EXPLORATORY STUDY ON THE ACCEPTANCE AND ADOPTION OF MOBILE LEARNING IN THE COMMERCIAL BANKING SECTOR

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Abstract

Mobile learning (m-Learning) is transforming training and development across sectors by enabling access to educational resources via mobile technologies. Despite its potential, the commercial banking sector in Malaysia has seen limited adoption due to challenges such as resistance to change, lack of awareness, technical constraints, and data security concerns. This study explores the acceptance of mobile learning among employees in Malaysia's commercial banking sector, focusing on their attitudes, beliefs, and expectations. It examines the impact of mobile learning on organisational learning, skill development, and operational efficiency. A qualitative methodology under the interpretivism paradigm was adopted, involving semi structured interviews, focus group discussions, and document analysis with participants including decision makers and operational employees in Klang Valley. Thematic and constant comparative analyses revealed differing acceptance levels, with decision makers emphasising strategic alignment and operational employees valuing usability and relevance. The study proposes a framework to facilitate mobile learning integration in banking institutions, addressing identified barriers. While limited by its geographic and sectoral focus, the findings offer valuable insights for digital learning implementation strategies in similar contexts. The study contributes to theoretical understanding by highlighting the role of organisational culture and leadership in mobile learning adoption, and provides practical recommendations for effective deployment. It lays a foundation for future research aimed at cross-sectoral or empirical researches of mobile learning adoption.

Keywords Mobile learning, Commercial banking, Organisational improvement, Employee training, Digital transformation, User acceptance

1.0 INTRODUCTION

In the dynamic digital economy, continuous innovation and effective communication are vital, particularly within the commercial banking sector. Mobile learning, using mobile devices for flexible, accessible training, offers a promising solution. Despite widespread smartphone use and mobile app adoption in Malaysia, uptake in banks remains modest due to resistance, technical gaps, security concerns, and traditional culture. Banking institutions face pressure to adapt training strategies for digitally-savvy millennials. Mobile learning supports skill enhancement, compliance, and development while overcoming time and location barriers. Neglecting it risks productivity declines, reduced engagement, and communication gaps. This study explores mobile learning acceptance in Malaysian commercial banks, aligning with national digital transformation goals (MyDIGITAL, 12th Malaysia Plan). It proposes a strategic framework to enhance learning, agility, and competitiveness among employees and decision-makers.

The banking industry is one sector where mobile learning is vital. Banks operate in a competitive, evolving environment, where staying updated on trends, regulations, and compliance is critical. Mobile learning gives professionals flexibility and accessibility, enabling them to access training materials anytime, anywhere, whether on the move or at different branches. Compliance training, a key banking function, benefits as mobile platforms keep employees updated on regulations, reducing compliance risks. Mobile learning supports professional development through bite-sized, interactive, on-demand content, fostering adaptability in a constantly evolving industry. The banking workforce includes many tech-savvy millennials whose preferences align with mobile platforms. Embracing mobile learning engages and retains this group, boosting motivation and satisfaction.

Mobile learning, or m-Learning, utilises mobile devices such as smartphones and tablets to deliver educational content and training experiences. Over the past decade, m-Learning has transformed the landscape of education and professional development, gaining prominence across various industries, including banking (Traxler, 2008; Wang et al., 2023). In Malaysia, the banking sector is both competitive and dynamic, with mobile learning increasingly viewed as a means to enhance employee performance, improve customer experiences, and keep pace with regulatory changes (Nagarajan et al., 2022; Dang et al., 2023).

Despite the clear benefits of mobile learning, its adoption in the Malaysian commercial banking sector remains limited. Resistance to change, lack of awareness, technical barriers, and concerns about data security have all contributed to low uptake rates (Dang et al., 2023; Nagarajan et al., 2022). These challenges hinder the sector's ability to fully leverage mobile learning as a tool for organisational improvement and professional development (Wang et al., 2023).

This study investigates the acceptance of mobile learning among employees in the Malaysian commercial banking sector, focusing on their attitudes, beliefs, and expectations toward its use for professional development and organizational learning. The research aims to explore how banking employees perceived the benefits, challenges, and expectations associated with mobile learning, as well as its impact on organisational learning and performance improvement.

The central research question guiding this study is:

What are the perceived benefits, challenges, expectations and impact of mobile learning among banking employees?

Correspondingly, the research objective is to identify and analyse these perceptions to better understand the factors (benefits, challenges, and expectations) that influence mobile learning acceptance within financial institutions.

The study focuses on commercial banks operating in the Klang Valley, encompassing Selangor and Kuala Lumpur. Participants include decision makers and operational employees from various organisational levels, providing a comprehensive view of attitudes and experiences related to mobile learning adoption and its implications for workplace capability development and institutional innovation..

Understanding the factors that influence the acceptance and adoption of mobile learning is crucial for banks seeking to enhance their training and development strategies. By identifying the barriers and facilitators associated with mobile learning, this study provides valuable insights that can inform the design and implementation of effective training programmes (Dang et al., 2023; Nagarajan et al., 2022). The findings have practical implications for decision makers, human resource professionals, and training managers within the banking sector, as well as broader relevance for other industries undergoing digital transformation (Wang et al., 2023).

The study contributes to the theoretical understanding of technology acceptance and organisational learning in the context of the banking sector. It also offers practical guidance for banks aiming to implement mobile learning effectively, proposing a comprehensive framework that addresses key factors influencing adoption and providing actionable strategies for successful implementation.

In summary, mobile learning represents a critical opportunity for the Malaysian commercial banking sector to enhance organisational performance, support continuous professional development, and maintain competitiveness in a rapidly changing environment. However, realising these benefits requires a clear understanding of the factors influencing acceptance and adoption among employees. By addressing these challenges, banks can harness the full potential of mobile learning to drive innovation, compliance, and employee engagement.

2.0 LITERATURE REVIEW

2.1 Malaysian Banking Sector

The Malaysian banking sector has experienced a profound digital transformation, driven by the adoption of technologies such as artificial intelligence, machine learning, and big data analytics (Lorente, 2023; Lugovsky, 2021; Husain et al., 2022). These advancements have led to significant improvements in operational efficiency and customer service, positioning banks to better meet the demands of the modern economy. The integration of blockchain technology and the rise of cryptocurrencies further illustrate the sector's commitment to innovation and digitalisation (Lugovsky, 2021). As banks continue to digitise their operations, the need for ongoing training and upskilling becomes increasingly important. Mobile learning addresses this need by providing

employees with flexible access to the latest information, tools, and best practices (Nagarajan et al., 2022). This ensures that staff remain competent and confident in their roles, even as the industry undergoes rapid change.

Mobile learning is increasingly vital for Malaysia's banking sector, given high smartphone penetration (89.06% in 2022) and a mobile, tech-savvy workforce (Statista, 2022b). It addresses industry challenges by providing accessible, flexible training that keeps pace with technological advancements and evolving customer expectations (Ministry of Finance Malaysia, 2021). Supported by government initiatives promoting digital innovation, mobile learning aligns with broader national strategies (MIDA, 2022).

This study examines employees' perceptions and acceptance of mobile learning, identifying its benefits, challenges, and adoption factors. Ultimately, it aims to propose a framework to enhance mobile learning integration, supporting workforce development and the sector's ongoing improvement.

2.2 Mobile Learning of the Commercial Banking Sector in Malaysia

The adoption of mobile learning in the commercial banking sector is a complicated process that brings both opportunities and challenges. A significant challenge the industry faces is the deficiency in comprehending and capitalising on the impact of mobile learning (Malini, 2022; Chaouali et al., 2023). This challenge forms the basis of the study exploration in this chapter, highlighting the need for a more thorough, comprehensive understanding of the potential impact of mobile learning. Malaysia's banking sector has its roots in the colonial era. The early years of the nation's independence witnessed the establishment of key regulatory bodies, such as Bank Negara Malaysia (ABM, n.d.; Bank Negara Malaysia, 2012). The 1980s marked a turning point with reforms and the rise of Islamic banking (ABM, n.d.). The digital wave of the late 1990s and early 2000s transformed customer interactions and internal operations (Bank Negara Malaysia, 2012). Current trends are shaped by the Financial Sector Blueprint 2022–2026, aiming to foster innovation (MIDA, 2022; EMIS, 2020).

The banking industry facilitates economic transactions and stimulates investment (Aziakpono, 2003; Deloitte, 2020). Its resilience during the MCO (Khoo, 2020) and the dual operation of conventional and Islamic banks are key features (BNM, 2023). By 2021, the banking landscape had grown robustly, with Islamic banks accounting for 41% of total financing (BNM, 2023).

Key players and digital trends in the commercial banking sector in Malaysia involve top banks such as Maybank and CIMB dominate in assets (Statista, 2022a). Hong Leong Bank is known for digital innovation. Digitalisation has transformed banking services, boosted personalisation, and enabled cost efficiency (PwC, 2020; Kitsios et al., 2021; Kittane, 2020). Mobile learning supports skill development in this evolving digital context (Kitsios et al., 2021). Mobile learning enhances the employee training in commercial banking. m-Learning is being explored as a scalable training solution (Traxler, 2008). Digitalisation is shaping both customer service and employee development (Kittane, 2020; Kitsios et al., 2021).AI-powered mobile learning aligns with industry tech trends (Accenture, 2024). The impact of mobile learning is the improved accessibility and adaptability for professionals (Talan, 2020). It enhances productivity and reduces training costs (Kittane, 2020;

Kitsios et al., 2021). Banks aim to remain competitive by equipping employees with modern, mobile-driven training solutions (Chaouali et al., 2023).

The implementation of mobile learning in commercial banking involves the deployment of learning management systems (LMS), mobile apps, and digital content tailored to the needs of banking professionals (Ali et al., 2022; Mauthner & Doucet, 2003). Successful implementation requires alignment with organisational goals, investment in technology, and the development of relevant content (Traxler, 2008; TheHRDirector, 2023). Banks must also address issues related to data security, user privacy, and platform usability (Cochrane et al., 2023; Deloitte, 2023).

Assessment of mobile learning effectiveness focuses on metrics such as user engagement, knowledge retention, and performance improvement (Talan, 2020; Ahmad, 2020). Studies have found that mobile learning enhances learning outcomes compared to traditional methods, particularly when combined with interactive and multimedia content (Moya & Camacho, 2021). However, the success of mobile learning initiatives depends on factors such as leadership support, employee motivation, and the availability of technical support (Armstrong & Taylor, 2014; Amin et al., 2019).

Despite these benefits, challenges persist, including resistance to change, limited digital literacy among some employees, and concerns about the reliability and security of mobile platforms (Ali et al., 2022; Chaouali et al., 2023). Regardless of its broad applicability, limited research has explored mobile learning acceptance in Malaysian commercial banking using the interpretivism paradigm. This is notable given the Malaysian government's emphasis on technology adoption and digital transformation. The Malaysian Digital Economy Corporation (MDEC) has urged banks to adopt mobile learning to upskill employees and enhance digital skills (Business Today Malaysia, 2021). Bank Negara Malaysia (2018) and Fintech News Malaysia (2022) issued guidelines stressing employee preparedness for technology use. Furthermore, the World Economic Forum (WEF, 2020) highlights understanding human factors in workplace technology adoption, advocating a user-centric approach.

2.3 Conceptual Foundation and Study Variables

Mobile learning (m-learning) adoption in the commercial banking sector can be best understood through established technology adoption frameworks, particularly the Technology Acceptance Model (TAM) (Davis, 1989) and the Unified Theory of Acceptance and Use of Technology (UTAUT2) (Venkatesh et al., 2012). These models emphasize that technology adoption is influenced by both cognitive evaluations such as perceived usefulness and contextual factors including organizational support and social influence.

In banking institutions, learning through mobile platforms is shaped by the sector’s operational complexity, regulatory demands, and customer service dynamics (Nagarajan et al., 2022). Employees require continuous training to stay aligned with evolving fin-tech tools and compliance frameworks, yet traditional training remains rigid and resource-intensive (Aburayya et al., 2022). Mobile learning provides a viable solution by enhancing accessibility, flexibility, and engagement (Dang et al., 2023; Wang et al., 2023).

Drawing upon this theoretical and contextual understanding, the study identifies four major variables influencing mobile learning acceptance and adoption in the banking industry; perceived benefits, referring to how employees value mobile learning in enhancing knowledge, efficiency, and job performance (Lorente, 2023); perceived challenges, representing the perceived barriers such as limited technical infrastructure, lack of incentives, and management support (Al-Shammari & Al-Mekhalfi, 2022); user expectations, capturing users' anticipations of interactive, engaging, and flexible learning features (Fares et al., 2022); and impact on performance and organizational learning, encompassing how mobile learning adoption enhances personal competence and institutional learning capability (Chaouali et al., 2023).

Table 2.3 : Variables' Definition and Literature Reference

Variable	Definition	Supporting Contemporary Literature
Perceived Benefits	Beliefs regarding usefulness, flexibility, and skill improvement	Wang et al. (2023); Aburayya et al. (2022)
Perceived Challenges	Barriers such as security, infrastructure, resistance to change	Chaouali et al. (2023); Almarashdeh (2020)
User Expectations	Features and support expected by learners	Al-Shammari & Al-Mekhalfi (2022)
Impact on Performance & Organisational Learning	Improvements in efficiency, productivity, and learning culture	Dang et al. (2023); Nagarajan et al. (2022)

Collectively, these variables form the conceptual foundation of this study, illustrating the psychological, structural, and performance-based dimensions of m-learning adoption within the commercial banking context.

2.4 Proposed Conceptual Framework

The conceptual framework (see Figure 1) integrates insights from TAM and UTAUT2 with contextual influences identified in the literature on mobile learning in financial institutions. The model posits that perceived benefits, perceived challenges, and user expectations directly affect the acceptance and adoption of mobile learning systems. In turn, this adoption enhances individual performance and supports organizational learning, promoting overall institutional efficiency.

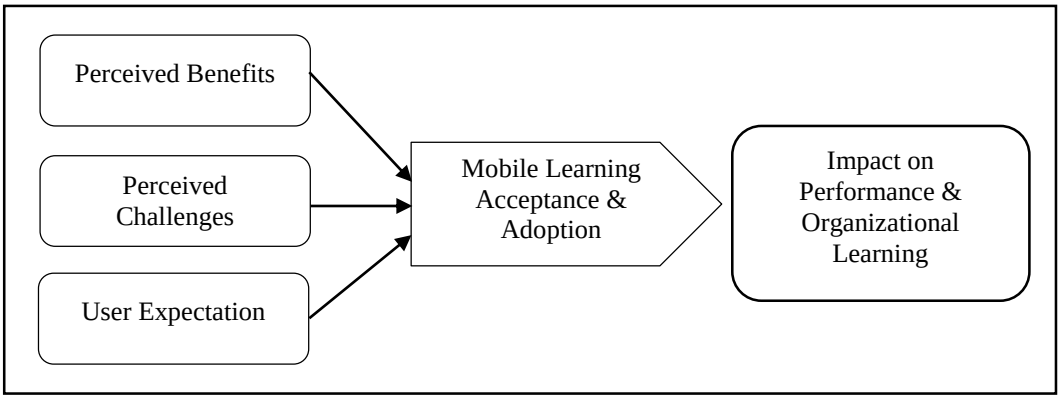


Figure 2.4 : Conceptual Framework for Mobile Learning Acceptance in Malaysian Commercial Banking Sector

This framework serves as the foundation for exploring the determinants influencing employees' acceptance and the strategic implications for digital workforce development within Malaysia's commercial banking sector.

3.0 RESEARCH DESIGN AND METHODOLOGY

Interpretivism is a widely used research paradigm in social sciences, especially qualitative research (Pervin & Mokhtar, 2022; Bryman, 2016). Applied in fields like education, psychology, and sociology, it emphasizes how individuals construct understanding through experiences and interactions, highlighting context and subjectivity. To contextualize, interpretivism has been used in mobile learning studies. Annamalai et al. (2021) showed Malaysian employees' attitudes toward learning management systems (LMS) were shaped by perceived ease and resources availability, while similarly, Jiang et al. (2021) found Chinese students' mobile learning acceptance depended on perceived utility, user-friendliness, and learning styles. These findings stress situational factors and personal experiences. For this research, interpretivism suits exploring employees' subjective perspectives on mobile learning acceptance in Malaysia's commercial banking sector, acknowledging diverse interpretations shaped by cultural and organizational contexts. It has been applied in Malaysian industries like healthcare, hospitality, and education, where users' perceptions and social support influenced adoption decisions (Zahle, 2021; Vandamme, 2021; Omodan, 2022).

3.1 Choice of Case Study Approach

This study employs an embedded case study approach as introduced by Scholz and Tietje (2002). This approach is particularly relevant for dealing with complexities requiring the integration of multiple variables or pieces of evidence. It allows for exploring the case's intricacies by examining more than one sub-unit of analysis within the commercial bank. Commercial banks operate in a competitive market, and understanding the impact of mobile learning can affect their market positioning and competitiveness. This aspect may interest both the bank being studied and other similar institutions.

3.2 Data Collection

Sampling and Population.

The study's population comprises employees from commercial banks operating in the Klang Valley. A purposive sampling strategy was employed to select participants directly involved in or affected by mobile learning initiatives. This includes; decision-makers, such as senior managers, HR professionals, and training coordinators responsible for designing and implementing mobile learning strategies; and operational employees, such as frontline staff and middle managers who are the primary users of mobile learning platforms.

This sampling approach ensures representation across organizational hierarchies and captures diverse perspectives on mobile learning adoption. The sample size was determined based on the principle of data saturation, i.e. interviews and focus groups continued until no new themes emerged.

Sampling Method

Purposive sampling was selected for its suitability in qualitative research where participants must possess relevant knowledge or experience related to the phenomenon studied (Creswell & Creswell, 2022). This approach enhances the validity and depth of the data by focusing on information-rich cases directly related to mobile learning acceptance in Malaysia's banking industry..

Data Collection Techniques.

Multiple data collection techniques were employed to enhance the credibility and depth of the findings (Bryman, 2016; Creswell & Creswell, 2022). Semi-structured interviews were conducted with decision-makers to gain insights into strategic considerations, implementation challenges, and organizational support for mobile learning (Fontana & Frey, 2005; Gill et al., 2008). Focus group discussions were held with operational employees to explore user experiences, perceived benefits and barriers, and expectations for future improvements (Gill et al., 2008). Document analysis further contextualised the primary data through review of organizational policies, training materials, and internal reports to contextualize interview and focus group data (Bowen, 2009). The use of multiple data sources (triangulation) strengthens the validity of the research by allowing cross-verification of findings (Cochrane et al., 2023; Creswell & Creswell, 2022).

Data Collection Procedures.

Participants were invited via formal letters and provided with information sheets outlining the study's purpose, confidentiality measures, and voluntary nature of participation. Interviews and focus groups were conducted in person or via secure online platforms, depending on participants' preferences and logistical considerations. All sessions were audio-recorded (with consent) and transcribed verbatim for analysis.

3.3 Data Analysis Techniques

The study employed thematic analysis as the primary analytical approach, involving systematic coding and categorization of data to identify recurring patterns and themes (Braun & Clarke, 2019, 2021). The analysis began with familiarization, involving repeated reading of transcripts to develop an in-depth understanding of the content. Initial codes were then generated to capture key concepts and significant ideas emerging from participant's narratives. These codes were subsequently grouped into broader categories that represented emerging themes aligned with the research objectives. The themes were refined iteratively to ensure internal coherence, distinctiveness, and conceptual relevance to the study's framework. The final phase involved interpreting relating themes to existing literature on mobile learning adoption and the study's conceptual framework specifically TAM and UTAUT2.

The constant comparative method was also employed, involving continuous comparison of data segments to refine codes and themes and ensure analytical rigor (Glaser & Strauss, 2017). Ensuring the reliability, validity, and ethical integrity of

this qualitative research was essential to establishing its rigor and credibility. To strengthen reliability and validity, several strategies were employed. Triangulation was achieved by drawing on multiple data sources via interviews, focus groups, and documents in order to corroborate findings and enhance trustworthiness (Creswell & Creswell, 2022). Member checking involved sharing preliminary findings with participants to validate interpretations and ensure accuracy (Busetto et al., 2020). An audit trail was maintained by keeping comprehensive records of data collection, coding, and analytic decisions, thereby promoting transparency and replicability (De Kleijn & Van Leeuwen, 2018). The researcher also engaged in reflexivity through continuous self-reflection to identify and mitigate potential biases and acknowledge personal assumptions that could influence the interpretation of data (Braun & Clarke, 2019; Finlay & Gough, 2003).

Ethical considerations guided all aspects of the research process (Clark et al., 2016), with participants receiving detailed information and providing informed, written consent prior to participation. Their confidentiality was safeguarded by anonymizing data and removing identifiable information from transcripts and reports, while voluntary participation was assured by informing them of their right to withdraw at any point without penalty. Data security was upheld by securely storing audio recordings, transcripts, and research materials, accessible only to the researcher. The study adhered to institutional ethical guidelines and received formal approval from the relevant ethics review board.

3.4 Study Variables and Link to Research Questions and Objectives

This study's research questions and objectives were mapped directly to the conceptual variables derived from the literature review. This mapping ensures the study maintains logical coherence between conceptual constructs, research objectives, and data analysis procedures.

Table 3.4 : Mapping of RO, RQ and Analytical Approach

Research Objective	Research Question	Key Variable(s)	Analytical Approach
To identify the perceived benefits influencing mobile learning adoption in commercial banks.	What benefits motivate employees to adopt mobile learning?	Perceived Benefits	Thematic Analysis
To examine the challenges affecting mobile learning implementation.	What barriers hinder mobile learning acceptance?	Perceived Challenges	Thematic Analysis
To explore employees' expectations regarding mobile learning systems.	What are employees' expectations of mobile learning design and content?	User Expectations	Pattern Matching
To assess how mobile learning influences performance and organizational learning.	How does mobile learning improve individual and institutional outcomes?	Impact on Performance and Organizational Learning	Thematic Cross-case Comparison

3.5 Statistical Analysis Consideration

Although this study employed a qualitative research design, the variables identified provide a structured foundation for future quantitative validation. For a more robust generalization of findings, future studies could employ Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) to assess construct validity,

followed by Structural Equation Modelling (SEM-PLS) to test causal relationships among variables. A sequential mixed-methods design that integrates qualitative and quantitative approaches would enhance the robustness and generalisability of results by triangulating interpretive insights with statistical evidence (Hair et al., 2021). Such methodological integration would further strengthen the theoretical and practical understanding of mobile learning acceptance, ensuring greater applicability of findings for policymaking and digital training initiatives in the banking sector.

Table 3.5 : Suggested Analysis for Each Variables

Variable Type	Suggested Analysis
Perceived usefulness, ease, challenges	Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA)
Relationships between predictors and acceptance	Structural Equation Modelling (SEM-PLS) using SmartPLS/AMOS
Group differences (management vs front-line staff)	Independent t-Test / MANOVA

4.0 RESULTS AND DISCUSSION

Drawing on qualitative data from semi-structured interviews, focus group discussions, and document analysis (Bowen, 2009; Fontana & Frey, 2005; Gill et al., 2008), the results are organised thematically to reflect the perspectives of both decision makers and operational employees. Findings reveal a disparity in mobile learning acceptance between decision makers and operational employees. Decision makers prioritised strategic benefits, including alignment with organisational goals, cost efficiency, and compliance training scalability, while operational employees focused on usability, accessibility, and relevance to daily tasks.

The thematic analysis identified four themes: perceived benefits, challenges, adoption drivers, and resistance factors. Mobile learning was consistently recognised for its capacity to enhance flexibility, accessibility, and real-time updates. However, technical issues, lack of training, and data security concerns were highlighted as barriers that inhibit widespread adoption. At the same time, leadership endorsement, the availability of user-friendly platforms, and recognition systems emerged as significant motivators for engagement. Resistance to adoption was attributed mainly to employees' habitual reliance on traditional learning methods, unclear objectives, and lack of involvement in decision making processes..

Overall, the thematic analysis highlighted that mobile learning enhances job performance, supports professional growth, and fosters a learning culture. However, the successful implementation requires addressing usability gaps, offering continuous support, and promoting engagement through incentives and recognition. The proposed framework incorporates organisational, technological, and individual-level factors influencing adoption. Leadership commitment, ongoing feedback, and adaptive content delivery emerged as critical components.

The findings support and expand upon existing literature, affirming the importance of aligning mobile learning initiatives with user needs and organisational culture. Practical recommendations include co-creating content with

employees, piloting tools before rollout, and integrating learning with performance metrics.

4.1 The Participants

The study involved two main groups: decision makers (senior managers, HR professionals, and training coordinators) and operational employees (frontline staff and middle managers) from commercial banks in the Klang Valley. This diverse sample enabled a comprehensive exploration of attitudes, beliefs, and experiences related to mobile learning adoption (Creswell & Creswell, 2022; Creswell & Poth, 2018).

Composition of Decision Makers (DM)

The decision-maker group consisted of five individuals with extensive experience in strategic, managerial, and human resource roles. DM1 has been with the organisation for 15 years, serving as the headquarters' Assistant Vice President of Strategic Alliance. As a male in the 41-50 age group with a Bachelor's degree in Marketing, he brings extensive experience and a strategic perspective to his role, which is crucial in forming and maintaining strategic partnerships for the company. DM2, a female in the 41-50 age group, has been with the organisation for 8 years. She holds a Bachelor of Arts, and Commerce and serves as the Executive Director of Centre Area III at a branch location. Her background in commerce and leadership experience make her a valuable asset in overseeing her area's operations and strategic initiatives.

With 10 years of experience in the organization, DM3 is the Head of Human Resources based at the headquarters. A female in the 41-50 age group, she holds a Bachelor's degree in Human Resources. Her role is crucial in managing and developing the organisation's human capital, ensuring effective HR policies and practices are in place. DM4, a male aged between 51-60, has dedicated 19 years to the organisation, currently heading the Credit Division at the headquarters. He has a Bachelor of Arts in Accounting, providing him with a strong foundation in financial management. His extensive experience and expertise are vital in overseeing the credit operations and ensuring the organisation's financial stability. Lastly, DM5, the Senior Centre Manager at a branch, has been with the organisation for 12 years. He is a male in the 41-50 age group with a Bachelor of Science in Finance. His financial expertise and years of experience are instrumental in managing the

Participants' Profile

Operational employees, drawn from divisions such as business banking and asset management, represented frontline and mid-level staff directly involved in mobile learning practices. Their participation allowed the study to capture user-level experiences, challenges, and expectations, enriching the depth and authenticity of the findings.

Table 4.1: Focus Group A - Business Banking

Focus Group	Position Title	Years in Organisation	Location	Gender	Age Group	Education Background
FG-A-01	Relationship Manager	5	Branch	Female	31-40	Bachelor's in Economics
FG-A-02	Manager, Fintech	3	Branch	Male	31-40	Bachelor - Accounting
FG-A-03	Branch Manager	12	Branch	Male	41-50	Bachelor - Business
FG-A-04	Manager, Commercial Lending	7	Branch	Male	31-40	Bachelor's in Communication
FG-A-05	Relationship Executive	8	Branch	Female	31-40	Bachelor's in Finance
FG-A-06	Centre Manager	14	Branch	Female	51-60	Bachelor's in Commerce
FG-A-07	Trade Finance Executive	6	Branch	Male	21-30	Diploma
FG-A-08	Teller	4	Branch	Female	21-30	Diploma

Table 4.2: Focus Group B - Asset Management

Focus Group	Position Title	Years in Organization	Location	Gender	Age Group	Education Background
FG-B-01	Investment Analyst	6	Headquarter	Male	31-40	Bachelor's in Economics
FG-B-02	Compliance Manager	10	Headquarter	Female	31-40	Bachelor's in Law
FG-B-03	Investment Advisor	15	Headquarter	Male	51-60	Bachelor - Finance
FG-B-04	Operations Manager	8	Headquarter	Male	41-50	Bachelor's in Management
FG-B-05	Marketing and Communication	4	Headquarter	Female	31-40	Bachelor - Mass Com
FG-B-06	Client Relationship	5	Headquarter	Female	31-40	Bachelor - Commerce
FG-B-07	Portfolio Support	2	Headquarter	Female	21-30	Bachelor - Business

4.2 Findings from Decision Makers (DM) Perspectives

Theme [1]: Positive Impact and Benefits

Finding 1: Improved Accessibility and Flexibility

Decision makers unanimously agreed on the increased accessibility and flexibility of mobile learning initiatives in commercial banking. DM1 emphasised the success of their organisation's mobile learning initiatives, stating, *"We have successfully implemented mobile learning initiatives in our organisation. It has greatly improved employee training by providing increased accessibility to learning materials."*

Similarly, DM2 noted positive results, stating, *"We have implemented mobile learning initiatives in our organisation and have seen positive results. It has improved employee training by providing greater accessibility and convenience."*

DM3, DM4, and DM5 reiterated these sentiments, pointing out the transformative nature of mobile learning in providing employees with flexible learning opportunities.

Finding 2: Enhanced Performance Outcomes and Customer Service

Most decision makers (4 out of 5 DMs) agreed on the positive effects of mobile learning on performance outcomes and customer service within commercial banking organisations. DM4 highlighted how mobile learning has empowered employees to take control of their learning journey and enhance their skills, stating, *"Mobile learning has empowered our employees to take control of their learning journey and enhance their skills."*

Similarly, DM5 emphasised the significant impact of mobile learning, stating, *"The impact of mobile learning has been significant in the commercial banking sector. It has empowered our employees to take ownership of their learning journey and acquire knowledge anytime, anywhere."*

DM1 and DM3 echoed these sentiments, emphasising the transformative impact of mobile learning on employee development and customer service improvement.

Finding 3: Personalised Learning Experiences

Decision makers were in alignment regarding the role of mobile learning in facilitating personalised learning experiences for employees. Most DMs (4 out of 5) acknowledged that mobile learning supports tailored development paths, enabling employees to focus on areas relevant to their professional improvement. DM2 highlighted this aspect, stating, *"Mobile learning supports personalised learning paths, allowing employees to focus on areas that are most relevant to their professional development."*

Similarly, DM1, DM3, and DM5 emphasised the importance of personalised learning experiences in driving employee engagement and skill development within the commercial banking sector.

4.3 Findings from Operational Employee Perspectives

Findings from Focus Group A – Business Banking Division

Theme [1]: Benefits and Impact of Mobile Learning

Finding 1: Accessibility and Convenience

Employees highly value the accessibility and convenience offered by mobile learning. They express gratitude for the easy access to training materials, which they can utilise at their own pace and convenience, even during commutes or breaks. One employee noted, *"Mobile learning has been a game-changer for me. It has provided me with easy access to training materials, allowing me to learn at my own pace and convenience" (FG-A-01).*

Another emphasised its role in staying updated with industry insights, stating, *"Mobile learning keeps me connected to the latest industry insights and developments" (FG-A-05).*

Finding 2: Flexibility in Learning

Mobile learning is recognised for flexibility and personalisation, enabling employees to access learning materials whenever necessary. This flexibility

enhances performance and productivity. One participant shared, *"The impact has been significant. It has made learning more flexible and personalised to individual employees" (FG-A-02).*

Another highlighted how it transcends the limitations of traditional classroom-based learning, offering opportunities for learning anytime, anywhere. *"Mobile learning provides us with the flexibility to learn at our convenience, whether at the office, on the move, or even at home" (FG-A-04).*

Finding 3: Improved Knowledge and Skills

Employees perceive mobile learning as instrumental in expanding their knowledge base and enhancing their capability to serve customers effectively. They recognise the direct impact on service quality. One participant mentioned, *"Mobile learning has expanded my knowledge base, enabling me to provide customers with more comprehensive and informed assistance" (FG-A-02).*

Additionally, job aids provided through mobile learning are acknowledged for enhancing accuracy and work quality. *"Mobile learning's job aids have been helpful in improving the accuracy and quality of my work" (FG-A-01).*

Finding 4: Engagement and Interactivity

The interactive nature of mobile learning is highlighted as a significant factor in enhancing engagement. Employees find interactive simulations and visualisations particularly effective in grasping complex concepts. *"The interactive simulations and visualisations in mobile learning have revolutionised how I grasp complex banking concepts" (FG-A-03).*

Moreover, the interactive features of mobile learning platforms motivate employees to participate actively in training sessions. *"The interactive features of mobile learning have made training sessions more engaging. I feel more motivated to participate and learn actively" (FG-A-06).*

Findings from Focus Group B – Asset Management System

Theme [1]: Benefits and Impact of Mobile Learning

Finding 1: Learning Experience and Engagement

Mobile learning has revolutionised the learning experience for operational employees in the commercial banking sector, offering various benefits and impacts.

- **Engagement through Interactive Approach**

  Participants emphasised the engaging nature of mobile learning, attributing it to features like interactive quizzes and simulations. Participant FG-B-01 highlighted the value of interactive elements, *"I love the interactive quizzes and simulations in mobile learning modules. They make the training experience fun and keep me engaged throughout the process."*

  FG-B-05 echoed this sentiment, *"Mobile learning offers interactive quizzes and simulations make the learning more engaging and enjoyable."*

- **Personalised Learning Paths**

The ability to customise learning paths emerged as a significant benefit, empowering employees to tailor their learning experiences to their needs. FG-B-02 emphasised this, *"Mobile learning empowers me to customise my learning path. I can focus on specific areas where I need improvement, making the learning experience more relevant and impactful."*

- **Improved Training Accessibility and Interactivity**

  Participants noted the enhanced accessibility and interactivity facilitated by mobile learning, enabling them to conveniently learn on the go and access training materials. FG-B-01 appreciated the accessibility of mobile learning, stating, *"It has allowed me to access training materials on the go, improving my learning experience."*

  FG-B-02 highlighted the impact on training accessibility, stating, *"The impact of mobile learning has been significant on both my job and the sector. It has made training more accessible and interactive."*

Finding 2: Learning Effectiveness and Efficiency

Mobile learning has improved engagement and enhanced learning effectiveness and efficiency for operational employees in the commercial banking sector.

- Increased Efficiency and Task Accomplishment

  Participants acknowledged the role of mobile learning in improving efficiency and task accomplishment by providing access to relevant resources and information. FG-B-03 highlighted the transformative effect on work efficiency; *"Having access to relevant resources on my mobile device has improved my efficiency, allowing me to accomplish tasks more quickly and effectively."*

- Professional Development and Confidence Building

  Mobile learning was seen as a catalyst for professional development, enabling employees to expand their knowledge and skills, thus boosting confidence in their job roles. FG-B-05 shared their experience; *"Mobile learning has changed and elevated my professional development journey. It has expanded my knowledge, improved my skills, and provided me with the confidence and competence to deliver better results in my job."*

- Skill and Career Growth and Development

  Participants recognised mobile learning as a continuous growth and development opportunity, particularly beneficial for individuals striving for personal and professional advancement. FG-B-05 emphasised the growth potential; *"Mobile learning provides continuous growth and development opportunities. Individuals who are driven by their desire for personal and professional advancement will eagerly embrace mobile learning as a means to achieve their goals."*

- Linking Mobile Learning to Performance Evaluation and Recognition

  Some participants highlighted integrating mobile learning with performance evaluation processes to incentivise adoption and recognise employees' efforts. FG-B-04 suggested, *"Linking mobile learning to performance*

evaluation and recognising employees' efforts in utilising mobile learning can incentivise adoption and foster a sense of achievement."

The results of this exploratory study reinforce the proposed conceptual framework and highlight several critical factors influencing mobile learning acceptance in Malaysian commercial banks. Thematic analysis revealed that employees' adoption of mobile learning is significantly influenced by their perceived benefits (e.g., convenience, flexibility, job relevance) and user expectations (e.g., interactive design, gamified learning experiences). These findings align with past studies by Dang et al. (2023) and Lorente (2023), who emphasized that engagement and accessibility are core predictors of mobile learning success in corporate environments.

Conversely, **perceived challenges**, such as inadequate digital infrastructure, management indifference, and inconsistent content quality, emerged as deterrents to sustained adoption. This supports **Al-Shammari and Al-Mekhalfi (2022)**, who found that limited organizational support undermines mobile learning adoption in knowledge-intensive sectors.

Overall, the study confirms that mobile learning adoption is not solely a technological issue but a multidimensional process influenced by organizational readiness, employee attitudes, and contextual challenges. The next sub-sections expand on these themes to discuss their strategic and operational implications.

5.0 DISCUSSION, CONCLUSION AND LIMITATION

Shaping Employee Training

The outcomes of this exploration distinctly illustrate the affirmative impact of mobile learning on employee training within the commercial banking sector (Andriotis, 2019). The discerning consensus among decision makers and the diverse roles in focus groups highlight the manifold benefits of integrating mobile learning initiatives (InfoPro Learning, 2023; The Financial Brand, 2024).

The transformative power of mobile learning is particularly noteworthy, as echoed by the enthusiastic endorsement from focus group participants. Their experiences reflect a paradigm shift towards heightened accessibility, marking a pivotal advancement facilitated by integrating mobile learning into their extensive learning routines (InfoPro Learning, 2023). The convenience of accessing training materials at any time has become a basis, enhancing the overall training landscape within the commercial banking sector.

Moreover, the infusion of multimedia elements and gamification techniques strategically embedded in mobile learning modules has engendered a visible surge in employee motivation and participation during training sessions (Andriotis, 2019; FinTech Magazine, 2024). This heightened engagement enriches the overall learning experience and positions mobile learning as a catalyst for the dynamic evolution of training methodologies.

A further testament to the effectiveness of mobile learning lies in its facilitation of real-time knowledge applications. Participants' endorsement emphasises the practicality of swiftly applying acquired knowledge to daily tasks,

transforming theoretical understanding into highly pertinent practical experiences (InfoPro Learning, 2023).

Beyond the immediate impacts, the paradigm shift introduced by mobile learning extends into fostering a dynamic culture of continuous learning within the commercial banking sector (Hu et al., 2021). Implementing bite-sized learning modules and microlearning techniques, skillfully delivered through mobile devices, has evoked widespread satisfaction among participants. Their collective emphasis on convenience, heightened engagement, real-time application, and the wealth of continuous learning opportunities reflects the profound impact of mobile learning in nurturing ongoing learning endeavours (Hu et al., 2021).

In essence, the endorsement from participants accentuates the critical importance of mobile learning in contemporary workforce development across diverse industries, particularly in the ever-evolving landscape of the commercial banking sector (MyShortlister, 2023). The affirmative impact on accessibility, engagement, and real-time knowledge application is a testament to mobile learning's transformative potential, solidifying its role as a foundation in shaping the future of employee training.

Knowledge Acquisition

Mobile learning has emerged as a pivotal tool in enhancing knowledge acquisition within the commercial banking sector, as evidenced by the consensus among decision makers and operational employees. This study's findings highlight several key aspects that emphasise the positive impact of mobile learning on knowledge acquisition.

Enhanced Retention and Understanding: Operational employees applauded mobile learning's capacity to improve retention and understanding of training content significantly. Interactive and multimedia elements integrated into mobile learning modules were highlighted as transformative in simplifying complex banking concepts. The hands-on approach, including interactive simulations and visualisations, was particularly effective in reinforcing comprehension and ensuring lasting retention. This observation resonates with industry reports (World Bank, 2020; Claessens, 2020) emphasising the importance of interactive approaches in facilitating understanding in the post-COVID-19 banking landscape.

Personalised Learning Experience: The ability of mobile learning to deliver a personalised learning experience was recognised by focus group participants. The flexibility to select modules and topics tailored to individual needs and preferences was commended for enhancing motivation and learning outcomes. The adaptive features of mobile learning enable employees to focus on areas that require improvement, thereby ensuring a more relevant and impactful learning journey. This aligns with insights from Goel (2021) from Forbes, which highlights the role of mobile learning in allowing banks to stay ahead by catering to diverse learning needs.

Immediate Application of Knowledge: Both decision makers and employees acknowledged the utility of mobile learning in facilitating the direct application of newly acquired knowledge. Quick access to job aids, reference materials, and tutorials via mobile devices empowers employees to apply

knowledge directly to their work tasks. This real-time application leads to improved problem-solving skills and heightened job performance. The alignment of this finding with the observations made by Beutner et al. (2020) from McKinsey & Company (2020) underlines the potential of mobile learning to harness AI capabilities for practical knowledge application.

***Access to Up-to-date Information*:** Mobile learning was praised for providing access to up-to-date information critical for navigating the evolving banking landscape. The delivery of bite-sized learning modules through mobile devices informs employees about industry trends, regulatory changes, and best practices. Staying connected to the latest industry insights and developments was essential for delivering excellent customer service. This resonates with the wisdom of Claessens (2020) and the World Bank (2020), which emphasise the need for banks to thrive by remaining agile and well-informed in the face of post COVID19 challenges.

The significant positive impact of mobile learning on knowledge acquisition in the commercial banking sector has been demonstrated through the responses of decision makers and focus group participants. There is a strong consensus among them regarding the benefits of mobile learning, including enhanced knowledge retention, personalised learning experiences, immediate application of knowledge, and access to up-to-date information. Integrating interactive features, personalised learning paths, and on-demand resources through mobile learning has improved performance and a competitive edge for banking professionals (Beutner et al., 2021).

In conclusion, the collective agreement among decision makers and operational employees emphasises the transformative impact of mobile learning on knowledge acquisition within the commercial banking sector. This impact encompasses enhanced retention and understanding, a personalised learning experience, immediate application of knowledge, and access to up-to-date information. The findings align with industry experts' views on the role of mobile learning in driving the banking sector's resilience and innovation (World Bank, 2020; Forbes, 2021; McKinsey & Company, 2020).

Performance Improvement

Examining various sources within the banking industry underscores the affirmative impact of mobile learning on performance improvement in commercial banking. Accenture's Commercial Banking Top Trends report (2023) aligns with these observations, emphasising a particular focus on innovation in trade finance and modern treasury management. Integrating mobile learning aligns with these ongoing trends, optimising bank employees' operational efficiency, productivity, accuracy, and problem-solving skills.

The qualitative insights gathered from focus group participants echo the positive impact of mobile learning, reinforcing the alignment with the trends identified in Accenture's report. Furthermore, the Deloitte report on Mobile Banking (2023) acknowledges the substantial opportunities mobile learning presents for operational efficiencies and revenue growth within the banking sector.

To summarise, the collective findings strongly support the assertion that mobile learning has positively contributed to performance improvement in

commercial banking. Facilitating easy access to resources, job aids, and real-time information through mobile learning empowers employees, resulting in heightened efficiency, productivity, accuracy, improved problem-solving and decision-making skills, and continuous professional development in the banking industry (Accenture, 2023; Deloitte, 2023).

Customer Service Enhancement

The study supports the substantial positive impact of mobile learning on customer service within the commercial banking sector (Hitachi Solutions, 2023; Gartner, 2023). This effect collectively demonstrates a robust consensus on the merits of mobile learning in enhancing knowledge, responsiveness, communication abilities, and overall customer satisfaction.

Hitachi Solutions' comprehensive analysis of "12 Banking Customer Experience Trends to Watch in 2023" delves into the transformative currents shaping the banking landscape (2023). Notably, integrating mobile app data and the amalgamation of artificial intelligence and machine learning emerge as catalysts for refining customer service. Mobile learning is pivotal in this setting, furnishing bank employees with the necessary proficiencies to harness these progressive trends.

Gartner's report, "Top Customer Service Trends and Priorities to Watch in 2023" (2023), emphasises vital customer service imperatives for organisations during the same period. Emphasis is placed on optimising operational exceptional skills and effectively leveraging customer data and analytics for strategic improvement. Herein, mobile learning emerges as an enabler, equipping banking personnel with the acumen to heighten operational efficiency, expedite the resolution of customer needs, and facilitate more engaging interactions, collectively enhancing the overall customer experience.

The scholarly scrutiny conducted by Chauhan et al. (2022) delves into the complexities of "Customer Experience in Digital Banking: A Review and Future Research Directions." This endeavour dissects the pivotal variables that significantly impact the financial dynamics of banks in digital customer experience. As the digital landscape increasingly permeates banking, mobile learning becomes a potent tool, furnishing employees with the resources to navigate the complexities of evolving digital trends and technologies. This knowledge empowerment facilitates the provision of accurate information and the curation of personalised customer journeys.

In summary, this study demonstrates that mobile learning is a transformative tool for organisational improvement, professional development, and operational efficiency in Malaysia’s commercial banking sector. Its successful adoption depends on strong leadership, relevant content, user-friendly platforms, and ongoing support. By addressing barriers and leveraging facilitators, banks can foster a culture of continuous learning and adaptability, positioning themselves for sustained success in the digital era. While the findings are context-specific, they offer a valuable foundation for future research and practical innovation in mobile learning across diverse business environments.

5.1 Limitations and Future Research

While the study provides valuable insights, several limitations must be acknowledged (Davidson, 2009; Dawadi et al., 2021). First, the research focused exclusively on commercial banks in the Klang Valley (Selangor and Kuala Lumpur). As such, the findings may not be fully generalisable to other regions or sectors with different organisational cultures or technological infrastructures (Davidson, 2009). Second, the case study relied on qualitative methods, which, while providing depth and context, may not capture the full breadth of experiences or allow for statistical generalisation (Dawadi et al., 2021).

Third, although participants were selected from various organisational levels, the sample size was limited by the qualitative design. Broader participation could yield additional perspectives, especially from banks in rural areas or with different technological maturity levels (Dawadi et al., 2021). Finally, given the fast-evolving nature of digital technologies means that findings may become outdated as new platforms and tools emerge. Ongoing research is needed to keep pace with these developments (Dawadi et al., 2021).

Despite these limitations, the present study contributes meaningfully to the understanding of mobile learning adoption in corporate settings. It provides an empirical foundation for future research on digital transformation in human capital development and offers practical direction for organisations seeking to leverage mobile learning as a strategic instrument for workforce innovation and competitiveness.

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BUSINESS HIGHLIGHT: PROBLEMS AND SOLUTIONS

The commercial banking sector faces significant challenges in workforce training and knowledge retention due to the limitations of traditional training methods, which are often rigid, time-intensive, and lack engagement. These outdated approaches restrict accessibility and flexibility, making it difficult for employees to continuously update their skills in a rapidly evolving banking landscape. As a result, motivation and knowledge retention remain low, particularly when employees are required to grasp complex financial concepts. Furthermore, the gap between training delivery and real-time application hinders productivity and weakens problem-solving capabilities. This lack of agility in employee development also affects customer service quality, as banking personnel are often unprepared to adapt to shifting customer expectations, new fintech tools, and evolving regulatory frameworks. Collectively, these issues create a competitive disadvantage for banks that fail to modernize their training strategies, especially compared to peers leveraging digital transformation to strengthen workforce performance and customer satisfaction.

To overcome these challenges, commercial banks must institutionalize mobile learning as a strategic tool for workforce development. Mobile platforms offer employees flexible, anytime-anywhere access to training content, enabling faster adaptation to industry changes. By embedding multimedia features, gamification, and micro learning techniques, banks can enhance employee motivation, engagement, and retention of knowledge. The integration of real-time job aids, reference materials, and mobile tutorials allows employees to immediately apply new skills in their daily operations, thus bridging the gap between learning and practice. Personalized learning paths tailored to individual needs further ensure training relevance and efficiency. Importantly, mobile learning can also enhance customer service by equipping employees with up-to-date insights on digital banking trends, artificial intelligence applications, and customer engagement strategies. Over time, embedding mobile learning into organizational culture fosters continuous professional development, cultivates adaptability, and positions banks to maintain long-term competitiveness in the digital era.



