

Business Ecosystem Architecture for Savings and Loan Cooperatives: A Value Co-Creation Perspective

Jatnika Eka Patra¹, Yusuf Iskandar², Kurniawan³
¹⁻³ Nusa Putra University

Article Info	ABSTRACT
Article history: Received Sep, 2026 Revised Sep, 2026 Accepted Sep, 2026 Keywords: Savings and Loan Cooperative Business Ecosystem Architecture Value Co-Creation Organizational Readiness Digital Capability Cooperative Sustainability	Savings and Loan Cooperatives (SLCs) face increasing challenges arising from digitalization, changing member expectations, and the need for sustainable service management. Existing studies have examined digitalization, member welfare, trust, governance, and financial performance, but these dimensions are often discussed separately. This study develops a conceptual framework for the business ecosystem architecture of SLCs based on value co-creation. An Integrative Literature Review (ILR) was conducted to synthesize theoretical and empirical studies related to SLCs, business ecosystems, Business Ecosystem Architecture, Service-Dominant Logic, organizational readiness, digital capability, trust, member participation, and cooperative sustainability. The synthesis shows that Business Ecosystem Architecture can function as the main structural mechanism for organizing ecosystem boundaries, actors, roles, value propositions, and interactions. Organizational readiness provides the foundation, while digital capability supports ecosystem implementation. Trust strengthens relational interaction, and member participation facilitates value co-creation. The proposed framework establishes the relationship Organizational Readiness → Business Ecosystem Architecture → Value Co-Creation → Cooperative Sustainability. The framework provides a conceptual basis for developing adaptive, participatory, and sustainable SLCs and for future empirical research. <i>This is an open access article under the CC BY-SA license.</i> 
Corresponding Author: Name: Jatnika Eka Patra Institution Address: e-mail: jatnika.eka@nusaputra.ac.id	

1. INTRODUCTION

Savings and Loan Cooperatives (SLCs) operate in an increasingly dynamic business environment shaped by digitalization, changing member expectations, and growing demands for efficient and accessible financial services. Digital technologies have changed how financial services are accessed, how transactions are conducted, and how

organizations manage information and relationships with users. These changes create both opportunities and challenges for cooperatives. Digitalization can improve service efficiency, member engagement, and access to information, but its implementation also faces barriers related to technological capability, infrastructure, organizational readiness, and resistance to change [1], [2]. In Indonesia, digitalization within cooperatives

remains uneven, indicating that technological adoption cannot be separated from the characteristics of the cooperative business model and the needs of its members [3]. Recent evidence also indicates that digitalization can influence the financial performance of savings and loan cooperatives and contribute to member welfare when supported by appropriate organizational capabilities [4].

The characteristics of SLCs further distinguish them from conventional financial institutions. SLCs operate based on membership principles in which members have both economic and organizational roles. Members are not only users of savings and lending services but also owners who participate in the governance and development of the cooperative [5]. This dual position creates a reciprocal relationship between the cooperative and its members. Members contribute capital, use financial services, fulfill their obligations, provide feedback, and participate in organizational decision-making, while the cooperative provides financial access and economic benefits to its members. Empirical evidence also indicates that cooperative membership can contribute to household welfare, demonstrating that the value of cooperatives extends beyond financial transactions to broader economic benefits [6]. Therefore, the sustainability of SLCs depends not only on financial performance but also on member participation, trust, governance, and the ability to provide relevant and sustainable benefits.

Despite these characteristics, many SLCs still face challenges in integrating digitalization with organizational governance and service management. Digital transformation requires more than the adoption of applications or information systems. Cooperatives need to manage member data accurately, integrate operational processes, strengthen transaction security, improve information transparency, and ensure that digital services respond to member needs. Weak technological capability and limited organizational readiness can reduce the effectiveness of digital

transformation [1], [3]. Governance also becomes increasingly important because digital services generate larger volumes of member data and create new requirements for accountability, transparency, and risk management. Recent research on Indonesian savings and loan cooperatives shows that digitalization and trust are associated with member welfare, with trust playing an important role in the relationship between digitalization and member outcomes [7]. These conditions indicate that digitalization, governance, data management, transparency, and service management should not be treated as separate organizational issues. They need to be integrated within a broader organizational and relational framework.

A business ecosystem perspective provides a useful approach for understanding these interdependencies. An ecosystem perspective views value creation as the result of interdependent activities involving multiple actors rather than the outcome of an isolated organization [8]. For SLCs, relevant actors include members, boards, managers, supervisors, regulators, technology partners, financial institutions, communities, and member-owned businesses. Each actor can perform different roles and contribute resources, information, services, or other forms of value. Business ecosystem architecture provides a more structured approach to identifying ecosystem boundaries, actors and roles, value propositions, interactions, and the relationships among these elements [9]. This perspective is particularly relevant to SLCs because their operations involve financial flows, information flows, data exchanges, governance relationships, and social interactions among multiple actors. Thus, business ecosystem architecture can provide the structural foundation for understanding how SLCs organize relationships and coordinate activities to create value.

However, identifying actors and designing ecosystem structures alone does not explain how value is actually created within SLCs. The concept of value co-creation provides this missing perspective. Service-Dominant Logic (S-D Logic) emphasizes that

value emerges through interaction, resource integration, and service use rather than being created solely by an organization and delivered to customers [10]. This perspective is highly relevant to SLCs because members actively participate in the creation of value through deposits, use of lending services, repayment discipline, feedback, participation in cooperative meetings, and other forms of engagement. Value therefore emerges through interactions between the cooperative and its members and through relationships with other ecosystem actors. Within this perspective, business ecosystem architecture explains how actors and interactions are structured, while value co-creation explains how these interactions generate shared value. This distinction provides a stronger conceptual basis for understanding SLCs as member-based business ecosystems rather than merely as financial service providers.

Although previous studies have examined cooperative digitalization, member welfare, financial performance, governance, trust, and digital transformation, these issues have largely been investigated as separate dimensions [3], [4], [7]. Research on cooperative digitalization has focused on technological adoption and its consequences, while studies on member welfare have examined the economic benefits of cooperative participation. Other studies have examined business ecosystems and ecosystem architecture as mechanisms for coordinating multiple actors and interactions [8], [9]. Similarly, S-D Logic provides a strong theoretical foundation for explaining value co-creation through interaction and resource integration [10]. However, the integration of these perspectives in the specific context of SLCs remains limited. In particular, there is still a conceptual gap concerning how organizational readiness and digital capability can support business ecosystem architecture, how ecosystem architecture facilitates value co-creation, and how value co-creation contributes to cooperative sustainability. Therefore, a conceptual framework that integrates these elements is needed to provide a more systematic

explanation of SLC development in the digital environment.

Based on this gap, this article aims to develop a conceptual framework for business ecosystem architecture of Savings and Loan Cooperatives based on value co-creation. The study uses an integrative literature review to synthesize research on SLCs, cooperative digitalization, business ecosystem architecture, value co-creation, Service-Dominant Logic, organizational readiness, digital capability, trust, governance, and cooperative sustainability. The proposed framework positions readiness as the organizational foundation, business ecosystem architecture as the structural mechanism, value co-creation as the core value creation process, and cooperative sustainability as the intended outcome. The framework also recognizes digital capability and member participation as important supporting elements, while trust operates as a relational foundation across the ecosystem. The contribution of this study lies in integrating these previously fragmented perspectives into a conceptual model that can guide future empirical research and provide a structured basis for developing more adaptive, participatory, and sustainable SLCs.

2. LITERATURE REVIEW

2.1 *Savings and Loan Cooperatives*

Savings and Loan Cooperatives (SLCs) are member-based economic organizations that provide savings and lending services while operating through collective ownership and participation. Unlike conventional financial institutions that primarily organize relationships between service providers and customers, SLCs establish a dual relationship in which members act as both users and owners of the organization. Members contribute capital through savings, access financing services, participate in cooperative

activities, and have a role in determining the direction of the organization. This structure makes the cooperative more than a financial intermediary because its operations involve financial, organizational, and social relationships among members and the cooperative. The primary function of SLCs remains important because they provide financing access that is relatively close to member needs and support the economic activities of their members [11]. Recent research further indicates that SLCs should be understood as member-based economic organizations that manage financial capital, social relationships, information, services, and institutional relationships simultaneously [12], [13].

The member-based character of SLCs creates a distinctive relationship between member ownership, member participation, and cooperative governance. Members do not only provide funds and use savings and lending services. They also contribute through deposits, responsible use of financing, timely repayment, feedback, participation in member meetings, and social supervision. These activities represent economic as well as organizational participation. Cooperative governance therefore requires mechanisms that enable members to exercise their ownership rights while allowing boards, managers, and supervisors to perform their respective responsibilities. Democratic governance, member economic participation, and voluntary membership can function as internal mechanisms

that strengthen organizational resilience and sustainability [14]. At the same time, the objectives of SLCs extend beyond financial performance.

Financial performance remains necessary to maintain operational capacity, liquidity, and the quality of the loan portfolio, but cooperative development also needs to generate tangible benefits for members. Research on SLCs shows that digitalization and product quality can influence financial performance and member welfare, reinforcing the importance of connecting organizational performance with member benefits [12], [15], [16], [17].

These characteristics indicate that cooperative sustainability should be understood as a multidimensional outcome. Financial soundness is necessary, but it does not fully represent the sustainability of an SLC. Sustainability also depends on the ability to maintain member participation, preserve trust, strengthen governance, manage credit and operational risks, improve service quality, and generate continuing socio-economic benefits for members. Research on cooperative resilience shows that collective action, strong social relationships, organizational agility, and decision-making that remains close to members can strengthen the capacity of financial cooperatives to respond to crises and environmental changes [18]. This perspective suggests that the long-term sustainability of SLCs depends on both organizational capacity and the quality of relationships between the cooperative and its members. Therefore, SLC sustainability

should be viewed as the ability to maintain financial performance while simultaneously preserving member trust, participation, governance quality, organizational resilience, and member welfare [12], [18], [19], [20], [21].

2.2 Business Ecosystem

The Business Ecosystem perspective provides an organizational view that extends beyond the boundaries of a single firm. Adner (2017) conceptualizes an ecosystem as the alignment structure of multiple partners whose activities need to interact for a focal value proposition to materialize [22]. This perspective emphasizes that value creation increasingly depends on relationships among actors rather than on the capability of an individual organization alone. An ecosystem therefore consists of interdependent activities that must be coordinated to produce a particular value proposition. The ecosystem perspective is different from a conventional organizational perspective because it focuses on how actors, activities, and interdependencies are structured around value creation. The concept also helps distinguish ecosystem relationships from broader concepts such as markets, supply chains, networks, and platforms by emphasizing the alignment of interdependent actors required to realize value [22], [23].

The structure of a business ecosystem can be examined through the relationships among actors, interdependence, roles, resources, interactions, and value. Actors may include organizations, customers, suppliers, regulators, technology providers, communities, and

other parties that contribute to the realization of a value proposition. Each actor performs a particular role and contributes resources or capabilities that may be complementary to those of other actors. The interdependence among actors means that the achievement of one actor's objectives may depend on the actions, resources, or decisions of other actors. Consequently, ecosystem value emerges through interaction and coordination rather than through isolated activities. Ma et al. (2021) operationalize business ecosystem architecture through the identification of ecosystem boundaries, actors and their roles, value propositions, and interactions among actors [24]. This approach indicates that understanding an ecosystem requires attention not only to who the actors are, but also to what roles they perform, what resources they contribute, how they interact, and how these relationships support the creation and delivery of value [25].

This perspective is particularly relevant to Savings and Loan Cooperatives (SLCs) because their activities depend on relationships among multiple actors rather than on the cooperative as an isolated financial institution. Members provide savings, use financing services, fulfill financial obligations, provide information and feedback, and participate in cooperative decision-making. At the same time, boards, managers, supervisors, regulators, technology partners, financial institutions, local communities, and member-owned businesses may contribute different resources and capabilities to the

cooperative's activities. These relationships create interdependence because the cooperative's ability to provide reliable financial services and member benefits depends on the participation and contribution of these actors. Previous literature on SLCs has therefore begun to move from viewing cooperatives only as savings and lending institutions toward understanding them as systems involving actors, relationships, information, trust, governance, and shared economic benefits. From this perspective, Business Ecosystem provides a useful foundation for examining how the structure and interaction of actors in SLCs can support value creation and, ultimately, cooperative sustainability.

2.3 *Business Ecosystem Architecture*

Business Ecosystem Architecture refers to the structured design of an ecosystem that explains how actors, roles, value propositions, and interactions are organized to enable a focal value proposition. While the Business Ecosystem perspective emphasizes the existence and interdependence of multiple actors, Business Ecosystem Architecture focuses more specifically on how the ecosystem is structured and designed. Ma et al. (2021) propose Business Ecosystem Architecture as a systematic approach for identifying the boundaries of an ecosystem, the actors involved, their roles and value propositions, the interactions among actors, and the verification of the resulting ecosystem design [24]. This perspective is important because an ecosystem does not automatically generate value simply because multiple actors

are present. Value depends on whether their relationships, responsibilities, resources, and interactions are properly structured

Ma et al. (2021) identify five main stages in developing Business Ecosystem Architecture: ecosystem boundaries, actors and roles, value propositions, interactions, and design verification [24]. Ecosystem boundaries determine the scope of the system and which actors and activities are relevant to the focal value proposition. Actors and roles identify the parties involved and the functions or contributions performed by each actor. Value propositions describe the benefits or value expected and offered by each actor. Interactions explain how actors exchange services, money, information, data, and other forms of value. Finally, design verification assesses whether the proposed ecosystem structure is coherent and capable of supporting the intended value proposition. These components provide a systematic basis for moving from a general ecosystem perspective toward an explicit architectural model. The five-stage logic is consistent with the framework already developed in this article, which positions Business Ecosystem Architecture as a structure involving boundaries, actors, roles, value propositions, and interactions.

The distinction between Business Ecosystem and Business Ecosystem Architecture is therefore important. Business Ecosystem explains the system, while Business Ecosystem Architecture explains its structure and design. Business Ecosystem highlights interdependence

among actors and the conditions under which a shared value proposition can be realized, as emphasized by Adner (2017). Business Ecosystem Architecture goes further by identifying who participates, what roles they perform, what value they seek or provide, how they interact, and whether the overall configuration is workable. Thus, architecture provides a more operational and analytical perspective than the broader ecosystem concept. This distinction is particularly relevant for conceptual model development because the research does not merely seek to describe KSP as an ecosystem. It seeks to design a structure that can explain and organize relationships among actors to support value co-creation. The existing literature in the article also positions Business Ecosystem Architecture as the structure that organizes actors, roles, value propositions, value flows, coordination mechanisms, and partnerships.

In the context of Savings and Loan Cooperatives, Business Ecosystem Architecture can be adapted by defining the KSP ecosystem boundary, identifying its key actors and roles, mapping their respective value propositions, and describing the interactions through which value is exchanged and created. The main actors may include members, boards, managers, supervisors, regulators, digital technology partners, financial institutions, local communities, and member-owned businesses. Members have a distinctive position because they simultaneously act as owners, service users, depositors, borrowers, feedback providers,

and participants in cooperative governance. Other actors contribute different resources, capabilities, information, services, or institutional support. The architecture therefore needs to make visible not only financial flows such as savings, loans, installments, and surplus, but also information, data, trust, participation, reputation, and other intangible forms of value. Through this adaptation, Business Ecosystem Architecture becomes the main structural concept for explaining how KSP actors are connected and how their interactions create the conditions for value co-creation and, ultimately, cooperative sustainability.

2.4 Service – Dominant Logic and Value Co-Creation

Service-Dominant Logic (S-D Logic) provides a theoretical foundation for understanding value creation through service and interaction among actors. Vargo and Lusch (2016) explain that service is the fundamental basis of exchange and that organizations should not be viewed primarily as producers of goods or providers of predefined value. Instead, value emerges through the application of resources and interactions among multiple actors [26]. This perspective shifts attention from the output of an organization toward the processes through which actors integrate resources and participate in service exchange [27]. In this view, organizations, customers, partners, and other stakeholders can function as resource integrators within a broader service ecosystem [28], [29], [30].

A central implication of S-D Logic is that value is not simply embedded in a product or service and transferred from the provider to the customer. Value is determined through value-in-use, meaning that value emerges from the beneficiary's experience and use of resources in a particular context. The organization can therefore propose and facilitate value, but cannot unilaterally determine the value experienced by the user. Value formation depends on the integration of resources, service experience, context, and interaction among actors [27]. This perspective is particularly relevant to financial services because the value of a savings or loan service is not limited to the financial product itself. It also depends on accessibility, convenience, security, information, trust, service experience, and the ability of members to use the service to achieve their economic objectives [31].

Based on this perspective, value co-creation occurs when actors actively participate in integrating resources and interacting to create value. In KSPs, members are therefore not passive recipients of savings and lending services. They contribute resources through savings, loan utilization, repayment discipline, information, feedback, participation in decision-making, and continued engagement with the cooperative. At the same time, KSPs provide financial services, information, financing access, transaction facilities, and institutional support. The interaction between these contributions creates opportunities for shared value.

The existing literature reviewed in this article similarly positions value co-creation in KSPs through member participation, communication, trust, service experience, service innovation, data use, and resource integration. Thus, S-D Logic serves as the theoretical foundation for the value co-creation construct, while Business Ecosystem Architecture provides the structural context in which those interactions occur. This establishes the conceptual link: Business Ecosystem Architecture → actor interaction → value co-creation → cooperative sustainability [32], [33], [28], [34], [35].

2.5 *Organizational Readiness and Digital Capability*

Organizational readiness refers to the extent to which an organization is prepared to implement and manage organizational change. In the context of cooperative transformation, readiness includes the capacity of human resources, governance, leadership, organizational culture, technology, and financial resources to support change. Organizational readiness is important because the development of a new ecosystem structure requires more than a conceptual design. Boards, managers, supervisors, and members need sufficient understanding, commitment, and capacity to implement new processes and interaction mechanisms. In KSPs, readiness therefore represents the organizational foundation that enables the cooperative to respond to changing member needs, technological development, governance

requirements, and competitive pressures. The literature reviewed in this article positions readiness as an initial condition that supports the development and implementation of Business Ecosystem Architecture [36], [37].

Digital capability represents the organization's ability to use digital technology, manage data, integrate processes, and apply digital information to organizational activities and decision-making. Digital capability is broader than simply adopting digital applications. It includes digital infrastructure, data management, process integration, information processing, and the ability to use technology to improve services and organizational performance. Prakasa and Jumani (2024) show that digital capability can support digital business transformation and improve organizational performance, while the cooperative literature indicates that digitalization can improve service access, convenience, transaction security, financial performance, and member welfare. For KSPs, digital capability can therefore support member administration, communication, loan monitoring, reporting, data accuracy, risk management, and information-based decision-making. However, digital capability is positioned in this article as a supporting capability, rather than the primary theoretical construct [38], [39], [40], [41].

The relationship between organizational readiness and digital capability can be explained through the Dynamic Capability perspective. Dynamic capability emphasizes an organization's ability to

recognize changes in its environment, mobilize and organize resources, and renew processes and capabilities in response to changing conditions [42]. In KSPs, this perspective helps explain why technological adoption alone does not guarantee ecosystem transformation. The cooperative must have the organizational readiness to absorb change and the digital capability to use technology as part of new interaction and coordination processes. These capabilities can strengthen the implementation of Business Ecosystem Architecture by making interactions among members, managers, supervisors, regulators, and partners faster, more transparent, documented, and data-based. Thus, organizational readiness and digital capability function as supporting concepts that enable ecosystem transformation, while Business Ecosystem Architecture remains the main structural concept and Value Co-Creation remains the central process through which ecosystem actors generate shared value.

2.6 Trust, Member Participation and Cooperation Sustainability

Trust is an important relational foundation in Savings and Loan Cooperatives because it influences members' willingness to participate, share information, use services, fulfill financial obligations, and engage in cooperative activities. Higher levels of member trust can strengthen participation and the quality of interactions between members and the cooperative, creating better conditions for value co-creation. In turn, active participation and stronger relationships can contribute to

cooperative sustainability, which should be understood beyond financial performance alone. In this article, cooperative sustainability includes financial performance, member welfare, organizational resilience, governance quality, and socio-economic benefits. Financial performance provides the economic foundation for continuity, while member welfare reflects the cooperative's ability to deliver meaningful benefits to its members. Organizational resilience reflects the ability to adapt to crises and environmental changes, governance ensures accountability and effective management, and socio-economic benefits reflect the broader contribution of the cooperative to members and their economic environment. Previous literature reviewed in this article indicates that trust, participation, governance, and social relationships are important sources of cooperative resilience and sustainability. Therefore, the proposed relationship can be expressed as trust → member participation → stronger interaction → value co-creation → cooperative sustainability, with trust and member participation functioning as relational factors that strengthen the value creation process [43], [44].

2.7 Theoretical Integration and Research Proposition

The theoretical perspectives discussed above are integrated to explain how Savings and Loan Cooperatives can develop a sustainable business ecosystem. Business Ecosystem Architecture provides the main structural mechanism for organizing

ecosystem boundaries, actors, roles, value propositions, and interactions, while Service-Dominant Logic explains how these interactions facilitate resource integration and value co-creation among ecosystem actors. Organizational readiness and digital capability function as supporting organizational foundations that enable the architecture to be implemented and the ecosystem to operate effectively, particularly in responding to technological and environmental changes. Trust functions as a relational foundation that strengthens members' willingness to participate and interact with the cooperative, while member participation represents a key mechanism through which value is co-created. The resulting value co-creation process is expected to contribute to cooperative sustainability, reflected in financial performance, member welfare, organizational resilience, governance, and socio-economic benefits. Based on this integration, the conceptual relationship proposed in this article is Readiness → Business Ecosystem Architecture → Value Co-Creation → Cooperative Sustainability, with Digital Capability positioned as a supporting capability, Trust as a relational foundation, and Member Participation as a key mechanism in the value co-creation process. This integrated structure provides the theoretical basis for developing a Business Ecosystem Architecture model for Savings and Loan Cooperatives and for formulating propositions that can be empirically tested in future research [45].

3. METHODS

3.1 Research Design

The research method in the article text describes the type of research, the subject and object of the study, the time and location of the research. This study employs a conceptual research design using an Integrative Literature Review (ILR) to identify, evaluate, and synthesize relevant literature for developing a conceptual framework for Savings and Loan Cooperatives (SLCs). The ILR approach is used because the concepts relevant to cooperative transformation, including Business Ecosystem Architecture, Value Co-Creation, organizational readiness, digital capability, trust, member participation, and cooperative sustainability, have largely been examined separately in previous studies. This study integrates these perspectives to develop a more coherent understanding of how SLCs can organize ecosystem actors and interactions to support value creation and sustainability. The review therefore focuses on synthesizing theoretical and empirical literature related to SLCs and the selected constructs, rather than testing hypotheses empirically. The resulting synthesis provides the theoretical basis for developing a conceptual framework that positions Business Ecosystem Architecture as the main structural concept linking organizational readiness and supporting capabilities with value co-creation and cooperative sustainability [46], [47]

3.2 Literature Search and Selection

The literature search was conducted using relevant academic databases and scholarly search sources to identify studies related to Savings and Loan Cooperatives, business ecosystems, value co-creation, organizational readiness, digital capability, trust, member participation, and cooperative sustainability. The main keywords included "Savings and Loan Cooperative," "financial cooperative," "credit union," "business ecosystem," "business ecosystem architecture," "value co-creation," "organizational readiness," "digital capability," "trust," "member participation," and "cooperative sustainability." The review

prioritized literature published within the last five years, while selected seminal works were retained when necessary to establish the theoretical foundations. Articles were included when they were relevant to the research focus, addressed one or more key constructs, and were published in credible academic sources. Articles that were unrelated to the research focus, lacked sufficient academic relevance, or contained insufficient information were excluded. The selection process involved identification, screening of titles and abstracts, assessment of relevance, full-text review, and removal of duplicate articles before the final literature set was used for synthesis. The existing review procedure also applied duplicate removal and excluded sources with uncertain credibility from the main theoretical foundation.

3.3 Data Extraction and Thematic Synthesis

Data extraction was conducted by reviewing the theoretical perspective, research context, key findings, relevant constructs, and relationships among constructs reported in the selected studies. The extracted information was then compared across studies to identify conceptual similarities, differences, and relationships relevant to the development of the proposed framework. A thematic synthesis was subsequently applied to organize the literature into several major themes, including Savings and Loan Cooperatives and financial cooperatives, Business Ecosystem Architecture, Value Co-Creation, organizational readiness and digital capability, trust and member participation, and cooperative sustainability. The synthesis was used to identify the main constructs and their theoretical relationships, which subsequently formed the basis for the proposed conceptual framework.

3.4 Conceptual Framework Development

The conceptual framework was developed through a sequential process of literature synthesis, identification of key constructs, theoretical integration,

formulation of conceptual relationships, and development of the proposed framework. The literature synthesis identified recurring concepts and relationships across studies on Savings and Loan Cooperatives, business ecosystems, value co-creation, digital capability, readiness, trust, member participation, and sustainability. These findings were then used to identify the key constructs and integrate their respective theoretical functions. Based on this integration, the proposed framework positions Readiness → Business Ecosystem Architecture → Value Co-Creation → Cooperative Sustainability as the main relationship. Digital Capability is positioned as a supporting capability that strengthens the implementation of the ecosystem architecture, Trust as a relational foundation that supports interaction and participation, and Member Participation as a key mechanism through which value co-creation occurs. This framework provides the conceptual basis for understanding how KSPs can develop an organized ecosystem structure that facilitates value creation and supports long-term cooperative sustainability [48].

4. RESULTS AND DISCUSSION

4.1 Evaluation of Savings and Loan Cooperative Research

Research on Savings and Loan Cooperatives (SLCs) has gradually moved beyond viewing cooperatives primarily as institutions that collect savings and provide loans. This traditional perspective remains important because savings and lending constitute the core financial functions of SLCs and provide members with access to financing. However, recent studies indicate that cooperative development increasingly involves broader organizational and relational dimensions, including digitalization, member welfare, trust, governance, participation, financial performance, and organizational resilience. Haykal et al. (2021) emphasize the role of savings and loan cooperatives in maintaining access to financing, while Miswanto et al. (2024) link digitalization, product quality, and

financial performance with member welfare. Indriastuti et al. (2025) further highlight the relationship between digitalization, member trust, and welfare, while the cooperative literature also emphasizes member participation and democratic governance as important elements of cooperative sustainability [49].

This development shows that SLC performance cannot be explained adequately through financial indicators alone. Digitalization affects service delivery and organizational processes, while trust and member participation influence the quality of relationships between members and the cooperative. Governance determines accountability and coordination, whereas resilience reflects the cooperative's ability to respond to economic, technological, and environmental changes. Mangan and Ward (2024), for example, show that cooperative resilience is supported by collective action, strong social relationships, agility, and decision-making that remains close to members. These findings indicate that financial, technological, organizational, and relational dimensions are interconnected. However, existing studies tend to examine these dimensions through separate constructs and research perspectives rather than through an integrated ecosystem structure [50], [44], [20], [17].

This fragmentation creates an important research gap. Although previous studies provide valuable explanations of digitalization, member welfare, trust, governance, participation, performance, and sustainability, they provide limited explanation of how the different actors and resources within an SLC can be structurally organized to facilitate value creation. The literature reviewed in this study therefore indicates a need to move from a variable-oriented perspective toward a more systemic perspective based on Business Ecosystem Architecture. This approach allows the relationships among actors, roles, value propositions, and interactions to be examined as an integrated structure. Accordingly, Business Ecosystem Architecture provides a basis for connecting the fragmented

dimensions identified in previous research and becomes the central conceptual foundation for developing a framework that links organizational readiness, ecosystem structure, value co-creation, and cooperative sustainability [23].

4.2 Business Ecosystem Architecture for Savings and Loan Cooperations

The Business Ecosystem Architecture (BEA) developed in this study adapts the architecture approach proposed by Ma et al. (2021) to the context of Savings and Loan Cooperatives (SLCs/KSP). Unlike the broader concept of a business ecosystem, which mainly describes the network of interdependent actors, BEA provides a structured approach for identifying the boundaries, actors and roles, value propositions, interactions, and design verification of an ecosystem. Ma et al. (2021) demonstrate that these components can be used to systematically design an ecosystem by determining who is involved, what value each actor seeks to create or receive, how actors interact, and whether the resulting architecture is feasible and aligned. In the SLC context, this approach is important because

cooperative value is generated through the interaction of members, management, governance bodies, regulators, and external partners rather than through financial transactions alone.

4.2.1 Adaptation of Business Ecosystem Architecture to the KSP Context

The adaptation of Ma et al. (2021) begins by translating each architecture component into the institutional and operational characteristics of KSPs. The ecosystem boundaries determine which services, members, geographic areas, and external relationships are included in the ecosystem. Actors and roles identify the parties that contribute resources, perform activities, make decisions, or receive value. Value propositions describe the benefits expected by each actor. Interactions explain the exchange of financial resources, information, data, services, and governance activities. Finally, design verification evaluates whether the proposed architecture is aligned, feasible, and capable of coordinating the interests and activities of the actors [25].

Table 1. Business Ecosystem Architecture Mapping for Savings and Loan Cooperatives

Architecture Component	KSP Context	How the Component Works in KSP
Ecosystem boundaries	Services, members, geographical scope	Defines the scope of KSP activities, member groups, services, operational area, and relevant external relationships.
Actors and roles	Members, board, managers, supervisors, regulators, partners	Identifies each actor's position, responsibilities, resources, and contribution to the ecosystem.
Value propositions	Financing, savings, convenience, trust, welfare	Identifies the value expected and offered through financial services, accessibility, reliability, trust, and member welfare.
Interactions	Financial, information, data, service, governance	Describes how actors exchange resources, information, services, decisions, feedback, and financial transactions.
Design verification	Alignment, feasibility, coordination	Assesses whether actor roles, value propositions, interactions, and boundaries are consistent and feasible within the KSP context.

Source: Adapted from Ma et al. (2021) and developed for the KSP context.

4.2.2 Ecosystem Boundaries

The first component establishes the boundaries of the KSP ecosystem. In the cooperative context, boundaries should not be limited to the physical office or internal organizational structure. They include the range of savings and loan services, member groups, geographic coverage, and external relationships that directly influence value creation. This boundary definition is important because KSP activities involve both internal and external actors. Members interact with the cooperative as owners and users, while technology providers, financial institutions, regulators, and other partners may provide resources or capabilities that support cooperative operations. Therefore, the boundary defines which actors and relationships are strategically relevant to the proposed ecosystem architecture.

4.2.3 Actors and Roles

The second component identifies the actors and their roles within the ecosystem. The core actor is the member because members simultaneously occupy multiple positions as owners, service users, savers, borrowers, and participants in cooperative governance. The board provides strategic direction and represents member interests, while managers coordinate operational activities and service delivery. Supervisors perform control and oversight functions. Regulators establish institutional requirements and external governance conditions. Technology and financial partners can contribute digital infrastructure, financial services, data capabilities, or other resources [16].

This actor configuration differs from a conventional organizational perspective because value creation is distributed across multiple parties. Each actor contributes resources and capabilities while receiving different forms of value. Consequently, defining roles explicitly is necessary to reduce overlapping responsibilities, strengthen accountability, and support coordination among ecosystem participants [23].

4.2.4 Value Propositions

The third component concerns the value propositions exchanged within the KSP ecosystem. For members, the primary value propositions include access to financing, savings facilities, convenience, reliable services, trust, and improved economic welfare. For the KSP, active members provide financial resources, transaction activity, information, feedback, and participation in governance. External partners may obtain value through sustainable business relationships, service utilization, or institutional collaboration [32], [33].

The value proposition is therefore not limited to the financial products provided by KSPs. It includes the broader benefits generated through relationships among ecosystem actors. This perspective is consistent with the service-dominant logic view that value emerges through the integration of resources and interaction among actors rather than being created solely by the organization. Thus, BEA provides the structural context in which these value propositions can be connected and coordinated [51], [29].

4.2.5 Interaction

The fourth component describes how actors interact to realize the identified value propositions. In KSPs, interactions occur through financial transactions, information exchange, digital services, service delivery, member participation, feedback, and governance processes. Savings and lending represent direct financial interactions, while communication, data sharing, reporting, complaints, and feedback represent information-based interactions. Member meetings, supervision, and decision-making represent governance interactions.

These interactions form the operational mechanism of the ecosystem. Their effectiveness depends on the clarity of actor roles, accessibility of information, technological capability, and trust among participants. A well-designed architecture therefore needs to connect financial, informational, service, and governance interactions rather than treating them as

separate organizational activities [40], [41], [43].

4.2.6 Design Verification

The final component is design verification. Following Ma et al. (2021), verification evaluates whether the proposed architecture is sufficiently aligned and feasible. In the KSP context, verification concerns at least three aspects: alignment, feasibility, and coordination. Alignment refers to the consistency between actor roles and value propositions. Feasibility concerns whether the KSP possesses sufficient organizational, technological, financial, and managerial capacity to implement the proposed architecture. Coordination concerns whether interactions among actors can operate effectively without creating conflicting responsibilities or disconnected processes [25].

Design verification is important because an ecosystem architecture should not only describe existing relationships. It should provide a workable structure for organizing those relationships. In this study, verification therefore becomes the basis for assessing whether the proposed KSP architecture can support effective interactions and facilitate value co-creation.

4.2.7 Business Ecosystem Architecture as the Structural Core

The adaptation demonstrates that Business Ecosystem Architecture is more specific than the general Business Ecosystem perspective. Business Ecosystem explains the existence of interdependent actors and relationships, whereas BEA specifies how those actors, roles, value propositions, and interactions are structured and verified. In the proposed KSP model, BEA therefore functions as the main structural concept connecting organizational readiness with value co-creation and cooperative sustainability [23], [25].

The resulting logic can be expressed as:

Organizational Readiness → Business Ecosystem Architecture → Value Co-Creation → Cooperative Sustainability

Digital capability functions as a supporting organizational capability that strengthens ecosystem interactions. Trust provides a relational foundation, while member participation functions as an important mechanism through which resources are integrated and value is co-created. This positioning makes BEA the central architecture of the proposed model rather than merely an extension of the general Business Ecosystem concept [30], [40].

4.3 Value Co-Creation in the Cooperative Ecosystem

The Business Ecosystem Architecture provides the structural arrangement through which value co-creation can occur among actors in the KSP ecosystem. This relationship can be explained through Service-Dominant Logic (S-D Logic), which views value creation as a process of resource integration and interaction among actors rather than as an activity performed solely by the organization. Vargo and Lusch (2016) emphasize that actors participate in service exchange by integrating their resources and that value emerges through use and interaction. Therefore, the architecture identified in Section 4.2 provides the structure, while S-D Logic explains the mechanism through which that structure generates value [32], [28].

Within this perspective, ecosystem actors are not merely recipients of value. They also contribute resources that enable service delivery and value creation. In KSPs, the member has a particularly important position because the member is simultaneously an owner, service user, saver, borrower, and participant in cooperative activities. Members contribute deposits, loan utilization, repayment discipline, information, feedback, and participation in governance and decision-making. These resources complement the resources provided by the KSP, such as financial services, financing facilities, information, administrative support, digital services, and institutional capabilities. Value

therefore emerges from the combination of resources contributed by multiple actors [32], [33], [28], [34].

Member deposits, for example, provide financial resources that support the cooperative's intermediation activities. Loan utilization creates economic value when financing is used to support members' productive or household needs. Repayment discipline contributes to portfolio quality and the continuity of lending services. Meanwhile, information and feedback enable the KSP to understand member needs and improve its products and services. Participation in meetings, governance, and decision-making further enables members to influence the direction of the cooperative. These contributions demonstrate that member participation is not merely an outcome of good service but also an input into the value creation process [34].

The process can therefore be understood as a sequence of interaction → resource integration → value co-creation. The architecture establishes who interacts, what roles they perform, what value they seek, and through which channels interaction occurs. These interactions enable actors to combine financial, informational, technological, social, and organizational resources. Resource integration then produces outcomes that cannot be generated effectively by one actor alone. For example, reliable financing requires the integration of cooperative funds, member information, management capabilities, member repayment behavior, and governance mechanisms. The resulting value is reflected not only in financial service delivery but also in member welfare, trust, participation, and cooperative sustainability [25], [28], [35].

Accordingly, Value Co-Creation is positioned as the mechanism linking Business Ecosystem Architecture to Cooperative Sustainability. BEA provides the structural conditions for interaction, while S-D Logic explains how actors integrate resources through those interactions. Member participation becomes a critical mechanism because the quality and intensity of member contributions affect the effectiveness of

resource integration. Trust further strengthens the willingness of actors to exchange information, use services, fulfill obligations, and participate in cooperative activities. The conceptual relationship can be summarized as follows:

Business Ecosystem Architecture → Actor Interaction → Resource Integration → Value Co-Creation → Cooperative Sustainability

This formulation clarifies the theoretical position of the study. Business Ecosystem Architecture answers "how the ecosystem is structured," while S-D Logic explains "how value is created within that structure." The combination of both perspectives provides a stronger explanation of value creation in KSPs than treating members as passive customers or the cooperative as the sole value creator.

4.4 Supporting Conditions: Readiness, Digital Capability, Trust and Member Participation

The effectiveness of Business Ecosystem Architecture in KSPs depends on several supporting conditions that enable the architecture to function effectively. Organizational readiness and digital capability provide the organizational and technological foundation required to implement ecosystem structures, coordinate actors, manage information, and support digital interactions. Trust strengthens relationships among actors by encouraging information exchange, service utilization, fulfillment of obligations, and willingness to interact within the cooperative ecosystem. Meanwhile, member participation activates the value co-creation process because members contribute deposits, information, feedback, loan utilization, repayment discipline, and involvement in cooperative activities. Thus, these four concepts are positioned as supporting factors rather than the main architecture: readiness and digital capability enable the implementation of the ecosystem architecture, trust strengthens interactions within the architecture, and member participation activates resource

integration and value co-creation [36], [38], [39], [37].

4.5 Integrated Conceptual Framework and Research Propositions

The integrated framework positions Organizational Readiness as the foundation for developing Business Ecosystem Architecture, which structures actors, roles, value propositions, and interactions within KSPs. The architecture enables Value Co-

Creation through actor interaction and resource integration, which ultimately contributes to Cooperative Sustainability. Digital Capability functions as a supporting capability that strengthens the implementation of the architecture, while Trust serves as a relational foundation that strengthens interaction. Member Participation acts as a key mechanism that activates resource integration and value co-creation [23], [32], [40].

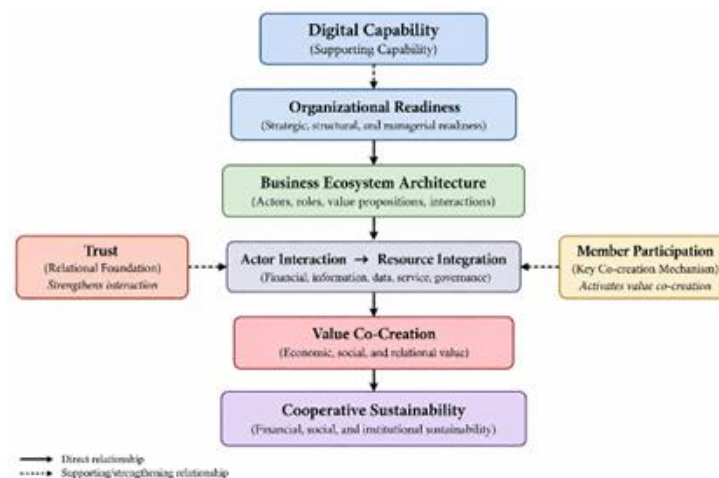


Figure 1. Integrated Conceptual Framework for Savings and Loan Cooperatives

Based on this integrated framework, the study proposes the following research propositions:

- 1) P1: Organizational readiness positively enables the development of Business Ecosystem Architecture in KSPs.
- 2) P2: Business Ecosystem Architecture facilitates value co-creation among KSP ecosystem actors.
- 3) P3: Value co-creation contributes to cooperative sustainability.
- 4) P4: Digital capability strengthens the implementation of Business Ecosystem Architecture.
- 5) P5: Trust strengthens actor interaction and member participation.
- 6) P6: Member participation strengthens the relationship

between ecosystem interaction and value co-creation.

This framework positions Business Ecosystem Architecture as the central structural concept, while readiness, digital capability, trust, and member participation function as supporting conditions and mechanisms that enable the architecture to generate value and contribute to cooperative sustainability.

5. CONCLUSION

This study develops an integrated conceptual framework for strengthening value creation and sustainability in Savings and Loan Cooperatives (KSPs). The framework positions Business Ecosystem Architecture (BEA) as the central structural concept that organizes ecosystem boundaries, actors and roles, value propositions, and interactions. Based on Service-Dominant

Logic, these interactions enable resource integration and value co-creation, which contributes to cooperative sustainability. Organizational readiness and digital capability provide supporting conditions for implementing the architecture, while trust strengthens actor interaction and member participation activates the co-creation process. The proposed framework extends the conventional view of KSPs as financial service providers by positioning members and other ecosystem actors as active contributors to value creation. The six propositions provide a basis for future empirical research to examine the relationships among readiness, BEA,

value co-creation, and cooperative sustainability. Future studies can validate the framework through case studies, surveys, or mixed-method approaches in KSPs.

ACKNOWLEDGEMENTS

The authors would like to express their gratitude to all parties who provided support and valuable contributions to the completion of this study. The authors also appreciate the academic guidance and institutional support received throughout the research process

REFERENCES

- [1] R. Adner, "Ecosystem as Structure : An Actionable Construct for Strategy," vol. 43, no. 1, pp. 39–58, 2017, doi: 10.1177/0149206316678451.
- [2] U. Z. Agustiana and G. Pratama, "Cooperative Principles and Economic Sustainability in the Digital Era : Evidence from Indonesian Cooperatives," vol. 11, no. 2, pp. 60–69, 2025.
- [3] O. Dziubaniuk and L. Aarikka-stenroos, "Ethical value co-creation in circular economy ecosystems : a case study of the textile industry," vol. 6, no. June, pp. 1423–1438, 2026, doi: 10.1108/JBIM-04-2024-0288.
- [4] J. P. Ferdinand, H. J. Christianto, and C. O. Sereati, "Designing a Website-Based Cooperative Application," vol. 16, no. 2, 2023.
- [5] X. Font, R. English, A. Gkritzali, and W. Stella, "Value co-creation in sustainable tourism : A service-dominant logic approach," *Tour. Manag.*, vol. 82, no. July 2020, p. 104200, 2021, doi: 10.1016/j.tourman.2020.104200.
- [6] R. E. Freeman, *Strategic Management: A Stakeholder Approach*. Boston: Pitman, 1984.
- [7] H. Haykal, T. Negoro, and L. Adeline, "Revitalization of Funding for Savings and Loans Cooperatives As Efforts To Improve The State ' s Economy After The Covid-19 Pandemic," vol. 10, no. 2, pp. 124–144, 2021, doi: 10.20961/yustisia.v10i2.50438.
- [8] D. R. Indriastuti, R. Susanti, R. Wulandari, and J. Intan, "Building public trust in cooperatives through digitalization," vol. 5, no. 1, pp. 69–84, 2025.
- [9] J. A. Luft, S. Jeong, R. Idsardi, and G. Gardner, "Literature Reviews , Theoretical Frameworks , and Conceptual Frameworks : An Introduction for New Biology Education Researchers," pp. 1–10, 2022, doi: 10.1187/cbe.21-05-0134.
- [10] Z. Ma, K. Christensen, and B. N. Jørgensen, "Business ecosystem architecture development: a case study of Electric Vehicle home charging," *Energy Informatics*, vol. 4, no. 1, 2021, doi: 10.1186/s42162-021-00142-y.
- [11] A. Mangan and A. M. Ward, "Cooperative resilience : Toward a heuristic model of collective action in a crisis," no. September 2023, pp. 308–325, 2024, doi: 10.1111/faam.12382.
- [12] R. Matheus, R. Faber, E. Ismagilova, and M. Janssen, "International Journal of Information Management Digital transparency and the usefulness for open government," *Int. J. Inf. Manage.*, vol. 73, no. December 2019, p. 102690, 2023, doi: 10.1016/j.ijinfomgt.2023.102690.
- [13] M. Minzar, "Digital Transformation In Cooperatives : Opportunities And Challenges," vol. 26, no. 10, pp. 23–31, 2024, doi: 10.9790/487X-2610132331.
- [14] M. Miswanto, L. Kusumasari, and R. W. Anggoro, "Enhancing Member Welfare in Savings and Loan Cooperatives : The Roles of Digitalization , Product Quality , and Financial Performance," vol. 14, no. 3, pp. 203–225, 2024, doi: 10.33168/JSMS.2024.0313.
- [15] D. J. Sulistyaningsih, "Operational and Externality Risk Management on Cooperative Performance : Moderating Role of Good Governance in Indonesia," vol. 13, no. 5, pp. 1093–1104, 2025, doi: 10.37641/jiakes.v13i5.4108.
- [16] C. Eka, R. Putri, M. Indriani, U. S. Kuala, and B. Aceh, "The Role of Member Participation and

- Governance on Sustainability : Evidence from Cooperatives in South Aceh," vol. 5, no. 2019, pp. 147–155, 2022.
- [17] T. Kumkit, B. Hu, C. Gan, D. Le, and T. Anh, "Enhancing governance practice for better Thailand," pp. 597–612, doi: 10.1111/issj.12366.
 - [18] A. Nurdany, "DIGITALIZATION IN INDONESIAN COOPERATIVES : IS IT NECESSARY ?," vol. 5, no. 2, pp. 120–131, 2020.
 - [19] "Kleanthous, A., Paton, R. A. and Wilson, F. M. (2019) Credit unions, co- operatives, sustainability and accountability in a time of change: a case study of credit unions in Cyprus.," vol. 46, no. September 2018, pp. 309–323, 2019, doi: 10.1108/IJSE-06-2017-0231.
 - [20] I. Yuhertiana, M. Zakaria, D. Suhartini, and H. W. Sukiswo, "Cooperative Resilience during the Pandemic : Indonesia and Malaysia Evidence," pp. 1–13, 2022.
 - [21] N. Abdul Aris, M. Madah Marzuki, R. Othman, S. Abdul Rahman, and N. Hj Ismail, "Designing indicators for cooperative sustainability: the Malaysian perspective," *Soc. Responsib. J.*, vol. 14, no. 1, pp. 226–248, 2018, doi: <https://doi.org/10.1108/SRJ-01-2017-0015>.
 - [22] M. H. Oermann, "Strategies for completing a successful integrative review," pp. 65–68, 2021, doi: 10.1111/nae2.30.
 - [23] M. G. Jacobides, C. Cennamo, and A. Gawer, "Towards a theory of ecosystems," *Strateg. Manag. J.*, vol. 39, no. 8, pp. 2255–2276, 2018, doi: <https://doi.org/10.1002/smj.2904>.
 - [24] Y. Prakasa and Z. A. Jumani, "Linking digital capability to small business performance : the mediating role of digital business transformation," *Cogent Bus. Manag.*, vol. 11, no. 1, p., 2024, doi: 10.1080/23311975.2024.2342486.
 - [25] M. Blaschke, "Design principles for digital value co-creation networks : a service-dominant logic perspective," pp. 443–472, 2019.
 - [26] S. L. Vargo and R. F. Lusch, "Institutions and axioms: an extension and update of service-dominant logic," *J. Acad. Mark. Sci.*, vol. 44, no. 1, pp. 5–23, 2016, doi: 10.1007/s11747-015-0456-3.
 - [27] A. Senadjki, H. Nee, A. Yong, T. Ganapathy, and S. Ogbeibu, "Unlocking the potential : the impact of digital leadership on firms' performance through digital transformation," vol. 4, no. 2, pp. 161–177, 2026, doi: 10.1108/JBSED-06-2023-0050.
 - [28] C. K. Prahalad and V. Ramaswamy, "Co-creating unique value with customers," *Strateg. Leadersh.*, vol. 32, no. 3, pp. 4–9, 2004.
 - [29] S. L. Vargo and R. F. Lusch, "Service-dominant logic: continuing the evolution," *J. Acad. Mark. Sci.*, vol. 36, no. 1, pp. 1–10, 2008.
 - [30] R. F. Lusch and S. Nambisan, "Service innovation: A service-dominant logic perspective1," *MIS Q.*, vol. 39, no. 1, pp. 155–175, 2015.
 - [31] C. Grönroos, "Service logic revisited: who creates value? And who co-creates?," *Eur. Bus. Rev.*, vol. 20, no. 4, pp. 298–314, 2008.
 - [32] H. Alves, C. Fernandes, and M. Raposo, "Value co-creation: Concept and contexts of application and study," *J. Bus. Res.*, vol. 69, no. 5, pp. 1626–1633, 2016, doi: <https://doi.org/10.1016/j.jbusres.2015.10.029>.
 - [33] B. Pathak, M. Ashok, Y. L. Tan, and M. Ashok, "Value co-creation in the B2B context : a conceptual framework and its implications," vol. 2069, 2022, doi: 10.1080/02642069.2021.1989414.
 - [34] A. Payne, K. Storbacka, and P. Frow, "Managing the co-creation of value," *J. Acad. Mark. Sci.*, vol. 36, pp. 83–96, Aug. 2007, doi: 10.1007/s11747-007-0070-0.
 - [35] A. Oertzen, G. Odekerken-schröder, and B. Mager, "Co-creating services — conceptual clarification , forms and outcomes," vol. 29, no. 4, pp. 641–679, 2026, doi: 10.1108/JOSM-03-2017-0067.
 - [36] C. C. Tiu and E. M. Villamar, "Digital Readiness of the Cooperatives in Surigao del Norte," vol. 1, no. 1, pp. 24–34, 2025.
 - [37] N. Halpern, D. Mwesiumo, P. Suau-Sanchez, T. Budd, and S. Bråthen, "Ready for digital transformation? The effect of organisational readiness, innovation, airport size and ownership on digital change at airports," *J. air Transp. Manag.*, vol. 90, p. 101949, Jan. 2021, doi: 10.1016/j.jairtraman.2020.101949.
 - [38] J. Yu and T. Moon, "Impact of Digital Strategic Orientation on Organizational Performance through Digital Competence," pp. 1–15, 2021.
 - [39] J. Yu, J. Wang, and T. Moon, "Influence of Digital Transformation Capability on Operational Performance," 2022.
 - [40] S. Barile, M. Grimaldi, F. Loia, and C. A. Sirianni, "Technology, Value Co-Creation and Innovation in Service Ecosystems: Toward Sustainable Co-Innovation," *Sustainability*, vol. 12, no. 7. p. 2759, 2020. doi: 10.3390/su12072759.

- [41] J. W. Peltier, A. J. Dahl, and E. L. Swan, "Digital information flows across a B2C/C2C continuum and technological innovations in service ecosystems: A service-dominant logic perspective," *J. Bus. Res.*, vol. 121, pp. 724–734, 2020, doi: <https://doi.org/10.1016/j.jbusres.2020.03.020>.
- [42] D. J. Teece, "EXPLICATING DYNAMIC CAPABILITIES : THE NATURE AND MICROFOUNDATIONS OF (SUSTAINABLE) ENTERPRISE PERFORMANCE," vol. 1350, no. February 2004, pp. 1319–1350, 2007, doi: 10.1002/smj.
- [43] Lenna V Shulga, James A Busser, Billy Bai, and Hyelin (Lina) Kim, "The Reciprocal Role of Trust in Customer Value Co-Creation," *J. Hosp. Tour. Res.*, vol. 45, no. 4, pp. 672–696, May 2021, doi: 10.1177/1096348020967068.
- [44] F. K. Steinbruch, L. da S. Nascimento, and D. C. de Menezes, "The role of trust in innovation ecosystems," *J. Bus. Ind. Mark.*, vol. 37, no. 1, pp. 195–208, 2021, doi: <https://doi.org/10.1108/JBIM-08-2020-0395>.
- [45] T. Tuominen, B. Edvardsson, and J. Reynoso, "Institutional change and routine dynamics in service ecosystems," *J. Serv. Mark.*, vol. 34, no. 4, pp. 575–586, Apr. 2020, doi: 10.1108/JSM-06-2019-0243.
- [46] H. Snyder, "Literature review as a research methodology : An overview and guidelines," *J. Bus. Res.*, vol. 104, no. July, pp. 333–339, 2019, doi: 10.1016/j.jbusres.2019.07.039.
- [47] R. Whitemore and K. Knafl, "The integrative review: updated methodology," *J. Adv. Nurs.*, vol. 52, no. 5, pp. 546–553, 2005.
- [48] H. Snyder and H. Snyder, "Designing the literature review for a strong contribution Designing the literature review for a strong contribution," *J. Decis. Syst.*, vol. 33, no. 4, pp. 551–558, 2024, doi: 10.1080/12460125.2023.2197704.
- [49] D. J. Sulistyaningsih and Lindrianasari, "Operational and Externality Risk Management on Cooperative Performance: Moderating Role of Good Governance in Indonesia," *J. Ilm. Akunt. Kesatuan*, vol. 13, no. 5 SE-Articles, pp. 1093–1104, Oct. 2025, doi: 10.37641/jiakes.v13i5.4108.
- [50] S. Syamsiah, B. Ariyanto, Y. K. Firdausia, and F. Seven, "THE IMPACT OF DIGITAL TRANSFORMATION ON THE FINANCIAL PERFORMANCE OF COOPERATIVES IN," vol. 2024, no. 4, pp. 1375–1382, 2024.
- [51] S. L. Vargo and R. F. Lusch, "Evolving to a new dominant logic for marketing," *J. Mark.*, vol. 68, no. 1, pp. 1–17, 2004.

BIOGRAPHIES OF AUTHORS

	Jatnika Eka Patra is a Master's student in Management at Universitas Nusa Putra, Indonesia. He earned a Bachelor's Degree in Accounting from STIE PASIM in 2016. His areas of expertise include management, cooperative management, business ecosystems, digital transformation, and sustainability management. His research interests focus on Savings and Loan Cooperatives, Business Ecosystem Architecture, Value Co-Creation, digital transformation, cooperative governance, and sustainability. Email: jatnika.eka@nusaputra.ac.id
Formal Photo	Yusuf Iskandar Email: yusuf.iskandar@nusaputra.ac.id
Formal Photo	Kurniawan Email: kurniawan@nusaputra.ac.id