


TECHNOLOGICAL CAPACITY AND ORGANIZATIONAL CULTURE: THE IMPORTANCE OF ORGANIZATIONAL AMBIDEXTERITY IN THE BANKING SECTOR

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ARTICLE INFO	ABSTRACT
<p>Article history:</p> <p>Received 20 February 2023</p> <p>Accepted 08 May 2023</p>	<p>Purpose: The research aims to identify the role of organizational cultures mediating technological capacity in the relationship with organizational ambidexterity.</p> <p>Theoretical framework: The effect of technological capacity on organizational ambidexterity is still relatively low. However, when technological capacity is mediated or supported by organizational culture, the effect of technological capacity on organizational ambidexterity becomes greater when compared to its direct effect.</p> <p>Design/methodology/approach: An online poll was utilized to collect data from the highest levels of management in Indonesia's banking industry. Following nine months, 75 responders completed the surveys. We employed Smart PLS software for statistical analysis and testing hypotheses.</p> <p>Findings: The findings revealed that technological capacity and organizational cultures have a beneficial effect on organizational ambidexterity. Organizational cultures mediate the impact of technological capacity and organizational ambidexterity.</p> <p>Research, Practical & Social implications: The study shows that the role of technological capacity with an established organizational culture will support acceleration in achieving organizational ambidexterity. This research contributes to the existing literature by empirically examining the relationship between technological capacity, organizational cultures, and organizational ambidexterity.</p> <p>Originality/value: Several research models and empirical investigations have investigated the relationship between organizational culture, technological capacity, and ambidexterity. There has been a paucity of research on the 'technological capacity' of the banking sector, particularly in developing nations.</p>
<p>Keywords:</p> <p>Organizational Ambidexterity; Organizational Culture; Technological Capacity; Banking Sector.</p> <div data-bbox="172 965 480 1211" style="text-align: center;">  </div>	<p>Doi: https://doi.org/10.26668/businessreview/2023.v8i5.1479</p>

CAPACIDADE TECNOLÓGICA E CULTURA ORGANIZACIONAL: A IMPORTÂNCIA DA AMBIDEXTERIDADE ORGANIZACIONAL NO SETOR BANCÁRIO

RESUMO

Objetivo: A pesquisa visa identificar o papel das culturas organizacionais mediadoras da capacidade tecnológica na relação com a ambidestria organizacional.

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Referencial teórico: O efeito da capacidade tecnológica na ambidestria organizacional ainda é relativamente baixo. No entanto, quando a capacidade tecnológica é mediada ou apoiada pela cultura organizacional, o efeito da capacidade tecnológica sobre a ambidestria organizacional torna-se maior quando comparado ao seu efeito direto.

Desenho/metodologia/abordagem: Uma enquete online foi utilizada para coletar dados dos mais altos níveis de gerenciamento no setor bancário da Indonésia. Após nove meses, 75 respondentes completaram as pesquisas. Empregamos o software Smart PLS para análise estatística e teste de hipóteses.

Resultados: Os resultados revelaram que a capacidade tecnológica e as culturas organizacionais têm um efeito benéfico na ambidestria organizacional. As culturas organizacionais mediam o impacto da capacidade tecnológica e da ambidestria organizacional.

Pesquisa, implicações práticas e sociais: O estudo mostra que o papel da capacidade tecnológica com uma cultura organizacional estabelecida apoiará a aceleração na obtenção da ambidestria organizacional. Esta pesquisa contribui para a literatura existente ao examinar empiricamente a relação entre capacidade tecnológica, culturas organizacionais e ambidestria organizacional.

Originalidade/valor: Vários modelos de pesquisa e investigações empíricas investigaram a relação entre cultura organizacional, capacidade tecnológica e ambidestria. Tem havido uma escassez de pesquisas sobre a "capacidade tecnológica" do setor bancário, particularmente nos países em desenvolvimento.

Palavras-chave: Ambidestria Organizacional, Cultura Organizacional, Capacidade Tecnológica, Setor Bancário.

CAPACIDAD TECNOLÓGICA Y CULTURA ORGANIZACIONAL: LA IMPORTANCIA DE LA AMBIDESTREZA ORGANIZACIONAL EN EL SECTOR BANCARIO

RESUMEN

Propósito: La investigación tiene como objetivo identificar el papel de las culturas organizacionales que median la capacidad tecnológica en la relación con la ambidestreza organizacional.

Marco teórico: El efecto de la capacidad tecnológica sobre la ambidestreza organizacional es aún relativamente bajo. Sin embargo, cuando la capacidad tecnológica está mediada o respaldada por la cultura organizacional, el efecto de la capacidad tecnológica sobre la ambidestreza organizacional se vuelve mayor en comparación con su efecto directo.

Diseño/metodología/enfoque: Se utilizó una encuesta en línea para recopilar datos de los niveles más altos de gestión en la industria bancaria de Indonesia. Después de nueve meses, 75 encuestados completaron las encuestas. Empleamos el software Smart PLS para el análisis estadístico y la prueba de hipótesis.

Hallazgos: Los hallazgos revelaron que la capacidad tecnológica y las culturas organizacionales tienen un efecto beneficioso sobre la ambidestreza organizacional. Las culturas organizacionales median el impacto de la capacidad tecnológica y la ambidestreza organizacional.

Implicaciones de investigación, prácticas y sociales: el estudio muestra que el papel de la capacidad tecnológica con una cultura organizacional establecida apoyará la aceleración en el logro de la ambidestreza organizacional. Esta investigación contribuye a la literatura existente al examinar empíricamente la relación entre la capacidad tecnológica, las culturas organizacionales y la ambidestreza organizacional.

Originalidad/valor: Varios modelos de investigación e investigaciones empíricas han investigado la relación entre la cultura organizacional, la capacidad tecnológica y la ambidestreza. Ha habido una escasez de investigación sobre la "capacidad tecnológica" del sector bancario, particularmente en los países en desarrollo.

Palabras clave: Ambidestreza Organizacional, Cultura Organizacional, Capacidad Tecnológica, Sector Bancario.

INTRODUCTION

Companies compete in an environment of volatility and unpredictability (Aslam et al., 2018). Organizations must continuously seek new revenue streams to preserve a competitive advantage and enhance their current operational procedures (Aslam et al., 2018; March, 1991). An organization achieves success if the company is ambidextrous or, in other words, can pursue exploration and exploitation simultaneously through separate and differentiated sub-units or

individuals, each of which has a specialization in exploration or exploitation (Gibson & Birkinshaw, 2004; Gupta et al., 2006; Luger et al., 2018; Mazzelli et al., 2020; O'Reilly & Tushman, 2013; Raisch et al., 2009; Raisch & Birkinshaw, 2008; Zimmermann et al., 2015). Exploration is being open to and actively seeking new experiences, ideas, and opportunities (March, 1991). Exploitation refers to selecting, perfecting, and implementing standard procedures to achieve efficiency in the company's operations (March, 1991). The original meaning was defined as an individual's capacity to do two different things equally well. The more recent meaning refers to an organization's capacity to do two different things equally well, from exploitation and exploration, integration and responsiveness, adaptability and alignment, and efficiency and flexibility (Birkinshaw & Gupta, 2013; Wu et al., 2020). Thus, underpinning the phenomenon requires banks to have ambidextrous capabilities, using exploitation and exploration approaches to maintain their business sustainability.

Research related to organizational ambidexterity in the banking sector is essential because banking products meet a broad market that people in their daily lives widely use. The national banking sector is a driving sector for other industries and a catalyst for all aspects that affect many people's lives. The financial services sector is strategic, considering the many public funds managed. There has been a shift toward digital financial transactions requiring additional care and attention. However, very little research has been conducted on technology preparedness and implementation in the banking sector (Brock & von Wangenheim, 2019). Globalization and technological changes have created a competitive business environment encouraging companies to frequently develop and introduce new products or services (Ardito et al., 2018). Previous research has highlighted corporate competence's importance in generating innovations that exploit existing products, skills, and resources while exploring new opportunities (Farzaneh et al., 2022).

The digital strategy will continue to be the Bank's principal focus across all segments, and improving information technology is essential for company expansion. It motivates banks to invest in reliable technological capacity. Compared to firms with a lower technological capacity, those with a more significant technological capacity are more likely to be innovative and competitive in developing their products, systems, and processes (Andrade et al., 2020). Although technological capacity acts as a determinant of company performance (Plummer et al., 2016), entrepreneurial capacity (Dai et al., 2014), industrial capacity (W. Wang & Zhang, 2018), innovation capacity (Figueiredo & Piana, 2018) and capacity learning, increase the

technological level of the company (Mathews et al., 2019). There has been a dearth of research regarding the technological capacity of the banking industry, especially in emerging countries.

Employee participation in the organization, proper management, values, and norms reflected in the ambidextrous organizational culture support employees' efforts toward exploration and exploitation (Úbeda-García et al., 2018). Organizational culture is a system of perceptions, symbolism, and meanings shared by organization members and directs the use of technology, beliefs, methods of assumptions, and systems together (Lee et al., 2019). Following the subprime financial crisis, the Dutch reform program centered on banking recommendations to change banking culture from the ground up by developing a code of ethics and a banker's oath (Ganderson, 2020). Internal marketing is developing a culture of customer service, employee empowerment, and service excellence; nevertheless, adopting internal marketing is challenging and can lead to division, conflict, and uncertainty in the new business culture (Kelemen & Pappasolomou, 2007). Therefore, it is important to understand employee beliefs and attitudes as part of organizational change (Alavi & Gill, 2017). However, few studies have explicitly investigated the potential impact of IT on culture (Leidner & Kayworth, 2006). Likewise, technology mechanisms and organizational culture have not been emphasized (Uzkurt et al., 2013). At the same time, absorbing technology is an essential organizational capability to welcome the fourth industrial revolution and is related to organizational ambidexterity (Mahmood & Mubarik, 2020). The banks must be more technologically innovative, creative, and competitive than before (Imran et al., 2021).

The above argument suggests that this study can fill the existing theoretical and empirical literature gap. This study examines the role of technological capacity in driving ambidexterity. In addition, this study aims to analyze the mediating effect of organizational culture in the relationship between technological capacity and ambidexterity, specifically in commercial banks. There are two reasons why this study is so fascinating. Firstly, research on technological capacity was carried out in the banking sector. Advances in information technology and fintech competition require banks to assess their competitive advantage (Jakšič & Marinč, 2019). Indonesian banking shows a lower efficiency than other ASEAN countries (Effendi et al., 2018) and even The Asia Pacific region (Yang et al., 2019). Second, this study examined the relationship between cultures, technological capacity, and ambidexterity. This research's findings have the potential to serve as a significant and beneficial resource for academic theory development and banking sector practitioners' strategic decision-making. This

study's conclusion can be utilized as a reference for future research and requires immediate examination to meet the degree of exploration and exploitation in the banking sector.

The following section reviews the pertinent literature and discusses the methods used to derive the results, following the presentation of the findings in the discussion. Finally, the study concludes and offers directions for future research while acknowledging the study's limitations.

LITERATURE REVIEW

Banking Ambidexterity

Learning, analysis, imitation, regeneration, and technological change are the main components in improving organizational performance and strengthening competitive advantage in adaptation, exploration, and exploitation activities (March, 1991). Exploration implies corporate behavior characterized by search, discovery, experimentation, risk-taking, and innovation, while exploitation implies corporate behavior characterized by refinement, implementation, efficiency, production, and selection (He & Wong, 2004). The simultaneous pursuit of both activities is called ambidexterity (He & Wong, 2004; Tushman & O'Reilly III, 1996). According to Tushman and O'Reilly III (1996), managers and organizations must be ambidextrous and capable of implementing gradual and revolutionary change for long-term success.

Research on the banking industry in Italy indicates the ambidexterity model in 3 (three) models: 1). exploitation, 2). exploration, 3). ambidextrous (Marabelli et al., 2012). Studies at European banks show that organizational units use formal and informal coordination mechanisms to encourage exploratory and exploitative innovation (Jansen et al., 2006). In a case study conducted on Babel Bank in Iraq, it was observed that the banking industry had embraced electronic management to a significant degree (Ali, 2023). Technological elements influence Vietnam's commercial banks' service quality, and several modifications are discussed in light of recent technological advances (Tam & Thuy, 2023).

Technological Capacity

Technological capacity is a company's ability to perform a technical function by creating new processes and products using the techniques, knowledge, and tools the company already has (Andrade et al., 2020). Technological advances threaten organizational sustainability, and organizations face many challenges regarding their performance (Imran et al., 2021). Organizations are under intense external pressure and must review their processes to innovate.

As a result, innovation has become critical to organizations' long-term survival and growth and is now increasingly important (Imran et al., 2021). Therefore, it is necessary to develop a better understanding of why and how companies adopt digital technologies and how they exploit them. In addition, organizations adopting technology to improve results is critical (Welch & Feeney, 2014).

Many investments establish a culture within an organization that supports learning (Al Dari et al., 2021). Learning has been a crucial organizational success component for decades now, mainly due to the influence that learning has on the progression of technology and industry (Villena-Manzanares et al., 2021). The ability to absorb new technologies requires obtaining, internalizing, and modifying them (García-Morales et al., 2007). The orientation toward technology necessitates the resolution of novel concepts, innovative techniques, and proactive actions highly influenced by organizational culture (Borodako et al., 2022). Hence, the following statement is reached:

H1: Technological capacity positively affects organizational culture

According to Tsai & Hsieh (2009), an increase in a firm's technological capacity enables it to combine and integrate exploration (external technological knowledge) with exploitation (current expertise) to increase sales of new goods. Both exploitation and exploration are forms of learning that can help develop ambidexterity, although they are very distinct from one another (March, 1991). A great aptitude for absorbing new technologies facilitates organizational agility, whereas lacking this competence hinders the development of cutting-edge expertise (Mahmood & Mubarik, 2020). In short, technological capacity can be an instrument in achieving organizational ambidexterity. From the above references, the hypothesis can be formulated as follows:

H2: Technological capacity has a direct impact on organizational ambidexterity

Organizational Culture

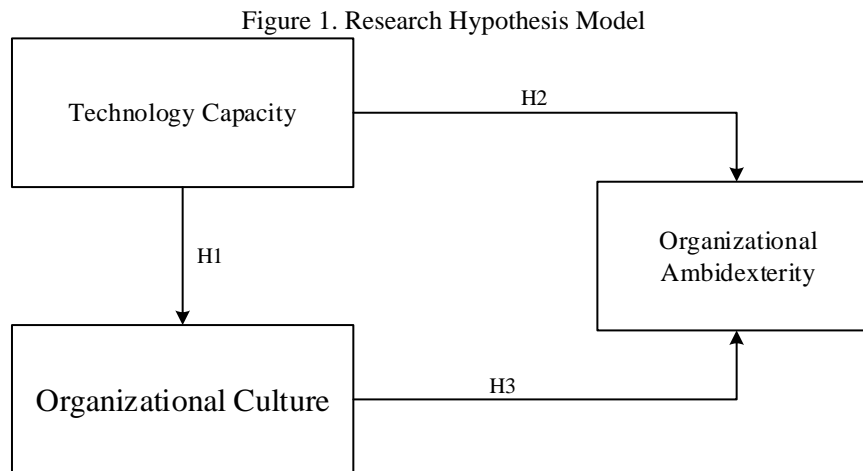
Organizational culture is the comprehension of organizational members' interactions inside a group, which influences their behavior and produces a shared value (Weber & Pliskin, 1996). The organization's culture influences how firms respond and make strategic decisions in response to external events (Liu et al., 2010). Increasing the number of new products a company brings to market depends on fostering an innovation culture that encourages the growth of knowledge through contextual ambidexterity (Ramdan et al., 2022).

Based on the previous study, ambidextrous organizational culture (AOC) should be built on two set organizational ideals: organizational diversity and shared vision (Rink & Ellemers, 2007; Úbeda-García et al., 2018; C. L. Wang & Rafiq, 2014). AOC indicates organizational diversity is a set of practices that value and reward employees' diverse ideas, skills, and experiences (C. L. Wang & Rafiq, 2014). While shared vision is a set of organizational values and customs that encourages all members to work collaboratively to set, share, and achieve the organization's goals (C. L. Wang & Rafiq, 2014). Thus, we can formulate the following hypothesis.:

H3: Organizational culture has a significant effect on organizational ambidexterity

Absorptive capacity is a company's ability to identify, assimilate, and exploit knowledge from the environment (Vinding, 2006). Organizational culture is essential to technology adoption and adaptation for better results. Some institutions may adopt technology because of government mandates, others may adopt it in response to market demand, and others may adopt it because of managerial preference. While numerous criteria can predict adoption, we believe organizational culture will also influence the success of technology adoption and how much it fosters a positive view of technology among managers. It is not just the organization's mission and its members that will determine its culture, but also the external elements, such as technology, that put pressure on the organization to attain ambidexterity (Welch & Feeney, 2014). When a culture of innovation is fostered within a company, organizations are compelled to continuously generate more creative and inventive products, encouraging businesses to continuously learn new information through exploration and exploitation (Ramdan et al., 2022). Research shows that all ownership of high-level digital combined with service and organizational culture capabilities can build company performance antecedents (Lember et al., 2018). From the sources given above, the following conclusion may be drawn:

H4: Organizational culture mediates the relationship between technological capacity and organizational ambidexterity



Source: Prepared by the authors (2023)

We can build a research hypothesis model from the hypotheses above, as shown in Figure 1. Technological capacity and organizational culture directly affect organizational ambidexterity. Simultaneously, organizational culture has a mediating effect on the relationship between technological capacity and ambidexterity.

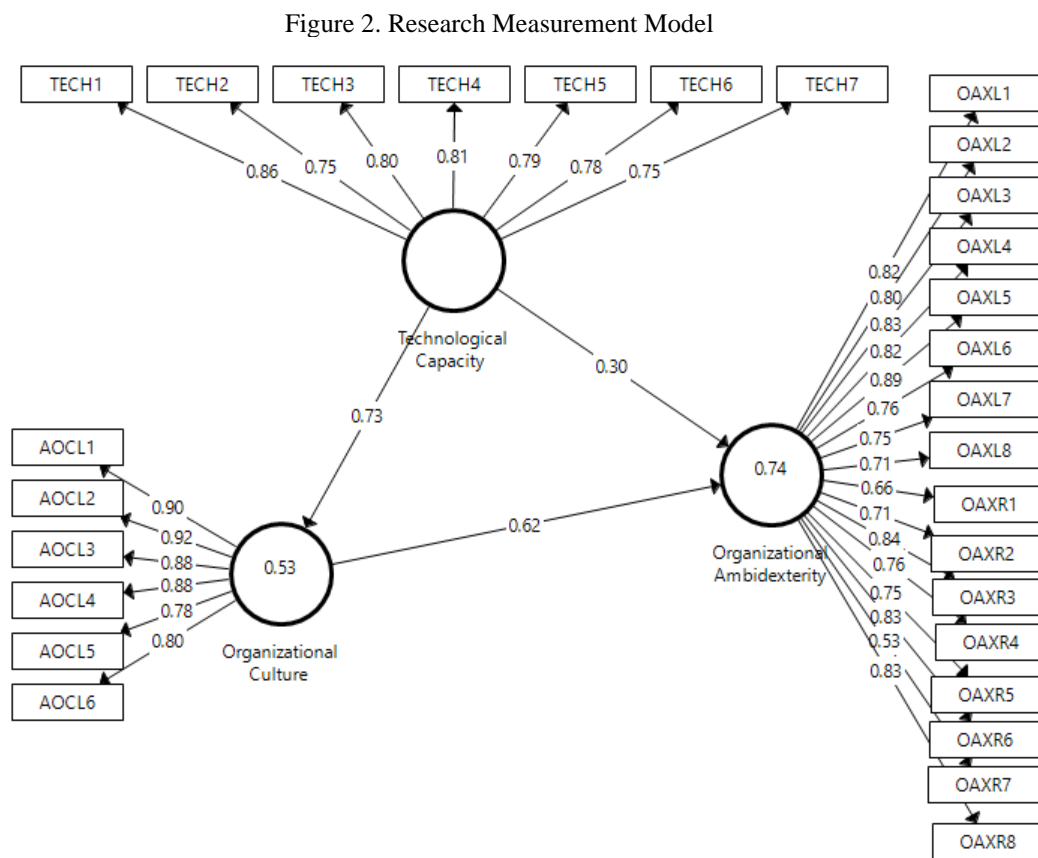
DATA AND METHODOLOGY

This study tests hypotheses by analyzing and validating the impact of technological capacity on organizational culture and ambidexterity. At the same time, this study aims to investigate the role of organizational cultures in mediating the relationship between technological capacity on organizational ambidexterity. This study has applied a quantitative approach to collecting data through questionnaire-based surveys in the banking sector. Referring to Financial Services Authority data, the number of commercial banks in Indonesia is 107. This study follows the direction of Hair (2017) and Cohen (1992), using *G*Power* as a reference for determining the sample. This study's maximum number of independent variables is two, so the minimum sample required is 33 (Hair Jr et al., 2017). The study applied a convenient approach via WhatsApp and email to top management banks in Indonesia. Data were acquired utilizing the survey approach by distributing online surveys via the Microsoft Form link enabled by Perbanas. After nine months, 75 respondents filled in the questionnaires. Validity and reliability tests were conducted to ensure the validity of the questionnaire, we use the Smart PLS program to analyze data and test hypotheses.

Measurement of organizational ambidexterity used 16 statement items adapted from (Jansen et al., 2006; Li, 2016; Soto-Acosta et al., 2018; Úbeda-García et al., 2018), To assess technological capacity utilizing seven items adapted from (Andrade et al., 2020). Six statement

items were devised to assess organizational culture by (Muhammad et al., 2021; Úbeda-García et al., 2018; C. L. Wang & Rafiq, 2014). All the items were measured using seven scales from the range; of strongly disagree to agree strongly.

Figure 2 shows that all loading factors on each variable are more significant than 0.5. Where (Hair, Jr. et al., 2017) still allow the loading factor to be greater than 0.4 if the loading factor's elimination does not significantly affect convergent validity. The loading factor of organizational ambidexterity ranges from 0.534 to 0.891, technological capacity ranges from 0.746 to 0.858, and organizational culture ranges from 0.777 to 0.925.



Source: Prepared by the authors (2023)

Table 1 shows that all indicators are valid, indicated by the AVE value greater than 0.5, and the indicators also show reliability because Cronbach's alpha and CR are greater than 0.7. OA (Alpha = 0.954, CR = 0.959), TECH (Alpha = 0.902, CR = 0.922), and AOCL (Alpha = 0.931, CR = 0.946) have the internal consistency reliability (> 0.7). At the same time, the AVE value for the three constructs is more than 0.5 (OA = 0.597, TECH = 0.629, and AOCL = 0.744), which means that all constructs are valid.

Table 1. Convergent Validity

	Loadings	Alpha	CR	AVE
Organizational Ambidexterity (OA)		0.954	0.959	0.597
OAXL1	0.822			
OAXL2	0.804			
OAXL3	0.827			
OAXL4	0.820			
OAXL5	0.891			
OAXL6	0.758			
OAXL7	0.750			
OAXL8	0.705			
OAXR1	0.656			
OAXR2	0.715			
OAXR3	0.839			
OAXR4	0.759			
OAXR5	0.750			
OAXR6	0.833			
OAXR7	0.534			
OAXR8	0.825			
Technological Capacity (TECH)		0.902	0.922	0.629
TECH1	0.858			
TECH2	0.746			
TECH3	0.801			
TECH4	0.814			
TECH5	0.793			
TECH6	0.782			
TECH7	0.753			
Organizational Culture (AOCL)		0.931	0.946	0.744
AOCL1	0.904			
AOCL2	0.925			
AOCL3	0.876			
AOCL4	0.881			
AOCL5	0.777			
AOCL6	0.803			

Source: Prepared by the authors (2023)

In addition, discriminant validity can also be seen from the HTMT ratio, which shows values below 0.90, which means that the items and variables are valid and reliable.

Table 2. Discriminant Validity (HTMT)

	1	2	3
1. Organizational Ambidexterity			
2. Organizational Culture	0.870		
3. Technological Capacity	0.785	0.786	

Source: Prepared by the authors (2023)

Table 3 shows the results of the hypothesis of this study, where the direct relationship between technology capacity and organizational culture variables on organizational ambidexterity is accepted. The mediating effect of the organizational culture in the relationship between technological capacity to organizational ambidexterity is accepted, with a coefficient of influence of 45.1%. All hypotheses are accepted at a significant level of 95% on two tails.

The most extensive direct relationship is the technology capacity variable to organization culture, 72.7%. In comparison, the most significant relationship to the dependent variable is the organizational culture variable to organizational ambidexterity, which is 62%.

Table 3. Hypothesis Results

	Betas	T-Statistics	P-Values	Results
H1: TECH → AOCL	0.727	6,070	0.000	Supported
H2: TECH → OA	0.299	3,160	0.002	Supported
H3: AOCL → OA	0.620	6,978	0.000	Supported
H 4: TECH → AOCL → OA	0.451	4.157	0.000	Supported

Source: Prepared by the authors (2023)

RESULTS AND DISCUSSION

H1 has 0.727 on path coefficients (t-Statistics = 3,223 and p-Value = 0.001), indicating that technological capacity significantly impacts organizational cultures. Investment in R&D as a form of technological capacity indicates a quality of life that leads to a happier digital citizen (Nevado-Peña et al., 2019). This study is in line with (Schulz, 2022), who has examined the connections between technology and Cultural learning. Reengineering an organization's culture may benefit from using IT (Leidner & Kayworth, 2006). At the same time, the other study reveals that 3D technologies are used in analyzing intangible and cultural heritage (Skublewska-Paszowska et al., 2022).

Based on the results of statistical testing (path coefficients of 0.727, t-Statistics = 6,066, and p-Value= 0,000). Technological capacity positively and significantly affects organizational ambidexterity, which means H2 is supported. The higher the technological capacity, the higher the organizational ambidexterity. Retail banking networks are dealing with the presence of fintech, which is slowly eroding the portion of the banking business, especially established banks with solid experience and networks (Brand Finance, 2020). Advances in information technology and fintech competition require banks to assess their competitive advantage (Jakšič & Marinč, 2019). Technology has increased a company's resilience to shocks by facilitating online sales and services (Doerr et al., 2021). These findings support the study's results by Mahmood & Mubarik (2020), which have proven that technology-absorptive capacity impacts organizational ambidexterity.

H3 (t-Statistics = 3,223, and p-Value = 0.001) has 0.299 in path coefficient, which is supported. Organizational cultures have a positive and significant effect on organizational ambidexterity. Organizational culture related to discipline, stretching, support, and trust is needed in contextual organization ambidexterity (Gibson & Birkinshaw, 2004). It is in line with

the results of our study, which are stated in H3; namely, organizational culture in commercial banks significantly affects organizational ambidexterity. It is also in line with research results (Muhammad et al., 2021; Úbeda-García et al., 2018) that organizational culture is related to corporate diversity, and shared vision has a link to organizational ambidexterity. Other studies show that organizational culture mediates the relationship between technology-organizational capacity and e-gov outcomes (Welch & Feeney, 2014).

Finally, hypothesis 4, the role of organizational cultures mediating the relationship between technological capacity and organizational ambidexterity, is accepted (t-Statistics = 4.168, and p-Value = 0.000). Culture plays a vital role in the dissemination of information to be able to benefit from IT, where information is the authority at the top management level in the organization (Zhang & Tansuhaj, 2007)

The effect of technological capacity on organizational ambidexterity is still relatively low. However, when this technological capacity is mediated or supported by organizational culture, the effect of technological capacity on organizational ambidexterity becomes greater when compared to its direct effect. It shows that the role of technological capacity with an established organizational culture will support acceleration in achieving organizational ambidexterity. It means that the role of technological capacity supported by an adequate organizational culture will better contribute to organizational ambidexterity, particularly in the banking sector. The organizational culture in the banking sector is a benchmark for the governance of the banking system.

CONCLUSION

This study examines the relationship between the independent variable technological capacity and organizational culture on organizational ambidexterity. This study also examines the mediating role of organizational culture on the relationship between technological capacity and organizational ambidexterity. The results of this study are as follows: First, the direct relationship between the variable technological capacity and organizational culture is accepted. The direct relationship between variable technological capacity and organizational ambidexterity in Indonesian commercial banks is also accepted. Third, the direct relationship between organizational culture and organizational ambidexterity in commercial banks in Indonesia is accepted. Forth, the mediating influence of the organizational culture variable on the relationship between technological capacity and organizational ambidexterity in commercial banks in Indonesia is also accepted. Technological capacity is necessary for

organizations to accelerate the process of achieving company ambidexterity. Supported by an adequate organizational culture, organizations will adopt technology more quickly and use it to achieve good performance.

Suggestions for further research are to deepen research using the mix-method, hoping the results will be more refined and confirmed.

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