

THE DYNAMICS OF INDONESIA'S DIGITAL BANKING BUSINESS ENVIRONMENT: A CONCEPTUAL PESTEL ANALYSIS INTEGRATED WITH DYNAMIC CAPABILITIES AND INSTITUTIONAL THEORY

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Received: 25/08/2026 | Revised: 03/09/2026 | Accepted: 19/09/2026 | Published: 10/10/2026

Abstract

The Indonesian banking industry is undergoing a structural transformation driven by the acceleration of financial services digitalization, changes in customer behavior, competitive pressure from financial technology (fintech) players, and the strengthening of the regulatory framework by the Financial Services Authority (OJK) and Bank Indonesia (BI). This conceptual article aims to develop a theoretical analysis framework that integrates PESTEL Analysis with Dynamic Capabilities as a grand theory and Institutional Theory as a supporting theory, in order to understand the dynamics of the digital banking business environment in Indonesia in a more comprehensive and multi-layered manner. This study uses a narrative-systematic literature review approach that refers to the Tranfield, Denyer, and Smart (2003) protocol and the PRISMA transparency principle (Page et al., 2021), by examining and synthesizing indexed academic literature, official regulatory documents, and statistical data from Indonesian financial authorities for the period 1967 to 2026. The results of the study show that the six PESTEL dimensions, namely political, economic, social, technological, environmental, and legal, are intertwined to form institutional pressures that are coercive, mimetic, and normative (DiMaggio & Powell, 1983), which in turn encourages banking organizations to build dynamic capabilities through the processes of sensing, seizing, and transforming (Teece, 2007). This article produces an integrated conceptual model of PESTEL-Dynamic Capabilities-Institutional Theory that can be used as an analytical roadmap for further doctoral research on banking digitalization in Indonesia, while providing managerial implications for bank management and policy makers in designing legitimate, resilient, and sustainable adaptive strategies amidst the ever-changing business environment.

Keywords: business environment dynamics; PESTEL analysis; dynamic capabilities; institutional theory; banking digitalization; Indonesia

1. INTRODUCTION

1.1 Background

The Indonesian banking industry is undergoing a structural transformation driven by the accelerated digitalization of financial services, changes in customer behavior, competitive pressure from financial technology (fintech) players, and the strengthening of the regulatory framework by the Financial Services Authority (OJK) and Bank Indonesia (BI). This phenomenon is a concrete manifestation of the dynamic business environment that demands banking organizations to continuously adapt their strategies, structures, processes, and business models (Teece, Pisano, & Shuen, 1997). Recent data empirically demonstrates the scale and speed of these changes. Bank Indonesia recorded a national digital payment transaction volume of 12.99 billion transactions in the third quarter of 2025, a 38.08 percent annual growth, with Quick Response Code Indonesian Standard (QRIS) transactions growing by 147.65 percent (Bank Indonesia, 2025a). By the first semester of 2025, QRIS had reached 57 million users and 39.3 million merchants, 93.16 percent of which were Micro, Small, and Medium Enterprises (MSMEs), with a transaction value reaching IDR 579 trillion (Bank Indonesia, 2025b). This digitalization acceleration does not occur in a vacuum, but rather takes place amidst the complex interaction of various macro-environmental factors. From a socio-demographic perspective, Indonesia's internet penetration in 2025 will exceed 220 million people, or more than 78 percent of the population (Association of Indonesian Internet Service Providers [APJII], 2025), while the 2024

National Survey of Financial Literacy and Inclusion (SNLIK) recorded a financial literacy index of 65.43 percent for the Indonesian population and a financial inclusion index of 75.02 percent (Financial Services Authority & Central Statistics Agency, 2024). From a macroeconomic perspective, the Indonesian economy is projected to grow in the range of 4.7 to 5.45 percent in the 2025-2026 period, with inflation maintained at the target of 2.5 ± 1 percent and the benchmark interest rate (BI-Rate) moving dynamically in line with rupiah exchange rate pressures and global conditions (Bank Indonesia, 2026). From a legal and regulatory perspective, the issuance of OJK Regulation Number 12/POJK.03/2021 concerning Commercial Banks, OJK Regulation Number 11/POJK.03/2022 concerning the Implementation of Information Technology by Commercial Banks, Law Number 27 of 2022 concerning Personal Data Protection, and Bank Indonesia Regulation Number 2 of 2024 concerning Information System Security and Cyber Resilience demonstrate that the government is actively shaping the direction and pace of digital banking transformation (Financial Services Authority, 2021, 2022; Bank Indonesia, 2024). At the same time, demands for sustainability have also strengthened through the issuance of the Taxonomy for Indonesian Sustainable Finance (TKBI) version 2 by the OJK in early 2025 as a classification framework for green economic activities towards the net-zero emission target by 2060 (Financial Services Authority, 2025).

The complexity and multidimensionality of these factors emphasize that the dynamics of the digital banking business environment in Indonesia cannot be adequately understood through a single theoretical lens. A systematic macroenvironmental analysis framework is needed to map the six key external dimensions—political, economic, social, technological, environmental, and legal—collectively known as the PESTEL framework (Aguilar, 1967; Johnson, Whittington, Scholes, Angwin, & Regnér, 2020). However, the PESTEL framework is inherently descriptive and static: it excels at mapping “what” changes in the external environment, but is less effective at explaining “why” these changes impact organizations differently and “how” organizations respond strategically (Grant, 2019). These limitations are the background to the need to integrate PESTEL with more explanatory strategic management theories, namely Dynamic Capabilities Theory (Teece, 2007) which explains the internal mechanisms of organizations in responding to environmental changes, and Institutional Theory (DiMaggio & Powell, 1983; Scott, 2001) which explains why and through what pressures organizations in a field tend to converge their responses.

As the initial stage of a series of doctoral research on the digitalization of the banking industry in Indonesia, this article is prepared to synthesize and deepen the theoretical analysis framework that has been pioneered in the previous literature review (Sub-CPMK-2), by adding an in-depth PESTEL analysis as an instrument for mapping the macro environment, while strengthening the methodological basis of the study so that it is worthy of being presented as a scientific journal article that meets Sinta 4 standards or equivalent. This approach is important because, as emphasized by Teece (2007), the competitive advantage of an organization in a volatile environment is not solely determined by the ownership of resources, but by the organization's capacity to scan, interpret, and respond adaptively to signals of change from its external environment.

1.2 Problem Formulation

- How does the configuration of the six PESTEL dimensions (political, economic, social, technological, environmental, and legal) shape the dynamics of the digital banking industry business environment in Indonesia in the contemporary period?
- How can institutional pressures originating from the PESTEL dimensions be explained through the mechanisms of coercive, mimetic, and normative isomorphism from an Institutional Theory perspective?
- How do banking organizations build and reconfigure their dynamic capabilities (sensing, seizing, transforming) as a strategic response to environmental pressures identified through PESTEL analysis?
- What is the form of an integrated conceptual model that connects PESTEL analysis, Dynamic Capabilities, and Institutional Theory as a multi-level analytical framework for banking digitalization research in Indonesia?

1.3 Research Objectives

Based on the problem formulation above, this article aims to: (1) map and analyze in depth the six PESTEL dimensions that shape the digital banking business environment in Indonesia based on the latest data and regulations; (2) explain the relationship between the findings of the PESTEL analysis and the institutional pressure mechanism from an Institutional Theory perspective; (3) analyze how the dynamic capabilities of banking organizations are built in response to the identified dynamics of the business environment; and (4) develop an integrated conceptual model of PESTEL-Dynamic Capabilities-Institutional Theory that can serve as an analytical basis for the next stage of doctoral research.

1.4 Contribution and Originality

This article's theoretical contribution lies in its integration of three analytical frameworks conventionally used separately in strategic management studies: PESTEL as a tool for mapping the macroenvironment, Dynamic Capabilities as an explanation of an organization's internal capabilities, and Institutional Theory as an explanation of external legitimacy pressures. Most PESTEL studies in the literature tend to stop at the descriptive-categorical stage without explaining the causal mechanisms between environmental factors and an organization's strategic response (Nandonde, 2019, in a critical review of the PESTEL framework). This article attempts to fill this gap by positioning PESTEL not merely as a checklist, but as an instrument for identifying sources of institutional pressures that are then translated into specific dynamic capability needs. The practical contribution of this article is to provide an analytical map that can be used by bank management and regulators to understand the interrelationships across business environment dimensions more holistically, rather than analyzing each PESTEL dimension in isolation.

1.5 Writing Systematics

This article is structured into six main sections. The first section describes the background, problem formulation, objectives, and contributions of the study. The second section presents a literature review and theoretical foundation, encompassing environmental scanning and PESTEL theories, Dynamic Capabilities, and Institutional Theory, as well as an integrative framework for all three. The third section explains the research methods used. The fourth section presents an in-depth PESTEL analysis along with an integrative discussion with Dynamic Capabilities and Institutional Theory. The fifth section outlines theoretical and managerial implications. The sixth section contains the study's limitations, future research agenda, and conclusions.

2. LITERATURE REVIEW AND THEORETICAL BASIS

2.1 Environmental Scanning and the PESTEL Framework as a Basis for Business Environmental Analysis

The concept of environmental scanning was first systematically formulated by Aguilar (1967) in his work, *Scanning the Business Environment*, which defined it as a way for management to gather relevant information about events outside the company to guide the company's future actions. Aguilar (1967) introduced the ETPS (Economic, Technical, Political, Social) framework as an initial instrument for mapping the macro environment, which was later developed into the PEST framework and further expanded into PESTEL with the addition of Legal and Environmental dimensions as regulatory complexity and the urgency of sustainability issues in strategic planning increased (Johnson et al., 2020). The theoretical foundation of PESTEL is rooted in the perspective of organizations as open systems that constantly interact with their environments and depend on them for resources and legitimacy (Scott, 2001). The implication is that organizations cannot be understood separately from their external context, and an organization's capacity to survive and excel competitively depends heavily on the accuracy of its interpretation of signals of environmental change.

Conceptually, PESTEL groups macro-environmental factors into six dimensions: (1) Political, encompassing government stability, public policy, and the direction of economic policy; (2) Economic, encompassing growth, inflation, interest rates, and exchange rates; (3) Social, encompassing demographics, cultural values, lifestyles, and public literacy levels; (4) Technological, encompassing the rate of innovation, technology diffusion, and digital infrastructure; (5) Environmental (ecological), encompassing environmental regulations, climate change, and sustainability demands; and (6) Legal, encompassing the legislative framework, sectoral regulations, and compliance (Johnson et al., 2020; Yuksel, 2012). Although widely criticized for its descriptive, static nature and potential for becoming a mechanistic checklist without analytical prioritization (Grant, 2019), PESTEL remains relevant as an entry point for business environmental analysis, especially when combined with a more explanatory strategic theoretical framework to explain organizational response mechanisms (Global Advisors, 2026). In other words, PESTEL functions optimally not as a stand-alone theory, but as an instrument for mapping environmental data that becomes input for further theoretical analysis, as approached in this article through its integration with Dynamic Capabilities and Institutional Theory.

The relevance of PESTEL for the banking industry is unique given that this sector is one of the most heavily regulated and most sensitive to macroeconomic fluctuations and technological changes (Grant, 2019). The Basel Committee on Banking Supervision and national authorities such as the Financial Services Authority (OJK) and Bank Indonesia (BI) regularly issue policies that directly affect the cost structure, business model, and competitive landscape of banks, making the political and legal dimensions of PESTEL more influential than in less regulated industries. This characteristic is one of the main justifications why a PESTEL analysis of the Indonesian digital banking industry requires in-depth conduct and cannot be generalized from PESTEL studies of other industries.

2.2 Dynamic Capabilities as Grand Theory

The theoretical roots of Dynamic Capabilities Theory can be traced from the Resource-Based View (RBV) perspective, which states that an organization's competitive advantage stems from the possession of valuable, rare, inimitable, and non-substitutable (VRIN) resources (Barney, 1991; Wernerfelt, 1984). However, the RBV has been criticized for being static and unable to explain how organizations maintain their competitive advantage in a high-velocity environment. Responding to these limitations, Teece, Pisano, and Shuen (1997) introduced the concept of dynamic capabilities as an extension of the RBV, emphasizing that an organization's competitive advantage in a rapidly changing environment is not solely determined by the possession of strategic resources, but rather by the organization's ability to integrate, build, and reconfigure internal and external competencies on an ongoing basis.

Teece (2007) further details dynamic capabilities into three sequential yet cyclical groups of microconditions: sensing, which is the capacity to identify and assess opportunities and threats from environmental changes through research activities, market scanning, and regulatory monitoring; seizing, which is the capacity to formulate strategic responses and mobilize resources to capture identified opportunities, for example through technology investments, strategic partnerships, or business model redesign; and transforming, which is the capacity to continuously update organizational assets, structures, and routines to stay aligned with changing environmental demands. These three microconditions do not stand alone, but rather form a continuous cycle of organizational learning, where the results of the transforming process will influence sensing capacity in the following period.

In the Indonesian banking context, the sensing-seizing-transforming framework has been empirically proven relevant. Abdurrahman, Gustomo, and Prasetyo (2024a) found that sensing, seizing, and transforming activities significantly drive digital transformation, which subsequently acts as a mediator for improving bank performance, with governance, risk management, and compliance (GRC) factors strengthening this influence. A follow-up study by the same researchers (Abdurrahman, Gustomo, & Prasetyo, 2024b) confirmed that digital transformation capabilities contribute to improved banking performance through strengthening GRC practices in the Indonesian context. A third qualitative study (Abdurrahman, Gustomo, & Prasetyo, 2024c) identified dynamic capabilities based on the Technology-Organization-Environment (TOE) framework relevant to the Indonesian digital banking context, encompassing technology, strategy, organization, and innovation capabilities, along with the drivers and barriers to each. These three findings strengthen the argument that Dynamic Capabilities is an appropriate grand theory for analyzing how banks build adaptive internal capabilities in the face of digitalization pressures identified through PESTEL analysis.

2.3 Institutional Theory as a Supporting Theory

Institutional Theory emphasizes that organizational behavior and strategy are not solely determined by considerations of economic efficiency, but are also shaped by pressures to gain legitimacy from their institutional environment (Scott, 2001). DiMaggio and Powell (1983) proposed the concept of institutional isomorphism, which explains why organizations within an organizational field tend to become increasingly similar to one another, through three mechanisms: coercive isomorphism originating from regulations and formal authorities such as government and regulatory agencies; mimetic isomorphism arising from imitation of other organizations deemed more successful under conditions of uncertainty; and normative isomorphism originating from professional standards and practices deemed legitimate and socially binding within the professional community.

North (1990) expanded this understanding by defining institutions as the rules of the game that limit and shape economic interactions, both formal (laws, regulations, contracts) and informal (norms, conventions, codes of ethics). Scott (2001) further formulated three pillars of institutions: the regulatory pillar (formal rules and sanctions), the normative pillar (values and norms deemed appropriate), and the cognitive-cultural pillar (shared frameworks of thought deemed taken-for-granted), which collectively shape the legitimacy and sustainability of an organization in its field. These three pillars are relevant for interpreting the legal and political dimensions within the PESTEL framework, as both are essentially manifestations of regulatory institutional pressures on banking organizations.

The context of banking digitalization in Indonesia demonstrates the concrete operation of these three isomorphism mechanisms. Coercive pressure is evident in the role of the Financial Services Authority (OJK) as regulator, including through the issuance of OJK Regulation No. 12/POJK.03/2021 concerning Commercial Banks, which regulates the establishment and transformation of digital banks; a blueprint for digital banking transformation covering data governance, technology, risk management, collaboration, and institutional governance (Financial Services Authority, 2021); and Bank Indonesia Regulation No. 2 of 2024 concerning Information System Security and Cyber Resilience (Bank Indonesia, 2024). Mimetic pressure is evident in the tendency of incumbent banks to adopt digital banking business models and the QRIS Tap feature after observing the success of digital-native players and competing banks that had already transformed, as reflected in the surge in QRIS adoption across major banks in

the first half of 2025 (Kontan, 2025). Normative pressure is evident in the widespread adoption of information technology risk governance and compliance (GRC) practice standards among banking professionals as a shared reference for implementing digital innovation responsibly (Abdurrahman et al., 2024b).

2.4 Integration of PESTEL, Dynamic Capabilities, and Institutional Theory: A Multi-Level Analysis Framework

The three theoretical frameworks above operate at different yet complementary levels of analysis, thus combining them to create a more comprehensive multi-level analytical framework. PESTEL operates at the macro-environmental level, mapping the changing external factors that potentially impact the banking industry as a whole. Institutional Theory operates at the meso-organizational field level, explaining why changes in certain PESTEL dimensions, particularly the political and legal dimensions, translate into coercive, mimetic, or normative legitimacy pressures on all banking organizations. Dynamic Capabilities operate at the micro-organizational level (firm level), explaining how each individual bank responds through idiosyncratic sensing, seizing, and transforming processes based on its internal resources and competencies.

This integration logic is consistent with the view that Institutional Theory and Dynamic Capabilities are complementary in explaining the phenomenon of banking digitalization: Institutional Theory explains the sources and forms of external pressures—regulative, mimetic, and normative—that encourage and constrain banking organizations' latitude for digital transformation, while also explaining why digitalization strategies across banks tend to exhibit convergence patterns; while Dynamic Capabilities explain the internal mechanisms by which organizations translate these institutional pressures into concrete strategic responses. By inserting PESTEL as a macro-level data mapping layer, this combined framework provides a more structured empirical basis for specifically identifying which environmental factors are the sources of certain institutional pressures, and what specific dynamic capabilities banks need to respond to them. This three-layered integration model is presented in detail in section 4.6.

2.5 Position of PESTEL relative to Other Environmental Analysis Frameworks

To emphasize the specific contribution of PESTEL compared to other environmental analysis frameworks commonly used in strategic management, it is necessary to differentiate PESTEL's position in relation to Porter's Five Forces framework and the Technology-Organization-Environment (TOE) framework. The Five Forces framework focuses on the industry level of analysis, emphasizing the intensity of competition, the bargaining power of suppliers and buyers, the threat of new entrants, and the threat of substitute products (Grant, 2019). This framework is inadequate to explain the influence of political, social, and environmental factors that are macro and not specific to a single industry. The TOE framework, used by Abdurrahman, Gustomo, and Prasetyo (2024c) in the context of Indonesian digital banking, groups the drivers of technology adoption into three contexts: technological, organizational, and environmental. However, the "environment" dimension in TOE is aggregated and does not explicitly separate political, legal, social, and ecological influences. Compared to the two frameworks, PESTEL offers higher analytical resolution at the macro-environmental level, as it breaks down the external environment into six more specific dimensions that can be independently explored. Table 3 presents a brief comparison of the three frameworks to clarify the justification for selecting PESTEL as the macro-environmental mapping instrument in this article, without denying that the three frameworks are essentially complementary and can be used simultaneously at different levels of analysis within the same study.

Table 3. Comparison of the PESTEL, Five Forces, and Technology-Organization-Environment (TOE) Frameworks

Framework	Level of Analysis	Main Focus	Limitations
PESTEL (Aguilar, 1967; Johnson et al., 2020)	Macro-environment	Politics, economics, social, technology, environment, law separately and granularly	Descriptive, does not explain the organizational response mechanism without combining it with other theories.

Framework	Level of Analysis	Main Focus	Limitations
Five Forces (Porter, in Grant, 2019)	Industry	Intensity of competition, supplier/buyer power, threat of new entrants & substitutes	Lack of coverage of non-competitive macro factors such as politics and ecology
Technology-Organization-Environment (Tornatzky & Fleischer, in Abdurrahman et al., 2024c)	Organizational-technology adoption	Technological, organizational, and environmental factors as drivers of innovation adoption	The environmental dimension is aggregative, not explicitly separating politics, law, social and ecology.

2.6 Criticism and Limitations of the PESTEL Framework

As an analytical framework that has been in use for more than five decades, PESTEL is not free from methodological criticism. First, PESTEL is susceptible to being used mechanistically as a checklist without analytical prioritization, resulting in a lengthy catalog of environmental factors that are uninformative for strategic decision-making (Grant, 2019). Second, PESTEL is a snapshot at a specific point in time and is less able to capture the speed of change in the contemporary business environment, leading some strategy practitioners to recommend updating PESTEL quarterly rather than annually, particularly in industries with high rates of disruption such as digital banking (Global Advisors, 2026). Third, PESTEL does not provide an explicit mechanism for explaining how mapped environmental factors translate into strategic decisions and organizational capabilities, so its use alone risks producing descriptive analysis without sufficient explanatory power (Nandonde, 2019, as cited in a critical review of business environmental analysis frameworks). Awareness of these limitations is the main methodological justification for this article in combining PESTEL with Dynamic Capabilities and Institutional Theory, as described in section 2.4. With this integration, PESTEL's weaknesses as a static-descriptive framework can be compensated by the causal clarity offered by its two supporting theories, while PESTEL's strengths in mapping the macro environment in a granular manner are maintained as an empirical database for further theoretical analysis.

2.7 Previous Research and Research Gaps

A literature review shows that the three theoretical frameworks mentioned above have been used largely separately in banking digitalization studies. Most PESTEL-themed studies in the banking industry are descriptive-practical in nature and used as part of business feasibility studies or consultancy reports, without explicitly linking them to strategic management theory that explains organizational response mechanisms (Global Advisors, 2026). On the other hand, studies that use Dynamic Capabilities in the Indonesian digital banking context, such as the research series by Abdurrahman, Gustomo, and Prasetyo (2024a, 2024b, 2024c), focus on examining the relationship between dynamic capabilities, digital transformation, and bank performance, but have not explicitly mapped the sources of macro-environmental pressures that drive the need for these capabilities through a systematic PESTEL framework. Similarly, studies based on Institutional Theory in the banking context tend to focus on institutional isomorphism in general without explicitly linking it to specific PESTEL dimensions. The research gap identified from the review is the lack of an integrated analytical framework that explicitly links macro-environmental mapping (PESTEL) with explanations of institutional pressure mechanisms (Institutional Theory) and internal organizational capability response mechanisms (Dynamic Capabilities) simultaneously in the context of the Indonesian digital banking industry. This article is positioned to fill this gap by developing an integrated conceptual model that will be detailed in the results and discussion sections, while also serving as a basis for formulating research propositions in subsequent doctoral research stages.

3. RESEARCH METHODS

3.1 Research Design

This research uses a conceptual paper design with a qualitative approach based on a systematic-narrative literature review. This design was chosen based on the characteristics of the research objective, namely to develop a new theoretical synthesis through the integration of analytical frameworks that previously developed separately in the literature, rather than testing causal relationships between variables empirically and quantitatively. MacInnis (2011) classifies conceptual contributions into several typologies, including integrating (integrating previously separate concepts into a coherent framework) and synthesizing (synthesizing scattered findings into a more concise model). This article explicitly positions itself within the integrating and synthesizing typologies, by integrating three theoretical frameworks (PESTEL, Dynamic Capabilities, Institutional Theory) that are conventionally studied separately in the strategic management and banking literature.

Despite its conceptual nature, this study still applies systematic and transparent literature search and selection procedures as recommended by Tranfield, Denyer, and Smart (2003) for evidence-informed management research, and adopts the reporting transparency principle of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) protocol (Page et al., 2021) at the source identification and screening stage, although this study is not a systematic review in the strict sense because its purpose is conceptual synthesis, not the aggregation of quantitative empirical evidence.

3.2 Literature Search and Selection Procedures

The literature search was conducted through three categories of sources. First, indexed academic databases (Scopus, Google Scholar, and the Science and Technology Index/SINTA portal) to obtain journal articles, textbooks, and seminal works related to dynamic capabilities theory, institutional theory, and the PESTEL framework, with search keywords including combinations of the terms "dynamic capabilities," "institutional theory," "PESTEL analysis," "digital banking transformation," and "Indonesian digital banking." Second, official regulatory documents issued by Indonesian financial authorities, namely the Financial Services Authority (OJK) and Bank Indonesia, to ensure the accuracy and up-to-dateness of data on the legal and political dimensions. Third, statistical reports and official publications from state institutions and industry associations, including Bank Indonesia, the OJK, the Central Statistics Agency (BPS), and the Indonesian Internet Service Providers Association (APJII), to obtain the most up-to-date quantitative data on the economic, social, and technological dimensions.

The inclusion criteria used included: (1) publications in Indonesian or English; (2) for the foundational theory literature (grand theory), the publication timeframe was not strictly limited considering that seminal works such as Aguilar (1967), Teece, Pisano, and Shuen (1997), and DiMaggio and Powell (1983) remain relevant primary references to date; (3) for contextual and empirical data on Indonesian digital banking, priority was given to publications from 2019 to 2026 to ensure data recency; and (4) regulatory documents that were still in force at the time of writing this article. Exclusion criteria included sources whose credibility could not be verified, non-peer-reviewed articles outside of official authority documents, and statistical data that had been superseded by more recent data releases from the same source.

3.3 Data Analysis Techniques

The collected data and information were analyzed using thematic content analysis techniques with a combined deductive-inductive approach. In the deductive stage, the six PESTEL dimensions were used as an initial coding framework (a priori coding framework) to classify all obtained business environment information into political, economic, social, technological, environmental, and legal categories. In the inductive stage, each PESTEL category was then analyzed to identify patterns of institutional pressures (coercive, mimetic, normative) attached to it, as well as the need for specific dynamic capabilities (sensing, seizing, transforming) relevant to the banking organization's strategic response. This analysis process was iterative, where findings on one PESTEL dimension were examined in relation to other dimensions to identify patterns of cross-dimensional interaction, considering that in practice PESTEL factors rarely operate in isolation.

Data source triangulation was conducted by comparing findings from academic literature, official regulatory documents, and authority statistical data to ensure consistency and validity of interpretations. As an illustration, findings regarding the acceleration of QRIS adoption from official Bank Indonesia data (2025a, 2025b) were triangulated with academic findings regarding dynamic capabilities in digital banking transformation (Abdurrahman et al., 2024a, 2024c) to ensure that the theoretical interpretations constructed were consistent with empirical realities on the ground.

3.4 PESTEL Framework as a Synthesis Instrument

To maintain a systematic presentation, the PESTEL framework is used as a synthesis instrument (synthesis matrix) that organizes the findings into four analytical columns: (1) PESTEL dimensions, (2) key indicators and current data, (3) identified sources of institutional pressure, and (4) relevant dynamic capability responses of banks. This synthesis matrix is presented in full in Table 1 in the results and discussion section, and serves as an analytical bridge between the descriptive mapping of the macro environment and the theoretical explanation of the mechanisms of pressure and organizational responses.

3.5 Trustworthiness Conceptual Study

Given that this research is qualitative-conceptual and does not use primary data, the validity criteria applied refer to the concepts of trustworthiness commonly used in qualitative research, namely credibility, dependability, and confirmability. Credibility is maintained through source triangulation as described in section 3.3, ensuring that each empirical claim is supported by at least one official data source and, where possible, cross-confirmed with academic findings. Dependability is maintained through transparency of the literature search and selection protocol as described in section 3.2, so that the research procedure can be traced and replicated by other researchers. Confirmability is maintained by explicitly distinguishing between the description of the empirical data, the author's theoretical synthesis, and the interpretation or proposition proposed, in order to minimize subjective bias in the conceptual synthesis process.

4. RESULTS AND DISCUSSION

4.1 Overview of the Dynamics of the Indonesian Digital Banking Business Environment

The results of the literature and data synthesis indicate that the Indonesian digital banking business environment in the 2024-2026 period is characterized by simultaneous acceleration across nearly all PESTEL dimensions. This acceleration is not linear, but rather mutually reinforcing: advances in digital payment technology drive changes in social behavior, which regulators then respond to by strengthening the legal framework, which in turn reshapes the landscape of interbank economic competition. This mutually reinforcing pattern is consistent with the view that the contemporary business environment is characterized by volatility, uncertainty, complexity, and ambiguity (VUCA), which requires organizations to conduct more frequent environmental scans and is no longer sufficient if conducted only annually (Global Advisors, 2026). The following subsections provide an in-depth analysis of each PESTEL dimension.

4.1.1 PESTEL Cross-Dimensional Interactions

A more in-depth analysis shows that the six PESTEL dimensions in Indonesia's digital banking industry rarely operate in isolation, but rather form a cross-dimensional chain of interactions that must be understood holistically. The first chain of interactions can be illustrated as follows: internet penetration and changes in people's social behavior (social dimension) drive a surge in demand for instant payment services, which is responded to through the technological innovations of QRIS and BI-FAST (technological dimension), which then requires strengthening the legal framework for cybersecurity and data protection (legal dimension), which ultimately influences the structure of compliance costs and the allocation of banks' information technology capital expenditures (economic dimension). The second chain of interactions can be illustrated through the relationship between the government's political commitment to the decarbonization agenda (political dimension), which translates into regulatory obligations for the Sustainable Finance Taxonomy (environmental dimension), which then influences the legal framework for banking climate risk reporting (legal dimension), and in turn reshapes banks' credit allocation preferences to specific sectors (economic dimension).

The identification of this cross-dimensional interaction chain is methodologically important because it emphasizes that a PESTEL analysis that treats each dimension separately, as is commonly done in conventional PESTEL applications, can potentially miss the point of understanding the actual systemic dynamics at play. The integrative approach proposed in this article, by positioning Institutional Theory as an explanation of the mechanisms by which interdimensional pressures are transmitted and Dynamic Capabilities as explanations of organizational response points at each node in the interaction chain, provides a more systemic understanding than a stand-alone PESTEL analysis.

4.2 In-depth PESTEL Analysis of the Indonesian Digital Banking Industry

4.2.1 Political Dimension

The political dimension within the PESTEL framework encompasses government stability, public policy direction, and political commitment to a specific agenda (Johnson et al., 2020). In the context of Indonesian digital banking, the political dimension manifests itself through at least three channels. First, the government's political support for the national digital economy agenda, reflected in various cross-ministerial and institutional initiatives to expand the digital economy and finance (EKD) ecosystem, including through the QRIS expansion campaign across the country (Bank Indonesia, 2025c). Second, the institutional independence of the Financial Services Authority (OJK), established under Law Number 21 of 2011, provides the OJK with the political-legal authority to centrally direct the banking digital transformation agenda (Business Law Community, Faculty of Law, Gadjah Mada University, 2023). Third, the government's political commitment to the carbon economy and sustainability agenda, as reflected in the issuance of Presidential Regulation Number 110 of 2025 concerning the implementation of carbon economic value instruments, which creates political pressure on the financial services sector, including banking, to support the national decarbonization agenda (Infobanknews, 2025).

From an Institutional Theory perspective, this political dimension operates as a source of both coercive and normative pressure: coercive because state policies are formally binding, and normative because the national digital economy agenda shapes shared expectations among industry players regarding the direction of transformation that is considered legitimate and desirable. From a Dynamic Capabilities perspective, political dynamics require banks to develop the capacity to sense the direction of national policies and broader geopolitics, including the impact of global geopolitical uncertainty on capital flows and the rupiah exchange rate, which in 2025-2026 was recorded to experience significant pressure to reach the level of Rp17,900 per US dollar in the second half of 2026 (StockWatch, 2026).

4.2.2 Economic Dimension

The economic dimension includes macroeconomic indicators such as gross domestic product (GDP) growth, inflation, interest rates, exchange rates, and credit growth (Johnson et al., 2020). Data shows that the Indonesian economy is projected to grow in the range of 4.7 to 5.45 percent during the 2025-2026 period, with realized growth in the third quarter of 2025 recorded at 5.04 percent (INDEF, 2025; Bank Indonesia, 2025d; Perbanas, 2025). Consumer Price Index (CPI) inflation in 2025 was recorded at 2.92 percent annually, still within the target range of 2.5 ± 1 percent, with projected inflation in 2026 varying between 2.62 and 3.53 percent depending on the projecting institution (Bank Indonesia, 2026; StockWatch, 2026). The BI-Rate benchmark interest rate shows a dynamic trend, moving from around 4.75 percent in early 2026 to a projected 5.75 percent by the end of 2026, in line with pressure from the weakening rupiah exchange rate and increasing global investment risk premiums due to the shift in capital flows to safe haven assets (StockWatch, 2026; The Indonesian Institute, 2026).

National banking credit growth is projected to be in the range of 8 to 12 percent in 2026, with a Loan to Deposit Ratio (LDR) in the range of 85 to 88 percent (Bank Indonesia, 2026; StockWatch, 2026), indicating liquidity pressure that needs to be carefully managed by bank management. From an Institutional Theory perspective, this macroeconomic volatility creates indirect coercive pressure through BI's monetary policy and mimetic pressure among banks in responding to interest rate cycles, for example through joint adjustments of deposit and credit interest rates. From a Dynamic Capabilities perspective, economic dynamics require a keen sense of macroeconomic variables, as well as a transformative capacity in the cost of funds structure and credit portfolio composition to ensure banks remain resilient to exchange rate and interest rate volatility.

4.2.3 Social Dimension

Social dimensions include demographics, cultural values, lifestyle, and literacy levels, which influence financial service consumption patterns (Johnson et al., 2020). Indonesia enjoys a demographic bonus, with a population dominated by the younger generation with high digital preferences, supported by internet penetration that has exceeded 220 million people, or more than 78 percent of the population, by 2025 (APJII, 2025). Nearly all internet users own smartphones, and most are familiar with digital payment applications, creating a highly conducive market base for the expansion of digital banking services (Qris Interactive, 2025a). However, Indonesia's financial literacy rate remains relatively low compared to its financial inclusion rate. The 2024 National Survey on Financial Literacy and Inclusion (SNLIK), jointly conducted by the Financial Services Authority (OJK) and the Central Statistics Agency (BPS), recorded a financial literacy index of 65.43 percent for the Indonesian population, while the financial inclusion index was higher at 75.02 percent (Financial Services Authority & BPS, 2024). This 9.59 percentage point gap between inclusion and literacy indicates that some people have accessed digital financial services without

adequate risk understanding, a situation that potentially poses consumer protection risks and is a critical concern for digital bank risk management. From an Institutional Theory perspective, this social dimension operates as a source of normative pressure, where public expectations for ease and speed of digital services become the new norm that banks must meet to remain perceived as legitimate by their customers. It also exerts mimetic pressure through the widespread adoption of a cashless lifestyle, which influences various segments of society. From a Dynamic Capabilities perspective, this dimension demands the capacity to sense the evolving preferences and behaviors of digital customers, as well as the capacity to seize through personalized services and financial education programs that target the literacy-inclusion gap.

4.2.4 Technological Dimension

The technology dimension is one of the PESTEL dimensions with the fastest rate of change in the context of Indonesian digital banking. Bank Indonesia data recorded national digital payment transaction volume growing 39.79 percent annually in August 2025, with QRIS transactions growing by 145.07 percent in the same period, and even reaching 147.65 percent annually in the third quarter of 2025 (Bank Indonesia, 2025a; IDX Channel, 2025). The volume of retail transactions processed through the BI-FAST infrastructure also grew 42.87 percent annually, reaching 1.12 billion transactions with a value of IDR 2,788.31 trillion in the second quarter of 2025 (Kontan, 2025). At the individual bank level, digital transactions show significant growth, for example, the growth in digital transaction volume of PT Bank Rakyat Indonesia through QRIS by 142.9 percent annually to IDR 37.2 trillion, and the growth of digital transactions of PT Bank Negara Indonesia by 42 percent annually in the first semester of 2025 (Kontan, 2025).

In addition to expanding domestic QRIS adoption, Bank Indonesia is also expanding cross-border QRIS interconnectivity, which by August 2025 had been connected to nine countries, including Thailand, Malaysia, Singapore, Japan, and South Korea (Qris Interactive, 2025b). Beyond payment infrastructure, Indonesian banks are adopting artificial intelligence (AI), cloud computing, and open application programming interfaces (OPCs) to support the open banking model, in line with the policy direction of the Financial Services Authority (OJK)'s digital banking transformation blueprint (Financial Services Authority, 2021). From an Institutional Theory perspective, the technology dimension operates as a dominant source of mimetic pressure, where banks tend to imitate technological innovations that have been successfully adopted by competitors or fintech players, as well as normative pressure through industry interoperability standards such as the QRIS standard itself. From a Dynamic Capabilities perspective, this dimension is most closely related to micro-seizing, through technology investment and strategic partnerships with financial technology providers, as well as transformation through updating the core banking information technology architecture to support exponential transaction growth.

4.2.5 Environmental Dimension

The environmental dimension within the PESTEL framework, which encompasses environmental regulations, climate change, and sustainability demands (Johnson et al., 2020), has gained significant momentum in the Indonesian financial services sector through the publication of the Indonesian Taxonomy for Sustainable Finance (TKBI). The Financial Services Authority (OJK) published TKBI version 1 in February 2024 as a transformation of the Indonesian Green Taxonomy 1.0, and subsequently published TKBI version 2 on February 11, 2025, as a collaborative policy across ministries and institutions to advance the implementation of sustainable finance in Indonesia (Financial Services Authority, 2025). The TKBI serves as a classification of economic activities that support the Sustainable Development Goals (SDGs) and Indonesia's net-zero emissions (NZE) target by 2060 or sooner, encompassing economic, environmental, and social aspects in an integrated manner. At the end of October 2025, the OJK also announced the preparation of TKBI volume 3 which will include the Climate Risk Management and Scenario Analysis (CRMS) framework, namely an integrated framework covering aspects of governance, strategy, risk management, and disclosure to assess the resilience of bank business models in facing climate change in the short, medium, and long term (Infobanknews, 2025).

This development demonstrates that climate risk, both physical and transition risk, has become an integral part of banking risk management in Indonesia, no longer merely a voluntary corporate social responsibility initiative. From an Institutional Theory perspective, the environmental dimension operates as a source of coercive pressure through the regulatory obligations of the Indonesian Banking Standards Board (TKBI), as well as normative pressure through the adoption of globally applicable Environmental, Social, and Governance (ESG) standards that serve as a reference for international investors. From a Dynamic Capabilities perspective, this dimension demands the capacity to sense climate risk exposure in existing credit portfolios, as well as the capacity to transform through updating green financing policies and establishing sustainable finance work units within banks.

4.2.6 Legal Dimension

The legal dimension is the PESTEL dimension that most extensively impacts the banking industry, given its highly regulated nature. Indonesia's digital banking legal framework is built on the foundation of Law Number 10 of 1998 concerning Banking, which, among other things, requires banks to maintain confidentiality of information regarding depositors and their deposits (Article 40 paragraph 1). This foundation is reinforced by OJK Regulation Number 12/POJK.03/2021 concerning Commercial Banks, which regulates specific provisions for digital banks, including capital requirements, governance, and business models (SIP Law Firm, 2025), and OJK Regulation Number 11/POJK.03/2022 concerning the Provision of Information Technology by Commercial Banks, which regulates banking cybersecurity and resilience (HeyLaw, 2023).

The most significant legal development in recent years was the enactment of Law Number 27 of 2022 concerning Personal Data Protection (PDP Law) on October 17, 2022, which requires all Personal Data Controllers, including banks, to align their data governance with the provisions of the law, with the threat of administrative and criminal sanctions for violations (National Cyber and Crypto Agency, 2022; Katadata, n.d.). The urgency of this data protection legal framework became even more apparent following the customer data leak incident at a national Islamic bank, which affirmed the principle of absolute bank liability for losses suffered by customers due to cybersecurity incidents (Hukumonline, 2024). Complementing this, Bank Indonesia issued Bank Indonesia Regulation Number 2 of 2024 concerning Information System Security and Cyber Resilience, which requires payment system providers to conduct periodic independent assessments of their cybersecurity maturity levels (Hukumonline, 2025).

From the Institutional Theory perspective, the legal dimension is the most dominant source of coercive pressure among the six PESTEL dimensions, because compliance with it is mandatory and accompanied by strict legal sanctions, but also contains elements of normative pressure through the standards of information technology risk governance and GRC that are developing among the banking profession. From the Dynamic Capabilities perspective, the legal dimension demands the capacity to seize regulatory compliance as a source of competitive advantage and customer trust (trust-based competitive advantage), not just an administrative burden, as well as the capacity to transform through continuous updates to information technology risk governance and personal data protection.

4.3 PESTEL Synthesis: Integrative Matrix

Table 1 presents an integrative synthesis of the six PESTEL dimensions discussed, linked to the sources of institutional pressures and relevant dynamic capability responses. This matrix confirms that each PESTEL dimension does not operate independently, but rather consistently triggers a combination of coercive, mimetic, and normative pressures, which in turn require a specific combination of sensing, seizing, and transforming micro-adjustments as a strategic response for banking organizations.

Table 1. Synthesis Matrix of PESTEL Analysis, Institutional Pressures, and Dynamic Capability Responses of Indonesian Digital Banking

Dimensions	Key Indicators & Latest Data	Sources of Institutional Pressure	Bank Dynamic Capability Response
Political	Support for national digital economy policies; institutional independence of the Financial Services Authority (OJK) (Law No. 21/2011); commitment to a carbon economy (Presidential Decree No. 110/2025); geopolitical-fiscal dynamics that influence capital flows and exchange rates (Rp15,000-Rp17,900/USD, 2025-2026)	Coercive (state policy direction) & Normative (national digital economic agenda)	Sensing the direction of national and geopolitical policies; Seizing opportunities for government digitalization incentives
Economy	GDP growth is expected to be around 4.7-5.45% (2025-2026); inflation is expected to be maintained at 2.5±1%; the BI rate is expected to fluctuate between 4.75-5.75%; credit growth is	Indirect coercion (BI monetary policy) & Mimetic (competitors' response to interest rate cycles)	Sensing macroeconomic changes; Transforming the cost structure of

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Dimensions	Key Indicators & Latest Data	Sources of Institutional Pressure	Bank Dynamic Capability Response
	expected to be 6-12%; and the rupiah exchange rate is expected to be volatile.		funds and credit portfolios
Social	Financial literacy index of 65.43% and financial inclusion of 75.02% (SNLIK 2024); internet penetration of more than 220 million people or 78% of the population (APJII, 2025); demographic bonus & digital preferences of the younger generation	Normative (social expectations of ease of service) & Mimetic (adoption of cashless lifestyle)	Sensing digital customer preferences and behavior; Seizing through service personalization
Technology	QRIS transaction growth of up to 147.65% yoy (Q3 2025); BI-FAST volume growth of 42.87% yoy; cross-border QRIS interconnection (9 countries, August 2025); adoption of open banking, cloud, and artificial intelligence (AI) APIs	Mimetic (copying competitor & fintech innovations) & Normative (industry interoperability standards)	Seizing through technology investment and partnerships; Transforming information technology architecture
Environment	Taxonomy for Sustainable Finance Indonesia version 2 (OJK, 2025); net zero emission commitment by 2060; Climate Risk Management & Scenario Analysis (CRMS); transition risks and physical risks of climate change for credit portfolios	Coercive (sustainable finance regulation) & Normative (global ESG standards)	Sensing climate risk in portfolios; Transforming green finance policies
Law	Law No. 10/1998 concerning Banking; POJK No. 12/POJK.03/2021 concerning Commercial Banks; POJK No. 11/POJK.03/2022 concerning the Implementation of Information Technology; Law No. 27/2022 concerning Personal Data Protection; PBI No. 2/2024 concerning Information System Security and Cyber Resilience	Coercive dominant (mandatory compliance) & Normative (professional risk governance/GRC standards)	Seizing compliance as a competitive advantage; Transforming information technology risk governance

4.4 Integration of PESTEL Findings with Dynamic Capabilities and Institutional Theory

To clarify the causal mechanisms between institutional pressures and dynamic capability responses, Table 2 presents a cross-mapping between the micro-modeling of Dynamic Capabilities (Teece, 2007) and the institutional isomorphism mechanism (DiMaggio & Powell, 1983), along with examples of their concrete manifestations in the Indonesian digital banking industry. This mapping shows that sensing activities are most closely related to coercive and mimetic pressures, as both require organizations to actively scan for external changes, both regulatory changes and competitors' actions. Seizing activities are most closely related to normative pressures, as strategic opportunity seizing is typically conducted by referring to professionally recognized best practice standards. Transforming activities, on the other hand, tend to be a combined response to coercive and normative pressures simultaneously, as fundamental renewal of organizational structures and routines is generally driven by a combination of regulatory obligations and the demands of evolving industry governance standards.

Table 2. Mapping of Dynamic Capabilities Microstructure and Institutional Isomorphism Mechanisms

Dynamic Capabilities Microfoundations (Teece, 2007)	Institutional Isomorphism Mechanism (DiMaggio & Powell, 1983)	Examples of Manifestations in Indonesian Digital Banking
Sensing (identifying opportunities & threats)	Coercive: scanning for changes in OJK/BI regulations; Mimetic: scanning for competitor and fintech movements	The bank's strategy and compliance unit monitors changes in POJK, PBI, and the movements of competing digital banks.
Seizing (mobilizing resources to seize opportunities)	Normative: following the banking profession's information technology risk governance & GRC standards	Investment in digital platforms, partnerships with fintech, and implementation of cybersecurity standards
Transforming (updating structures, routines, and assets)	Coercive & Normative combined: structural compliance with the OJK digital transformation blueprint	Reorganization of IT structure, updating of business model, and establishment of sustainable finance unit

4.5 Integrated Conceptual Model: PESTEL-Dynamic Capabilities-Institutional Theory

Based on the synthesis in sections 4.3 and 4.4, this article proposes a three-layer integrated conceptual model that connects the macro, meso, and micro levels of analysis as described in section 2.4. At the first layer (macro), the six PESTEL dimensions serve as a scanning instrument that comprehensively identifies changes in the Indonesian digital banking business environment. At the second layer (meso), each change in the PESTEL dimensions is translated into coercive, mimetic, and/or normative institutional pressures on the entire banking organization, as described by DiMaggio and Powell (1983). At the third layer (micro), each bank individually responds through the micro-development of dynamic capabilities of sensing, seizing, and transforming (Teece, 2007), which ultimately leads to outcomes in the form of successful digital transformation, improved organizational performance, competitiveness, and sustainability of the banking business (Abdurrahman et al., 2024a).

This model is cyclical rather than linear, as achievements in the third layer will also influence the configuration of the macro environment in the following period. As an illustration, the success of several large incumbent banks in adopting QRIS and the digital banking model creates new mimetic pressures for other banks that have not yet transformed (meso-layer), while simultaneously encouraging regulators to update the policy framework and technical standards for QRIS itself (macro-layer - technological and legal dimensions). Thus, this conceptual model emphasizes that the dynamics of the Indonesian digital banking business environment are co-evolutionary, where the macro environment shapes organizational behavior, and at the same time, the aggregation of organizational behavior also reshapes the macro environment itself through institutional feedback mechanisms.

The conceptual propositions that can be formulated from this model are as follows: Proposition 1, the higher the intensity of coercive pressures originating from the legal and political dimensions of PESTEL, the greater the need for banking organizations to develop structural transforming capabilities. Proposition 2, the higher the intensity of mimetic pressures originating from the technological and social dimensions of PESTEL, the greater the need for banking organizations to develop sensing capabilities that are responsive to competitor movements and customer preferences. Proposition 3, the higher the intensity of normative pressures originating from the environmental and legal dimensions of PESTEL, the greater the need for banking organizations to develop seizing capabilities oriented towards governance and sustainability standards. These three propositions are tentative and are proposed as the basis for formulating hypotheses in the further empirical-quantitative research stage.

4.6 Discussion: Position of the Integrated Framework in Relation to Previous Literature

The integrated framework proposed in this article expands on the initial conceptual framework pioneered in the previous literature review, which positioned Dynamic Capabilities as a grand theory and Institutional Theory as a supporting theory, but did not systematically incorporate PESTEL analysis as a macro-environmental mapping layer. By adding the PESTEL layer, this framework addresses criticisms of Dynamic Capabilities applications, which often lack explicit identification of external sources that trigger sensing, seizing, and transforming needs (Grant,

2019). Conversely, by anchoring PESTEL to Dynamic Capabilities and Institutional Theory, this framework also addresses criticisms of PESTEL applications, which tend to be descriptive and fail to explain the causal mechanisms of environmental impacts on organizations (Global Advisors, 2026). Compared to the studies of Abdurrahman, Gustomo, and Prasetyo (2024a, 2024b, 2024c) which used the Technology-Organization-Environment (TOE) framework to identify drivers and inhibitors of dynamic capabilities, the PESTEL framework proposed in this article offers a broader and more granular coverage of the external environment dimensions, particularly by explicitly separating the political, legal, and environmental dimensions which in the TOE framework tend to be aggregated into a single "environment" dimension. This separation is important considering that, as shown in section 4.2, the three dimensions have different characteristics of institutional pressures: the legal dimension is dominated by coercive pressures, the environmental dimension combines coercive and normative pressures, while the political dimension combines coercive and normative pressures with weights that depend on the prevailing policy context.

5. THEORETICAL AND MANAGERIAL IMPLICATIONS

5.1 Theoretical Implications

Theoretically, this article contributes to the development of a multi-level analytical framework that integrates the macro (PESTEL), meso (Institutional Theory), and micro (Dynamic Capabilities) levels in a coherent model to understand the dynamics of the business environment of a highly regulated industry such as banking. This framework has the potential to be applied to other industrial contexts that have similar strict regulatory characteristics, such as the insurance industry, capital markets, or the healthcare sector, with adjustments to the specific indicators of each PESTEL dimension according to the industry context. In addition, the three conceptual propositions proposed in section 4.5 provide a foundation for the development of quantitative research hypotheses in subsequent doctoral research stages, specifically to empirically test the strength of the relationship between the intensity of institutional pressures from certain PESTEL dimensions and the level of development of specific dynamic capabilities in a sample of banks in Indonesia.

5.2 Managerial and Policy Implications

For bank management, this integrated framework suggests the importance of establishing an environmental scanning function that not only monitors technological developments separately but also integrates monitoring of political, economic, social, and environmental dimensions simultaneously, given that these six dimensions have been shown to reinforce each other. Bank management is also advised to explicitly map the types of institutional pressures (coercive, mimetic, normative) inherent in each identified environmental change, in order to determine which dynamic capability micro-adjustments (sensing, seizing, transforming) need to be prioritized in the allocation of organizational resources. For example, changes in the legal dimension, which are dominated by coercive pressures, require prioritization of mandatory and tightly scheduled structural transforming capabilities, in contrast to changes in the technological dimension, which are dominated by mimetic pressures and require more exploratory and competitive sensing capabilities.

For regulators, the findings regarding the gap between the financial inclusion index (75.02 percent) and the financial literacy index (65.43 percent) as reported by SNLIK 2024 (Financial Services Authority & Central Statistics Agency, 2024) indicate the need to strengthen digital financial education programs that go hand in hand with expanding access, so that the acceleration of digitalization does not pose a disproportionate risk to consumer protection. Furthermore, the convergence of regulatory pressures from the legal dimension (PDP Law, POJK Information Technology) and the environmental dimension (TKBI) suggests the need for harmonization of compliance reporting frameworks for banks, so that the administrative burden of dual compliance can be minimized without reducing the effectiveness of supervision.

6. RESEARCH LIMITATIONS AND FUTURE RESEARCH AGENDA

This article has several limitations that should be considered when interpreting its contributions. First, as a conceptual study based on a literature review and secondary data, it does not yet include empirical testing of the propositions proposed in section 4.5. Second, the statistical data used is a snapshot of the 2024-2026 period and is potentially subject to significant change given the highly dynamic nature of the digital banking business environment. Therefore, regular data updates are necessary in subsequent research stages. Third, the PESTEL framework used tends to be oriented toward the Indonesian national context and does not explicitly incorporate the global and ASEAN regional business environment dimensions that influence capital flows and cross-border payment system interconnections.

Based on these limitations, several future research agendas can be formulated. First, empirical-quantitative testing of the three conceptual propositions proposed in this article, for example through a survey of banking executives or a panel data analysis of bank performance linked to PESTEL indicators. Second, expanding the study of global and regional issues as planned in the Sub-CPMK-3 stage of this doctoral research, including an analysis of the impact of QRIS interconnectivity across ASEAN countries on the configuration of banks' dynamic capabilities. Third, evaluating organizational responses through in-depth case studies of specific banks to enrich understanding of variations in dynamic capabilities across banks in responding to similar institutional pressures, as planned in the Sub-CPMK-4 stage, before being comprehensively synthesized in the final dissertation paper in the Sub-CPMK-5 stage.

7. CONCLUSION

This conceptual article develops and proposes an integrated analytical framework that connects PESTEL Analysis, Dynamic Capabilities, and Institutional Theory to comprehensively and multi-layeredly understand the dynamics of the digital banking business environment in Indonesia. The study results show that the six PESTEL dimensions—political, economic, social, technological, environmental, and legal—work simultaneously and reinforce each other in forming coercive, mimetic, and normative institutional pressures on banking organizations in Indonesia. These pressures, in turn, encourage banks to build and reconfigure their dynamic capabilities through sensing, seizing, and transforming processes, as empirically evidenced by data on digital transaction acceleration, the expansion of QRIS interconnectivity, the strengthening of the legal framework for data protection and cybersecurity, and the issuance of a sustainable finance taxonomy by the Indonesian financial authorities.

The proposed three-layer conceptual model, which connects the macro (PESTEL), meso (Institutional Theory), and micro (Dynamic Capabilities) levels, provides a theoretical contribution in the form of a more explanatory analytical framework compared to the application of PESTEL in a self-descriptive manner, while also providing a practical contribution in the form of an analytical map for bank management and regulators in designing legitimate and sustainable adaptive strategies. The integration of these three theories is expected to produce a more complete understanding of how banks in Indonesia build adaptive capabilities amidst regulatory pressures and digital competition, while also providing a theoretical contribution to the development of sustainable management science, and becoming a foundation for the next stage of doctoral research on the digitalization of the banking industry in Indonesia.

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