equally important factors such as citizen satisfaction and loyalty to e-government services. These are shaped by the usability of digital platforms, including intuitive design, navigation, and personalization. Without user-friendly interfaces, these reforms have limited impact. This underscore that long-term success in digital transformation hinges not only on internal organizational reforms but also on the end-user experience and public trust.

These case studies show that successful digital transformation requires an integrated approach that combines strategic leadership, institutional reform, cultural and structural adaptability, technological innovation, and citizen-centric service design. From NADRA's internal reinvention to the UK's centralized digital governance model and Estonia's sustained digital vision, a consistent pattern emerges that sustainable transformation

depends on political will, institutional continuity, coordinated efforts, public trust, and adaptive capacity. For Pakistan, the key lesson is to treat digital governance as an interconnected ecosystem, where technology, policy, human capital, and user engagement are mutually reinforcing components.

2.9 Conclusion

This literature review has critically examined the current state of digital transformation in Pakistan's public sector, highlighting its potential benefits, persistent challenges, and the role of change management frameworks in facilitating change. It also assesses institutional strategies and global and national examples offering complimentary insights to digital transformation efforts. While digital transformation offers significant advantages such as improved service delivery, transparency, cost efficiency, and citizen engagement, its implementation in Pakistan remains slow and uneven due to structural inefficiencies, bureaucratic resistance, weak digital literacy, and fragmented governance.

Structured change management frameworks, such as ADKAR, Lewin's Force Field Analysis, McKinsey's 7S, and the Burke-Litwin Model, offer valuable theoretical foundations for managing organisational change. Complementary institutional strategies from organisations such as the UNDP, OSET, and IBM, along with insights from local case studies in Pakistan, underscore the importance of political will, stakeholder engagement, policy alignment, flexibility, and context-sensitive implementation. Global examples from the UK, Estonia, and Singapore further reinforce that sustainable transformation requires coordinated, long-term efforts that prioritise both system-wide reform and active citizen involvement.

Despite these insights, critical research gaps persist. Many studies overlook the socio-political complexities of developing countries like Pakistan, where informal power structures, trust deficits, and political instability complicate reform efforts. Additionally, existing frameworks often fail to account for localized resistance dynamics, such as bureaucratic reluctance, economic constraints, fear of transparency, and the digital divide in rural areas.

The review specifically highlights the absence of context-specific change management strategies tailored to Pakistan's bureaucratic culture, political dynamics, and infrastructural limitations. While global models offer a variety of tools and approaches, their applicability to Pakistan's public sector remains underexplored. Similarly, successful transformations such as NADRA and NHMP have seen limited broader replication, underscoring the need for scalable and adaptable models.

This study therefore aims to address these gaps by examining elements of change management frameworks to support effective transformation. By combining global best practices with localized insights, the research aims to offer context-sensitive recommendations for digital transformation that balance technological innovation with institutional readiness, leadership commitment, and citizen engagement. Ultimately, this dissertation seeks to contribute meaningful insights into how Pakistan's public sector can navigate digital reform sustainably, providing actionable guidance for policymakers, administrators, and change leaders.

Chapter 3: Research Methodology

3.1 Introduction

This chapter outlines the research methodology adopted to explore the barriers to digital transformation in Pakistan's public sector and analyse the role of change management frameworks in overcoming these challenges. The research is designed to align with the aims and objectives of the study and provides a clear rationale for the chosen philosophical orientation, methodological approach, data collection methods, and analysis techniques.

The primary aim of this research is to identify key barriers to digital transformation within Pakistan's public sector and to propose a roadmap for addressing these barriers through change management frameworks. To achieve this, the study follows the following objectives:

1. Critically review the literature on barriers to digital transformation in Pakistan's public sector and assess their implications for governance, service delivery, and institutional efficiency.
2. Conduct interviews with government officials and public sector employees to explore the challenges, successes, and strategies related to digital transformation
3. Propose solutions for overcoming barriers to digital transformation through a change management perspective.
4. Analyse national and international case studies of successful public sector digital transformation, identifying key success factors.

The methodology is primarily designed to address the second objective and aspects of the third and fourth objectives. It collects data through a qualitative methodology using semi-structured interviews with key stakeholders in the public sector. This approach enables an in-depth exploration of institutional dynamics, stakeholder perspectives, and transformation challenges. In addition, secondary data including relevant literature and case studies is used to enhance context and support triangulation.

The research design is guided by Saunders et al.'s (2019) Research Onion model, which offers a structured, step-by-step framework for aligning the study's philosophical foundations with practical methodological decisions. The model ensures consistency throughout the research process from philosophical assumptions to methods of data collection, and analysis techniques.

This methodology chapter begins with an overview of the research philosophy and approach, followed by a discussion of the research strategy and data collection methods. It then outlines the time horizon and sampling strategy, describes the data analysis techniques, addresses methodological limitations, and concludes with a review of ethical and logistical considerations.

3.2 Research Philosophy

Research philosophy refers to the set of beliefs and assumptions that guide how knowledge is created, interpreted, and validated. It is shaped by three key assumptions including ontology, epistemology, and axiology. Ontology defines the nature of reality, what exists and how it is perceived. Epistemology examines the nature and sources of knowledge, while axiology considers the role of values and ethics on the research process. These three assumptions guide every stage of the research from design, data collection, analysis, and interpretation (Saunders et al., 2019).

Business and management research typically draws upon five main philosophical perspectives including positivism, critical realism, interpretivism, postmodernism, and pragmatism (Saunders et al., 2019). This study adopts an interpretivist philosophy, which is particularly suited to qualitative research that explores the complex and socially embedded nature of change processes within public sector institutions.

Interpretivism is founded on the belief that reality is socially constructed and shaped by context, culture, interactions, and individual experiences. Unlike positivism, which seeks to establish universal and generalisable laws, interpretivism emphasizes the importance of gaining deep, contextual insights into human experiences. It recognizes that social realities may be seen differently depending on the background, circumstances, and the specific time in which they occur (Saunders et al., 2019; Myers, 2008; Bhattacherjee,

2012, as cited by Alharahsheh & Pius, 2020). This approach aligns with the aims of the research, which seeks to understand the barriers to digital transformation and explore how change management frameworks can support public sector reform. These issues are deeply rooted in institutional dynamics, stakeholder experiences, and individual perspectives.

The philosophical stance also incorporates a subjectivist ontology. While objectivism assumes reality exists independently of individual perception, subjectivism argues that reality is constructed through personal experiences, emotions, and social interactions (Wood, 2023). These views shape how researchers understand reality, acquire knowledge, and acknowledge the influence of values on the research process. Ontologically, it recognizes the existence of multiple realities shaped by stakeholder beliefs and experiences. Epistemologically, the study gathers knowledge through semi-structured interviews with public sector employees, capturing their individual views and lived experiences. Axiologically, the study acknowledges the role of the researcher's own values, preconceptions, and interpretive role in influencing the research process.

This subjectivist and interpretivist approach provides a flexible and context sensitive framework. It also helps ensure that the research stays closely connected to the real experiences of people involved in digital transformation within the public sector, making the findings more meaningful and realistic.

3.3 Research Approach

This study uses an inductive research approach, consistent with its interpretivist philosophical stance. Inductive research begins with the collection of detailed, context-rich data, allowing themes and patterns to emerge naturally from participants' experiences rather than being tested against pre-existing theories. This approach enables a flexible exploration of stakeholder perspectives and supports the development of insights grounded in real-world complexity (Thomas, 2003).

In line with this approach, the study uses a qualitative methodology, aiming to understand how public sector employees perceive and navigate barriers to digital transformation. Data is collected through semi-structured interviews, enabling

participants to express their views, perceptions and experiences. This approach ensures that the findings remain closely tied to participants experiences while directly addressing the research objectives.

3.4 Research Strategy

The study adopts the grounded theory research strategy. Grounded theory is widely used in qualitative research, that involves developing theory directly from empirical data. It follows an inductive approach, where concepts and explanations are derived from participant's experiences rather than being imposed by pre-existing theoretical frameworks. The method focuses on identifying patterns, themes, and commonalities within the data, which are then used to generate a theory grounded in the real-world experiences of participants (Charmaz, 2015).

This strategy complements the study's interpretivist philosophy, inductive approach, and qualitative methodology. It is particularly well suited for the research aim, as it focuses on real-life experiences and context-specific insights from those directly involved in digital transformation within public sector institutions.

3.5 Data Collection Method

This study adopts a mono-method qualitative approach, consistent with its interpretivist philosophy. Data was collected through semi-structured interviews with government and public sector employees. This approach enabled open-ended dialogue, encouraging participants to share detailed insights from their real-life experiences. The interview questions were designed to explore the key barriers to digital transformation, examine the role of change management frameworks, and capture perceptions, experiences, and lessons learned from those directly involved.

3.6 Time Horizon

This study adopts a cross-sectional time horizon, collecting data through semi-structured interviews with government and public sector officials. Unlike a longitudinal design, which involves data collection over an extended period, a cross-sectional design

provides a snapshot of participants perspectives at a single point in time (Rindfleisch et al., 2008).

Although the interviews were conducted at one point in time, the insights provided by the participants were based on their long-term involvement in digital transformation initiatives within their respective public sector organisations. Therefore, the data reflects experiences and perceptions developed over multiple years, despite the study's cross-sectional design.

Furthermore, due to the time limitations associated with an academic research project, the cross-sectional approach was both practical and appropriate for achieving the study's objectives.

3.7 Data Analysis Methods and Techniques

Given the qualitative nature of this study and the use of semi-structured interviews, a thematic analysis approach is employed to analyse the data. Braun and Clarke (2006) define thematic analysis as a "method for identifying, analysing, and reporting patterns or themes within qualitative data." It offers a flexible, rigorous framework that is particularly well-suited to research with an interpretivist orientation. This method enables exploration of social, cultural, and organisational contexts that shape participants experiences (Braun & Clarke, 2006; Lochmiller, 2021).

This approach aligns with the study's aims to understand barriers to digital transformation, the perceived role of change management frameworks, and strategies adopted within public sector institutions. The analysis will follow the six-step approach to thematic analysis as outlined by Braun and Clarke (2006), which involves familiarisation with the data, generating initial codes, identifying and reviewing themes, defining and naming them, and finally producing the report.

Interview recordings (where consent was provided) or written notes from interviews were reviewed carefully, with attention paid not only to what was said, but how it was said including the tone, emotion, hesitation, or diplomatic phrasing. Data was be coded inductively, allowing patterns to emerge without the constraints of pre-defined categories. Initial codes were then grouped into broader themes aligned with the

research questions and objectives. Weak, overlapping, or inconsistent themes were refined, merged, or excluded as needed.

The final themes were clearly defined to reflect their core meaning and supported by direct participant quotes. The report presents a narrative interpretation of the findings, connecting the thematic insights to the broader research context and objectives.

3.8 Sampling Strategy

This study used a purposive sampling strategy, in which participants were intentionally selected according to a predefined criteria that aligned with the research objectives. This approach facilitated the inclusion of key stakeholder groups and ensured diversity across relevant categories (Ritchie & Lewis, 2003). The rationale for sample selection is further shaped by the study's ontological, epistemological, and axiological positioning (Campbell et al., 2020).

The target population consisted of government officials and public sector employees who offered informed perspectives on how digital transformation is perceived, implemented, and experienced within their institutions. Participants were selected based on socio-demographic characteristics, professional roles, and relevant experiences that were critical to exploring the central themes of the study. The use of purposive sampling was supported by the researcher's informed judgment that certain individuals were more likely to provide rich and valuable insights (Mason, 2002). More specifically, a heterogeneous or maximum variation sampling approach was adopted to include participants with diverse attributes, capturing a broad range of perspectives (Dudovskiy, n.d.).

The final sample included 11 individuals from a variety of departments and organisational levels, with deliberate variation in age and hierarchical position. These factors were expected to influence perceptions of digital transformation. For instance, older employees may face greater challenges due to limited digital literacy, while senior officials are more likely to have the authority to lead change. In contrast, junior staff may depend on institutional support mechanisms, such as training and capacity-building, to adapt to digital initiatives. Departments were chosen based on varying levels of digital

advancement. For example, employees from NADRA, known for its advanced digital systems, were included alongside those from less digitised departments to provide contrast and highlight institutional variability.

Finally, practical considerations such as time, access, and resource constraints influenced the implementation of the sampling strategy. Overall, purposive sampling was well-suited to the interpretivist orientation of this research, enabling the collection of rich, context-specific data from individuals who provided critical insights into digital transformation in the public sector.

3.9 The Methodological Limitations

While qualitative research offers flexibility and provides rich, human-centred insights essential for understanding complex social and behavioural issues, it also has limitations. These include the time-intensive nature of data collection and analysis, limited generalisability of findings, and a reliance on the interpretive skills of the researcher. Additionally, the researcher's presence during interviews may inadvertently influence participant responses and introduce the possibility of observer bias. (Anderson, 2010).

In this study, access constraints within the public sector posed difficulties in reaching a broader and more diverse sample. Some participants may have been reluctant to speak openly on sensitive topics such as bureaucratic resistance or political interference, which could have introduced response bias and led to more cautious or diplomatically worded responses.

Furthermore, time and resource limitations restricted the number of interviews conducted. The sample may have been skewed toward individuals who were more accessible or willing to discuss digital transformation, rather than those most directly responsible for leading such initiatives. As a result, the findings primarily reflect the views of government officials and public sector employees across selected departments and may not fully represent the wider range of stakeholders involved in digital reform processes.

3.10 Ethical and Logistical Considerations

An ethics form was submitted and approved, and the study complied with the Research Ethics and Integrity Code of Practice of the University of Wales Trinity Saint David. The research adhered to key ethical and logistical principles, including voluntary participation, informed consent, and the protection of participant's confidentiality (Bhandari, 2025). Every effort was made to minimize potential harm, findings were communicated transparently and honestly. Research integrity was maintained by avoiding any form of data falsification or misrepresentation.

Participants were provided with a consent form outlining the study's purpose, their rights, the voluntary nature of participation, and confidentiality of their responses. Interviews were conducted privately and were audio recorded only with prior consent. All data was securely managed, anonymised, and stored in accordance with the General Data Protection Regulation (GDPR) and the university's ethical guidelines.

Participants were informed of their right to withdraw from the study at any stage without consequence. The study did not include children or vulnerable individuals lacking the capacity to provide informed consent.

3.11 Concluding Summary

This chapter outlined the methodological approach adopted to explore the barriers to digital transformation in Pakistan's public sector and the potential role of change management frameworks in addressing them. The research design was guided by Saunders et al.'s (2019) Research Onion model, adopting an interpretivist philosophy and an inductive approach, with data collected through semi-structured interviews. Data was analysed through thematic analysis, to identify recurring patterns and themes emerging from participant's experiences.

Ethical and logistical considerations were carefully considered to ensure confidentiality, integrity, and compliance with institutional guidelines. Overall, the methodology offers a context-sensitive, and participant-centred framework that supports the generation of actionable insights aligned with the study's objectives.

Chapter 4: Findings & Results

4.1 Introduction

This chapter presents the findings from semi-structured interviews conducted with 11 public sector officials from different government departments and ministries in Pakistan. The research aimed to identify barriers to digital transformation, highlight successful practices and strategies, and examine the potential role of change management in addressing these challenges. The interviews explored participant's perceptions and experiences of digital transformation in the public sector, focusing on barriers, the influence of organizational culture and leadership, familiarity with change management frameworks, and key success factors.

The interview questions, included in Appendix 2 ("List of Interview Questions"), were derived from the following core research questions from the study:

1. What are the key barriers to digital transformation within Pakistan's public sector?
2. What are the perceptions and experiences of government officials and public sector employees regarding digital transformation efforts?
3. How can change management frameworks help overcome these barriers to digital transformation?
4. What lessons can be learned from successful digital transformation initiatives in Pakistan and globally?

The chapter is organized thematically to present a coherent narrative of the emerging issues beginning with barriers, moving to factors that influence success or failure, and concluding with observed outcomes. Thematic analysis of the interviews identified five core themes:

- Resistance to Change and Cultural Inertia
- Systemic and Institutional Barriers to Digital Transformation

- Leadership and Systemic Alignment as Catalysts for Digital Transformation
- Critical Enablers of Sustainable Digital Transformation
- Fragmented but Emerging Digital Transformation

Each theme is supported with direct quotations from the participants. The chapter provides an objective and descriptive account of the results and concludes with a summary that forms the foundation for the interpretation and discussion in the next section.

4.2 Emergent Themes from the Findings

4.2.1 Theme 1: Resistance to Change and Cultural Inertia

One of the most consistent themes to emerge was the widespread resistance to change among employees, which is deeply embedded in the organisational culture. Participants frequently described a workforce accustomed to traditional methods and reluctant to adopt new digital systems.

> *"People don't want change and are happy with the old way of doing things." (Participant A)*

Several participants linked this to generational factors, noting that senior officials, particularly those nearing retirement, were the most hesitant:

> *"Culture will take a long time to change… Senior officials don't want to change in the last years of service. They are used to what they have been doing for 50 years." (Participant C)*

Others observed that younger staff were generally more adaptive and often assisted their senior colleagues:

> *"Younger officers are more adaptive and support their seniors with digital tasks." (Participant G)*

The data also highlighted how resistance was further reinforced by hierarchical dominance and a bureaucratic culture with vested interests favouring maintaining the status quo:

> *“Our bureaucratic rules don’t support change, and there is also no accountability.” (Participant C)*
> *“Digital transformation is stalled by vested interests, red tape, and slow decision-making.” (Participant D)*

Multiple participants emphasized that resistance was multifaceted, driven by fear, perception of increased workload, lack of transparency, and lack of incentives. While staff often complied with directives, genuine willingness to implement digital systems was lacking:

> *“People comply with decisions but lack genuine willingness to implement them.” (Participant E)*
> *“No incentives for staff to adopt digital workflows, just extra work.” (Participant J)*

Some even reported deliberate avoidance of digital systems to escape accountability and transparency:

> *“Some avoid transparency, they would try to make the cameras not work.” (Participant F)*
> *"The barriers are mainly related to issues of transparency because most departments don’t want their processes to become transparent." (Participant H)*

This reluctance was compounded by limited digital literacy and capacity gaps among staff:

> *“A major barrier for us was also the capacity of our staff.” (Participant D)*
> *“Staff lack the technical skills needed to operate new systems.” (Participant B)*

Another significant concern was the fear of job loss due to automation. However, participants noted that employees initially resisted reforms, but acceptance grew once benefits became visible:

"Fear of job loss… initially changes not welcomed, later seen as performance improvement." (Participant H)

"At first people thought computers would replace them, but later they realised it helped them work better." (Participant K)

4.2.2 Theme 2: Systemic and Institutional Barriers to Digital Transformation

Beyond cultural resistance, participants identified a range of systemic and institutional barriers that impeded digital transformation. These included outdated IT infrastructure, poor internet connectivity in remote areas, low digital literacy, outdated laws, rigid procedures, resource limitations, and governance gaps.

A common challenge, especially in remote regions, was inadequate technological infrastructure and unreliable electricity. As noted by some participants:

"Lack of modern IT equipment and poor internet connectivity." (Participant B)

"Power and connectivity issues in remote forest regions." (Participant F)

Citizen-level digital literacy gaps were also reported as limiting adoption and reducing the effectiveness of service delivery:

"Service utilisation [is] less effective as end-users are not tech savvy." (Participant E)

"Digital systems improved access, but frequent crashes, low digital literacy, and weak IT support left many users frustrated and underserved." (Participant J)

Issues related to cybersecurity, poorly designed interfaces, and unreliable systems were reported due to weak and outdated systems:

"Outdated IT infrastructure leaves records and data vulnerable to hacking and data breaches." (Participant J)

"Poorly designed, unreliable systems discourage usage." (Participant J)

Another barrier was the lack of digital readiness and integration across government departments, which created fragmentation and inefficiencies:

“There are other departments we work with that are not as technologically advanced.” (Participant K)

“Department[s] have developed their internal systems, but some are dependent on other departments and since there is no integrated system, it’s not functional.” (Participant E)

Financial constraints were also repeatedly mentioned. Many organisations lacked the capacity to invest in large-scale reforms, though some participants argued that smaller-scale reforms, if well manage could still deliver meaningful progress:

“Investment is an issue. Most organisations are already in loss. They cannot afford such a massive change.” (Participant C)

“Digitization in the public sector doesn’t always require big budgets. What matters is leadership, quick wins, staff involvement, and adapting solutions to local realities.” (Participant J)

In addition, legal and policy rigidities were seen as slowing reforms due to complex procedures and long approval processes:

“Legal changes can only be made during the budget cycle, as acts must be amended through parliament. This meant we had to wait until the budget process.” (Participant A)

“Delayed, long approval processes stall projects.” (Participant J)

Finally, governance and continuity gaps were frequently cited, with frequent turnover of senior officials undermining progress:

“Senior level secretaries are always changed every two years. One comes from a completely different field, and it takes them a year to understand a new department.” (Participant C)

“When you leave, people revert, there is no accountability.” (Participant A)

4.2.3 Theme 3: Leadership and Systemic Alignment as Catalysts for Digital Transformation

Leadership was consistently identified as a decisive factor in both successful and unsuccessful digital initiatives. However, its impact was realised only when embedded within and supported by the broader system, including laws, policies, regulations, institutional frameworks, infrastructure, and resource allocation.

Visible commitment, ownership, and leading by example emerged as a critical catalyst.

One participant stated:

> *"I had the wish to implement this automation, and I was clear it was required. So, I was determined. And it should be a story of success... I said I take responsibility, and I was committed to implement it" (Participant A).*

> *"Even the General Manager has to use the biometric system to set an example." (Participant G)*

Others emphasised leadership's role in communication, trust-building, and taking risks and responsibility, in order to create an enabling environment for reforms:

> *"It was mainly due to the leadership's commitment, holding weekly meetings and convincing staff it was for their and the organization's betterment." (Participant H)*

> *"Leader needs to give in writing, so lower staff feels safe." (Participant A)*

Data also revealed that leadership competence, particularly a background or understanding of IT was essential for effective digital transformation:

> *Senior leadership has IT background. And are very well in touch with IT." (Participant I)*

On the contrary, a lack of leadership endorsement and frequent leadership turnover, were identified as key reasons hindering long term success of digital initiatives:

> *"No visible leadership endorsement, HODs often don't use the systems themselves." (Participant J).*

"Senior level secretaries are always changed every two years. One comes from a completely different field, and it takes them a year to understand a new department." (Participant C)

Alongside the human dimension of leadership, participants highlighted its crucial role ensuing systemic alignment across legal, financial, coordination, and procedural frameworks. These were essential factors required within digital reforms, within which leaderships role of key:

"The first step was to pass the required laws and regulations. All relevant departments began sharing data, and access to the data was achieved." (Participant I)

"An external loan of 135 million dollars was initially refused, but I pushed at the board level to have it implemented. Such massive change requires funding." (Participant C)

"A new law was needed, and it was amended. This ensured that digital initiatives were built on a solid, legally sound foundation." (Participant A)

4.2.4 Theme 4: Critical Enablers of Sustainable Digital Transformation

While leadership and systemic alignment served as catalysts for digital transformation, participants emphasized that sustaining these reforms required a set of critical enablers. These included stakeholder engagement and trust, staff capacity-building, motivation through incentives, accountability mechanisms, and contextual adaptation of global systems. Although many participants described strategies that aligned closely with recognised change management principles, only one government agency reported having a dedicated change management unit, and just one other participant demonstrated familiarity with change management frameworks:

"We have a dedicated change management department, which I lead. We are aware of frameworks and mostly follow ADKAR." (Participant K)

Another participant when asked if they were aware of any change management frameworks responded:

“Absolutely, I am aware. I have a PhD in management. But the thing is, it takes time.” (Participant C)

Participants consistently identified awareness, clarity of purpose, stakeholder engagement, and trust building as critical enablers in managing resistance and fostering acceptance:

“We do a lot of external collaboration. We start with awareness, then orientation, and then explain what the portal is all about.” (Participant K)

“Communication is essential. You have to answer employees’ concerns, reassure them of their job security, and show that digital reforms will enhance their capabilities.” (Participant H)

Both employee and citizen feedback were central to successful digital initiatives, ensuring ownership and adoption:

“Employee feedback was taken seriously, with design inputs moving from the bottom up. At the same time, citizen issues as end-users were closely monitored through a dedicated portal to ensure responsiveness.” (Participant I)

“Digital initiatives were customized based on feedback from branch and field staff.” (Participant D)

A common theme among most participants was the need to invest in capacity-building and continuous training.

“We regularly build capacity engaging nearly 1,000 stakeholders each month through training, awareness, and hands-on support” (Participant K).

“For these initiatives to succeed fully, we need user training, and continuous support through dedicated helpdesks.” (Participant J)

Participants emphasised that change does not happen overnight, instead, a gradual pilot-based approach, combined with awareness and reward systems were seen as effective approaches:

"Training, pilot projects, and awareness materials highlighted benefits to stakeholders" (Participant A).

"Trust-building and engagement, supported by pilot testing together with an appreciation and feedback culture, drove successful adoption." (Participant K)

"They feel the benefit with use of the new technology. It won't happen all of a sudden. It doesn't come in a day or two." (Participant K)

Sustainable reforms were also linked to effective risk management, monitoring, and accountability mechanisms to ensure fool-proof digital systems:

"Balancing facilitation with risk management is essential for trust and avoiding misuse." (Participant A)

"Regularly track and report progress metrics" (Participant J)

"Change management should be regularly audited and monitored" (Participant C).

Several participants explained that well-known global systems were customised and adopted in line with local requirements, laws, and contextual realities, which helped to enhance usability and ownership:

"An international system was adapted and customized to meet local needs and requirements." (Participant A).

"International software was procured and successfully customised to local requirements and has been operating effectively since its launch." (Participant D)

4.2.5 Theme 5: Fragmented but Emerging Digital Transformation

All participants, regardless of their mandate or geographical area, reported ongoing digital transformation efforts within their departments. However, in many cases these were limited to specific initiatives rather than representing the comprehensive or system-wide reforms. The findings revealed a mixed outcome of digital transformation efforts. While participants highlighted ongoing initiatives and significant gains in

transparency and efficiency, overall progress was described as fragmented, uneven, and partial.

Many participants reported positive outcomes of digital initiatives in terms of efficiency and transparency:

> *“Online tendering process within our department has made the process transparent” (Participant G).*
>
> *“We recently have 500 cameras in a control room. And now only 3 people are able to monitor over 500 places” (Participant B).*
>
> *"I can monitor consumers consumption from my office, I don't need physical visits to each client" (Participant C).*

Digitalisation was also seen as enhancing citizen access, service delivery and facilitating business processes:

> *“People no longer need to travel long distances; they can access services directly through the system.” (Participant A)*
>
> *"Reduced physical queues and paperwork, faster processing of applications, convenience for citizens, and reduced corruption risks." (Participant J)*

Despite these successes, the state of digitalisation was found to be partial and fragmented, often implemented in silos. Several participants indicated that lack of integration and manual processes still dominate:

> *“In my department 75% things are done manually and 25% are done digitally” (Participant B).*
>
> *"File work is still manual. It needs to be digitalized."(Participant F)*
>
> *“[We have] multiple apps for one task, [There is a] need [for] one integrated system.” (Participant E)*
>
> *“Different departments are collecting the same data without much sharing. There is overlap and duplication of efforts” (Participant F).*

Lastly, participants raised concerns about the sustainability of digital initiatives. Even where reforms were introduced, many did not last, as they often depended on individual champions and were constrained by inadequate long-term planning, weak system design, limited user consultation, insufficient ongoing support, and the absence of an enabling environment and infrastructure.

> *"When you leave, people revert." (Participant A).*
>
> *"It was treated as just an IT task instead of an institutional priority." (Participant E)*
>
> *"Poorly designed, unreliable systems discouraged usage." (Participant J)*
>
> *"Top-down digital rollouts without user consultation, pilot testing, or sustained funding resulted in fragile systems that failed." (Participant G)*
>
> *"We faced internet and electricity issues, and continuity only improved after backup support was provided by a UN agency. Internet speed, however, remains an issue in our area." (Participant B)*
>
> *"Failed projects often stem from underfunding digital tools like buying software but having no maintenance budget." (Participant F)*

4.3 Conclusion

This chapter presented the findings from semi-structured interviews with public sector officials regarding digital transformation in Pakistan's public sector. The results showed strong resistance to change and cultural inertia, with entrenched bureaucratic practices, fear of transparency, and concerns over job security slowing reform. Alongside these cultural challenges, systemic and institutional barriers such as weak infrastructure, rigid laws and procedures, siloed approaches, financial constraints, and governance gaps further hindered progress.

Leadership was identified as a critical factor influencing both the success and failure of digital initiatives. Successful cases demonstrated that leadership commitment, willingness to take risks and responsibility, long-term vision, competence, and alignment

of legal, procedural, and policy frameworks created an enabling environment for change. Conversely, lack of vision, frequent rotations, and weak endorsement often contributed to failed initiatives.

The sustainability of reforms was found to rely heavily on critical enablers, such as communication, stakeholder engagement, trust-building, capacity-building, customisation, pilot testing, incentives, and accountability mechanisms. While many of these factors aligned with recognised change management principles, formal knowledge of change management frameworks was reported by only two participants.

Finally, the findings revealed a mixed, uneven, and partial state of digital transformation. While isolated success stories demonstrated clear benefits in efficiency, transparency, and service delivery, overall initiatives were fragmented, implemented in silos, heavily dependent on individual champions, and constrained by inadequate planning and institutionalization. Overall, these findings provide essential evidence on the barriers, enablers, and contextual realities of digital transformation in Pakistan's public sector, that will be interpreted and discussed in the following section.

Chapter 5: Discussion, Conclusion, and Recommendations

5.1 Discussion and Interpretation of Themes

This section provides interpretation, analysis, and discussion of the findings presented in the results chapter. Each theme is supported with participant quotations and is compared and contrasted with insights from existing literature.

5.1.1 Theme 1: Resistance to Change and Cultural Inertia

Resistance to change and cultural inertia were persistent barriers to digital transformation in Pakistan's public sector. Senior officials were frequently portrayed as reluctant to adapt, while younger employees were considered more open and technologically savvy, often supporting their seniors in digital tasks. Organisational and bureaucratic culture were described as unsupportive of change. Additional obstacles such as digital literacy, lack of transparency, fear of job loss, vested interests, and limited accountability further reinforced resistance.

> *"Culture will take a long time to change… Senior officials don't want to change in the last years of service. They are used to what they have been doing for 50 years" (Participant C).*
> *"Younger officers are more adaptive and support their seniors with digital tasks." (Participant G)*
>
> *"Digital transformation is stalled by vested interests, red tape, and slow decision-making." (Participant D)*
>
> *"Some avoid transparency, they would try to make the cameras not work." (Participant F)*

These finding closely align with earlier research. Habib et al. (2018) described uncertainty, fear of losing power, non-cooperation, and lack of skills contributing to resistance, while Siddiqui and Mehmood, (2021) highlighted entrenched bureaucratic norms that priorities status quo and hierarchical control over innovation.

A gap between superficial compliance and genuine adoption was also evident, alongside a lack of motivation and incentives. Participants remarked:

> *"No incentives for staff to adopt digital workflows, just extra work." (Participant J)*
> *"People comply with decisions but lack genuine willingness to implement them." (Participant E)*

This pattern reflects the authoritarian style of management in many government departments, where staff comply with orders but without genuine willingness or desire. These dynamics reinforce the ADKAR model's emphasis on creating the desire to participate, aligning stakeholders, and addressing institutional reluctance (Hayes & Fix, 2024). Similarly, the McKinsey 7-S Framework highlights the importance of aligning organizational elements such as structure and systems to support change (Malik, 2024). While Lewin's Force Field Analysis highlights the need to identify the driving and restraining forces to assess whether the organisational environment is conducive to successful change. (Lewin's 1951).

While resistance was frequently reported, not all participants experienced it to the same extent. Younger and mid-level staff were often more willing to adapt, particularly when digital reforms were seen as improving efficiency rather than threatening jobs. Some participants noted that once employees recognised the benefits of digital systems, resistance reduced, and acceptance grew. Participants also emphasized that change is a gradual process, especially in organisations accustomed to traditional practices.

> *"Fear of job loss… initially changes not welcomed, later seen as performance improvement." (Participant H)*
> *"They feel the benefit with use of the new technology. It won't happen all of a sudden. It doesn't come in a day or two." (Participant K)*

These factors demonstrate that digital transformation was not only a technical challenge but also a political and cultural one, as it threatens established hierarchies and power structures. This indicates that strategies must go beyond technology adoption or training and instead address deeper institutional and cultural barriers. A structured change

management approach is therefore essential, one that builds trust and ownership, provides incentives, strengthens accountability, and creates compelling reasons for reform.

5.1.2 Theme 2: Systemic and Institutional Barriers to Digital Transformation

In addition to cultural resistance, systemic and institutional barriers such as weak infrastructure and digital divide in remote areas, rigid procedures, financial constraints, governance gaps, and outdated policies have resulted in limited digital transformation. Due to these challenges, digital transformation even when introduced had limited impact or functionality. These challenges reflect Afreen's (2024) analysis, which identifies weak infrastructure, limited funding, and the digital divide as critical deterrents to digital transformation.

> *"Power and connectivity issues in remote forest regions." (Participant F)*
> *"Lack of modern IT equipment and poor internet connectivity." (Participant B)*
>
> *"Service utilisation [is] less effective as end-users are not tech savvy." (Participant E)*
>
> *"Investment is an issue. Most organisations are already in loss. They cannot afford such a massive change." (Participant C)*

While investment was a widely reported constraint, contrasting perspective from a participant suggested that effective leadership, incremental reforms, and well-designed solutions could achieve meaningful results even with limited resources:

> *"Digitization in the public sector doesn't always require big budgets. What matters is leadership, quick wins, staff involvement, and adapting solutions to local realities." (Participant J)*

Institutional fragmentation, siloed approaches, and disparities in digital readiness across departments slowed progress. Coupled with rigid legal and procedural frameworks are key barriers to impactful, meaningful and sustainable digital transformation. Similar

challenges were reported by Rasool and Malik, (2020), who highlighted clear regulatory frameworks and inter-agency coordination as persistent obstacles to reform.

> *"There are other departments we work with that are not as technologically advanced." (Participant K)*

> *"Departments have developed their internal systems, but some are dependent on other departments and since there is no integrated system, it's not functional." (Participant E)*
> *"Legal changes can only be made during the budget cycle, as acts must be amended through parliament. This meant we had to wait until the budget process." (Participant A)*

Concerns about cybersecurity, poor system design, outdated infrastructure and unreliable systems have also impacted widespread adoption and discouraged usage. This supports Sear's (2021), and Rasool and Malik's (2020), claim that unreliable, poorly designed systems, and weak cyber security act as major deterrents to adoption.

> *"Outdated IT infrastructure leaves records and data vulnerable to hacking and data breaches." (Participant J)*
> *"Poorly designed, unreliable systems discourage usage." (Participant J)*

Overall, the findings show that even highly motivated organisations are constrained when digital divides persist, systems lack reliability, and inter-departmental coordination is missing. Legal rigidity and policy delays further complicate decision-making, reinforcing the need for a comprehensive enabling environment. This includes investment in infrastructure, capacity-building, integrated systems, agile policy frameworks, and a greater focus on systems design. Lessons from national and international case studies provide valuable guidance, including South Korea and Singapore's investment in IT infrastructure (Mian, 2024), the UK's centralized digital transformation unit that addressed fragmented efforts (Sear, 2021), and Ali et al.'s (2016) study of NADRA, which linked systems design to citizen satisfaction.

5.1.3 Theme 3: Leadership and Systemic Alignment as Catalysts for Digital Transformation

Leadership emerged as a critical success factor throughout the study. Several aspects of leadership were highlighted as decisive. Leaders needed to have a clear vision and committed to achieving change. They were also expected to communicate effectively, actively involve staff, and incorporate feedback throughout the process. Furthermore, leadership competence, particularly strong understanding of IT, was described as essential for effective implementation.

In cases where digital transformation had significant impact on existing processes, there was a high degree of risk involved. Effective leaders demonstrated a willingness to assume responsibility and take calculated risks, while also protecting and supporting staff during implementation. Leading by example was repeatedly cited as a powerful tool for building trust and driving adoption. Specific leadership behaviours, such as consistent communication, active support for training, and recognition of digital champions created an enabling environment for change.

> *"I had the wish to implement this automation, and I was clear it was required. So, I was determined. And it should be a story of success... I said I take responsibility, and I was committed to implement it" (Participant A).*
>
> *"Even the General Manager has to use the biometric system to set an example." (Participant G)*
>
> *"It was mainly due to the leadership's commitment, holding weekly meetings and convincing staff it was for their and the organization's betterment." (Participant H)*
>
> *Senior leadership has IT background. And are very well in touch with IT." (Participant I)*

Equally important was systemic alignment. Leadership played a critical role in ensuring that digital transformation efforts were embedded within legal, financial, coordination, and procedural frameworks. Success was achieved when leadership, staff, technology, and institutions worked in the same direction and when policies, structures, and processes were integrated into the broader organizational strategy.

“An external loan of 135 million dollars was initially refused, but I pushed at the board level to have it implemented.” (Participant C)

“A new law was needed, and it was amended. This ensured that digital initiatives were built on a solid, legally sound foundation.” (Participant A)

Leadership and systemic alignment are reinforced by frameworks such as the McKinsey 7-S model, which emphasizes that strategy, systems, and structures must support leadership vision (Abouaomar & Alhaderi, 2024). The Burke–Litwin model further highlights the role of leadership, culture, and the external environment in shaping and influencing internal systems (Boone, 2012). Similarly, institutional strategies such as those of the UNDP stress that leadership-driven reform must be embedded within supportive and coordinated systems and policies (UNDP, 2006).

5.1.4 Theme 4: Critical Enablers of Sustainable Digital Transformation

Despite the numerous challenges, participants described several strategies that supported the effective implementation of digital initiatives. Beyond leadership and systemic alignment, success was attributed to a range of practical enablers that helped overcome resistance and sustain transformation. These included a clear sense of purpose, strong communication, capacity-building, continuous support, and active engagement of stakeholders.

“Communication is essential. You have to answer employees’ concerns, reassure them of their job security, and show that digital reforms will enhance their capabilities.” (Participant H)

“We regularly build capacity engaging nearly 1,000 stakeholders each month through training, awareness, and hands-on support” (Participant K).

Accountability, risk management, user-centred design, ongoing monitoring, and adaptability were also emphasized as crucial enablers. Digital initiatives that incorporated feedback loops and citizen involvement were reported to be more successful and better received.

"Employee feedback was taken seriously, with design inputs moving from the bottom up. At the same time, citizen issues as end-users were closely monitored through a dedicated portal to ensure responsiveness." (Participant I)

"Balancing facilitation with risk management is essential for trust and avoiding misuse." (Participant A)

"Regularly track and report progress metrics" (Participant J)

"International software was procured and successfully customised to local requirements and has been operating effectively since its launch." (Participant D)

Participants also noted that change needed to be a gradual process, advocating for pilot approaches to test new systems before full roll-out, and stressed that celebrating short-term wins and demonstrating tangible benefits were essential:

"They feel the benefit with use of the new technology. It won't happen all of a sudden. It doesn't come in a day or two." (Participant K)

"Training, pilot projects, and awareness materials highlighted benefits to stakeholders" (Participant A).

"Trust-building and engagement, supported by pilot testing together with an appreciation and feedback culture, drove successful adoption." (Participant K)

Interestingly, only two participants demonstrated formal knowledge of change management frameworks. However, the critical enablers they described align closely with established models such as ADKAR and Kotter's 8-Step Model, which emphasize elements such as awareness, clear purpose, communication, training, engagement, monitoring, celebrating short-term wins, and reinforcing change. This suggests that while explicit use of frameworks was limited, the strategies adopted in practice echoed the core principles of structured change management. The practical alignment is further supported by studies on institutional and policy-level strategies, which similarly advocate for a pilot approach, customization to local contexts, risk management, and maintaining a strong user-centric focus to achieve sustainable public sector digital transformation.

5.1.5 Theme 5: Fragmented but Emerging Digital Transformation

Overall, digital transformation within Pakistan's public sector remains fragmented and uneven across departments and sectors. While visible examples of successful initiatives exist, many remain isolated and disconnected from broader systemic reform. Much of this progress has been driven by the commitment of individual champions or through donor-supported interventions rather than being embedded in a coherent government-wide strategy.

Almost every participant described an ongoing digital initiative within their department. However, in most cases this referred to single interventions such as procurement, salary disbursement, or a specific citizen-facing service, rather than a comprehensive organisational transformation. Only two departments were described as fully digitised, painting a picture of uneven and partial progress. Overlapping mandates and high interdependency between departments further complicated integration. The fragmented approach was apparent in the duplication of effort and development of multiple applications for similar tasks. This confuses users and reinforces the need for consolidation through shared platforms or a unified system:

> *"In my department 75% things are done manually and 25% are done digitally" (Participant B).*
>
> *"[We have] multiple apps for one task, [There is a] need [for] one integrated system." (Participant E)*
>
> *"Different departments are collecting the same data without much sharing. There is overlap and duplication of efforts" (Participant F).*

This fragmented progress resonates with Rasool and Malik's (2020) findings on the lack of data sharing and collaboration between agencies. Furthermore, Sear (2021) highlighted the problem of uncoordinated national and provincial strategies, and digital systems that offer only partial solutions that fail to fully meet user needs.

Despite these challenges, participants widely acknowledged the benefits of even partial digitalisation. Initiatives improved efficiency, transparency, service delivery, and long-term cost-effectiveness. These results align with literature identifying efficiency,

transparency, and cost-effectiveness as visible benefits of digitalisation (Deane & Bhatnagar, 2004; Davies, 2015).

> *“We recently have 500 cameras in a control room. And now only 3 people are able to monitor over 500 places” (Participant B).*
>
> *“Online tendering process within our department has made the process transparent” (Participant G).*
>
> *"I can monitor consumers consumption from my office, I don't need physical visits to each client" (Participant C).*
>
> *“People no longer need to travel long distances; they can access services directly through the system.” (Participant A)*

There was clear recognition that while progress is being made, sustainability and inclusivity remain weak. Many initiatives were introduced without adequate consultation, pilot testing, or user feedback, leading to poor adoption and avoidable technical problems. Projects were further hindered by underfunding, glitches, and limited monitoring. Without accountability mechanisms and continuous support, systems risked being abandoned once initial champions moved on or donor funding ended.

In sum, while isolated reforms are delivering tangible efficiency gains, overall progress remains partial, siloed, and insufficiently inclusive. While the current trajectory offers a positive foundation, sustained success will require institutionalizing reforms, consolidating individual successes, and building a coherent, integrated, and user-centred digital ecosystem.

5.2 Conclusion

The concluding section summarises the key findings of the study in relation to the research aims and objectives. It also outlines the study’s contributions to theory and practice, highlights its limitations, and offers recommendations for policy and practice, and future research.

5.2.1 Overall Findings in Relation to the Research Aims

The study achieved its research aim by exploring the key barriers to digital transformation within Pakistan's public sector through qualitative research and semi-structured interviews. These findings demonstrated that barriers extend beyond technological constraints, encompassing cultural and organisational resistance, structural and institutional weaknesses, systems design limitations, and gaps in leadership and coordination. For policymakers and decision-makers, these barriers must be critically analysed and systematically addressed when planning or initiating digital transformation efforts.

The research also captured the perceptions and experiences of government officials. The officials provided first-hand insights into the benefits, challenges, and the strategies that may help overcome those challenges. Participants acknowledged the benefits of digital transformation and emphasised that progress was most effective when supported by committed and visionary leadership, investment in capacity and infrastructure, phased and pilot-based approaches, effective coordination, and citizen-centric design. Critical enablers such as communication, trust-building, stakeholder engagement, and capacity-building were also emphasized, although these were not always consistently embedded across initiatives.

While formal knowledge of change management frameworks was limited among participants, the enablers and strategies identified by them closely resonated with established change management frameworks. Elements such as leadership, communication, coordination, and phased pilot-based approaches reflect principles of models such as ADKAR, Lewin's Force Field Analysis, McKinsey 7-S framework and the Burke-Litwin model. Collectively, they offer a multidimensional approach for addressing resistance and building capacity at the individual level, aligning organisational structures, and integrating reforms within wide institutional and external environments. This highlights the potential value of such models to manage change more effectively in public sector reform processes.

Finally, lessons from both national and international case studies examined in the research offered practical guidance that can be adapted and replicated. The findings

emphasised the complex nature of reform within the public sector, requiring a broad range of customised solutions, that draw on change management principles, institutional strategies, and successful case examples from comparable contexts.

5.2.2 Contributions

The research makes both theoretically and practical contributions, filling an important gap in literature and addressing the limited awareness of change management within Pakistan's public sector. Its significance lies in examining digital transformation in a context where reforms are underway with visible benefits, but persistent barriers remain. This study demonstrates how change management can help manage these challenges by identifying them and proposing customisable solutions grounded in established frameworks, institutional strategies, and successful case studies.

The study provides a contextualised analysis that integrates global frameworks with local realities. By documenting the experiences of key personnel involved in digital initiatives, it extends beyond theory to show how individual, organisational, and institutional barriers can be systematically addressed. In doing so, it also offers actionable recommendations for policymakers and leaders seeking to manage reform more effectively.

The findings largely confirm existing theories, particularly in relation to the benefits and barriers to digital transformation. However, in terms of change management, the concept remains relatively new to many officials and government departments. Despite this, the strategies adopted in practice resonate closely with the principles of established change management frameworks. This reinforces both the relevance and adaptability of these models in this context.

Overall, the study offers change management principles as practical tools to manage individual, organisational, structural, and systemic barriers to digital transformation, while also recommending institutional strategies to address broader policy, regulatory, or structural constraints. These insights are complemented by lessons from national and international case studies, which provide tested and proven strategies that can be adapted and replicated in real-world settings.

5.2.3 Limitations

The findings of this study are subject to several limitations. First, the research relied solely on interviews with selected public sector officials, and access to some relevant stakeholders was not possible. This may have limited the diversity of perspectives represented in the findings. Moreover, the views of citizens as end-users of public digital services were not directly included in the data collection. While the researcher drew on personal knowledge and experience as a citizen to partially address this gap, this approach carriers the risk of introducing researcher bias.

Second, budgetary and time constraints restricted the overall scope of data collected and prevented the adoption of a longitudinal approach that could have captured experiences on specific digital initiatives over time. Lastly, as with most qualitative studies, the interpretation of findings may have been influenced by the researchers own perspectives and experiences. While steps were taken to minimise this risk, the possibility of such influence cannot be fully excluded.

5.2.4 Recommendations for Future Research

While the study touched upon successful local cases like NADRA, future in-depth research should examine NADRA and other departments that have achieved significant digitalisation. Such research could focus on their transformation vision, strategies, leadership models, change management practices, and cultural shifts, providing context-specific and actionable insights. Sector-specific studies would also be valuable in identifying the unique challenges and requirements of digital reform within different domains of the government.

Longitudinal research is recommended to track the evolution of digital initiatives over time. It may offer valuable insights on sustainability, long-term impact, and the ways challenges and successes evolve. Further investigation could also focus on rare cases of departments with dedicated change management units, evaluating their role and effectiveness in managing complex and dynamic challenges within Pakistan’s public sector.

The current study primarily explored the experiences and perspectives of public sector officials. Findings also revealed limited consideration of user feedback in digital initiatives. An important direction for future research should therefore incorporate the views of end-users and citizens to assess their needs, perceptions, and experiences with usability and accessibility of digital services. This would strengthen the case for citizen-centred design as a foundation for wider adoption and sustainable digital transformation.

Finally, future research could examine how emerging technologies such as artificial intelligence (AI), machine learning, and blockchain may shape the digital transformation of the public sector. Research could also examine how change management principles and institutional strategies may be adapted to address their unique challenges. Although Pakistan remains behind in adopting these technologies, context-appropriate strategies could enable the public sector to leapfrog and achieve meaningful progress.

5.2.5 Strategic Recommendations for Reform and Implementation

Successful digital transformation in Pakistan's public sector requires a comprehensive, multi-dimensional approach. Foundational investments are required in infrastructure and capacity building to reduce the digital divide among both citizens and across government departments. Equally important is the strengthening of leadership and accountability mechanisms, ensuring that reforms are institutionalized rather than dependent on individual champions.

At the same time, development of integrated systems and inter-agency coordination should be prioritised to replace fragmented and isolated efforts. Within departments, a shift is needed from one-off digitalisation projects towards a comprehensive departmental-wide digital transformation strategy and policy. These strategies should be supported by designated digital transformation units within departments and ministries. Embedding change management principles into such reform strategies will further help mitigate resistance and ensure sustained adoption. In addition, greater emphasis should be placed on citizen-centric system design that is user-friendly, transparent, reliable, secure, and responsive to user needs.

It is important to note that digital and cultural transformation is a long-term process. It requires an integrated, well-planned, holistic approach grounded in local realities rather than a one-size-fits-all approach. Success would require adapting and integrating elements from various change management frameworks, institutional strategies, and proven case studies, all guided by a clear vision and supported by an enabling environment.

This dissertation has highlighted the complex nature of digital transformation in Pakistan's public sector, which remains constrained by cultural, systemic, and institutional barriers. However, the findings demonstrate that committed leadership, structured change management, citizen-centric design, and an enabling external environment can create the foundations for sustainable reform. While challenges remain, with consistent political will, long-term vision, and context-sensitive strategies, Pakistan can move toward a transparent, efficient, service-oriented government, paving the way for a sustainable digital future.

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7.0 Appendices

7.1 Appendix 1- Consent Form

Carmarthen Business School

Interview Consent Form

Dissertation research project title: Overcoming Barriers to Digital Transformation in Pakistan's Public Sector: A Change Management Perspective.

Research course: Dissertation (BMMB7003D)

Research investigator: Omar Khan

Research Participants' name:

Dear Participant,

Thank you for agreeing to take part in the interview for the above research project. *Attached to this letter are the interview questions developed to explore the topic *"Overcoming Barriers to Digital Transformation in Pakistan's Public Sector: A Change Management Perspective."* There are no right or wrong answers, and your responses will contribute valuable insights toward understanding and addressing the challenges of digital transformation within Pakistan's public sector.

The interview will take approximately 30 minutes but there is no time constraint. It may be conducted either in person in a private setting or via phone, and all responses will remain strictly confidential. No personal details that could identify you such as your home address, date of birth, job title, or department will be included in the final transcript or any published material. You are free to withdraw from the interview process at any time, without any obligation.

Academic research conducted at UK universities is required to follow strict ethical guidelines, which includes obtaining explicit consent from participants regarding their involvement and how the information they provide will be used. The points below outline the terms of your participation and the purpose of your involvement in this study. Kindly review them and sign the consent form to confirm your agreement to the following:

- The interview will be recorded, and a transcript will be produced
- All responses will be anonymised, and no identifiable information will be requested
- The transcript will be analysed solely by Omar Khan, the research investigator.
- Access to the transcript will be restricted to the research investigator and the assigned dissertation supervisor.
- Any direct quotes or summarised content, that are made available through academic publication or other academic outlets will be anonymized and care will be taken to ensure that no identifiable information is disclosed.
- The recording will be made using a personal device accessible only to the research investigator and will be deleted immediately after transcription.
- The transcript will be stored securely in a password-protected research folder on the investigator's personal OneDrive for Business account and permanently deleted upon completion of the dissertation.
- All data handling will comply with the University of Wales Trinity Saint David's data protection policies and national GDPR guidance

By signing this form, I confirm that:

1. I am participating in this project voluntarily. I understand that my participation is optional, and I may withdraw from the interview at any time without consequence.
2. The transcribed interview or extracts from it may be used as described above.
3. I have read and understood the information provided in the participant information sheet.

4. I do not expect to receive any form of compensation or benefit for my participation
5. I am satisfied with the arrangements described and understand that I can contact the researcher with any questions or concerns at any stage.

_____

Printed Name

_____ _____

Participant Signature Date

_____ _____

Researcher Signature Date

If you would like me to share details of my findings once the research is completed, please feel free to let me know.

Thank you once again for your time and participation. Feel free to contact me, should you have any questions or concerns.

Researcher Name:

Tel:

Email:

7.2 Appendix 2- List of Interview Questions

Perception/Experience & Barriers

1) What are your perceptions or experience regarding digital transformation efforts within the public sector?
2) How would you describe the current state of digital transformation within your department or organisation?
3) Have any digital initiatives been introduced in your organisation over the past 5 years? Yes/No, what was the outcome? How was it implemented?
4) What are the key challenges your department faces in implementing digital initiatives?
5) To what extent do organisational culture and employee attitudes impact digital transformation efforts in your department?

Role of change management frameworks in overcoming these barriers

6) Are you familiar with any change management principles or frameworks? Have any structured change management frameworks or approaches been used when introducing digital systems? If yes, how effective were they?
7) How are staff typically prepared for digital change? (e.g., training, communication, involvement in decision-making)
8) How do leadership and management influence the success or failure of digital transformation efforts?

Lessons learned and recommendations

9) What strategies or interventions do you think could help overcome the barriers to digital transformation in the public sector?
10) Can you share any successful examples of digital transformation within your department/organisation? What do you think contributed to its success?
11) Are there any global examples of digital transformation that you think Pakistan's public sector can learn from to overcome the existing barriers?

12) How are citizen needs or user feedback considered when designing or implementing digital systems in your organisation?

7.3 Appendix 3- Thematic Analysis Table - Quotes, Interpretations, and Emergent Themes

Voices of the participants grouped (Interviewee)	Meaning Interpretation (Researcher)	Concepts/Themes identified
People don't want change and are happy with the old way of doing things… One said, Over my dead body. (A)	Resistance to change rooted in comfort with established methods and fear of learning new processes.	***Resistance to Change and Cultural Inertia***
Culture will take a long time to change… Senior officials don't want to change in last years of service. They are used to what they have been doing for 50 years. (C)	Organisational culture as a barrier.	
"Younger officers are more adaptive and support their seniors with digital tasks." (G)		
They feel they know everything, and other people know nothing. This is a hurdle. (C)	Bureaucrats often project dominance, limiting openness to others' perspectives.	
Our bureaucratic rules don't support change. This is a very big hurdle and there is also no accountability. (C)		
Digital transformation is stalled by vested interests, red tape, and slow decision-making. (D)	Digital transformation challenged by vested interests seeking to avoid oversight.	

People comply with decisions but lack genuine willingness to implement them. (E) The barriers are mainly related to issues of transparency because most departments don't want their processes to become transparent. (H) Some avoid transparency, they would try to make the cameras not work. (F) Fear of job loss… initially changes not welcomed, later seen as performance improvement. (H) At first people thought computers would replace them, but later they realised it helped them work better. (K) No incentives for staff to adopt digital workflows, just extra work. (J) Staff lack the technical skills needed to operate new systems. (B) A major barrier for us was also the capacity of our staff. (D)	Initial fear and threat perception give way to acceptance after benefits are realised. Job security fears; gradual acceptance over time Skill gaps and limited digital capacity	

I had the wish to implement this automation, and I was clear it was required. So, I was determined. And it should be a story of success. (A)	Commitment	***Leadership and Systemic Alignment as Catalysts for Digital Transformation***
I said I take responsibility, and I was committed to implement it. (A)	Visible, risk-taking leadership that owns outcomes, shields staff and sustains momentum.	
Leader needs to give in writing, so lower staff feels safe. (A)	Taking risk and responsibility	
Even the General Manager has to use the biometric system to set an example (G)		
Senior Management played vital role in successful implementation. (D)	Leadership role modelling	
Success requires leaders who champion change, enforce adoption, and listen to end-users. (J)		
It was mainly due to the leadership's commitment, holding weekly meetings and convincing staff it was for their and the organization's betterment (H)	Enforcement, championing change, listen to end users.	
The first step was to pass the required laws and regulations. All relevant departments began		

sharing data, and access to the data was achieved. (I)		
A new law was needed, and it was amended. This ensured that digital initiatives were built on a solid, legally sound foundation. (A)	Legal reform and inter-departmental coordination	
An external loan of 135 million dollars was initially refused, but I pushed at the board level to have it implemented. Such massive change requires funding. (C)		
Senior leadership has IT background. And are very well in touch with IT (I)	Competence and merit	
No visible leadership endorsement, HODs often don't use the systems themselves (J)		
Senior level secretary are always changed every 2 years. One comes from a completely different field it takes them a year to understand a new department. (C)	Leadership turnover disrupts continuity and slows progress	
There are other departments we work with that are not as technologically advanced. (K)	Highlights disparities in digital readiness across government	***Systemic and Institutional Barriers***

Department[s] have developed their internal systems, but some are dependent on other departments and since there is no integrated system, it's not functional. (E)	entities, which complicates coordination and slows progress.	***to Digital Transformation***
Lack of modern IT equipment and poor internet connectivity (B) Power/connectivity issues in remote forest regions. (F)	Geographic remoteness exacerbates infrastructure limitations, creating digital exclusion.	
Poorly designed, unreliable systems that discourage usage. (J)		
Service utilisation less effective as end-users are not tech savvy. (E) Delayed/long approval processes stall projects (J)	Citizen digital literacy gaps hinder full adoption.	
Legal changes can only be made during the budget cycle, as acts must be amended through parliament. This meant we had to wait until the budget process (A)	Rigid legal and policy frameworks	
Outdated IT infrastructure leaves records and data vulnerable to		

hacking and data breaches, raising serious cybersecurity and privacy concerns. (J) Investment is an issue. Most organisation are already in loss. They cannot afford such a massive change. (C) Senior level secretaries are always changed every two years. One comes from a completely different field, and it takes them a year to understand a new department. (C) Digitization in the public sector doesn't always require big budgets. What matters is leadership, quick wins, staff involvement, and adapting solutions to local realities. (J)	Weak technological foundations and poor cybersecurity measures Financial constraints and lack of resources act as a major barrier Smaller digital reforms can succeed through smart strategies and leadership without major funding.	
We have a dedicated change management department, which I lead. We are aware of frameworks and mostly follow ADKAR. (K) Absolutely, I am aware. I have a PhD in management. But the thing is, it takes time. (C)	Accountability and Monitoring Trust-Building and Stakeholder Engagement	***Critical Enablers of Sustainable Digital Transformation***

Regularly track and report progress metrics (J)		
Change management should be regularly audited and monitored (C)	Comprehensive stakeholder trainings	
Trust building and engagement, supported by pilot testing together with an appreciation and feedback culture, drove successful adoption. (K)	Bottom-up feedback loops improve relevance and adoption of new systems	
They feel the benefit with use of the new technology. It won't happen all of a sudden. It doesn't come in a day or two. (K)		
An international system was adapted and customized to meet local needs and requirements. (A)	Localization and Customization	
International software was procured and successfully customised to local requirements and has been operating effectively since its launch. (D)		
Training, pilot projects, and awareness materials highlighted benefits to stakeholders. (A)	Importance of end user feedback, awareness, in design and utility	

Digital initiatives were customized based on feedback from branch and field staff (D) Balancing facilitation with risk management is essential for trust and avoiding misuse. (Participant A) We regularly build capacity engaging nearly 1,000 stakeholders each month through training, awareness, and hands-on support. (K) Communication is essential. You have to answer employees' concerns, reassure them of their job security, and show that digital reforms will enhance their capabilities. (H) We do a lot of external collaboration. We start with awareness, then orientation, and then explain what the portal is all about. (K) Employee feedback was taken seriously, with design inputs moving from the bottom up. At the same time, citizen issues as end-users were closely monitored	Awareness, pilot projects Risk management Capacity building	

through a dedicated portal to ensure responsiveness. (I) We ensure extensive stakeholder engagement before launch and maintain liaison through design, implementation, and execution. (K) For these initiatives to succeed fully, we need user training, and continuous support through dedicated helpdesks. (J)	Collaboration, communication and feedback	
With 24/7 availability and daily interactive sessions, we turn stakeholder feedback into system innovations, maximizing our output through extensive outreach with all stakeholders (K) Online tendering process within our department has made the process transparent (G) People no longer need to travel long distances; they can access services directly through the system. (A) We recently have 500 cameras in a control room. And now only 3 people are able to monitor over 500 places. (B)	Efficiency & Transparency Gains	***Fragmented but Emerging Digital Transformation***

I can monitor consumers consumption from my office, I don't need physical visits to each client. (C).		
Reduced physical queues and paperwork, faster processing of applications, convenience for citizens, and reduced corruption risks (J)	Fragmented and Partial Digitalization	
We are aware of change management, and we mostly follow ADKAR. We start with awareness then orientation. (K)		
	User-Centric Gaps	
Manual signatures remain for despite digital records. (B)		
File work is still manual. It needs to be digitalized (F)		
In my department 75 % things are done manually and 25% are done digitally (B)	Sustainability risks without monitoring and continuity	
Top-down digital rollouts without user consultation, pilot testing, or sustained funding resulted in fragile systems that failed. (G)		

Poorly designed, unreliable systems discouraged usage. (J) It was treated as just an IT task instead of an institutional priority. (E) When you leave, people revert, there is no accountability. (A) Multiple apps for one task, need one integrated system (E) We faced internet and electricity issues, and continuity only improved after backup support was provided by a UN agency. Internet speed, however, remains an issue in our area. (B) Department have developed their internal systems, but some are dependent on other departments and since there is no integrated system. Its not functional (E) Failed projects often stem from underfunding digital tools like buying software but having no maintenance budget. (F) Different departments are collecting the same data without	Lack of accountability and institutionalization Siloed development without cross-departmental integration Duplication of efforts and weak data-sharing practices Interdepartmental coordination	

much sharing. There is overlap and duplication of efforts (F).		

7.4 Appendix 4- Ethics Form

APPLICATION FOR ETHICAL APPROVAL

In order for research to result in benefit and minimise risk of harm, it must be conducted ethically.

The University follows the OECD Frascati manual definition of **research activity**: "creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications". As such this covers activities undertaken by members of staff, postgraduate research students, and both taught postgraduate and undergraduate students working on dissertations/projects.

The individual undertaking the research activity is known as the "principal researcher".

This form must be completed and approved prior to undertaking any research activity.

SECTION A: About You (Principal Researcher)

1	Full Name:	Omar Khan
2	Student Number:	2219359
3	Email address:	2219359@student.uwtsd.ac.uk
4	Programme of Study:	Master of Business Administration (MBA) (online)
5	Supervisor:	Anthony Burns

SECTION B: Internal and External Ethical Guidance Materials

	Please list the core ethical guidance documents that have been referred to during the completion of this form (including any discipline-specific codes of research ethics, location-specific dodes of research ethics, and also any specific ethical guidance relating to the proposed methodology). Please tick to confirm that your research proposal adheres to these codes and guidelines. You may add rows to this table if needed.	
1	**UWTSD Research Ethics & Integrity Code of Practice**	☒
2	**UWTSD Research Data Management Policy**	☒

SECTION C: Details of Research Activity

		Overcoming Barriers to Digital Transformation in Pakistan's Public Sector: A Change Management Perspective.		
		20 Jan 2025		30 Sept 2025

	Introduction to the Research (maximum 300 words in each section) **Ensure that you write for a <u>Non-Specialist Audience</u> when outlining your response to the three points below:** • *Purpose of Research Activity* • *Proposed Research Question* • *Aims of Research Activity* • *Objectives of Research Activity* Demonstrate, briefly, how **<u>Existing Research</u>** has informed the proposed activity and explain • *What the research activity will add to the body of knowledge* • *How it addresses an area of importance.*
3	**Purpose of Research Activity** The purpose of the research activity is to review the available literature on key barriers to digital transformation within the public sector in Pakistan and to propose solutions to overcoming those barriers. It will also look into successful case studies both globally and nationally, as well as gather insights from public sector employees.
4	**Research Question** 1. What are the key barriers to digital transformation within Pakistan's public sector? 2. How can change management frameworks help overcome these barriers to digital transformation? 3. What lessons can be learned from successful digital transformation initiatives in Pakistan and globally? 4. What are the perceptions and experiences of government officials and public sector employees regarding digital transformation efforts?
5	**Aims of Research Activity** The aim of the research activity is to identify key barriers to digital transformation within the public sector in Pakistan and to provide a roadmap for overcoming those barriers through change management frameworks.
6	**Objectives of Research Activity** • To critically review the relevant literature on the key barriers to digital transformation within the public sector in Pakistan and analyse its impact on governance, service delivery, and institutional efficiency.

	• To analyse case studies of successful digital transformation within public sectors in Pakistan and globally, identifying key success factors • To conduct interviews with government officials and public sector employees to explore the successes, challenges, and potential strategies for achieving digital transformation. • To propose solutions and develop a strategic roadmap for overcoming barriers to digital transformation based on change management frameworks
	Proposed data collection methods (maximum 600 words) Provide a brief summary of all the methods that **may** be used in the research activity to collect data, making it clear what specific techniques may be used. If methods other than those listed in this section are deemed appropriate later, additional ethical approval for those methods will be needed. You do not need to justify the methods here, but should instead describe how you intend to collect the data necessary for you to complete your project.
7	- Semi structured interviews will be conducted with government officials and public sector employees - A review of existing literature on barriers to digital transformation and change management frameworks to overcoming those barriers will be conducted - National and global case studies will be analysed to identify key success factors and lessons learned.

SECTION D: Scope of Research Activity

	Will the research activity include:	**YES**	**NO**
1	Use of a questionnaire or similar research instrument?	☐	☒
2	Use of interviews?	☒	☐
3	Use of focus groups?	☐	☒
4	Use of participant diaries?	☐	☒
5	Use of video or audio recording?	☐	☒
6	Use of computer-generated log files?	☐	☒
7	Participant observation with their knowledge?	☐	☒
8	Participant observation without their knowledge?	☐	☒
9	Access to personal or confidential information without the participants' specific consent?	☐	☒
10	Administration of any questions, test stimuli, presentation that may be experienced as physically, mentally or emotionally harmful / offensive?	☐	☒

11	Performance of any acts which may cause embarrassment or affect self-esteem?	☐	☒
12	Investigation of participants involved in illegal activities?	☐	☒
13	Use of procedures that involve deception?	☐	☒
14	Administration of any substance, agent or placebo?	☐	☒
15	Working with live vertebrate animals?	☐	☒
16	Procedures that may have a negative impact on the environment?	☐	☒
17	Other primary data collection methods. Please indicate the type of data collection method(s) below.	☐	☒
	Details of any other primary data collection method: (this box should expand as you type)		

If you have ticked NO to every question then the research activity is (ethically) low risk and you may skip section E and continue to section F.

If YES to any question, then no research activity should be undertaken until full ethical approval has been obtained.

SECTION E: Intended Participants

	Who are the intended participants:	**YES**	**NO**
1	Students or staff at the University?	☐	☒
2	Adults (over the age of 18 and competent to give consent)?	☒	☐
3	Vulnerable adults?	☐	☒
4	Children and Young People under the age of 18? (Consent from Parent, Carer or Guardian will be required)	☐	☒
5	Prisoners?	☐	☒
6	Young offenders?	☐	☒
7	Those who could be considered to have a particularly dependent relationship with the investigator or a gatekeeper?	☐	☒
8	People engaged in illegal activities?	☐	☒
9	Others. Please indicate the participants below, and specifically any group who may be unable to give consent.	☐	☒
	Details of any other participant groups:		

	Complete this only if your participants cannot give consent. This includes animals. If students choose individuals under the age of 18 and or vulnerable individuals, a DBS (Disclosure and Barring Service) check is essential. (this box should expand as you type)		

	Participant numbers and source Provide an estimate of the expected number of participants. How will you identify participants and how will they be recruited?	
10	How many participants are expected?	6-10 *(this box should expand as you type)*
11	Who will the participants be?	Government officials and public sector employees *(this box should expand as you type)*
12	How will you identify the participants?	The participants will include a mix of senior, mid-level, and junior government officials and employees, representing various age groups and departments, to capture a range of perspectives Additionally, some participants will be selected from the departmental case studies. Recruitment will be conducted through my professional and personal networks, with participants primarily contacted via telephone, email, or in person, where feasible. *(this box should expand as you type)*

	Information for participants:	**YES**	**NO**	**N/A**
13	Will you describe the main research procedures to participants in advance, so that they are informed about what to expect?	☒	☐	☐
14	Will you tell participants that their participation is voluntary?	☒	☐	☐
15	Will you obtain written consent for participation?	☒	☐	☐
16	Will you explain to participants that refusal to participate in the research will not affect their treatment or education (if relevant)?	☒	☐	☐
17	If the research is observational, will you ask participants for their consent to being observed?	☒	☐	☐
18	Will you tell participants that they may withdraw from the research at any time and for any reason?	☒	☐	☐
19	With questionnaires, will you give participants the option of omitting questions they do not want to answer?	☐	☐	☒
20	Will you tell participants that their data will be treated with full confidentiality and that, if published, it will not be identifiable as theirs?	☒	☐	☐

21	Will you debrief participants at the end of their participation, in a way appropriate to the type of research undertaken?	☒	☐	☐
22	If NO to any of above questions, please give an explanation			
	No questionnaires will be used. *(this box should expand as you type)*			

	Information for participants:	**YES**	**NO**	**N/A**
24	Will participants be paid?	☐	☒	☐
25	Is specialist electrical or other equipment to be used with participants?	☐	☒	☐
26	Are there any financial or other interests to the investigator or University arising from this study?	☐	☒	☐
27	Will the research activity involve deliberately misleading participants in any way, or the partial or full concealment of the specific study aims?	☐	☒	☐
28	If YES to any question, please provide full details			
	N/A *(this box should expand as you type)*			

SECTION F: Anticipated Risks

	Outline any anticipated risks that may adversely affect any of the participants, the researchers and/or the University, and the steps that will be taken to address them.	
1	**Risks to participants** For example: sector-specific health & safety, emotional distress, financial disclosure, physical harm, transfer of personal data, sensitive organisational information. If you have identified in section D that there are no participants then enter N/A and go skip to question 3.	
	Risk to participants: Government officials may be reluctant to disclose information related to internal barriers or other sensitive organizational issues. *(this box should expand as you type)*	*How you will mitigate the risk to participants:* Anonymity and confidentiality will be guaranteed, and information will not be attributed to any specific individual or department. *(this box should expand as you type)*
2	If research activity may include sensitive, embarrassing or upsetting topics (e.g. sexual activity, drug use) or issues likely to disclose information requiring further action (e.g. criminal activity), give details of the procedures to deal with these issues, including any support/advice (e.g. helpline numbers) to be offered to participants. Note that where applicable, consent procedures should	

	make it clear that if something potentially or actually illegal is discovered in the course of a project, it may need to be disclosed to the proper authorities	
	N/A *(this box should expand as you type)*	
3	**Risks to the investigator** For example: personal health & safety, physical harm, emotional distress, risk of accusation of harm/impropriety, conflict of interest	
	Risk to the investigator: -Interviewees may not feel comfortable answering some questions -Potential difficulty in scheduling interviews *(this box should expand as you type)*	*How you will mitigate the risk to the investigator:* -Participants will be informed that they have the right to decline to answer any question they find uncomfortable. - I will reach out to participants well in advance and leverage personal and professional networks to facilitate introductions. *(this box should expand as you type)*
4	**University/institutional risks** For example: adverse publicity, financial loss, data protection	
	Risk to the University: Ethical and compliance risks *(this box should expand as you type)*	*How you will mitigate the risk to the University:* Ensure all ethical guidelines including consent, confidentiality and data protection are followed. *(this box should expand as you type)*
5	**Environmental risks** For example: accidental spillage of pollutants, damage to local ecosystems	
	Risk to the environment: N/A *(this box should expand as you type)*	*How you will mitigate the risk to environment:* N/A *(this box should expand as you type)*

SECTION G: Feedback, Consent and Confidentiality

If you have identified in section D that there are no participants then enter skip this section and continue to section H.

1	**Feedback** What de-briefing and feedback will be provided to participants, how will this be done and when?
	Email and contact details will be shared with the participants should they require any further details or results. *(this box should expand as you type)*
2	**Informed consent** Describe the arrangements to inform potential participants, before providing consent, of what is involved in participating. Describe the arrangements for participants to provide full consent before data collection begins. If gaining consent in this way is inappropriate, explain how consent will be obtained and recorded in accordance with prevailing data protection legislation.
	Participants will be informed on what is involved in participating at the time of requesting the interview via email or through phone. Before the interview the participants will sign a consent form, either in person or electronically. *(this box should expand as you type)*
3	**Confidentiality / Anonymity** Set out how anonymity of participants and confidentiality will be ensured in any outputs. If anonymity is not being offered, explain why this is the case.
	Participants will be referred to as numbers and no participants will be named within the study. *(this box should expand as you type)*

SECTION H: Data Protection and Storage

	Does the research activity involve personal data (as defined by the General Data Protection Regulation 2016 "GDPR" and the Data Protection Act 2018 "DPA")?	**YES**	**NO**
1	***"Personal data"*** *means any information relating to an identified or identifiable natural person ('data subject'). An identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person. Any video or audio recordings of participants is considered to be personal data.*	☒	☐

	If YES, provide a description of the data and explain why this data needs to be collected:		
2	A consent form will be obtained to confirm that participation is entirely voluntary. Participants may decline to answer any question or withdraw at any time without consequence. All responses will remain strictly confidential, with no personally identifiable information included in the research report. *(this box should expand as you type)*		
	Does it involve special category data (as defined by the GDPR)?	**YES**	**NO**
3	***"Special category data"*** *means sensitive personal data consisting of information as to the data subjects' –* *(a) racial or ethnic origin,* *(b) political opinions,* *(c) religious beliefs or other beliefs of a similar nature,* *(d) membership of a trade union (within the meaning of the Trade Union and Labour Relations (Consolidation) Act 1992),* *(e) physical or mental health or condition,* *(f) sexual life,* *(g) genetics,* *(h) biometric data (as used for ID purposes),*	☐	☒
	If YES, provide a description of the special category data and explain why this data needs to be collected:		
4	What counts as 'sensitive' will differ between cultures. Any information on behaviour that is not in accordance with cultural norms would count as sensitive personal data. N/A *(this box should expand as you type)*		

	Will data from the research activity (collected data, drafts of the thesis, or materials for publication) be stored in any of the following ways?	**YES**	**NO**
5	Manual files (i.e. in paper form)?	☐	☒
6	University computers?	☐	☒
7	Private company computers?	☐	☒
8	Home or other personal computers?	☐	☒
9	Laptop computers/ CDs/ Portable disk-drives/ memory sticks?	☐	☒
10	"Cloud" storage or websites?	☐	☒
11	Other – specify:	☐	☒
12	For all stored data, explain the measures in place to ensure the security of the data collected, data confidentiality, including details of backup procedures, password protection, encryption, anonymisation and pseudonymisation:		

	If possible, save your data on computers that are secure and regularly backed up. Many cloud services only provide GDPR-compliant storage for business customers. An example of suitable text is given below. *All data will be kept in password protected laptop and folder. All participants will be given a unique number to ensure confidentiality.* *(this box should expand as you type)*

	Data Protection		
	Will the research activity involve any of the following activities:	**YES**	**NO**
13	Electronic transfer of data in any form?	☐	☒
14	Sharing of data with others at the University outside of the immediate research team?	☐	☒
15	Sharing of data with other organisations?	☐	☒
16	Export of data outside the UK or importing of data from outside the UK?	☐	☒
17	Use of personal addresses, postcodes, faxes, emails or telephone numbers?	☐	☒
18	Publication of data that might allow identification of individuals?	☐	☒
19	If YES to any question, please provide full details, explaining how this will be conducted in accordance with the GDPR and Data Protection Act (2018) (and/or any international equivalent):		
	This includes data such as drafts of your thesis as well as experimental or survey data. An example of suitable text is given below. *N/A* *(this box should expand as you type)*		
20	List all who will have access to the data generated by the research activity:		
	The principal researcher, the supervisor and, the second marker *(this box should expand as you type)*		
21	List who will have control of, and act as custodian(s) for, data generated by the research activity:		
	Principal researcher *(this box should expand as you type)*		
22	Give details of data storage arrangements, including security measures in place to protect the data, where data will be stored, how long for, and in what form.		
	All data will be encrypted and kept in password protected cloud storage on the University Office 365 system which will not be shared. Any USB sticks used to store or transfer data will be password protected and will be reformatted at the end of the project in order to destroy the data. The data will be stored until the completion of the project and then deleted.		

	(this box should expand as you type)	
22	Confirm that you have read the UWTSD guidance on data management (see https://www.uwtsd.ac.uk/library/research-data-management/)	☒
23	Confirm that you are aware that you need to keep all data until after your research has completed or the end of your funding	☒

SECTION I: Declaration

	The information which I have provided is correct and complete to the best of my knowledge. I have attempted to identify any risks and issues related to the research activity and acknowledge my obligations and the rights of the participants. In submitting this application I hereby confirm that I undertake to ensure that the above named research activity will meet the University's Research Ethics and Integrity Code of Practice which is published on the website: https://www.uwtsd.ac.uk/research/research-ethics/		
1	**Signature of applicant:**		**Date:** 4/28/2025
2	Director of Studies/Supervisor:	Anthony Burns	**Date:** 28/04/2025
3	Signature:	Anthony Burns	

FOR INTERNAL USE ONLY:

	Ethical approval given		
1	**Signature of assessor:**		**Date:**
2	Name:		
3	Role:		