

The Role of Strategic Agility in Promoting Digital Transformation: A Field Study of Yemeni Banks in the Capital Municipality of Sana'a

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© 2024 جامعة العلوم والتكنولوجيا، اليمن. يمكن إعادة استخدام المادة المنشورة حسب رخصة مؤسسة المشاع الإبداعي شريطة الاستشهاد بالمؤلف والمجلة.

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Abstract

The study aimed to examine the role of strategic agility in promoting digital transformation at Yemeni banks in the Capital Municipality of Sana'a. It employed the quantitative descriptive approach and used the questionnaire to collect data from a sample of 385 from a total population of 1901 employees with supervisory posts working for the Yemeni banks in the Capital Municipality of Sana'a. A number of 338 questionnaires were retrieved with a response rate of 88.02%, and all of them were valid for statistical analysis using SPSS v 28. The study revealed that strategic agility across its three dimensions (strategic sensitivity, resource fluidity, and collective commitment) has a significant and positive role in promoting digital transformation in the Yemeni banks, with 'collective commitment' emerging as the most influential dimension, followed by 'strategic sensitivity', then 'resource fluidity'. The study concluded that banks that are sensitive to strategic changes, have flexible resource allocation, and prioritize collective commitment are more likely to achieve successful digital transformation. It recommends Yemeni banks focus on strengthening the organizational aspect within digital transformation efforts, work on improving resource fluidity, prioritize strategic sensitivity and alignment, and focus on fostering a collaborative environment where all stakeholders are aligned towards the common goal of digitalization.

Keywords: strategic agility, promoting digital transformation, Yemeni banks.

دور الرقابة الاستراتيجية في تعزيز التحول الرقمي: دراسة ميدانية على البنوك اليمنية في أمانة العاصمة صنعاء

الملخص

هدفت الدراسة إلى التحقق من دور الرقابة الإستراتيجية في تعزيز التحول الرقمي في البنوك اليمنية في أمانة العاصمة صنعاء. واتبعت الدراسة المنهج الوصفي الكمي واستخدمت الاستبيان لجمع البيانات من عينة مكونة من 385 من إجمالي عدد المجتمع البالغ 1901 موظفا وموظفة من ذوو الوظائف الإشرافية في البنوك اليمنية في أمانة العاصمة صنعاء. وتم استرجاع عدد 338 استبانة بنسبة استجابة بلغت 88.02%، وكانت جميعها صالحة للتحليل الإحصائي باستخدام برنامج الحزمة الإحصائية للعلوم الاجتماعية (SPSS) الإصدار 28. وتوصلت الدراسة إلى أن للرقابة الاستراتيجية عبر أبعادها الثلاثة (الحساسية الاستراتيجية، وسيولة الموارد، والالتزام الجماعي) دور مهم وإيجابي في تعزيز التحول الرقمي في البنوك اليمنية، حيث كان البعد الأكثر تأثيرا هو "الالتزام الجماعي"، يليه "الحساسية الاستراتيجية"، ثم "سيولة الموارد". وخلصت الدراسة إلى أن البنوك التي تراعي التغيرات الاستراتيجية، وتمتع بمرونة في تخصيص الموارد، وتعطي الأولوية للالتزام الجماعي، هي الأكثر احتمالا لتحقيق تحولات رقمية ناجحة. وتوصي الدراسة البنوك اليمنية بالتركيز على تعزيز الجانب التنظيمي ضمن جهود التحول الرقمي، والعمل على تحسين سيولة الموارد، وإعطاء الأولوية للحساسية والمواءمة الاستراتيجية، والتركيز على تعزيز بيئة تعاونية حيث يتجه جميع أصحاب المصلحة نحو الهدف المشترك المتمثل في الرقمنة.

الكلمات المفتاحية: الرقابة الاستراتيجية، تعزيز التحول الرقمي، البنوك اليمنية.

Introduction

The world has witnessed many rapid changes and developments in the business environment in various economic, technological, cultural, social, and political fields, as a result of the increasing intensity of globalization and competition. This has put great pressure on businesses to change and work on improving the quality of their products and services. Businesses also need to ensure their continuity and survival in a constantly changing competitive environment (Almarri & Bashabsheh, 2020), through putting in significant effort to revamp their business models and incorporate digital technologies to maintain competitiveness and profitability in today's fast-paced market (Mihardjo et al., 2019).

As a company undergoes significant changes in its operations, products, services, processes, and organizational structure, it concurrently adopts digital technologies to support these initiatives (Andersen, 2019). The current industrial revolution demands the ability to grasp a fresh economic setting where globalization and digitalization are imperative in the upcoming strategic landscape (Andrade & Gonçalo, 2021). Therefore, firms' digital transformation has become a topic of discussion since firms are actively prioritizing it to tackle sustainability challenges and seize opportunities in product and service delivery.

One of the critical factors which could affect the digital transformation is organizational agility (Santos & Martinho, 2020; Yıldırım & Demirbağ, 2020; Zúñiga et al., 2017). Besides, Eggert and Bellman (2015) stated that one of the major obstacles to digital transformation is the absence of organizational agility, which is "essential to survive and compete in today's turbulent landscape, characterized by technological advancements and digitalization" (Troise et al., 2022, p. 1). Haider et al. (2021) concluded that achieving organizational agility requires flexibility at the strategic and operational levels. Strategic agility is paramount. Leaders driving improved organizational performance through digital transformation may have specific tools in mind, yet it is crucial that digital transformation aligns with the broader business strategy. They adopt business strategies and make the required changes to secure a competitive Advantage (Tabrizi et al., 2019).

While businesses may be hesitant to adopt change, they must be cautious and stay informed about the rapid advancements in the digital world (Wicaksana et al., 2022). Therefore, it is important to facilitate strategic procedures such

as gathering extensive data sets (Gandomi & Haider, 2015), employing intelligent analytical techniques (Chen et al., 2012), and adopting fresh approaches to business models (Schallmo et al., 2017). Jack Welch once said, "When the rate of change inside an institution becomes slower than the rate of change outside, the end is near" (AlNuaimi et al., 2022, p. 636).

According to Zafari (2017), firms in emerging and developing countries are experiencing a deterioration in performance because of their lack of strategic agility and inadequate response to challenges posed by various microeconomic and macroeconomic factors. These challenges include environmental factors specific to the industry, task environment, natural environment, and technological environment. Additionally, Arokodare and Asikhia (2020) highlighted that in the 21st century, where innovations, technologies, globalization, and various services and products have become boundaryless to the economy, organizations that lack strategic agility will face a competitive disadvantage and a continuous decline in performance.

The rapid pace of change in the world is evident in recent technological and environmental transformations. Consequently, it is imperative for organizations, including the financial industry, to embrace agile strategic management approaches to adapt to these changes (Bouزيد & Beldjazia, 2022). Banks face numerous challenges, such as rising customer expectations, competition, retaining customers, complying with regulations, and handling acquisitions (Nithya & Kiruthika, 2021).

However, if banks can make prompt and effective decisions, they have the potential to overcome these challenges (Manawadu et al., 2022). For them, it becomes crucial to recognize new opportunities for survival, growth, and innovation, as they confront various challenges, such as evolving customer needs, advancements in technology, and regulatory expectations. By effectively and efficiently addressing these challenges, banks can successfully achieve their strategic goals (Al-Shawkhi, 2023).

Yemeni economy relies heavily on cash and suffers from limited financial inclusion. The Central Bank of Yemen (CBY) initiated reforms to enhance the country's financial sector infrastructure and reduce reliance on cash by enhancing electronic interbank transactions and local electronic payment systems, such as electronic and mobile money services. These reforms offered the potential to greatly enhance financial inclusion, given the extensive use of mobile phones among the population. Unfortunately, the onset of the

ongoing conflict disrupted the progress that was being made (The Sana'a Center Economic Unit, 2022).

Because nowadays technology plays an important role in the field of banking sector, especially in the light of digital economy which has become essential for banks to achieve greater scope, penetrate new markets, and provide better and faster services to meet the service needs of customers (Al-Shawkhi, 2023); therefore, the need to adopt strategic agility at banks becomes important to enable banks to forecast, work, and respond proactively to identify strengths and weaknesses and face the challenges and threats now and in the future (Khoshnood & Nematizadeh, 2017).

Therefore, this study aims to show how important for companies to constantly and successfully implement, develop, establish, and adjust their internal and external digital competencies by being strategically agile to the changes, taking opportunities, and facing threats.

Literature Review

Digital Transformation

Definition

Digital transformation is defined as “a process of utilizing digital technology such as cloud computing, mobile computing, and virtualization technology where all system components within the organization are integrated with each other” (Nurjannah, 2023, pp. 65-66). Given the increasing reliance on data and technology in the digitalization era, digital transformation becomes imperative for the development of businesses. Its implementation is expected to enhance operational efficiency and deliver added value to customers (Devi, 2012).

Dimensions of Digital Transformation

Lundberg (2021) and Mhlungu et al. (2019) recognized various aspects of digital transformation, such as strategic, financial, technological, organizational, customer, and innovation dimensions. Hess et al. (2016) identified four key dimensions of digital transformation. The first dimension, technology, addresses how a company engages with and harnesses new digital tools and technologies. The second dimension, value creation or innovation, focuses on the influence of digital transformation on a company's value creation processes. Structural changes, the third dimension, indicate the adjustments required in organizational structures, processes, and skill

sets to effectively embrace new technologies. Lastly, the financial dimension encapsulates the necessity for businesses to address challenges in their core operations and the resources needed to support digital transformation initiatives.

The organizational dimension involves restructuring an organization's culture and processes to support digital transformation initiatives. Andrade and Gonçalo (2021) explained in their research that digital transformation involves the capacity to rearrange and adjust assets and the organization's structure in reaction to market or technological shifts. This includes the creation of new roles and responsibilities, as well as the decentralization and decomposability of the organization's structure.

Berman (2012) suggests the importance of reevaluating customer values to identify new opportunities for innovation and to introduce technologies that reshape the business model. The customer dimension involves leveraging digital technologies to enhance customer experience and engagement. Transforming customer interactions into digital formats can lead to substantial benefits, including boosted automation, elevated service standards, and an improved overall customer journey (Berman, 2012; Stoyanova, 2020).

The operational dimension involves optimizing business processes through the use of digital technologies to enhance efficiency and productivity. Organizations must prioritize the effectiveness and dependability of core operations and back-office services by adopting an integrated, flexible, and easily adaptable approach (Agrawal et al., 2020).

The strategic dimension includes aligning digital transformation initiatives with the overall business strategy and goals. Businesses need to undergo a fundamental shift in their operations and delivery of products and services by nurturing digital cultures that can flourish (Chierici et al., 2021). This transformation demands leaders who establish platforms and motivate stakeholders to take decisive actions (Sainger, 2018). Additionally, personnel play a crucial role in the digital transformation process, as highlighted by Nicolás-Agustín et al. (2022). According to Wicaksana et al. (2022), without a digital mindset among employees, organizations will struggle to become truly digital.

Accordingly, digital transformation is a multidimensional concept that encompasses all aspects vital to an organization's success. This study has specifically conceptualized digital transformation into five dimensions:

technological, organizational, strategic, financial, and innovative dimensions. These dimensions were identified by reviewing the most relevant and frequently mentioned aspects that can be promoted by strategic agility as dynamic capabilities.

Strategic Agility

Definition

Digitalization has had a profound impact on how companies across all industries manage their operations, and has led to a redefinition of the necessary mix of capabilities and assets, and the elimination of long-standing entry barriers (Doz & Kosonen, 2008b). Consequently, the business landscape has evolved to be more volatile, fast-changing, and unpredictable, leading to heightened levels of uncertainty (Andersen, 2019; Bock et al., 2012; Doz & Kosonen, 2008b).

Eisenhardt and Brown (1998) indicated that mastering strategic agility is key in turbulent business settings, and balancing efficiency with flexibility is crucial for effective business operations. This balance is crucial for organizations to be organized in a manner that enables them to adapt to highly turbulent business settings (Vagnoni & Khoddami, 2016). Strategic agility is often associated with the flexibility and speed required for organizations to adapt their businesses and respond to market changes (Bock et al., 2012; Brown & Eisenhardt, 1997).

Underpinning business transformation, strategic agility often involves introducing new concepts related to strategies, organizations, individuals, and technology (Arbussa et al., 2017; Bock et al., 2012; Doz & Kosonen, 2008b). To thrive in ever-changing avenues, a paradigm shift can be essential for reassessing, tweaking, or letting go of old ideas that can spark fresh ways to add value for stakeholders (Doz & Kosonen, 2008b; Doz & Kosonen, 2010; Weber & Tarba, 2014). This paradigm shift can give rise to various challenges, including tensions and the need for leaders to address paradoxes (Fourné et al., 2014; Lewis et al., 2014), all of which leaders must navigate to successfully enhance agility (Doz & Kosonen, 2008b; Doz & Kosonen, 2010).

Examining research on strategic inertia or strategic inaction, which stands in contrast to strategic agility, for instance Nokia highlights the state of being strategically inert until the incorporation of strategic agility practices. However,

the exploration of the process through which companies adopt strategic agility is limited in the existing contributions to the theory. Nonetheless, there are other research avenues in the realm of strategic agility. Some of these pathways are rooted in fundamental theories, including capabilities in strategic agility (Battistella et al., 2017), flexibility (Bock et al., 2012), and competitive dynamics (Vagnoni & Khoddami, 2016).

Key Components of Strategic Agility

After examining the literature on strategic agility, it becomes apparent that organizations can attain strategic agility by cultivating a specific range of capabilities that form the fundamental aspects of this concept. According to Doz and Kosonen (2008a), three main meta-abilities have been recognized as essential for improving an organization's ability to revitalize its business model and, in turn, promote strategic agility: 'strategic sensitivity', 'resource fluidity', and 'leadership unity' (Doz, 2020; Doz & Kosonen, 2010; Glesne & Pedersen, 2020).

To achieve strategic agility, it is essential to develop all three capabilities in a coordinated manner (Doz, 2020). These capabilities can be described as follows:

1. Strategic sensitivity:

Strategic sensitivity refers to the keen perception, heightened awareness, and focused attention on strategic situations in real-time or near real-time (Doz, 2020). It pertains to an organization's capacity to recognize business opportunities and threats and remain receptive to the rejuvenation and transformation of existing operations (Doz, 2020; Doz & Kosonen, 2010). Developing this ability involves a shift from foresight-driven strategic planning to insight-based strategic sensitivity, where emphasis is placed on sensing present circumstances rather than solely anticipating the future (Doz & Kosonen, 2008a). Achieving strategic sensitivity is facilitated by implementing an open strategy process that encourages transparent conversations, allows for experimentation, fosters high-quality internal dialogue, and ensures internal connectivity (Doz, 2020; Doz & Kosonen, 2008a; Morton et al., 2018).

2. Leadership unity:

The concept of leadership unity, also known as collective commitment, involves senior management working together to make and execute bold strategic decisions without getting entangled in personal power struggles (Doz, 2020; Morton et al., 2018). This idea entails a significant change in how senior teams function and collaborate with the CEO, focusing on interdependent collective commitments (Doz & Kosonen, 2008a). The emphasis is on shared responsibilities, mutual reliance, and the CEO's role as a facilitator rather than a hero (Doz, 2020; Heifetz & Laurie, 2001; Morton et al., 2018). While some scholars focus on senior management's collective commitment within human resources capabilities (Doz & Kosonen, 2010), others, such as Mavengere (2013), extend this to include the collective capabilities of the entire organization, emphasizing the importance of collaboration, open communication, knowledge sharing, and information exchange as key elements.

3. Resource fluidity:

Resource fluidity, essential alongside strategic sensitivity and leadership unity, involves the agile reallocation of resources to seize emerging strategic opportunities through adaptable structures and decentralized initiatives (Doz & Kosonen, 2008a; Morton et al., 2018; Sull, 2009). This shift emphasizes moving from resource allocation and ownership to sharing and leverage, enabling swift reconfiguration of activity systems and allocation of resources, particularly human resources (Doz, 2020; Doz & Kosonen, 2008a). This process includes mobilizing knowledge and personnel across units, transparent modular business processes, and dynamic governance mechanisms to efficiently reallocate resources and establish common rules (Doz & Kosonen, 2008a; Sull, 2009). Companies lacking resource fluidity can adopt strategies such as decoupling, modularizing business systems, negotiating resource use independently of ownership, and deploying multiple business models and strategic acquisitions (Doz & Kosonen, 2010). Effective alignment of leadership strategies with business processes is crucial to prevent resource wastage.

Strategic Agility and Digital Transformation

The relationship between strategic agility and digital transformation is paramount for organizations navigating the swift changes in the business landscape. Strategic agility enables firms to adapt to technological advancements and digitalization, essential for survival and competitiveness in today's landscape (Troise et al., 2022). The lack of organizational agility poses a significant barrier to successful digital transformation efforts (Eggers & Bellman, 2015). Strategic agility involves flexibility at both operational and strategic levels (Haider et al., 2021), guiding leaders to align digital transformation initiatives with broader business strategies for a competitive edge (Tabrizi et al., 2019).

Problem Statement

Yemen's banking sector faces formidable obstacles such as underdeveloped formal banking services and financial instability in key banks, exacerbated by limited technological infrastructure. The country's turbulent political and economic landscape presents unique challenges to digitalization efforts in the banking industry (The Sana'a Center Economic Unit, 2022). Hence, tackling the challenges and obstacles of digitalization is crucial for driving substantial economic growth (Saleh & Manjunath, 2020). Despite these challenges, there are emerging opportunities for Yemeni banks to embrace digital transformation by integrating modern technology to enhance their services and reach a broader customer base (Al-Shawkhi, 2023).

A conference in late 2022 in Sana'a involving key stakeholders aimed to promote the adoption of digital financial services and led to recommendations for a national strategy on financial inclusion and digital transformation, hence reflecting a growing awareness of the potential benefits of digital transformation in Yemeni banks (Al-Shawkhi, 2023). Despite efforts to promote digital transformation, challenges persist, necessitating a closer look at the capabilities and enablers required for successful digital transformation (Tabrizi et al., 2019).

Organizational agility has emerged as a critical factor in the digital transformation era, with a growing need for further research to enhance knowledge in this field (Troise et al., 2022). Emphasizing the importance of understanding the role of strategic agility in driving digital transformation, recent studies highlight the necessity of investigating this aspect across various industries and sectors to extrapolate generalizable results (AlNuaimi

et al., 2022; Andersen, 2019; Pfaff, 2023). Organizations are urged to focus on cultivating a flexible mindset for change and restructuring existing organizational frameworks to successfully navigate the challenges posed by rapid technological advancements and ensure the efficacy of digital transformation endeavors (AlNuaimi et al., 2022). Efforts towards exploring strategic agility further in different contexts are crucial for deriving valuable insights and formulating effective strategies to navigate the constantly evolving digital landscape (Andersen, 2019; Pfaff, 2023).

Therefore, this research study aimed to address this research gap by examining the role of strategic agility in promoting digital transformation of Yemeni banks in the Capital Municipality of Sana'a. Accordingly, the problem statement can be formulated with the following questions:

1. What is the role of strategic agility in prompting digital transformation of Yemeni banks in the Capital Municipality of Sana'a?

This question is divided into three sub-questions as follows:

- A. What is the role of strategic sensitivity in promoting digital transformation of Yemeni banks in the Capital Municipality of Sana'a?
- B. What is the role of resource fluidity in promoting digital transformation of Yemeni banks in the Capital Municipality of Sana'a?
- C. What is the role of collective commitment in promoting digital transformation of Yemeni banks in the Capital Municipality of Sana'a?

Research Hypotheses

Based on the foregoing literature review discussion, and to answer the study questions, the following main hypothesis and its sub-hypotheses were developed:

H1: There is a significant role of strategic agility in promoting digital transformation of Yemeni banks in the Capital Municipality of Sana'a.

- H1a: There is a significant role of strategic sensitivity in promoting digital transformation of Yemeni banks in the Capital Municipality of Sana'a.
- H1b: There is a significant role of resource fluidity in promoting digital transformation of Yemeni banks in the Capital Municipality of Sana'a.

- H1c: There is a significant role of collective commitment in promoting digital transformation of Yemeni banks in the Capital Municipality of Sana'a.

Conceptual Framework

Based on the reasoning provided earlier, the conceptual model of the study is showcased in Figure 1.

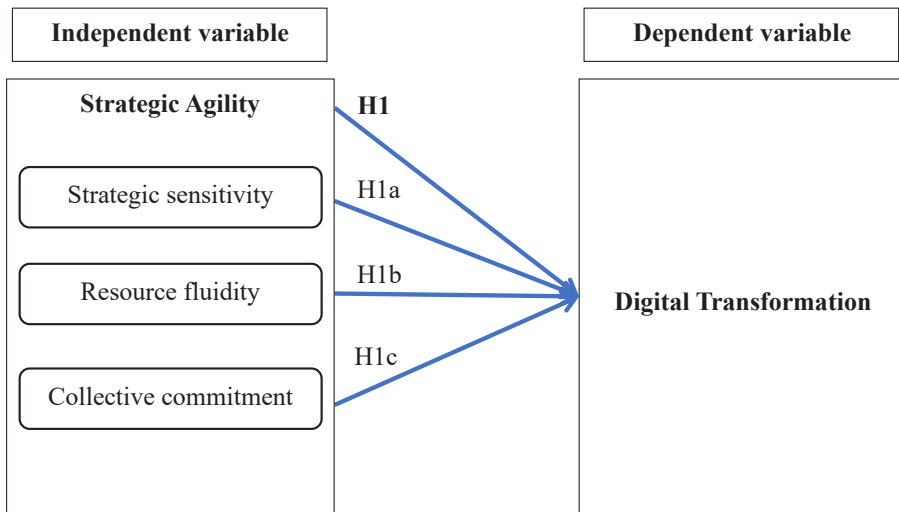


Figure 1: Research Conceptual Framework

Methodology

Study Approach

The research employed the descriptive approach, which is widely regarded as the suitable method for investigating and depicting phenomena in the field of social sciences (Al-Ariqi & Al-Nashmi, 2019).

Study Population and Sample

The study population included all Yemeni banks ($n=16$) in Sana'a registered with the Central Bank of Yemen (CBY) till the end of 2022. These banks have met capital adequacy requirements based on the Central Bank's standards. However, the study excludes six banks. Table 1 outlines the excluded Yemeni banks with reasons.

Table 1: Excluded Yemeni Banks

No.	Bank	Reason
1.	CBY	Monetary authority
2.	Islamic Bank for Finance & Investment	Without published financial report
3.	Yemen Gulf Bank	
4.	Housing Credit Bank	Under financial liquidation
5.	Watani Bank	
6.	National Bank of Yemen	Headquarters in Aden

Based on the above, the study included 10 Yemeni banks. The study population comprised of 1901 employees with supervisory posts, including general managers, vice managers, department managers, department vice managers, section heads, and vice section heads, as illustrated in Table 2.

Based on Krejcie and Morgan’s (1970) table of the sample size, the required sample size of a population of 1901 is 321 individuals. To avoid any shortage in responses, an additional 20% was added to the required sample, resulting in a revised sample size of 385 individuals, as shown in Table 2. The researchers adopted the simple random sampling method for selecting the study sample. For each bank, the sample size was determined according to the following formula:

Bank’s sample size = (bank’s population size / total population size) x total sample size

Table 2: Study Population and Sample

No.	Bank name	Population	Required sample	Revised sample	Retrieved sample
1.	Yemen Bank for Reconstruction and Development (YBRD)	423	71	86	82
2.	International Bank of Yemen (IBY)	153	26	31	31
3.	Yemen Kuwait Bank for Trade & Investment (YKB)	209	35	42	20
4.	Cooperative & Agricultural Credit Bank (CAC)	319	54	65	64
5.	Yemen Commercial Bank (YCB)	153	26	31	31

Table 2: continued

No.	Bank name	Population	Required sample	Revised sample	Retrieved sample
6.	Tadamon Bank (TB)	130	22	26	24
7.	Saba Islamic Bank (SIB)	134	23	27	25
8.	Shamil Bank of Yemen & Bahrain (SBYB)	84	14	17	10
9.	Al-Amal Microfinance Bank (AMB)	49	8	10	10
10.	Al-Kuraimi Islamic Microfinance Bank (KIMB)	247	42	50	41
	Total	1901	321 16.83%	385 20.20%	338 88.02%

Response Rate of Study Sample

A total of 385 questionnaires were distributed, and 338 questionnaires were retrieved with a response rate of 88.02%. All retrieved questionnaires were valid for data analysis.

Study Instrument

A structured questionnaire was developed as a tool for collecting data. The first part of the questionnaire obtained demographic and organizational characteristics of the personnel, including gender, age, education, work experience, and job title. The second part was organized based on two main sections for measuring the dependent variable (digital transformation) and the independent variable (strategic agility). Sources and number of items within each variable's dimension are illustrated in Table 3.

Table 3: Study Variables' Measurement

Variable	Dimension	Number of items	Source(s)
Digital transformation	Technological aspect	6	(Hasan, 2023; Westerman et al., 2014)
	Financial aspect	3	(Hasan, 2023)
	Strategic aspect	3	(Hasan, 2023; Westerman et al., 2014)
	Organizational aspect	4	(Hasan, 2023)
	Innovation	4	(Westerman et al., 2014)
Strategic agility	Strategic sensitivity	7	(Alsharah, 2020; Clauss et al., 2019; Clauss et al., 2021; Doz & Kosonen, 2008a, 2010; Hock et al. 2016; Omar, 2017)
	Resource fluidity	3	(Alsharah, 2020; Clauss et al., 2019; Clauss et al., 2021; Hock et al. 2016)
	Collective commitment	5	(Alsharah, 2020; Clauss et al., 2019; Clauss et al., 2021; Hock et al. 2016)

Initially, a preliminary version of the questionnaire was developed in English. Subsequently, this English questionnaire was translated into Arabic and presented to a panel of seven business administration experts from various universities in Sana'a for validation. Feedback was collected from the experts during this validation phase. Following this feedback and validation process, the final version of the questionnaire was prepared in both Arabic and English. However, only the Arabic version of the questionnaire was distributed among the study's participants.

Study Scale

The questionnaire was developed using a five-item Likert scale that spanned from 'Strongly Agree' to 'Strongly Disagree'. The frequency scales were assigned values as follows: 'Strongly Agree' received 5 points, 'Agree' received 4 points, 'Neutral' received 3 points, 'Disagree' received 2 points, and 'Strongly Disagree' received 1 point.

Data Analysis

The collected data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 28. Regression analysis was employed to test the hypotheses and assess the role of the independent variable (strategic agility) on the dependent variable (digital transformation). A p-value below 0.05 is typically deemed statistically significant.

Results and Discussion

Testing Study Hypotheses

Testing the Main Hypothesis

The main hypothesis states that "There is a significant role of strategic agility in promoting digital transformation of Yemeni banks in the Capital Municipality of Sana'a." To test this hypothesis, the simple linear regression was employed, as shown in Tables 4.

Table 4: Results of Testing the Main Hypothesis

R	R ²	F	Sig	β	T	Sig.
0.908	0.824	1571.976	0.000	0.908	39.648	0.000

As shown in Table 4, there is a robust fit for the regression model that demonstrates the significant contribution of "strategic agility" in explaining and predicting "digital transformation" ($R = 0.908$, $R^2 = 0.824$). This indicates that 82.4% of the variability in "digital transformation" is explained by "strategic agility". The high correlation coefficient ($R = 0.908$) signifies a strong positive linear relationship. Moreover, the standardized coefficient (Beta) for "strategic agility" is 0.908, indicating a significant contribution to "digital transformation". These findings indicate that "strategic agility" has a significant and positive role in promoting "digital transformation" in Yemeni banks in the Capital Municipality of Sana'a. Therefore, the main hypothesis is supported.

This result is in line with previous studies. Pfaff (2023) study, for example, revealed strategic agility as an essential capability in mastering digital transformation. Moreover, AlNuaimi et al. (2022) found that organizational agility has a positive influence on digital transformation. According to Li et al. (2022), the agility capability of organizations plays a crucial role in shaping the desired changes. Furthermore, Menon and Suresh (2021) suggested that organizations should also consider adopting agile Information and

Communication Technology (ICT) systems and human resources (HR) strategies to enhance agility in the digital environment. According to the Organizational Engineering Group (2023), strategic agility is considered one of the key strategic pillars of digital transformation.

Testing Sub-Hypotheses of the Main Hypothesis

Multiple linear regression was run to examine the role of strategic agility dimensions in promoting digital transformation at the studied Yemeni banks, as shown in Table 5.

Table 5: Results of Testing Sub-Hypotheses of the Main Hypothesis

Path	R	R²	B	Beta	SE	T	P value
Strategic sensitivity → Digital transformation			0.538	0.585	0.020	26.836	0.000
Resource fluidity → Digital transformation	.917	.841	0.339	0.368	0.020	16.898	0.000
Collective commitment → Digital transformation			0.555	0.603	0.020	27.701	0.000

Results in Table 5 show a well-fitted regression model for predicting “digital transformation” ($R = 0.917$, $R^2 = 0.841$). This signifies that 84.1% of the variance in “digital transformation” is accounted for by the predictors: “strategic sensitivity”, “resource fluidity”, and “collective commitment”.

Besides, the regression analysis showed strong evidence that “strategic sensitivity” has a significant positive role in promoting “digital transformation” ($Beta = 0.585$, $p < 0.001$). A one-unit increase in “strategic sensitivity” is associated with a 0.585-unit increase in “digital transformation”, on average, holding other variables constant. Therefore, the first sub-hypothesis is supported.

This finding complies with the finding of Merten et al. (2022) which revealed that strategic sensitivity is considered one of the key capabilities used for enabling successful digital transformation. It also supports the study of Fachrunnisa et al. (2020) which found that strategic sensitivity plays a significant role in enhancing digital transformation at the SMEs in Malaysia.

Moreover, “resource fluidity” has a significant positive role in promoting “digital transformation” ($Beta = 0.368$, $p < 0.001$). A one-unit increase in “resource fluidity” is associated with a 0.368-unit increase in “digital transformation”,

on average, holding other variables constant. While significant, the effect size is moderately strong compared to “strategic sensitivity”. Therefore, the second sub-hypothesis is supported.

This result supports the findings of Li et al. (2022) which reported that most research studies on digital transformation have often assumed that organizations possess the necessary resources to successfully undertake the transformation; however, not all organizations may be able to bear the costs of owning these resources. Instead, they may seek to access these resources in a dynamic and temporary arrangement. They also found that successful digital transformation relies on achieving resource fluidity, which involves three phases: acquisition, activation, and application.

Finally, “collective commitment” also has a significant positive role in promoting “digital transformation” (Beta = 0.603, $p < 0.001$). A one-unit increase in “collective commitment” is associated with a 0.603-unit increase in “digital transformation”, on average, holding other variables constant. This effect size is comparable to “strategic sensitivity”. Therefore, the third sub-hypothesis is supported.

This finding is similar to Manda’s (2022) study findings which highlighted the importance of collective commitment or leadership unit in successfully institutionalizing information systems for enhancing the digital transformation. It supports the study by Ko et al. (2022) which revealed that digital innovation is primarily influenced by management commitment. It also backs up the findings of Li (2020) and Steude (2017) which suggest that leadership plays a crucial role in enhancing the capacity to adjust digital information systems and processes, enabling organizations to navigate uncertainty and profound changes in the business landscape.

Conclusions

Based on the study findings, the following conclusions are drawn:

1. Strategic agility across its three dimensions (strategic sensitivity, resource fluidity, and collective commitment) has a significant and positive role in promoting digital transformation in the Yemeni banks in Sana’a. This underscores the importance of adapting to change, optimizing resources, and fostering a collaborative environment to successfully navigate the complexities of digitalization in the banking sector.

2. The role of strategic agility in promoting digital transformation in the Yemeni banks in Sana'a varies among its dimensions, indicating that 'collective commitment' emerges as the most influential dimension, followed by 'strategic sensitivity', with 'resource fluidity' playing a less pronounced significant role in driving digital transformation. Understanding and leveraging this prioritization can help Yemeni banks tailor their strategies to enhance collective engagement and strategic foresight for more effective digitalization efforts.

Recommendations

Based on the conclusions of the study, the following recommendations are drawn:

1. As embracing strategic agility principles can enable banks to navigate the complex digital landscape with efficiency and effectiveness, the Yemeni banks should highlight the critical role of strategic agility as a key driver of digital transformation success.
2. Recognizing the significance of collective commitment in promoting digital transformation, the Yemeni banks should focus on fostering a collaborative environment where all stakeholders are aligned towards the common goal of digitalization through encouraging teamwork, open communication, and shared accountability to drive successful digital transformation initiatives.

Limitations and Future Research Directions

The study had some limitations, including the following:

1. Some banks showed limited cooperation, which led to challenges in retrieving all the required questionnaires.
2. Generalizability of the study findings is limited to the Yemeni banking sector, potentially affecting the application of results to other industries and sectors within the country.
3. Key factors such as risk management practices, organizational resilience, regulatory environment, and cultural influences – known to play a role in strategic agility and digital transformation – were not included in the analysis, potentially overlooking important insights.

4. The scarcity of similar previous studies for reference posed a challenge in effectively comparing the obtained results, highlighting the need for more comprehensive research to support and validate findings.

Therefore, the study proposed the following potential avenues for future research:

1. Investigate the influence of cultural factors on strategic agility and digital transformation in Yemeni banks through analyzing how cultural values, norms, and practices impact the adoption of agile strategies and digital initiatives within the banking sector.
2. Study the relationship between strategic agility, risk management practices, and organizational resilience in the face of digital disruptions to examine how agile strategies can help banks mitigate risks, respond to challenges, and maintain competitiveness in the digital era.
3. Explore the impact of technology adoption, such as artificial intelligence, blockchain, or fintech solutions, on strategic agility and digital transformation in Yemeni banks to assess how emerging technologies influence agility practices and drive innovation in the banking sector.
4. Investigate the implications of the regulatory environment on strategic agility and digital transformation in Yemeni banks to explore how regulatory policies, compliance requirements, and governance frameworks shape agile strategies and digital initiatives within the industry.

Authors' contribution

MASA and OMA developed the introduction, literature review, problem statement, and research objectives, and designed the research methodology. OMA collected and analyzed the data. Both authors contributed to interpreting the results and highlighting the conclusions and recommendations, and read and approved the final manuscript.

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