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TRAILBLAZING AI IMPLEMENTATION: OVERCOMING REGULATORY HURDLES AND BRIDGING TALENT GAPS TO TURN RESISTANCE INTO RESILIENCE IN THE BANKING INDUSTRY IN MALAYSIA

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Abstract:
The rapid integration of Artificial Intelligence (AI) in the banking sector offers both transformative opportunities and significant challenges. This study investigates the impact of resistance to change, talent and skills gaps, and regulatory compliance on the successful implementation of AI technologies at XYZ Bank Headquarters in Malaysia. For confidentiality, the name of the bank is withheld. Using a quantitative research methodology, data were collected through a self-administered questionnaire distributed to 370 employees across various departments and hierarchical levels. Respondents were selected using a simple random sampling method. The study aimed to evaluate the relationships between these critical factors and AI implementation. Findings indicate that all three factors significantly influence AI implementation at XYZ Bank, with regulatory compliance emerging as the strongest predictor, followed by resistance to change and the talent and skills gap. These results suggest that addressing employee resistance, bridging workforce skill deficiencies, and ensuring regulatory adherence are crucial for overcoming barriers to AI implementation. The study concludes that for XYZ Bank to fully harness the advantages of AI, strategic efforts must focus on fostering a culture of adaptability, investing in talent development, and maintaining compliance with evolving regulatory frameworks. Such efforts are essential for enhancing the bank's operational efficiency and securing a competitive edge in the digital banking era.

Keywords: artificial intelligence, resistance to change, talent and skills gap, regulatory compliance, banking sector

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1. Introduction

The term AI refers to computer systems that replicate human intelligence processes. AI systems are designed to perform tasks such as recognizing speech, perceiving images, linguistic translation, and decision-making that ordinarily need human intelligence (Goyal, 2023).

XYZ Bank stands for Rashid Hussain Berhad Bank. One of Malaysia's largest financial services organisations, it provides various financial institutions. (Bei, 2017). According to the Group Corporate Restructuring Plan, XYZ Bank Berhad will take over as the XYZ Banking group's ultimate holding company on June 13, 2016. On June 28, 2016, XYZ Bank Berhad was listed on Bursa Malaysia Securities' Main Market. XYZ Bank can claim to be Malaysia's oldest and first local bank (Bei, 2017).

Nevertheless, there are several obstacles to overcome before implementing AI at XYZ Bank Berhad, even with the potential advantages being so great. These barriers encompass technological, organizational, regulatory, and cultural aspects (Hadji & Papenbrock, 2022). Addressing these barriers requires a concerted effort from XYZ Bank Berhad's leadership, supported by strategic planning, investment in technology and talent, stakeholder engagement, and a proactive approach to risk management (Stentoft *et al.,* 2020). By overcoming these obstacles, XYZ Bank Berhad can take advantage of AI's revolutionary potential and become recognized as a leader in the digital banking industry.

1.1 Research Problem Statements

The rapid integration of artificial intelligence (AI) technologies in the banking sector has transformed operational processes, customer service, and risk management. However, the successful implementation of AI technologies at XYZ Bank Headquarters is hampered by several challenges. The literature highlights three significant factors: resistance to change, the talent and skills gap, and regulatory compliance. While AI adoption can enhance efficiency, security, and customer satisfaction, resistance to change rooted in employees' fear of job displacement and a lack of understanding of AI remains a major obstacle (Fares *et al.,* 2022; Zvyagin, 2022). Moreover, the talent and skills gap in AI technologies presents another critical issue. Studies have shown that without a workforce skilled in AI, organizations struggle to implement and maintain AI systems effectively (Hann *et al.,* 2024; Aderibigbe, 2023). Finally, regulatory compliance presents both opportunities and constraints, as banks must navigate complex legal frameworks to ensure AI systems meet regulatory standards without stifling innovation (Temelkov, 2023; Sankar *et al.,* 2023).

Despite the existing literature on AI in the banking sector, there are notable gaps in understanding how these factors specifically influence AI implementation at XYZ Bank Headquarters. Current studies emphasize the importance of overcoming resistance to change and addressing the talent and skills gap but offer limited insights into how these issues interplay within the specific organizational context of XYZ Bank. Furthermore,

while regulatory compliance is widely discussed, there is a lack of clarity on how Malaysian banks, such as XYZ, can balance innovation and legal obligations. Without filling these gaps, XYZ Bank may face significant barriers to fully leveraging AI technologies, thereby impeding its competitive edge, operational efficiency, and risk management capabilities.

The implication of not undertaking this study in XYZ Bank risks stagnating in its efforts to implement AI technologies. Failure to address the resistance to change among employees may lead to lower morale and higher turnover, limiting the potential benefits of AI systems (Shweta & Meera, 2022). Additionally, the talent and skills gap, if not rectified, could result in inefficient AI implementations, further widening the digital divide and reducing the bank's competitiveness (Valenti & Horner, 2020). Moreover, the lack of understanding of how regulatory compliance interacts with AI implementation could expose the bank to legal risks, such as non-compliance with data privacy laws and ethical standards, resulting in financial penalties and reputational damage (Malladhi, 2023). Therefore, addressing these gaps is crucial for the successful adoption of AI technologies at XYZ Bank.

1.2 Research Question

RQ1: Is there a significant relationship between resistance to change and the implementation of AI technologies at XYZ Bank Headquarters?
RQ2: Is there a significant relationship between the talent and skills gap and the implementation of AI technologies at XYZ Bank Headquarters?
RQ3: Is there a significant relationship between regulatory compliance and the implementation of AI technologies at XYZ Bank Headquarters?

1.3 Research Objectives

RO1: To examine if there is a significant relationship between resistance to change and the implementation of AI technologies at XYZ Bank Headquarters.
RO2: To scrutinise if there is a significant relationship between the talent and skills gap and the implementation of AI technologies at XYZ Bank Headquarters.
RO3: To study if there is a significant relationship between regulatory compliance and the implementation of AI technologies at XYZ Bank Headquarters.

2. Literature Review and Hypothesis Development

The following sub-sections present the underpinning theory, literature, and hypothesis on AI's significance in the financial sector, focusing on resistance to change, talent and skill gaps, and regulatory compliance.

2.1 Underpinning Theory

This study employs the Technology Acceptance Model (TAM) to analyse the implementation and impact of technology across various sectors, including supply

chains, banking, MSMEs, and ERP systems education (Davis, 1989). It emphasizes the importance of technological, organizational, and environmental factors in assessing technology readiness and success. The TAM framework aims to enhance understanding of AI and analytics implementation in Malaysia's banking sector, particularly at XYZ Bank. TAM's fundamental goal is to elucidate the mechanisms driving technology adoption and guide practitioners on pre-installation measures (Davis, 1989). It posits that technology acceptance is influenced by users' behavioural intentions, shaped by perceptions of usefulness and ease of use (Davis, 1989).

The implementation of information technologies can provide immediate and long-term benefits, such as improved performance and efficiency (Hewa *et al.*, 2021). Research in information systems management continues to focus on technology acceptance, particularly since the rise of personal computers in the 1980s. Various metrics assess AI implementation effectiveness, including user satisfaction and cognitive frameworks. This literature review aims to identify factors influencing resistance to AI technology implementation at XYZ Bank Headquarters (Dwivedi *et al.*, 2021).

A study by (Alqutub, 2023) extends the Technology Acceptance Model (TAM) by incorporating perceived anthropomorphism, which significantly influences employee perceptions of AI's usefulness and ease of use in banking. The findings suggest that perceived ease of use and perceived usefulness are critical factors affecting the intention to implement AI technologies in banking services.

2.2 Implementation of AI in the Banking Sector

The implementation of artificial intelligence (AI) in the banking sector has emerged as a transformative force, reshaping operational processes, enhancing customer service, and improving risk management. A systematic literature review conducted by (Fares *et al.*, 2022) highlights the historical context of AI's emergence in banking. Their study noted that research on AI implementation in the banking sector began to gain traction following the dot-com bubble. The primary focus was on applications such as credit and loan analysis. This foundational understanding sets the stage for recognizing AI's role in modern banking, where its integration is not merely an enhancement but a necessity for survival in the digital age (Sankar *et al.*, 2023).

Moreover, AI technologies facilitate a paradigm shift in banking operations by automating routine tasks and this has significantly enhanced operational efficiency. AI-driven solutions have been shown to improve accuracy and speed in processing transactions and managing customer inquiries. This allows banks to allocate resources more effectively (Shiyyab, 2023). The advent of machine learning and big data analytics has enabled banks to analyse vast amounts of data. This has led to better decision-making processes and personalized customer experiences According to (Cerrone, 2023; Khuan, 2024). Moreover, based on (Maseke, 2024; Sharma, 2023), the AI's ability to detect anomalies in transaction patterns has fortified security measures against fraud, which has enhanced customer trust and satisfaction.

Additionally, the impact of AI extends to risk management, where it provides sophisticated tools for identifying and mitigating various types of financial risks. As mentioned by (Majumder, 2024), banks are increasingly adopting AI-driven solutions to bolster their fraud detection capabilities and improve overall risk management frameworks. This is particularly relevant in the context of regulatory compliance, where AI can assist in monitoring transactions and ensuring adherence to legal standards (Nnaomah, 2024). The comparative analysis by (Nnaomah, 2024) illustrates that while U.S. banks have advanced significantly in their AI implementations for risk management, other regions, such as Nigeria, are still grappling with foundational challenges. This disparity highlights the need for a supportive regulatory environment to foster AI adoption across different banking sectors.

Furthermore, the integration of AI in customer service has revolutionized how banks interact with their clients. The use of chatbots and virtual assistants has streamlined customer service processes, providing immediate responses to inquiries and enhancing overall client engagement (Oyeniyi, 2024). This shift not only improves customer satisfaction but also allows banks to gather valuable insights into customer preferences and behaviours, which can inform future service offerings (Bharti, 2023; Farishy, 2023). The ability to personalize services through AI is increasingly becoming a competitive differentiator in the banking industry, as highlighted by the findings of (Ali *et al.*, 2022) regarding customer perceptions of digital banking initiatives.

Therefore, the implementation of AI in the banking sector can vary. It encompasses operational efficiency, enhanced customer service, and improved risk management. As banks continue to navigate the complexities of digital transformation, the strategic integration of AI technologies will be crucial in maintaining competitiveness and meeting the evolving needs of customers. The ongoing research and development in this field will likely yield further innovations that can address existing challenges and unlock new opportunities for growth.

2.3 The Relationship between Resistance to Change and Implementation of AI Technologies

Resistance to implementing AI technologies in banking is an intricate and challenging issue. Employees often exhibit resistance due to factors like perceived usefulness and ease of use of the new technology (Fares *et al.*, 2022). Employees in the banking sector often exhibit resistance to technology implementation. This resistance can stem from various factors, such as fear of job displacement, a lack of understanding of AI, and concerns about privacy and data security (Shweta & Meera, 2022). Furthermore, the banking industry faces challenges related to cybersecurity when implementing new technologies, highlighting the importance of ensuring information security through AI solutions (Zvyagin, 2022). Understanding and managing resistance to AI change in banking requires a multilevel perspective and proactive strategies to address concerns at both employee and customer levels (Truby *et al.*, 2020).

The success of AI implementation efforts heavily relies on the extent of resistance to change (Dwivedi *et al.,* 2021). By ensuring that employees are adequately informed about changes and are provided with a platform to express their opinions, the likelihood of them embracing the change process and overcoming their resistance increases. In recent years, the banking industry has undergone substantial transformation. These changes have been driven by various factors, such as shifts in the global environment, alterations in the workforce, advancements in technology, and intensifying competition within the industry (Santhi & Muthuswamy, 2023). Additionally, the economic landscape has become increasingly volatile, further necessitating organizations to adapt and, whenever possible, proactively anticipate these changes. To remain relevant and competitive, banks have had to reinvent themselves through organizational redesign and foster a culture that embraces change (Strielkowski *et al.,* 2022). Failure to embrace change leaves banking institutions vulnerable and unable to thrive.

Studies emphasize that user resistance to change can lead to implementation failure. Additionally, the transition to technology-enabled business operations, including AI implementation, is essential for organizational survival and growth (Dwivedi *et al.*, 2021). Employee resistance attitudes towards changes in organizational policies significantly impact the organization's advancement. Furthermore, the challenges posed by resistance to implementing change are highlighted, emphasizing the need to address resistance to successful technology implementation (Zvyagin, 2022).

Moreover, resistance to change is a well-documented phenomenon in organizational behaviour research. Studies have highlighted various factors contributing to resistance, including organizational structure, employee preparedness, resource allocation, and interpersonal conflicts (Strielkowski *et al.,* 2022). Additionally, trust in management, cognitive flexibility, and effective communication have been identified as key determinants of resistance to technological change. Resistance to change is a common challenge when implementing new technologies like AI. Employees may feel threatened by the prospect of automation or fear that AI technologies will replace their jobs.

Organizational change is a fundamental aspect of organizational development and is essential for adaptation and competitiveness (Ford *et al.*, 2008). It involves a shift from the current state towards a desired future state to enhance effectiveness. Employees play a crucial role in initiating and embracing change, with organizational support significantly influencing their readiness for change (Maurer *et al.,* 2023). Changes in organizational structure impact communication networks, especially in transitioning to self-managing models, where formal hierarchy becomes less critical (Priatna, 2023).

While the integration of AI at XYZ Bank Headquarters in Malaysia has the potential to streamline operations, enhance decision-making, and improve customer service, it also poses significant challenges. Implementing AI can lead to resistance from employees who fear job displacement or are uncomfortable with the pace of technological change (Brynjolfsson & McAfee, 2014).

Although various studies highlight that resistance to change is often perceived as a significant barrier to the successful implementation of AI technologies, there are recent

research that suggests resistance to change may not substantially impact the implementation of AI. This is particularly true when organizations adopt strategic approaches to facilitate the transition.

According to (Nurlia, 2023) the role of organizational adaptation and training can mitigate resistance and allow the employees and organization to embrace AI. Therefore, by providing adequate support and training to employees will foster a sense of preparedness, which can lead to smoother transitions and reduced resistance. This aligns with the findings of (Malik *et al.,* 2022), who mention that employee attitudes towards technology significantly influence AI adoption, highlighting the importance of sequential implementation procedures that include training and support. Furthermore, the U-shaped relationship identified by (Sen *et al.,* 2022) indicates that while initial resistance to change may be present, it can evolve into understanding and acceptance as employees become more familiar with AI technologies.

Moreover, the psychological aspects of employee engagement and well-being play a crucial role in the implementation of AI. Research by (Xu *et al.,* 2023) illustrates that emotional exhaustion can mediate the relationship between AI awareness and employee well-being, suggesting that organizations need to address emotional responses to technological changes to foster a more positive outlook towards the implementation of AI. Additionally, (Braganza *et al.,* 2021) note that AI can enhance employee engagement and trust when implemented thoughtfully, thereby reducing the likelihood of resistance. This indicates that while resistance may exist, its impact can be mitigated through effective management practices that prioritize employee well-being.

Furthermore, the perception of AI as a threat to job security can contribute to resistance. However, this does not necessarily impede the implementation of AI technologies. According to (Dabbous *et al.,* 2021), understanding the factors that encourage employees to utilize AI technologies can lead to successful implementation, even in the face of initial resistance. Similarly, the reference to the need for organizations to communicate the benefits of AI and involve employees in decision-making processes to build trust and acceptance is supported by a recent study by (Nyathani, 2023). Consequently, in light of these divergent outcomes and perspectives, the subsequent hypothesis was formulated to examine the relationship in XYZ Bank:

H1: There is a significant relationship between resistance to change and the implementation of AI technologies at XYZ Bank Headquarters.

2.4 The Relationship between Talent and the Skills Gap and Implementation of AI Technologies

The implementation of artificial intelligence technologies is highly dependent on the available talent and the existing skills gap (Aldoseri *et al.,* 2024). Particularly, this is a challenge for developing countries like Malaysia that experience the digital divide and the lack of access to both AI technology and skilled professionals. This section seeks to explore the relationship among these elements and how they impact organizations and

individuals. According to (Valenti & Horner, 2020), a workforce equipped with the necessary skills in AI and banking operations is more likely to find AI tools easy to use and integrate into their daily workflows. The Technology Acceptance Model (TAM) indicates that when employees feel competent in using new technologies, their acceptance levels rise, enhancing successful AI implementation (Davis, 1989). Therefore, organizations must address this skills gap by providing training and development opportunities to improve employees' AI proficiency, which can lead to successful AI integration and improved operational outcomes (Dwivedi *et al.,* 2021).

According to (Aderibigbe, 2023), the lack of proficient talent in AI technologies hampers effective implementation and maintenance of AI systems, which is critical for leveraging AI's potential in various sectors, including the banking sector. Furthermore, (Yurdaisik, 2021) emphasizes that the uneven distribution of resources, such as the skills necessary for AI implementation, leads to disparities in the benefits derived from AI technologies. This is in line with a study conducted by (Hann *et al.,* 2024) in Taiwan, which discovered that talent shortages significantly hinder the implementation of AI technologies. They discovered that innovation intermediaries facilitate exploratory and customized learning for organizations, enhancing knowledge-sharing and facilitating talent growth. Their adaptive nature facilitates organizational change, ensuring a sustainable workforce for AI technology implementation. This study can be corroborated by (Baral *et al.,* 2022), who mentions that the implementation of AI technologies is severely hindered due to an existing talent and skills gap deficit. Many organizations are placed in a position where they are forced to use AI technology to reduce costs and remain competitive in their respective industries. The insufficiency of skills restricts the economic benefits for these companies. Therefore, business leaders have to train their workforce.

When it comes to the banking sector, the implementation of artificial intelligence (AI) technologies is significantly influenced by the talent and skills gap present within the workforce. As AI continues to reshape the banking landscape, the demand for specialized skills has surged, creating a mismatch between the existing workforce capabilities and the requirements of AI-driven roles. This phenomenon is often referred to as "skill-based technological change," where advancements in technology necessitate higher-level knowledge and abilities, leading to new skill demands (Margaryan, 2023; Johnson *et al.,* 2021).

Some research indicates that while the banking sector is increasingly implementing AI technologies, there remains a substantial skills gap. A systematic review by (Rigley, 2023) highlighted that many organizations struggle to recruit qualified personnel for AI roles. Additionally, (Rigley, 2023) mentions that this is exacerbated by the rapid pace of technological change outpacing educational institutions' ability to prepare graduates adequately. According to research by (Johnson *et al.,* 2021; Boustani, 2021), this gap not only hinders the effective implementation of AI but also poses challenges in maintaining competitive advantage in the banking industry.

Moreover, the implementation of AI technologies in banking operations requires employees to possess a blend of technical and soft skills. Based on (Morandini *et al.,* 2023; Aghaziarati, 2023), the importance of upskilling and reskilling initiatives to equip the workforce with the necessary competencies would enable a smooth implementation of AI technologies. Additionally, (Boustani, 2021; Morandini *et al.,* 2023) elucidate that as AI automates routine tasks, employees are expected to engage in more complex problem-solving and decision-making processes, which necessitate a higher level of digital literacy and analytical skills. Furthermore, (Aghaziarati, 2023) states that the evolving nature of banking services, driven by AI, demands continuous learning and adaptation from employees to keep pace with technological advancements. Therefore, the implications of the talent and skills gap are profound. Researchers such as (Johnson *et al.,* 2021; Boustani, 2021; Ghandour, 2021) assert that organizations that fail to address the talent shortage may experience operational inefficiencies and reduced innovation capacity that complicates the implementation of AI technologies.

Conversely, various studies also assert that talent and the skills gap are not significant factors in the implementation of AI technologies. According to a study by (Kumar *et al.,* 2023), the rapid advancements in machine learning and AI create uncertainty. This results in a perceived knowledge gap among employees. This is called technostress and can hinder the effective implementation of AI, as employees may feel overwhelmed by the pace of technological change rather than lacking the necessary skills. Similarly, (Yiğitcanlar *et al.,* 2022) note that local governments exhibit hesitance in adopting AI due to the contemporary nature of these technologies. This suggests that the reluctance to embrace AI is not solely due to talent and skill gaps but also due to a lack of regulatory frameworks and public acceptance.

Moreover, the challenges faced in implementing AI technologies often stem from infrastructural and organizational constraints rather than solely from a lack of skilled personnel. Based on a study by (Samuel-Okon, 2024), inadequate infrastructure and cultural resistance are significant barriers to AI adoption in developing nations compared to talent and skills gap. This perspective is supported by (Aderibigbe, 2023), who discovered the importance of public-private partnerships and tailored policy frameworks to address these broader challenges, indicating that the talent and skills gap are just one part of a more complex picture.

Furthermore, while some studies do point to a skills gap as a barrier to AI implementation, they also suggest that addressing this gap alone may not suffice. According to (Reznikov, 2024), the high implementation costs and the complexity of integrating AI systems can overshadow the importance of having skilled personnel. This indicates that even with a talented and skilled workforce, organizations may still struggle with the practicalities of AI implementation.

Research conducted in the healthcare sector by (Pecqueux *et al.,* 2022; Scheetz *et al.,* 2021) found the need for collaboration between IT specialists and healthcare professionals to enhance AI implementation. This suggests that while talents and skills are important, collaborative dynamics and organizational readiness play a crucial role in

successful AI implementation. The emphasis on collaboration underscores that the influence of talent and skills gap may be mitigated by fostering interdisciplinary partnerships rather than solely focusing on individual talent and skill enhancement. Therefore, based on these varying results and viewpoints, the following hypothesis was developed to investigate the relationship in XYZ bank:

H2: There is a significant relationship between talent and the skills gap and the implementation of AI technologies at XYZ Bank Headquarters.

2.5 The Relationship between Regulatory Compliance and the Implementation of AI Technologies

There are several elements in the relationship between regulatory compliance (RegComp) and the use of artificial intelligence technologies in the banking industry. Currently, banks are increasingly adopting AI systems to improve operational efficiency, provide better services to their customers, and manage risks more effectively. Therefore, banks face a broad array of regulations governing the use and implementation of AI technologies. As a result, the aspect of regulatory compliance is increasingly important to the integration of AI. Moreover, the two issues appear to be interdependent. Compliance is not only a legal requirement. It may actually influence the implementation of AI within the banking processes.

AI technologies, particularly in the context of regulatory technology (RegTech), offer substantial opportunities for improving compliance processes. Based on studies by (Malladhi, 2023; Tillu, 2023a; Firmansyah, 2023) RegTech utilizes advanced technologies, including AI and machine learning (ML), to streamline compliance tasks, reduce costs, and enhance data accuracy. According to (Tillu, 2023a; Tillu, 2023b), AI can automate regulatory reporting, enabling banks to efficiently manage vast amounts of data while ensuring adherence to regulatory requirements. Moreover, (Temelkov, 2023) mentions that automation not only simplifies compliance but also mitigates the risk of human error, thereby enhancing the overall integrity of financial reporting.

Moreover, AI's role in risk management and fraud detection is crucial for RegComp standards. According to (Hajj, 2023; Ghandour, 2021), the ability of AI systems to analyse large datasets in real-time allows banks to identify and respond to potential compliance breaches swiftly. Furthermore, (Sankar *et al.,* 2023; Lazo, 2023) have discovered that AI-driven analytics can detect fraudulent transactions and assess risks associated with lending practices, thereby aligning with regulatory expectations for consumer protection and financial stability. This is in line with studies by (Sharma, 2023; Singh, 2023) that the integration of AI not only supports compliance but also fosters a proactive approach to risk management, which is increasingly demanded by regulators. However, the implementation of AI technologies in banking is not without challenges. Regulatory concerns regarding data privacy, algorithmic transparency, and ethical use of AI are paramount, as elucidated by (Sankar *et al.,* 2023; Lazo, 2023). Therefore, according to (Savchuk *et al.,* 2023; Buchanan & Wright, 2021), banks must ensure that their AI

systems comply with existing regulations while also adapting to evolving legal frameworks that govern AI applications. Likewise, (Sankar *et al.,* 2023; Temelkov, 2023) indicate that the complexity of these regulations can deter banks from fully embracing AI, as they may fear potential penalties for non-compliance or the reputational risks associated with data breaches. Consequently, (Oriji, 2023; Ranchordás, 2021) state that an equalised approach that incorporates regulatory considerations into the design and implementation of AI technologies is essential for fostering innovation while ensuring compliance.

Conversely, regulatory concerns can also act as barriers to the full-scale implementation of AI in banking. According to (Truby *et al.,* 2020; Lazo, 2023), issues such as algorithmic transparency, data protection, and ethical considerations are paramount in the regulatory landscape. Therefore, banks must navigate these complexities to ensure that their AI systems are compliant with existing laws and regulations. Moreover, (Rahman *et al.,* 2021; Manjaly *et al.,* 2021) mention that these complexities can deter some financial institutions from fully implementing AI technologies. This indicates that while regulatory compliance can drive AI implementation, it can also impose constraints that banks must carefully manage.

Additionally, the evolving nature of regulations surrounding AI and financial technologies necessitates banks to take a proactive approach. As highlighted by (Truby *et al.,* 2020; Oriji, 2023), a lack of clear regulatory frameworks can hinder the effective implementation of AI solutions. In line with this (Olabanji, 2024; Singh, 2023) assert that the need for banks to stay ahead of regulatory changes emphasizes the importance of integrating compliance considerations into their AI implementation from the beginning. This proactive stance is essential for mitigating risks associated with regulatory backlash and ensuring sustainable AI implementation in the financial sector.

Therefore, there is evidence that RegComp significantly influences the implementation of AI technologies in banks. The fact that it acts as a driver, as well as a barrier to AI implementation, demonstrates the dual nature of this status with these solutions in the banking sector. Hence, due to these differing findings and views, the following hypothesis was formed to test the relationship in XYZ bank:

H3: There is a significant relationship between regulatory compliance and the implementation of AI technologies at XYZ Bank Headquarters.

2.6 Proposed Conceptual Framework

To examine if there is a significant relationship between resistance to change, talent and skills gap, regulatory compliance and the implementation of AI technologies at XYZ bank headquarters, the following conceptual framework was proposed as illustrated in Figure 2.1.

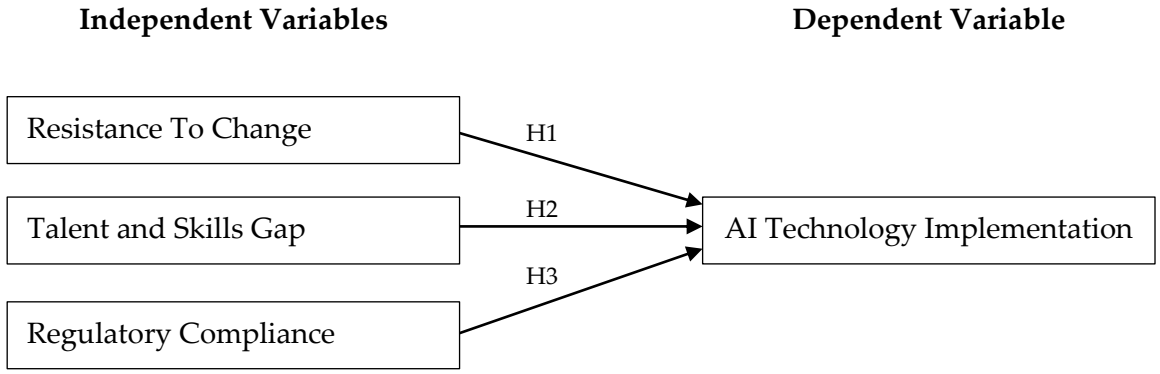

Figure 2.1: Proposed Conceptual Framework

3. Methodology

This section outlines the population, sampling technique, and measurements used in the study.

3.1 Population, Sampling and Measurements

This research adopts a quantitative approach, utilizing a self-administered questionnaire as the primary data collection tool to examine the relationships between resistance to change, talent and skills gaps, regulatory compliance, and the implementation of AI technologies at XYZ bank headquarters.

The study's population consists of all employees working at the XYZ bank headquarters in Malaysia. According to the (XYZ Integrated Report, 2023), the total workforce at the headquarters, including employees from both strategic business groups and various functional groups, stands at 3,601 (XYZ Bank Berhad, 2024).

The sample size for this study was determined using (Krejcie & Morgan's, 1970) tabulation. From the population of 3,601 employees across 12 departments, a sample size of 346 was deemed appropriate. However, to account for non-responses, incomplete, or extreme responses, the sample size was increased by 10%, bringing the total number of distributed questionnaires to 380 (Salkind *et al.*, 2008). The survey targeted employees across various categories, including Executive Vice Presidents (R12), Senior Vice Presidents (R11 and R10), Vice Presidents (R9 and R8), Assistant Vice Presidents (R7), Senior Managers (R6 and R5), Managers (R4), Assistant Managers (R3), Senior Executives (R2), Executives (R1), and Officers (O1 and O2). This wide range of participants ensures that the study captures a comprehensive view of perspectives from different organizational levels.

To ensure representativeness, a simple random sampling technique was employed. This method was selected because it provides each employee an equal opportunity to participate, reducing sampling bias (Silva *et al.*, 2016). As a result, 370 respondents were chosen from the target population.

The questionnaire consists of five sections with a total of 27 questions. The responses were measured using a five-point Likert scale ranging from "strongly agree" to "strongly disagree." The questionnaire was distributed using multiple channels, such as online Google Forms, email, and WhatsApp.

4. Findings and Interpretation

The following section provides the findings of this study, including the respondent's demographic profiles, descriptive, reliability, normality, correlation, and regression analysis.

4.1 Profile of Respondents in XYZ Headquarters

The profile of the respondents studied is displayed in Table 4.1.

Table 4.1: Demographic Profile of the Respondents (N = 370)

Variable	Category	N	Percentage (%)
Gender	Male	168	45.4%
	Female	202	54.6%
Age	Below 30 years old	50	13.5%
	30–39 years old	119	32.2%
	40–49 years old	191	51.6%
	50–60 years old	10	2.7%
Highest Education	PhD	3	0.8%
	Master	80	21.6%
	Bachelor	287	77.6%
Current Functionality	O2: Officer	69	18.7%
	R1 and R2: Junior and Senior Executive	139	37.6%
	R3 and R4: Assistant. Manager, Manager R5 and R6: Senior Manager	78	21.1%
	R7, R8, and R9: Assistant and Vice President R10 and R11: Senior Vice President	74	20%
	R12: Executive Vice President	10	2.70%
Years of Service	Below 5 Years	103	27.8%
	5–9 Years	95	25.7%
	10–15 Years	86	23.2%
	Above 15 Years	86	23.2%

The demographic profile of the respondents shows several trends across different variables across the majority categories. In terms of gender, a slight majority of the respondents were female, representing 54.6% of the sample. Regarding age, the largest group of respondents, 51.6%, were in the 40–49 years old category, indicating that the workforce is predominantly middle-aged.

For the highest education level, the majority of respondents held a Bachelor's degree, accounting for 77.6%, while a smaller portion held advanced degrees such as a

Master's or PhD. In terms of current functionality or job roles, the majority, 37.6%, were categorized as Junior and Senior Executives (R1 and R2), showing that a large portion of the respondents were at the executive level, but not in senior managerial or higher leadership positions.

Lastly, concerning years of service, the largest category was respondents who had worked below 5 years, representing 27.8% of the sample. However, those with longer tenures of 10 to 15 years and above 15 years also represented substantial proportions (23.2% each), indicating a mix of newer and more experienced employees within the organization.

4.2 Mean and Standard Deviation Analysis

Table 4.2: Descriptive Statistics (N = 370)

Factors	Mean	SD	Min	Max
Resistance in Change	3.442	0.726	1	5
Talent and Skill	3.518	0.785	1	5
Regulatory Compliance	3.312	0.656	1	5
Implementation of AI Technology	3.580	0.826	1	5

Table 4.2 Descriptive statistics provide insights into respondents' perceptions across four factors: resistance to change, talent and skills, regulatory compliance, and the implementation of AI technology. The mean score for resistance to change is (3.442 ± 0.726), suggesting that respondents generally perceive a moderate level of resistance, with some variation in opinions. The scores range from 1 to 5, indicating a full spectrum of responses from low to high resistance. The talent and skill factor has a mean of (3.518 ± 0.785), pointing to a moderate-to-high perception of the adequacy of talent and skills within the organization. However, the range from 1 to 5 indicates that while some respondents see a lack of these resources, others view them as sufficient.

For regulatory compliance, the mean score is (3.312 ± 0.656), showing that respondents generally view compliance as moderately well managed, though perceptions vary. The range of responses again spans from 1 to 5, reflecting diverse views on how well regulatory compliance is being handled. Finally, the implementation of AI technology has the highest mean score of (3.580 ± 0.826), indicating that respondents generally have a favourable view of AI implementation, although there is some variation in opinions. The range from 1 to 5 suggests that while most respondents view AI implementation positively, some perceive challenges or shortcomings in this area.

4.3 Reliability Analysis

Table 3: Reliability Analysis (N = 370)

Variables	Cronbach's Alpha	N of Items
Resistance to Change	0.816	5
Talent and Skill	0.922	7
Regulatory Compliance	0.909	5
Implementation of AI Technology	0.915	5

Table 3 Reliability analysis of the variables in the study, measured using Cronbach's Alpha, indicates strong internal consistency across all factors. The resistance to change variable has a Cronbach's Alpha of (0.816; 5 items), suggesting good reliability, as values above 0.7 generally indicate acceptable internal consistency. The talent and skill variable has a higher Cronbach's Alpha of (0.922; 7 items), indicating excellent reliability, meaning the items measuring this factor are highly consistent with one another.

Similarly, regulatory compliance shows a Cronbach's Alpha of (0.909; 5 items), also reflecting excellent reliability. This indicates that the items within this variable are consistently capturing the concept of regulatory compliance. Lastly, the implementation of AI technology has a Cronbach's Alpha of (0.915; 5 items), again demonstrating excellent reliability. Overall, all variables exhibit strong internal consistency, which suggests that the scales used to measure these constructs are reliable and suitable for further analysis.

4.4 Normality

For the normality test, the quantile-quantile plot (Q-Q plot) was used to check the assumption of normality of the sample data set. The quantiles are basically values that divide a probability distribution into equal intervals, meaning that every interval of the total population is proportional, according to (Stine, 2016).

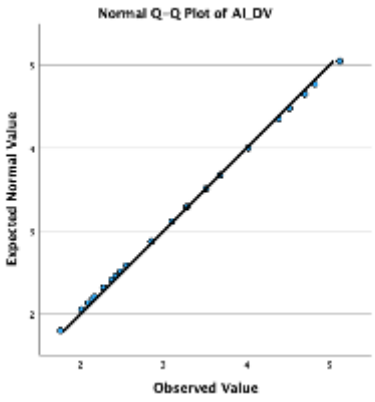

Figure 4.3.1: Q-Q Plot for Implementation of AI Technology

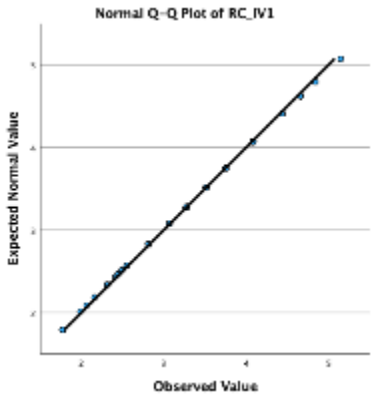

Figure 4.3.2: Q-Q Plot for Resistance to Change

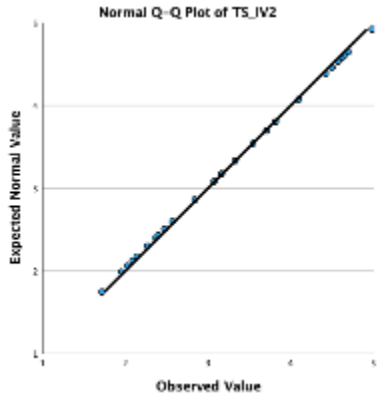

Figure 4.3.3: Q-Q Plot for Talent and Skill

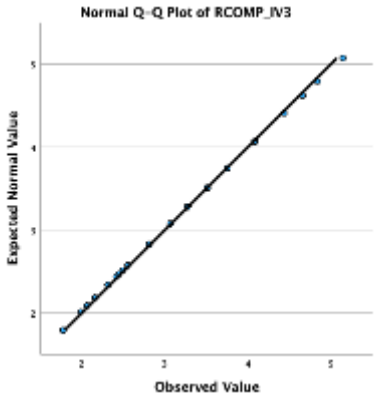

Figure 4.3.4: Q-Q Plot Regulatory Compliance

Figure 4.3.1 - 4.3.4 Q-Q plots show clearly that the datasets, resistance to change, talent and skill, regulatory compliance, and implementation of AI technology are normally distributed. In each identified case, the observed data points closely follow the line representing the values expected of the assumed normal distribution. The closeness of the points to the line observed indicates that the distribution is as normal as it can get, with any noticeable deviations from the line being an immediate indication that the data departs from normality.

4.4 Pearson's Correlation Coefficient Analysis

Table 4.4: Pearson's Correlation Matrix (N = 370)

Factors	RC	TS	RCOMP	AI
Resistance to Change (RC)	1			
Talent and Skill (TS)	0.626**	1		
Regulatory Compliance (RCOMP)	0.999**	0.635**	1	
AI Implementation (AI)	0.675**	0.588**	0.614**	1
**Correlation is significant at 0.01 level (2-tailed)				

Pearson's correlation matrix reveals significant associations between all the variables at the 0.01 level. There is a moderate-to-strong positive relationship between resistance to change (RC) and talent and skill (TS) (r = 0.626), indicating that as resistance to change decreases, the perception of talent and skill within the organization improves. The correlation between resistance to change (RC) and regulatory compliance (RCOMP) is nearly perfect (r = 0.999), suggesting that these two variables are almost identical in their association, implying that the more resistance to change, the more challenges are likely to be faced with regulatory compliance.

Furthermore, resistance to change (RC) also shows a strong positive correlation with AI implementation (AI) (r = 0.675), indicating that reduced resistance to change is associated with better AI implementation. Similarly, the relationship between talent and skill (TS) and regulatory compliance (RCOMP) is significant (r = 0.635), suggesting that higher talent and skill levels are linked to better regulatory compliance.

The correlation between talent and skill (TS) and AI implementation (AI) is moderate (r = 0.588), indicating that organizations with more skilled talent are more likely to implement AI successfully. Finally, regulatory compliance (RCOMP) and AI implementation (AI) are positively correlated (r = 0.614), showing that stronger regulatory compliance is associated with more successful AI implementation. Overall, the matrix highlights strong, significant relationships between all variables, with the most robust correlation seen between resistance to change and regulatory compliance.

4.5 Multiple Regression Analysis

Table 4.5: Model Summary

Model 1	R	R Square	Adjusted R Square	Std. Error Est.
	0.668[a]	0.446	0.443	0.617
a. Predictors: (Constant), Resistance to Change, Talent and Skill and Regulatory Compliance b. Dependent Variable: Implementation of AI Technology				

Table 4.5 Model summary indicates that the independent variables (resistance to change, talent and skill, and regulatory compliance), collectively explain 44.6% of the variance in the dependent variable, which is the (implementation of AI technology), as shown by the R Square value of (0.446). The Adjusted R Square, which accounts for the number of predictors, is (0.443), indicating a slightly adjusted proportion of explained variance. The (R = 0.668) shows a strong positive correlation between the independent variables and AI implementation. The (Standard error of the estimate = 0.617), which gives an indication of the average distance between the observed values and the regression line. Overall, the model suggests that these factors moderately predict AI implementation outcomes.

Table 4.6: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	**Regression**	112.326	2	56.163	147.718	< 0.001[b]
	Residual	139.534	367	0.380		
	Total	251.860	369			
a. Predictors: (Constant), Resistance to Change, Talent and Skill and Regulatory Compliance b. Dependent Variable: Implementation of AI Technology						

Table 4.6 ANOVA indicates that the regression model is statistically significant. The (F = 147.718; p < 0.001), meaning the model is highly significant, and the independent variables (resistance to change, talent and skill, and regulatory compliance) collectively explain a significant portion of the variance in AI implementation. The (Sum of Squares = 112.326), showing the variance explained by the model, while the (Residual Sum of Squares = 139.534), indicating the unexplained variance. Overall, this suggests that the model effectively predicts AI implementation.

Table 4.7: Regression Coefficient

Model 1 Coefficients	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.819	0.164		4.994	< 0.001
Resistance to Change (RC)	0.443	0.054	0.405	8.131	< 0.001
Talent and Skill (TS)	0.352	0.052	0.334	6.710	< 0.001
Regulatory Compliance (RCOMP)	0.672	0.045	0.615	14.955	< 0.001
a. Dependent Variable: Implementation of AI Technology					

4.5.1 Linear Regression Equation

Based on Table 4.7 Coefficients, the linear regression equation is as follows:

AI = 0.819 + 0.443 (RC) + 0.352 (TS) + 0.672 (RCOMP)

Where:
Constant or the y-intercept = 0.819,
RC = Resistance to Change,
TS = Talent and Skill,
RCOMP = Regulatory Compliance.

Table 4.7 Regression coefficient analysis and the linear regression equation reveal significant relationships between the independent variables (resistance to change, talent and skill, and regulatory compliance) and the dependent variable (AI technology implementation). The (constant value = 0.819) indicates that if all other variables are held constant, the baseline value of AI technology implementation would be 0.819.

Resistance to change has an unstandardized coefficient of 0.443, meaning that for every unit increase in resistance to change, AI implementation increases by 0.443 units. The standardized beta coefficient of 0.405 indicates a strong positive relationship between resistance to change and AI implementation, and the t-value of 8.131 further confirms the statistical significance of this relationship.

Similarly, talent and skill have a (B = 0.352), showing that a unit increase in talent and skill leads to a (0.352 unit) improvement in AI technology implementation. The (Beta = 0.334) indicates a moderately strong positive relationship between talent and skill and AI technology implementation. The (t = 6.710) confirms that this effect is also statistically significant.

Regulatory compliance emerges as the strongest predictor, with (B = 0.672), meaning that for every unit increase in regulatory compliance, AI implementation increases by (0.672 units). The (Beta = 0.615) shows that regulatory compliance has the most substantial impact on AI technology implementation. The (t = 14.955) highlights the high statistical significance of this relationship.

Overall, all three independent variables (resistance to change, talent and skill, and regulatory compliance) are positively associated with AI technology implementation, with regulatory compliance having the strongest effect, followed by resistance to change

and talent and skill. These findings suggest that improving regulatory compliance and reducing resistance to change, along with enhancing talent and skill levels, are key factors for successful AI implementation in XYZ headquarters.

4.6 Summary of Hypothesis Test

Table 8: Summary of Hypothesis Test

No	Hypothesis	p-value	Result
H1	There is a significant relationship between resistance to change and the implementation of AI technologies at XYZ bank headquarters.	< 0.001	Accepted
H2	There is a significant relationship between talent and skills gap and the implementation of AI technologies at XYZ bank headquarters.	< 0.001	Accepted
H3	There is a significant relationship between regulatory compliance and the implementation of AI technologies at XYZ bank headquarters.	< 0.001	Accepted

Table 4.8 Summary of the hypothesis test shows that all three hypotheses were accepted, as each has a ($p < 0.001$), indicating a statistically significant relationship with AI technology implementation at XYZ Bank headquarters. Hypothesis (H1), which posits a significant relationship between resistance to change and AI implementation, is accepted. (H2), suggesting a significant relationship between the talent and skills gap and AI technology implementation is also accepted. Finally, (H3), proposing a significant relationship between regulatory compliance and AI technology implementation, is accepted as well. These results suggest that resistance to change, the talent and skills gap, and regulatory compliance all significantly influence the successful implementation of AI technologies at XYZ bank headquarters.

5. Discussion

This section discusses the findings of this study by answering the 3 research questions.

The first research question attempted to answer if there is a significant relationship between resistance to change and the implementation of AI technologies at XYZ bank headquarters. The results indicate that resistance to change has a significant positive impact on AI implementation at XYZ bank headquarters, as evidenced by ($B = 0.443$; $p < 0.001$). This finding is consistent with previous research, which has shown that employee resistance can either hinder or facilitate technology adoption, depending on how it is managed (Dwivedi *et al.,* 2021; Nurlia, 2023). In this study, the significant relationship demonstrates that while resistance to change exists, the manner in which the organization addresses these concerns through strategic communication and support can lead to successful AI implementation. Employees' fear of job displacement and uncertainty about AI can be mitigated by providing them with adequate information and support, as suggested by (Malik *et al.,* 2022). The significance ($t = 8.131$) further confirms the importance of managing resistance to change to ensure successful AI implementation.

The second research question strived to solve if there is a significant relationship between the talent and skills gap and the implementation of AI technologies at XYZ bank headquarters. The analysis reveals that the talent and skills gap also has a positive and significant relationship with AI implementation, with ($B = 0.352$; $p < 0.001$). This implies that enhancing the talent pool and addressing the skills gap can significantly improve the implementation of AI technologies. This finding aligns with the literature that emphasizes the importance of skilled employees in adopting and integrating new technologies (Valenti & Horner, 2020; Dwivedi *et al.,* 2021). The study by (Hann *et al.,* 2024) highlights how a lack of AI proficiency within the workforce can hamper AI adoption. At XYZ bank, addressing the talent and skills gap by providing training and development opportunities has likely played a pivotal role in facilitating AI integration. The ($t = 6.710$) supports the statistical significance of this relationship, indicating that investment in talent is crucial for successful AI implementation.

The third research question sought to resolve if there is a significant relationship between regulatory compliance and the implementation of AI technologies at XYZ bank headquarters. Regulatory compliance emerges as the most significant predictor of AI implementation, with an ($B = 0.672$; $p < 0.001$). This finding suggests that regulatory frameworks play a critical role in ensuring the smooth implementation of AI technologies at XYZ Bank. AI-driven compliance systems not only enhance operational efficiency but also mitigate risks, as noted by (Sankar *et al.,* 2023; Temelkov, 2023). The strong relationship between regulatory compliance and AI implementation, supported by a ($t = 14.955$), emphasizes the necessity for banks like XYZ to align their AI strategies with regulatory requirements. This finding resonates with the broader literature, which highlights that compliance is both a driver and a potential barrier to AI implementation (Malladhi, 2023; Buchanan & Wright, 2021). The study suggests that by ensuring adherence to evolving legal standards, XYZ Bank can mitigate risks associated with data breaches and regulatory penalties, thus facilitating a more robust AI integration.

Hence, this current study confirms that resistance to change, talent and skills gaps, and regulatory compliance all have significant and positive relationships with the implementation of AI technologies at XYZ bank headquarters. Among these, regulatory compliance plays the most substantial role, followed by resistance to change and talent and skills. These findings highlight the importance of addressing both organizational and regulatory factors to ensure the successful implementation of AI technologies in the banking sector. By aligning its workforce and compliance practices with AI strategies, XYZ Bank can enhance its competitiveness and operational efficiency in the digital era.

6. Conclusion

The aim of this study is to investigate the relationships between resistance to change, talent and skills gap, regulatory compliance, and the implementation of AI technologies at XYZ Bank Headquarters.

The first research objective of the study was to determine whether resistance to change affects AI implementation in XYZ bank headquarters. The results confirm that resistance to change plays a critical role in AI adoption. This was echoed in a previous research by (Ford *et al.,* 2008), who argued that employee readiness for change significantly impacts technology acceptance. This aligns with the TAM framework, which posits that perceived ease of use and usefulness influence technology acceptance (Davis, 1989). Resistance to change can hinder employees' perceptions of these factors, making it crucial to address this issue through proper communication and support structures. While resistance is commonly seen as a barrier to AI implementation, according to (Shweta & Meera, 2022), it can be mitigated through strategic change management, as supported by (Sen *et al.,* 2022), who highlight that resistance can turn into acceptance with proper engagement. However, some research argues that resistance may not always obstruct AI implementation if the organization proactively engages employees (Nurlia, 2023), suggesting that this dynamic is complex and requires excellent handling. Bridging these perspectives highlights the importance of leadership and communication in minimizing resistance which is a key takeaway for financial institutions aiming to successfully implement AI technologies.

The second research objective was to explore the impact of the talent and skills gap on AI technologies implementation at XYZ bank headquarters. This study's outcomes reveal that this gap significantly influences AI adoption, which is consistent with prior research. Scholars such as (Valenti and Horner, 2020) have shown that organizations with a workforce proficient in AI technologies are more likely to implement these tools successfully. The TAM model reinforces this by suggesting that perceived ease of use increases when employees feel competent with the technology, thereby enhancing adoption rates (Davis, 1989). However, there are also contrasting views. While some argue that talent deficits are a major barrier (Hann *et al.,* 2024), other researchers (Kumar *et al.,* 2023) posit that the rapid pace of AI development creates a sense of technostress rather than purely a skills gap. This contradiction suggests that talent development alone may not resolve the challenges of AI implementation. Instead, organizations like XYZ must combine skills development with supportive environments that reduce stress and foster continuous learning. In this context, public-private partnerships and tailored training programs, as suggested by (Aderibigbe, 2023), can be critical for addressing the talent and skills gap comprehensively.

The third research objective focused on regulatory compliance and its impact on AI implementation. The findings show that compliance plays a crucial role in driving AI adoption, reinforcing the argument that aligning AI strategies with regulatory requirements is essential for success. This aligns with research from (Malladhi, 2023), who noted that regulatory compliance not only ensures legal adherence but also drives operational efficiency in AI deployment. The TAM model supports this perspective by emphasizing how external factors, such as regulatory environments, influence perceived usefulness and ease of use (Davis, 1989). However, compliance can also be seen as a double-edged sword. Some researchers, such as (Rahman *et al.,* 2021), argue that complex

regulations may slow down AI implementation due to fear of non-compliance penalties. This indicates that while regulatory frameworks are critical, they can also act as barriers if they are too rigid or unclear, as highlighted by (Buchanan & Wright, 2021). Balancing innovation with regulatory compliance is essential for organizations like XYZ Bank to both drive and sustain AI implementation while minimizing risks.

Hence, this study accentuates the importance of addressing both organizational and regulatory factors in the successful implementation of AI technologies. The Technology Acceptance Model (TAM) effectively explains the relationships between resistance to change, talent and skills gaps, and regulatory compliance in the context of AI adoption. By mitigating resistance to change through strategic communication, by addressing the talent and skills gap with comprehensive training, and aligning AI strategies with regulatory frameworks, XYZ Bank can enhance its competitive edge in the digital era. Bridging the literature with practical implications, this study contributes to a deeper understanding of the complexities surrounding AI implementation in the banking sector. It highlights the need for intricate strategies that not only foster technology acceptance but also ensure sustained success in a rapidly evolving regulatory landscape.

7. Limitations and Further Research

This study provides valuable insights for banks and policymakers on the factors driving AI adoption and the obstacles that hinder it. It suggests that understanding these factors can help develop better strategies for AI implementation at XYZ bank headquarters. However, the study has several limitations, including time constraints, differences in employees' knowledge levels about AI technologies, and its specificity to XYZ bank headquarters.

Future research should consider extended timelines or staggered data collection periods to mitigate these issues. Additionally, the study should explore the elements that provide hedonic motivation and how they influence employees' willingness to engage with AI technologies. This will help develop strategies to enhance employee engagement and satisfaction.

Further research should also adopt mixed-method approaches, including quantitative and qualitative methods, to enhance knowledge and validate the findings. It is recommended to include participants from various roles and levels of seniority, ranging from junior staff to senior management, to capture a wide range of perspectives on AI implementation. A larger sample size will help obtain more reliable results and allow for more detailed subgroup analyses. Extending research to branch employees and clients will also expand the study's subject matter, making it more generalizable.

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Conflict of Interest Statement

The authors of this study declare that there are no conflicts of interest and that it was not funded by any party that could influence the results. The authors, as the study's researchers, affirm its originality, assert that this research has not been previously published, and verify that there are no present plans for publishing elsewhere.

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