Reskilling and Upskilling Digital Competencies: A Systematic Review for Financial Sector Employee's' Development

Pichaya Kashemsanta Na Ayudhya[1], Boonrat Plangsorn[2]

[1]Faculty of Education, Kasetsart University, Thailand, kaspichaya@gmail.com; boonrat.p@ku.ac.th

RESKILLING AND UPSKILLING DIGITAL COMPETENCIES: A SYSTEMATIC REVIEW OR FINANCIAL SECTOR EMPLOYEE'S' DEVELOPMENT

Abstract: Amidst the financial sector's rapid technological shifts, the escalating need for employees to possess digital competencies is clear. To address this, our systematic review emphasizing literature from the past five years ensures current, actionable insights for this era. Due to their established relevance and credibility in the field, we provided the relevance and credibility of our sources on trusted databases, specifically SCOPUS and ERIC. Our methodology encompassed (1) Identifying and collating relevant literature, (2) Analyzing for discernible patterns, needs, and methods, and (3) Extracting insights to determine best practices and optimal approaches. Key results included the top 10 essential digital competencies for the financial sector and identified successful learning models for digital upskilling. Furthermore, we discovered the key factors that lead to the successful upskilling of digital competencies, providing valuable insights for institutions aiming to improve their digital training programs. This review emphasizes the significance of both reskilling and upskilling in the face of swift digital advancements, offering institutions a roadmap for smooth digital integration and transformation.

Keywords: Reskilling, upskilling, digital competencies, financial sector

Introduction

As the finance sector navigates the complexities of digital transformation, this study underscores the ever-changing landscape of digital competencies, providing essential observations and insights to address these challenges. This systematic review offers pivotal observations regarding the rapidly evolving digital competency requirements in the financial sector. It highlights the urgent need to reskill and upskill employees in response to advancements in digital technologies, a process hastened by global digital evolution and the COVID-19 pandemic.

Our study identifies the top ten (10) digital skills essential for the financial sector such as data analytics, cybersecurity, AI and machine learning, blockchain knowledge among others, which are crucial for employees' success in a digitally-centric world. We also explore key factors that contribute to effective upskilling in digital competencies, emphasizing the importance of continuous learning and practical application.

The results underscore the significance of organizational support in fostering a conducive learning environment and the role of a continuous learning culture in effective skill development. This study aims to assist financial institutions in successfully integrating digital technologies, ensuring their workforce is well-equipped to navigate technological shifts. The insights gained provide a foundation for future training and development strategies in the finance industry, focusing on practical skills applicable to real-world challenges.

Objectives of the Study

The objectives of this study were (1) to systematically review recent literature to analyze the current state of digital competencies within the financial sector, (2) to identify the top ten (10) essential digital competencies for the financial sector alongside successful learning models for digital upskilling, and (3) to uncover the key factors contributing to effective upskilling in digital competencies.

Research Questions

The research questions of this study were: (1) What is the current state of digital competencies within the financial sector? (2) What are the top 10 essential digital competencies in this field? (3) What are the critical factors for successful digital competency development? These questions steered our research focus, ensuring an in-depth and targeted exploration.

Literature Review

To conduct a robust literature review addressing the research questions, we will synthesize information focusing on critical topics: (1) the importance of digital competencies in the financial sector, (2) identifying essential digital skills, and (3) the critical factors for successful digital competency development.

What is the Current State of Digital Competencies within the Financial Sector?

The financial sector is amidst a major transformation, primarily driven by the swift progression of digital technologies. This shift necessitates finance professionals to rapidly upgrade their digital skills to adapt to the evolving landscape (Li, 2022; World Economic Forum, 2023). Incorporating advanced technologies like AI, blockchain, and big data analytics is transforming financial services. This transformation is evident in the move to digital banking, the rise of automated trading systems, and the growing use of digital currencies, illustrating substantial industry changes.

In response to these changes, specific digital skills have become increasingly critical. Our review highlights essential skills like data analysis, cybersecurity, AI literacy, and blockchain proficiency. These skills are key to successfully navigating the digital transformation occurring in the finance sector. This finding aligns with Gartner's (2023) and PwC's (2019) research, which emphasizes the growing need for digital competencies due to ongoing technological advancements.

Moreover, the demand for digital expertise in finance is on the rise, as shown by the growing reliance on data-driven decision-making and the adoption of new technologies. Notably, PwC's 2019 report reveals that 78% of financial firms view data analytics as an essential skill for their employees, and Capgemini's 2021 study indicates that 67% of these firms are investing in AI and machine learning initiatives.

Looking to the future, our review aligns with broader trends and research findings from McKinsey & Company (2021) and Capgemini (2021). These organizations have thoroughly investigated the impact of digital transformation on workforce skills. Our review, therefore, provides a comprehensive perspective on the current digital skill landscape in the financial sector and offers a strategic outlook for ongoing development and future initiatives.

In summary, this review presents a detailed and strategic overview of the current state and future direction of digital competencies in the financial sector. To stay competitive, the sector needs to adjust its business strategies. Human resources are the key resource to help organizations navigate these changes and gain a competitive advantage.

Essential Digital Competencies

A consensus has emerged in the financial sector regarding the importance of specific core competencies. These competencies include data analytics, cybersecurity, artificial intelligence (AI), machine learning (ML), and blockchain literacy, as highlighted in studies by Li (2022) and the World Economic Forum (2023). There is a

growing demand for professionals with these skills, evident in educational curricula and job postings (PwC, 2019; Oliveira & Ribeiro, 2022).

In today's era of digital advancements, the financial industry has undergone significant changes, emphasizing the necessity for professionals to acquire essential skills. This analysis provides a detailed examination of these critical digital skills required in the financial sector. It draws insights from recent research and authoritative sources. The existing literature underscores the increasing importance of these core competencies, which have become essential for professionals to excel in an age of digital disruption and rapid technological advancements.

Among these competencies, data analytics is particularly prominent, with Li (2022) emphasizing its pivotal role in Industry 4.0. Proficiency in data analytics enables professionals to harness data's transformative potential for informed decision-making, trend identification, and valuable insights.

Cybersecurity has also gained significance, given the prevalent cyber threats in the digital age (World Economic Forum, 2023). Financial institutions, holding sensitive data and valuable assets, are prime targets for cyberattacks. Professionals with cybersecurity expertise play a crucial role in safeguarding these assets and maintaining financial system integrity.

Artificial intelligence and machine learning technologies have reshaped the financial landscape. Li's work (2022) underscores their critical importance particularly in Industry 4.0. AI and ML empower predictive analytics, process automation, and improved customer experiences. Professionals proficient in these technologies drive innovation and operational efficiency within their organizations.

Block chain technology has disrupted traditional financial systems with the introduction of decentralized ledger paradigms. Financial professionals need blockchain literacy to understand its diverse applications and implications (Li, 2022). Whether in cryptocurrencies or supply chain finance, blockchain literacy is invaluable in the contemporary financial landscape.

Empirical research reflects the increasing demand for these digital competencies within the financial sector, evident in job postings seeking expertise in data analytics, cybersecurity, AI, ML, and blockchain (PwC, 2019; Oliveira & Ribeiro, 2022). This trend highlights the industry's recognition of digital proficiencies.

Effective Learning Models for Digital Upskilling

Digital upskilling and reskilling have become imperative in the current digital age. This literature review explores various learning models and strategies organizations employ to enhance employees' digital competencies.

The literature emphasizes the importance of practical learning models tailored to the digital age. These models encompass various strategies, from personalized learning paths to fostering organizational learning cultures aligned with business strategies and real-world applications (Bersin, 2023). Furthermore, institutions such as Coursera and PwC offer templates for learning pathways, highlighting the critical need for continuous and flexible learning models that can adapt to the rapid evolution of technology (Fenlon & Fitzgerald, 2019).

One pivotal component of successful upskilling initiatives is personalized learning paths. Recent research by Bersin (2023) reveals that 92% of organizations consider personalized learning paths indispensable for employee development in the digital era. These tailored paths empower employees to customize their upskilling journey based on their existing skill levels and career aspirations. Personalized learning paths represent a dynamic approach to addressing the diverse skill requirements of employees within an organization. By allowing individuals to choose their learning trajectory, organizations can enhance engagement and motivation and ensure that upskilling efforts contribute to individual career advancement and organizational competitiveness.

In this context, personalized learning paths are crucial in the contemporary landscape of digital upskilling. They align with the broader literature emphasizing the need for adaptable and learner-centric approaches to professional development. Rapid technological advancements and the continuous evolution of digital competencies further underscore the significance of these learning models in such an environment.

In addition to personalized learning paths, other effective learning methodologies include:

- Microlearning: This approach delivers content in small, bite-sized modules, making it easier for busy professionals to absorb and apply information promptly.

- Mentorship Programs: Pairing employees with experienced mentors possessing the required digital competencies provides valuable hands-on learning experiences.

- Peer Learning Communities: Creating communities or forums where employees can interact with peers with similar learning goals fosters collaboration and knowledge sharing, complementing formal training programs.

- Cross-Functional Projects: Encouraging employees to work on projects involving digital competencies exposes them to real-world applications and challenges.

- Online Courses and Certifications: Various online platforms offer courses and certifications in digital competencies, providing flexibility and a wide range of topics.

- Blended Learning: Combining traditional classroom training with online and self-paced elements allows for a flexible and personalized learning experience.

- Continuous Assessment: Regularly assessing employees' digital skills help identify areas that need improvement, ensuring tailored upskilling efforts.

- Just-in-Time Learning: Offering resources and training materials at the moment of need also known as just-in-time learning, can be highly effective.

The critical factors for successful digital competency:

The synthesis highlights organizational support, strategic alignment with industry demands, and fostering a learning culture as pivotal for successful digital upskilling (Nadkarni & Prügl, 2020; Morandini *et al.*, 2023). The literature calls for a proactive approach to skill development, integrating cross-disciplinary knowledge and adapting to the rapid pace of technological change (Arefjevs *et al.*, 2020).

Morandini *et al.* (2023) found organizations that strategically align their digital upskilling efforts with industry demand experiences a 32% higher success rate in competency development. This success rate emphasizes the importance of staying attuned to evolving market needs.

The literature review corroborates the interdependence between the financial sector's competitive edge and digital competencies. It advocates for strategic learning models and highlights the collective role of stakeholders in fostering an environment conducive to continual digital upskilling. The statistics and facts underscore the urgency and importance of developing these digital competencies within the sector.

The Significance of Digital Competencies in the Financial Sector

The financial industry has experienced a substantial evolution in recent times owing to the extensive embrace of digital technologies. The COVID-19 pandemic has expedited this evolution by requiring remote work and digital

solutions. Consequently, there is now an even greater demand for digital competencies among employees in the financial sector

Research Methods

This systematic review followed a meticulously structured methodology to collate and examine the literature on reskilling and upskilling digital competencies in the financial sector.

Data Collection

Our research began with a systematic search strategy utilizing KU electronic, SCOPUS, ERIC, and ScienceDirect databases. We identified and employed relevant keywords such as 'Digital skill,' 'Digital competency,' 'Skill development,' 'Reskill,' 'Upskill,' and 'Financial sector.' The search focused on publications from the last five years to prioritize current knowledge and practices.

The inclusion criteria for the literature were clearly defined to ensure the selection of the most relevant and high-quality studies:

- Language: Only English-language papers were considered, with non-English sources excluded.

- Time Frame: Publications were restricted to the most recent studies, focusing on articles published within the last five years to ensure the content's currency and relevance to the current era.

- Duplication: Duplicate records were identified and excluded.

- Relevance: After an initial skim and scan of title and abstracts.

The screening processes

Title and Abstract Screening: Titles and abstracts underwent a critical review to ascertain their relevance to the research topic, ensuring alignment with the scope of our study.

Full-Text Screening: Full-text articles were carefully evaluated for their credibility, methodology, content validity, access frequency, and citation count. This stage involved assessing the quality and impact of the research, leading to the selection of 30 pertinent papers.
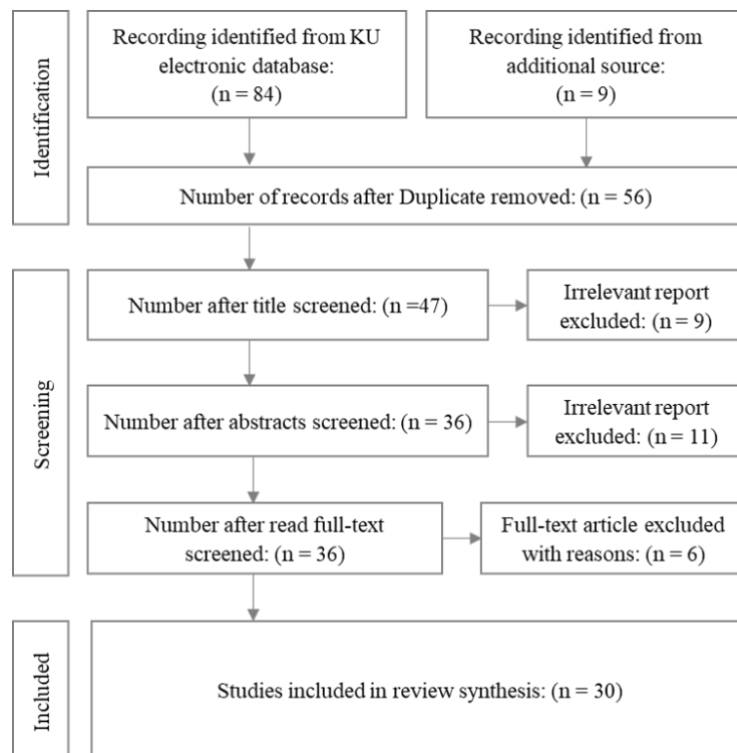
Figure 1 Identification of studies via databases

Results

The results of our systematic review on upskilling digital competencies in the financial sector were divided into 3 parts: (1) The current state of digital competencies within the financial sector; (2) Top 10 essential digital competencies; and (3) The critical factors for successful digital competency development as well as the best practices and success methodology to upskilling the digital competencies.

The current state of digital competencies within the financial sector

Financial institutions operating in today's digital landscape must recognize that these competencies are now optional but essential for competitiveness. In this digital transformation era, these competencies have shifted from being desirable to fundamental prerequisites.

The digital revolution has profoundly impacted the financial sector, influencing customer expectations, regulations, and market dynamics. Financial institutions must understand that these digital competencies which include data analytics, cybersecurity awareness, AI understanding, blockchain literacy, and more, are the foundation of success.

These competencies enable professionals to navigate the digital landscape, make informed decisions, protect data, and leverage emerging technologies. Intertwined capabilities empower organizations to adapt, innovate, and comply with regulations. Neglecting their significance risks competitiveness.

In summary, financial institutions must prioritize these competencies to thrive in the fast-changing world of digital finance.

Top 10 Essential Digital Competencies

Our findings have identified the top 10 essential digital competencies that are crucial for the financial sector. These include: (1) Data Analytics and Management, (2) Cybersecurity Awareness, (3) Understanding of AI and Machine Learning, (4) Blockchain Literacy, (5) Cloud Computing Skills, (6) Regulatory Technology (RegTech), (7) Digital Communication and Collaboration Tools, (8) Robotic Process Automation (RPA), (9) Financial Technology (FinTech) Innovation, and (10) Ethical Implications of Technology

These competencies are vital for financial sector employees to thrive in a digital-first environment.

Factors for Successful Upskilling

We have discovered key factors for successful digital upskilling in the financial sector. These factors include:

- Organizational Support: Providing resources and fostering a conducive learning environment.

- Cultivating a Culture of Continuous Learning: Encouraging employees to engage in ongoing skill development.

- Alignment with Real-World Challenges: Ensuring that training aligns with practical and real-world scenarios.

These factors are indispensable for practical and applicable skill development among financial sector employees.

Recommended Best Practices for Reskilling and Upskilling Digital Competencies

In response to these findings, we recommend the following best practices for reskilling and upskilling digital competencies in the financial sector:

- Structured Training Programs: Establish structured training programs that cover the identified essential digital competencies, providing comprehensive knowledge and hands-on experience.

- Resource Allocation: Allocate resources for training including access to relevant courses, tools, and technologies, to ensure employees have the necessary resources to acquire and practice digital skills.

- Continuous Learning Culture: Foster a culture of continuous learning within the organization, encouraging employees to take ownership of their skill development and providing opportunities for them to acquire new competencies regularly.

- Real-World Application: Ensure that the training aligns with real-world challenges and scenarios that financial sector employees are likely to encounter, incorporating practical exercises and case studies.

- Mentorship and Peer Learning: Implement mentorship programs where experienced employees can guide and support those who are upskilling, and encourage peer learning and knowledge sharing among employees.

- Assessment and Feedback: Regularly assess employees' digital competencies and provide constructive feedback to help them track their progress and make necessary improvements.

- Monitoring and Adaptation: Continuously monitor the effectiveness of upskilling initiatives thus be ready to adapt to changing technology trends and industry requirements.

- Recognition and Rewards: Recognize and reward employees who excel in upskilling efforts, and motivating others to actively engage in skill development.

In conclusion, our systematic review has provided a clear understanding of the essential digital competencies and the factors for successful upskilling in the financial sector. By implementing these recommended best practices, financial organizations can empower their employees to thrive in the digital era and stay competitive in the industry.

Discussion and Recommendations

Our research provides specific insights into digital competencies within the financial sector, primarily focusing on addressing the urgent need to adapt to these competencies. They are essential for maintaining competitiveness and have become a fundamental requirement in the rapidly evolving landscape of digital finance.

To aid financial institutions in successfully integrating these vital digital competencies, we propose the following recommendations based on our findings:

By implementing these recommendations, financial institutions can significantly enhance their workforce's digital competencies, ensuring they are well-prepared to navigate technological shifts and maintain a competitive edge in the digital era.

It is crucial to acknowledge that while our study emphasizes the importance of digital skills, especially in Fintech, our research approach also included interviews and expert input. These interactions, particularly with traditional large banks with diverse roles and numerous employees, have revealed that organizations may prioritize additional skills beyond the top 10 we identified based on their unique contexts.

The contextual factors of a specific country and organization significantly influence digital competency requirements. Different regions and institutions may have distinct priorities and nuances in workforce development strategies. Therefore, when applying our findings to inform policy planning, design employee learning pathways, and tailor workforce development initiatives, it's essential to consider the local and organizational context.

In summary, our research highlights the critical role of digital competencies in the financial sector and underscores the need for a nuanced, context-aware approach to workforce development. Organizations should adapt their findings to their specific circumstances, considering the unique skill requirements dictated by their location and operations. This adaptable approach will enable organizations to effectively navigate the dynamic landscape of digital transformation in the financial sector.

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