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Digital Innovation for Financial Services Organizations: A Preliminary Consideration of Lines of Action for Organizational Practices

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Abstract

As companies respond to digital disruption, traditional organizational practices are failing to respond rapidly enough. Traditional, pre-digital organizations are structured around practices in silos that enforce rules and legacy processes which result in “speedbumps” to digital innovation by slowing work and customer reaction times. Companies who have become reliant on digital innovation to improve service, such as financial services organizations, and do not adjust their organizational practices to respond to process changes may cease to exist. When considering digital innovation, a key challenge is a low level and fragmented understanding of organizational practices, even though there is an increasing number of documented benefits of transforming organizational practices. There is, therefore, a need for research to better understand organizational practices when considering digital innovation. This study responds to this call through a meta-aggregative approach to synthesize organizational practices associated with digital transformation when considering digital innovations. The meta-aggregative approach extracted recurring practices as lines of action guided by the Technology, Organization and Environment framework from which thirteen lines of action were identified. These lines of action provide recurring organizational practices affecting digital innovation in the financial services industry that affect digital innovation.

Keywords: Organizational Practices, Digital Innovation, Digital Transformation, Lines of Action.

1. Introduction

The increasing availability and application of information and communications technologies in organizations have led to widespread encoding, storage and dissemination of information in digital formats (Yoo et al., 2010). The encoding process is termed digitization and provides non-digital objects with qualities previously only found in digital objects (Yoo et al., 2010). Digitization provides digital innovation opportunities that combine digital and physical objects to add value to users (Legner et al., 2017; Yoo et al., 2010). Digital innovation is not limited to technology companies or information technology (IT) departments but extends to all industries and functional units (Yoo et al., 2010) and includes the innovation of products, processes, and organizational practices (Ciriello et al., 2018). Challenges in implementing digital innovation often arise due to a low level of understanding of the organizational practices (Ciriello et al., 2018) which hold potential to promote improvements in innovative performance (Chanas et al., 2019; Ciriello et al., 2018; Foss et al., 2010; Kohli & Melville, 2019). Over time, organizational practices become entrenched as the de facto way of doing things and become part of the organizational culture (Foss et al., 2010).

As companies respond to digital disruption, traditional organizational practices fail to respond rapidly enough to customers' demands and needs. Traditional (pre-digital) companies have successfully structured organizational practices around organizational silos in well-established management hierarchies that enforce rules and legacy processes which result in "speedbumps" to digital innovation by slowing work and customer reaction times (Dery et al., 2017). Companies that do not adjust their organizational practices to respond to digital innovation in their services and products offered may cease to exist (Kohli & Melville, 2019; Lokuge et al., 2019). Despite the benefit of organizational practices, research is fragmented with no definitive understanding of how organizations use these practices to advance digital innovation (Ciriello et al., 2018; Tumbas et al., 2018; Faulkner & Runde, 2013). Ciriello et al., (2018) view these organizational practices as to how innovators use digital artefacts to contribute to the innovation agenda, which makes it imperative to understand the role of organizational practices in mediating innovations. The organizational practices are little understood, are evolutionary and with far-reaching consequences (Faulkner & Runde, 2013). Therefore, there is a need for studies on how organizational practices affect digital innovation (Ciriello et al., 2018; Tumbas et al., 2018; Faulkner & Runde, 2013).

Fintechs are technology-enabled financial services organizations that use digital innovation to improve their service offerings (Arner et al., 2016; Mention, 2019; Schueffel, 2017). In Africa, the most successful Fintech application currently is M-Pesa which converts cash into e-money for secure transfer between mobile phones (Coetzee, 2019). In South Africa, digital banking, often by non-bank financial organizations, has created significant competition for the traditional banks (Camarate & Brinckman, 2017) who are risk-averse, have incompatible legacy systems and are heavily regulated (Coetzee, 2019). Those who have adopted digital innovation and adapted their practices are slowly disrupting traditional financial markets. However, digital innovation for financial organizations separates the customer from the organization resulting in a loss of trust (Coetzee, 2019). Fintech organizations who do not modify their organizational practices risk losing relevance and potentially their existence (Gomber et al., 2018; Mungai & Bayat, 2018).

In the following pages, section two provides a brief background of digital innovation in the financial services industry and organizational practices together with the research objectives. Section three outlines the research design with the finding presented in section four. Section five summarizes the findings and presents the limitations to this study and future research.

2. Literature review

Innovation is vital for new products and services which add value for customers, create a competitive advantage for firms and provide a better quality living environment for citizens (Lee & Trimi, 2018). Innovation is defined as the implementation of a new or significantly changed product, service, process, organizational practices, or relationship (Gault, 2018). Innovation refers to outcomes, processes and mindsets. As outcomes, innovation is pragmatic in considering the results that an organization seeks to achieve. Innovative processes are the initiatives through which innovation can be achieved while mindsets cultivate the culture needed for innovation (Kahn, 2018). Although innovation may achieve competitiveness and economic success, it increases complexity and requires diverse, dynamic capabilities and organizational routines (Mousavi et al., 2018). Out of four types of innovation - product, process, marketing, and organization - Harel et al. (2020) emphasize process innovation due to its potential impact on an organization's efficiency, quality and extent of product offerings.

Digital innovation is a transdisciplinary topic fusing digital and physical across levels, settings, technologies, and organizational functions (Nambisan et al., 2020). It is a sociotechnical

phenomenon which encompasses a wide range of outcomes from products and services to platforms, customer experiences and value propositions (Nambisan et al., 2017). Hess et al. (2016) regard digital innovation as the enacted combination of digital technologies, digital solutions and digital business concepts. They warn that if digital innovation is to succeed then the organizational practices need to change lest the barriers between the old and new be strengthened. Consequently, there is a need for theorizing about digital innovation management (Nambisan et al., 2017; Nambisan et al., 2020). Digital innovation has prompted a fluid entrepreneurial culture, empowering digital investments and undertakings to grow significantly due to two essential features (Huang et al., 2017). First, digital products are often inexpensive to scale after their initial creation. Second, digital technologies are malleable and can enhance an existing product without significant change to the current design (Huang et al., 2017). Therefore, organizations need to balance digital approaches with traditional business principles for emerging technologies (Hess et al., 2016). Organizations adopting digital innovation require digital transformation (Fichman et al., 2014) as digital innovation transforms the way the employees work due to digital innovation. Research has shown a moderating effect of process innovations between IT and productivity (Kijek & Kijek, 2019), increasing the organization's responsiveness and productivity (Brynjolfsson & McAfee, 2013; Lucas et al., 2013; Yoo et al., 2012). This requires understanding the organizational practices which support the innovation process (Ciriello et al., 2018; Kohli & Melville, 2019).

2.1 Digital Innovation in the financial industry

The financial services industry includes insurance, banking, credit markets and investment management services (Thakor, 2020). Digitizing financial institutions can extend financial services to a broad consumer group (David-West et al., 2018), which in developing countries, such as South Africa, can increase access especially among rural peoples (Chigada & Hirschfelder, 2017; Coetzee, 2019; Mungai & Bayat, 2018). With the incompatibility of legacy systems limiting the effectiveness of potential financial services networks (Coetzee, 2019), it is essential to understand what factors influence the adoption of new technological innovations in financial companies (Hoti, 2015). Digital innovations deliver cheaper ways of transacting, resulting in lower customer acquisition costs, improved customer experience, lower verification costs and cheaper information transmission (Boratyńska, 2019; Gomber et al., 2018; Thakor, 2020). Digitization also offers regulators better knowledge sharing and insights, which can be leveraged to improve customer experience and assist organizations with compliance of regulatory obligations (Mention, 2019). However, financial services organizations differ from other industries (Zhu et al., 2006) as these organizations are linked through complex networks to each other and their customers (Mulligan & Gordon, 2002) and generic digital innovation factors may not be appropriate for Fintechs. Consequently, this research sought to identify organizational practices that could influence the adoption of digital innovations, particularly for Fintechs.

2.2 Organizational practices for digital innovation

Practice is useful for framing and orienting organizational research as practices are recurrent sets of activities reproduced over time (Orlikowski & Scott, 2008). Reckwitz (2002) describes practice (*praktik*) as routinized behaviors comprising several interconnected elements: bodily activities; mental activities; material things and their use; background understanding; know-how; emotion and motivation. Studying organizational practices can provide insight into how people's actions contribute to organizational outcomes (Feldman & Orlikowski, 2011). Although practice may not produce the same results in all organizations (Slowinski & Sagal, 2010), some innovation management practices are essential for adopting innovation (Oke, 2007). Oke (2007) determined three forms of innovation - radical, me-too (emulating a

competitor) and incremental, and encouraged companies to define formal processes for implementing these forms of innovation. Oke (2007) further identifies innovation management practices in relation to organizations' innovation strategy, managing creative ideas, selecting and managing portfolios, implementing ideas, and managing people. These practices are conducted by skilful, purposeful and social humans who use resources "to satisfy their needs and intentions" (Ciriello et al., 2018, 565) leading to innovative solutions. For Financial organizations, organizational practices would entail providing the necessary artefacts to skillful, purposeful and social humans to create new solutions.

Theoretical frameworks provide reliability and validity when researching a phenomenon (Saunders et al., 2009). One popular and proven theoretical framework to frame technology innovation is the technological, organizational and environmental (TOE) framework (Bhattacharya & Wamba, 2015; Oliveira & Martins, 2011). TOE is a comprehensive organization level theory (Baker, 2011) with technological innovation at its core and three points of view from which to evaluate technology innovation (Bhattacharya & Wamba, 2015). The first view is the technology which serves as a prism for evaluating the technology factors (Nghah et al., 2017). The second view is the organizational viewpoint related to various aspects of the organization (Gutierrez et al., 2015). Finally, the environmental context concerns the organization's environment (Harfoushi et al., 2016). The TOE framework has been used to examine the adoption of digital innovations in diverse industries, including financial services (Zhu et al., 2006) and Fintechs (Varma, 2019).

2.3 Research objectives

The objective of the research was to identify organization practices essential to digital innovation in Fintech organizations. Two research questions are posed to guide the study: What organizational practices assist in producing digital? And, how do the identified organization practices assist in producing digital innovation?

3. Research design and method

A meta-aggregative approach was used to synthesize recurring organizational practices affecting digital innovation (Hannes & Lockwood, 2011) with particular attention to Fintech organizations. A meta-aggregative approach is a form of systematic qualitative review originating at the Joanna Briggs Institute in Australia and inspired by American pragmatism to produce "lines of action" from synthesized statements (Hannes et al., 2018). The lines of action are directive, providing direction and advice for practical decision-making (Hannes et al., 2018). However, to reach its full potential, meta-aggregation requires a mixed-methods approach to determine effectiveness (Hannes & Lockwood, 2011).

Meta-synthesis is a coherent analysis of data by selecting, appraising, summarizing and combining qualitative evidence to address a research question (Erwin et al., 2011). The meta-synthesis approach begins with defining inclusion and exclusion criteria for identifying research articles, analysis and screening methods for refining the selected articles and generating lines of action for identified processes. Noblit and Hare (1988) describe synthesis as an activity in which different parts are brought together to form a whole. Unlike other qualitative approaches, the meta-aggregative approach lessens the interpretation of findings. It is used to identify and summarize existing themes by selecting and systematically reviewing research articles (Hannes et al., 2018). This approach proves useful where concepts are predefined rather than redeveloped and saves time as it provides a direct path to qualitative evidence produced for a specific phenomenon of interest (Hannes et al., 2018).

3.1 Instrument Development

This study followed the four-phased model outlined by Hannes et al. (2018). Searching and selecting studies using inclusion criteria was followed by a critical analysis of each research paper to exclude papers based on pre-determined exclusion criteria. Data were extracted from the resultant papers and categorized through the sensitizing lens of the TOE framework.

3.1.1 Search strategy and selection of studies

A set of inclusion and exclusion criteria depicted in Table 1 was developed for the search process. The keywords included “organizational practices”, “digital innovation”, “digital transformation” and “financial services” or “fintech”. The inclusion keywords were used in the Google Scholar search engine with the time option set to “Since 2016”. Preference was given to the basket of eight journals (AIS, 2020). This rendered a total of 439 articles.

Criteria	Inclusion Criteria	Exclusion Criteria
Keywords	“organizational practices”, “digital innovation”, “digital transformation” and “financial services” or “fintech” and derivatives.	
Language of articles and publications.	Articles and publications must be written in English.	
Year of Publication.	Published from 2016 to the beginning of 2019.	
Relation to organizational practices affecting digital innovation.	Strong relation to respective organizational practices affecting digital innovation.	Vague/weak relation respective to organizational practices affecting digital innovation.
Publication status.	Only international peer-reviewed journal articles and book chapters from renowned publishers.	
Article Methodology.	Qualitative Methodology.	Quantitative Methodology to limit preconceived constructs. (only the themes of TOE were used as a sensitizing lens)

Table 1: Inclusion and Exclusion Criteria

3.1.2 Critical appraisal

The second phase of the meta-aggregative synthesis critically appraised the methodological quality of papers collected during the search and selection stage (Hannes et al., 2018) in two stages. First, the selected articles’ abstracts were assessed based on the exclusion criteria that excluded 370 articles. Second, the 69 retained articles were read in-depth and assessed using the JBI Qualitative Assessment and Review Manual appraisal checklist (JBI Global, 2020). Four of the ten criteria for assessing the validity of the articles were applied in this study. The four selected criteria assess (i) the congruity between the methodology and the research questions and objectives, (ii) the representation and analysis of data, (iii) the interpretation of the results, and (iv) the conclusions made from the analysis and interpretation of the results. The checklist resulted in the exclusion of a further 28 articles to retain 41 articles. Due to lack of space, neither the instrument nor the assessment are included in this paper.

3.1.3 Data extraction and categorization

In the third phase, findings from the 41 articles were coded based on comparison and theoretical similarity. Analogous codes were combined into thematic categories (Hannes et al., 2018) guided by the TOE framework.

3.1.4 Synthesis of findings

The fourth and final phase in the meta-synthesis in the aggregative approach was the conversion from categories to lines of action (Hannes et al., 2018). The categories were linked to the TOE framework constructs and are discussed in the next section.

4. Findings

The categories generated from the 41 selected articles associated with each TOE theme are described here. Lines of action were formed for each category and validated based on conceptual commonalities observed in cross-comparing the articles (Hannes et al., 2018). Thirteen categories were identified as depicted in Table 2.

Theme	Category	Line of Action
Technology	Access to technology	Ensuring secure access to technology
	Appropriateness of technology	Ensuring an appropriate scalable technology base
	Affordability of technology	Manage costly technology acquisitions
	Maintenance and support	Leverage competencies and agile practices to provide a responsive maintenance and support structure
	Integration into daily routines	Integrate digitally-enabled processes into current organizational practices
Organization	Organizational structure	Redefine organizational strategy and structures to include digital innovation
	Collaborative capacity	Encourage collaboration within the organization
	Governance and compliance	Develop business rules incorporating governance and compliance policies and procedures
	Funding	Ensure adequate funding for innovation
Environment	Locally relevant content	Participate and nurture the digital innovation ecosystem
	Socio-cultural factors	Encourage awareness of diversity and entrepreneurial thinking
	Legal and regulatory issues	Develop regulatory policies to ensure consistent, reliable and secure access
	Political and government structure	Align continuously with public structures to avoid political and governmental hindrances

Table 2. TOE framework for Fintech digital innovation showing the lines of action.

4.1 Technology

Five categories, each matched with lines of action were observed for the technology construct - access to technology, appropriateness, affordability, maintenance and support, and integration into the daily routine.

4.1.1 Access to Technology

Digital innovation necessitates access to technology with the capabilities and strategies for implementing emerging technologies such as big data, social media, cloud, emerging and other disruptive digital technologies (El Sawy et al., 2016; Dremel et al., 2017; Günther et al., 2017; Huang et al., 2017; Ives et al., 2016; Scuotto et al., 2017). Connectivity technologies require appropriate firewalls to control unauthorized access (El Sawy et al., 2016; Rolland et al., 2018; Sia et al., 2016; Svahn & Mathiassen, 2017). Access to adequate processing power must be available for implementing big data and data analytics for customer retention (El Sawy et al., 2016; Rolland et al., 2018; Suseno et al., 2018; Svahn & Mathiassen, 2017).

4.1.2 Appropriateness of Technology

Appropriate applications with relevant digital platforms must be deployed to digitize traditional services and process financial services (Huang et al., 2017; Jensen & Bækgaard, 2016; Marcinkowski & Gawin, 2019; Rolland et al., 2018; Saunila et al., 2019; Scuotto et al., 2017). A layered module architecture can provide a robust technical foundation by digitizing the installed base modularly. This can enable traditional organizations to drive digital innovation and create networks of consumers, producers, service providers, and third-party developers to create value (Constantinides et al., 2018; Herterich et al., 2016).

4.1.3 Affordability of Technology

Costly technology investments can be made more affordable through appropriate management practices and by exploiting collaborations, open innovation models and software-as-a-service

(SaaS). Collaboration can enable organizations to launch digital initiatives that include suitable specialized technical expertise and incubate and accelerate emerging digital innovations (Dremel et al., 2017; Kaulio & Thorén, 2017; Scuotto et al., 2017; Svahn & Mathiassen, 2017; Winkler & Kettunen, 2018; Yeow et al., 2018). Open innovation is based on permeable organizational boundaries that provide access to knowledgeable external sources while increasing the internal knowledge pool's diversity and improving cost efficiency (Huang et al., 2017; Leminen & Westerlund, 2019; Panopoulos et al., 2018; Scuotto et al., 2017). SaaS can provide economical, manageable and scalable digital solutions (Dremel et al., 2017; El Sawy et al., 2016; Oliveira et al., 2019).

4.1.4 Maintenance and Support

IT departments must be integrated into the organizational processes in close collaboration with business departments to leverage the IT departments' competencies to maintain and support digital innovation (Chanas et al., 2019; Dremel et al., 2017; Ravichandran, 2018; Scuotto et al., 2017). A platform must be established for agile adaptation to rapidly changing technology and organizational practices (Dery et al., 2017; El Sawy et al., 2016). Rapid changes require that Fintechs leverage practices such as agile methodologies to respond to these changes (Chanas et al., 2019; Dremel et al., 2017; Ravichandran, 2018; Saldanha et al., 2017).

4.1.5 Integration into Daily Routine

Effective use of digital innovation requires that daily routines incorporate digitally-enabled processes. Although digital transformation builds on many smaller, manageable digital innovations, it is disruptive. The better an organization is at leveraging existing business as a digital innovation, the faster and, potentially, the more successful it will be. Integrating digital innovation into daily practices will enhance and support the existing business processes and enable quicker acceptance of the innovations (Dremel et al., 2017; Kaulio & Thorén, 2017; Saldanha et al., 2017; Svahn & Mathiassen, 2017; Winkler & Kettunen, 2018).

4.2 Organization

Four categories and matching lines of action were observed for the organization construct - organizational structure, collaborative capacity, governance and compliance, and funding.

4.2.1 Organizational Structure

Digital transformation requires a digital transformation strategy. The strategy must set roles and responsibilities (Dremel et al., 2017; Saunila et al., 2019; Sia et al., 2016; Tumbas et al., 2018) and should establish digital innovation hub driven by a visionary chief digital officer (Chanas et al., 2019; Dremel et al., 2017; El Sawy et al., 2016; Kaulio & Thorén, 2017; Mathiassen, 2017; Sia et al., 2016; Yeow et al., 2018). Human resources play a vital role in the success of these initiatives as without the relevant roles, responsibilities and competencies, most digital initiatives fail (Dery et al., 2017; Dremel et al., 2017; Jensen & Bækgaard, 2016; Saunila et al., 2019; Sia et al., 2016; Svahn & Mathiassen, 2017; Yeow et al., 2018). Human resources must ensure purposeful training to broaden the business and IT skillsets to support infrastructure and data integration (Chanas et al., 2019; Dremel et al., 2017; Ravichandran, 2018; Scuotto et al., 2017).

4.2.2 Collaborative Capacity

Collaboration is essential for digital innovation. Leveraging existing collaborations assures cost-efficient coordination of internal resources (Dremel et al., 2017; Scuotto et al., 2017; Svahn & Mathiassen, 2017; Vetterli et al., 2016; Yeow et al., 2018). Intra-organizational and inter-organizational collaboration shares knowledge, technologies and other resources between

and across organizational boundaries (Dremel et al., 2017; El Sawy et al., 2016; Herterich et al., 2016; Ollila & Yström 2016; Sia et al., 2016; Yeow et al., 2018).

4.2.3 Governance and Compliance

Digital innovation which shifts organizations to bottom-up processes must include business rules enforced by governance for compliance in the collaborative networks (Bunduchi et al., 2019; Dery et al., 2017; Dremel et al., 2017; Rolland et al., 2018; Saldanha et al., 2017). Likewise, flexible, reactive customer-driven innovations need robust governance frameworks (El Sawy et al., 2016; Yeow et al., 2018), which must balance control and flexibility (Svahn et al., 2017).

4.2.4 Funding

Although collaboration and sharing of resources can provide more affordable technologies, digital innovation still requires high levels of funding with a willingness to invest aggressively in digital technology, process competence and research and development (Ravichandran, 2018; Scuotto et al., 2017; Winkler & Kettunen, 2018; Yeow et al., 2018).

4.3 Environment

Four categories and corresponding lines of action were observed for the environment construct - locally relevant content, socio-cultural factors, legal and regulatory milieu, political and government structures.

4.3.1 Locally Relevant Content

Practical digital innovation that is relevant in multiple contexts requires knowledge of local content for each context. Collaboration platforms must integrate local organizational and user knowledge into the innovation process (Abrell et al., 2018; Saunila et al., 2019; Sergeeva & Trifilova, 2018) while maintaining a balance between global and local content and processes (Dremel et al., 2017; Rolland et al., 2018; Yeow et al., 2018).

4.3.2 Socio-cultural Factors

The success of digital initiatives depends on transforming the workplace culture and instilling entrepreneurial thinking. The financial services organizational culture should include the norms, beliefs, values and behaviors that influence employee performance and help to develop core competencies relevant to the digital age (Dery et al., 2017; Dremel et al., 2017; El Sawy et al., 2016; Saunila et al., 2019; Sia et al., 2016).

4.3.3 Legal and Regulatory Milieu

Financial services organizations must ensure reliability, security and privacy. Flexible access to back-end systems must be balanced with authorized access (El Sawy et al., 2016; Herterich et al., 2016; Ives et al., 2016; Svahn & Mathiassen, 2017). Legacy IT system should be replaced with standardized business processes built on business process blueprints (Marcinkowski & Gawin, 2019; Winkler & Kettunen, 2018). Strict contractual and relationship management must be established with external partners (Constantinides et al., 2018; Sia et al., 2016) and strong governance (Winkler & Kettunen, 2018).

4.3.4 Political and Government Structures

Government, public and political agencies follow a logic different to financial services organizations and may influence the organization's digital innovation vision (Bunduchi et al., 2019; Svahn et al., 2017). Continuous alignment is required to relieve political tensions brought about by public structures that hinder digital innovations (Chanas et al., 2019).

5. Discussion and Conclusion

The objective of this study was to identify lines of action for organizational practices essential to digital innovation in financial services organizations as current research of organizational practices affecting digital innovation is fragmented. A meta-aggregative approach to synthesize organizational practices for digital inclusion in Fintechs, identified 41 articles between 2016 and early 2020. From these articles, thirteen lines of action were generated as guidelines for digital innovation efforts. The TOE framework provided three primary themes - technology, organisation and environment - to guide the lines of action.

The technology line of action guides access, appropriateness, affordability, and technology support, which must to be integrated into daily routines. Access is required for emerging and digital technologies with adequate processing power protected from unauthorized access. Technology must be appropriate and integrate the organizational processes into collaborative networks. Conservative fiscal management of technology costs is mandatory and cost-lowering initiatives that exploit collaborations, open innovation models and software-as-a-service should be explored. Continuous support for the deployed technology must be assured. Organizations should leverage existing technology knowledge enhanced through agile methodologies for support.

The organization line of action guides organizational structure, collaborative capacity, compliance governance, and funding. Digital innovations require a digital transformation strategy to set roles and responsibilities for which human resources are relied upon for implementation and training. A digital innovation hub with a visionary chief digital officer is recommended. Collaborative capacity leverages cost-effective resources and provides support by combining knowledge and resources throughout the Fintech supply chain. Governance is imperative for compliance in these collaborative networks. However, governance must maintain a balance between control and flexibility. Digital innovation requires high levels of funding which may be reduced through collaboration and diligent management.

The environment line of action guides locally relevant content, socio-cultural factors, legal and regulatory milieu, political and government structures. Global organizations must incorporate local knowledge and processes, maintaining a balance between local and global. Digital innovation is dependent on the workforce, which requires a digital-age work culture and entrepreneurial thinking. Financial services organizations must ensure reliability, security and privacy. Standardized business processes and strict contractual relationships aid in adherence to legal and regulatory requirements. Continuous alignment is required to relieve political tensions brought about by public structures that could hinder digital innovations.

Methodologically, the meta-aggregation synthesis approach, which generated the lines of action, proved useful for investigating digital innovation. Nevertheless, several limitations were noted. The selected research methodology has been criticized for focusing on the quality of articles more than the relevance of the article findings (Pearson, 2004). However, the methodology does not provide clear guidance on the definition of quality ratings or how to deal with low-quality articles (Hannes et al., 2018). Further restrictions include only selected journals between 2016 and 2019 and exclusion of quantitative articles.

Future research can extend the time frame and include other journals and articles with quantitative methods. A comparative study of the identified lines of action in financial services with other industries is indicated. Future research could include quantitative methods to

confirm the lines of action. Further work could explore governance and collaboration and an in-depth understanding of the process changes required for digital transformation.

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