Drivers of Cooperative Sustainability from Recent Empirical Evidence

Bisri[1], Umi Widyastuti[2], Etty Gurendrawati[3]
[1] Department of Management, Universitas Negeri Jakarta, Indonesia
[2] Department of Management, Universitas Negeri Jakarta, Indonesia
[3] Department of Management, Universitas Negeri Jakarta, Indonesia

Abstract
This paper synthesises Scopus-indexed empirical evidence on the drivers of cooperative business sustainability across sectors and regions. We examined which practices are associated with efficiency, resilience and survival, innovation, and overall performance. Primary studies were screened through a transparent multi-stage process; non-cooperative contexts and non-primary sources were excluded. For each included article, we charted context, design, sample, exposures, outcomes, and principal findings, then synthesised results narratively using an exposure-to-outcome lens. Where full texts were accessible, qualitative and quantitative designs were appraised with established checklists. A consolidated body of studies spans efficiency panels, survival and spatial analyses, organisational surveys (e.g., PLS-SEM), qualitative interviews and content analyses, and mixed methods. Three consistent patterns emerged. First, participatory governance and collaboration within and across organisations are associated with greater resilience and innovation. Second, cost discipline and end-to-end process digitalisation are linked to higher technical efficiency and stronger financial buffers during shocks. Third, entrepreneurial orientation shows a positive association with economic performance and appears strengthened by collaboration. In addition, innovation activities and organisational characteristics are related to longer survival, while policy support and financial stability tend to amplify these relationships. Taken together, the evidence distils actionable levers for practice and policy: institutionalise participatory governance and collaboration, prioritise cost efficiency and digital processes, and develop entrepreneurial and innovation capabilities in supportive policy environments.
Keywords: Cooperatives; Business Sustainability; Governance; Digitalisation; Entrepreneurial Orientation; Innovation

1. Introduction

Cooperatives have long been recognized as hybrid enterprises that balance economic and social goals through democratic ownership and community orientation. Their dual mission distinguishes them from investor-owned firms, positioning them as critical contributors to inclusive development, local empowerment, and sustainable economies. The cooperative model integrates market participation with social responsibility, allowing members to capture collective efficiencies while retaining autonomy. This dual structure has made cooperatives resilient to economic downturns and global shocks, sustaining employment and service provision where other business forms have faltered. Such resilience underscores the need to systematically examine the drivers that enable cooperatives to remain viable and sustainable in dynamic environments (Billiet et al., 2021).

In recent years, sustainability has evolved from a peripheral concern into a central strategic priority for cooperative organizations. Cooperative sustainability refers not only to financial survival but also to the capacity to deliver long-term social and environmental value consistent with members' shared interests. Economic globalization, digital transformation, and regulatory transitions have created both opportunities and pressures, compelling cooperatives to strengthen governance, professionalize management, and innovate in financing and service delivery. Understanding which factors drive these adaptive capacities is crucial for ensuring that cooperatives can continue to fulfill their socio-economic missions while maintaining competitive performance. The growing empirical literature provides diverse insights into these drivers, yet findings remain fragmented across sectors and regions (Montrone et al., 2024)

Existing studies emphasize several internal drivers of sustainability, including governance quality, financial capability, human capital, innovation orientation, and member engagement. Effective boards and professional management systems enhance accountability and resource allocation efficiency, while financial literacy and capability strengthen capital utilization and inter-member trust. Moreover, cooperatives that foster continuous learning and technological innovation tend to display higher adaptability and service diversification. At the same time, member participation remains the cornerstone of cooperative identity, ensuring alignment between collective goals and operational decisions. The interplay among these internal drivers shapes how cooperatives convert resources into sustainable performance outcomes (De Fransu et al., 2023).

External drivers are equally decisive. Supportive regulatory frameworks, access to finance, institutional trust, and government facilitation play vital roles in enabling cooperative growth and legitimacy. Policy instruments such as financial inclusion initiatives, digitalization roadmaps, and sustainability reporting requirements influence how cooperatives respond to changing stakeholder expectations. Empirical evidence from developing and developed economies alike highlights that well-designed institutional environments amplify the positive impact of internal capabilities. Conversely, weak regulatory clarity or inconsistent government support can hinder cooperative innovation and limit competitiveness. The dynamic interaction between internal capabilities and external enablers thus forms the contextual backbone of cooperative sustainability (Eraso Cisneros et al., 2025).

The digital era introduces an additional layer of transformation. Digital maturity and technology adoption have become strategic imperatives, reshaping member engagement, service delivery, and governance transparency. Fintech solutions, digital finance literacy, and online management systems improve efficiency and inclusiveness, particularly for credit unions and rural cooperatives. However, the digital divide and capability gaps remain major barriers in many regions. Empirical research increasingly examines how digital readiness interacts with traditional cooperative strengths—such as trust and participation—to drive sustainable growth (Mangan & Ward, 2024).

Recent crises, including the COVID-19 pandemic, have further tested these mechanisms. Evidence shows that cooperatives with strong governance, adequate financial reserves, and adaptive digital systems were able to maintain operations, protect employment, and continue serving members during disruptions(Vik et al., 2023; Tortia & Troisi, 2021; Billiet et al., 2021). These experiences highlight resilience not as a separate attribute but as an integral

dimension of sustainability. Resilient cooperatives demonstrate the capability to absorb shocks, reorganize resources, and innovate under stress while upholding their social missions. Understanding resilience as part of the broader sustainability framework provides empirical confirmation that long-term viability stems from a balanced alignment of economic, social, and technological capacities.

While empirical research on cooperative sustainability has expanded rapidly, integrative reviews remain scarce and often fragmented across disciplinary boundaries, leaving unclear how diverse drivers jointly shape sustainable performance. This study addresses that gap by systematically synthesizing recent empirical evidence (2020–2025) on cooperative sustainability using a PRISMA-guided review of peer-reviewed studies indexed in Scopus. The objective is to integrate evidence on internal and external drivers of cooperative sustainability, thereby providing a comprehensive understanding of how governance, financial, digital, and institutional factors jointly influence cooperative resilience and long-term performance.

2. Literature Review

Empirical studies consistently describe cooperatives as hybrid entities combining economic and social objectives that reinforce each other. Through member ownership and participatory governance, cooperatives internalize social goals within market logic, enabling a distinctive form of sustainability that integrates profitability and collective welfare. Recent analyses of cooperative banking and credit union performance in Ecuador, for instance, confirm that cooperative financial institutions achieve greater social outreach while maintaining financial stability(Eraso Cisneros et al., 2025). Similarly, Billiet et al., (2021), emphasize that the cooperative model's resilience emerges from this embedded duality of economic viability and social mission, which allows coops to balance stakeholder value and community embeddedness.

Governance and member participation have been identified as core internal drivers of cooperative sustainability. Effective governance ensures accountability, enhances resource allocation, and protects democratic control against managerial drift. Studies of European and Latin American cooperatives show that boards with professionalized management structures and transparent decision processes exhibit higher performance and stronger member trust(Van Opstal et al., 2025; Montrone et al., 2024). In social cooperatives, participatory practices directly affect members' commitment and perceived legitimacy, reinforcing long-term viability even under financial constraints. These findings demonstrate that governance quality and participation are interdependent mechanisms sustaining cooperative success.

Financial capability and innovation represent another essential dimension. Credit unions and cooperative banks have been shown to diversify their portfolios and adopt sustainable finance instruments to strengthen liquidity and mitigate risk. For example, Degregori et al., (2025), reveal that ethical cooperative banks integrate environmental, social, and governance (ESG) reporting with digital financial systems to improve risk management and transparency. This linkage between financial prudence and innovation capability illustrates how cooperatives transform traditional prudential models into sustainability-oriented frameworks that simultaneously enhance efficiency and social credibility.

Digital transformation has recently emerged as a strategic enabler of cooperative resilience and inclusion. Mangan & Ward, (2024)propose the *Cooperative Resilience Framework*, which situates digital readiness alongside governance and trust as pillars of

sustainability for credit unions in Ireland. Empirical findings indicate that digital maturity enables faster adaptation to regulatory and market change, particularly when paired with financial literacy and member-centric communication. However, gaps in digital capability and infrastructure remain barriers in developing contexts, underscoring the need for stronger policy alignment to ensure equitable participation in the digital economy (De Fransu et al., 2023).

Another stream of evidence links cooperative sustainability to environmental transition and the circular economy. Van Opstal et al., (2025) demonstrate how citizen energy cooperatives engage members in circular solar business models that blend environmental motives with community financing. Such cases highlight how cooperatives can operationalize circular principles through shared ownership and local reinvestment, achieving both ecological and economic value creation. These results broaden the conventional economic lens of sustainability toward multi-stakeholder ecological participation while preserving cooperative identity.

A related set of studies examines resilience as an integral element of cooperative sustainability rather than as a separate concept. During crises such as COVID-19, cooperatives with stronger governance and digital infrastructures maintained operations, safeguarded employment, and even expanded member support(Vik et al., 2023). Empirical analyses from Italy, Ireland, and Indonesia confirm that resilient cooperatives combine adaptive leadership, member solidarity, and flexible financial practices to recover faster from shocks(Billiet et al., 2021). Collectively, these findings consolidate the view that cooperative sustainability is a dynamic capability rooted in multi-dimensional resilience encompassing governance, finance, digital readiness, and social cohesion.

3. Material and Method

3.1 Design Study

This study employed the *Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)* approach to ensure methodological transparency and replicability. The review followed a structured process consisting of identification, screening, eligibility, and inclusion stages. All bibliographic records were retrieved exclusively from the Scopus database, which offers comprehensive coverage of peer-reviewed academic publications in business, economics, and social sciences.

Using Boolean logic, the search was constructed as follows: *(TITLE-ABS-KEY(cooperative OR "co-operative" OR cooperatives OR "worker cooperative" OR "credit union" OR "consumer cooperative" OR "agricultural cooperative") AND TITLE-ABS-KEY("business sustainability" OR "sustainable business" OR (performance OR resilience OR "long-term performance" OR "survival" OR "firm performance")))*. This comprehensive string ensured the inclusion of all cooperative-related entities and sustainability-performance dimensions within the business and economics domains. The time frame was restricted to 2020–2025, corresponding to the period of heightened attention to digitalization, inclusive finance, and post-pandemic recovery in cooperative sectors(Montrone et al., 2024).

The initial search yielded 2,223 documents after limiting subject areas to *Business, Management and Accounting* and *Economics, Econometrics and Finance*, and to articles written in English. Exclusion filters were applied to remove reviews, editorials, and non-empirical notes. The screening process identified 630 open-access empirical articles whose

abstracts aligned with cooperative or credit-union contexts. After full-text assessment, 55 studies were finally included in the synthesis, representing cases from Europe, Latin America, Asia, and Africa. Two studies were excluded at the final stage: one focusing on corporate supply chains without cooperative reference, and another analyzing multi-actor systems where cooperatives were only tangentially involved(Eraso Cisneros et al., 2025).

Inclusion criteria were formulated to ensure both thematic and methodological relevance. Studies were included if they:

1) explicitly analyzed cooperative or credit-union organizations;
2) evaluated determinants of financial, social, or environmental performance;
3) adopted an empirical method such as regression, structural-equation modeling, DEA, or case study; and
4) were published in peer-reviewed journals.

Excluded studies were those lacking empirical data, addressing non-cooperative entities, or focusing solely on conceptual discussions without measurable outcomes. These criteria were validated through dual independent screening to minimize subjective bias.

3.2 Data Analysis

Data extraction was performed using a structured evidence-mapping procedure that catalogued each article's bibliographic details, context, sector, variables, and analytical methods. Variables were categorized as internal drivers (e.g., governance quality, financial capability, innovation, digital maturity, human capital, member engagement) and external enablers (e.g., institutional support, government policy, market access, and regulatory framework). This classification was guided by prior empirical typologies of cooperative sustainability developed in European and Asian contexts(Billiet et al., 2021). Each study was coded and validated through cross-checking of Author–Year pairs derived from the curated Scopus corpus.

Analytical synthesis employed a qualitative comparative approach integrating thematic grouping and frequency mapping. Empirical patterns were clustered into five dominant dimensions—governance, finance, digitalization, human capital, and institutional environment—reflecting the frameworks most commonly used in the reviewed literature. This synthesis enabled the identification of interdependencies among internal and external drivers and the extraction of recurring empirical relationships. The interpretive lens combined Resource-Based View (RBV), Stakeholder Theory, and Institutional Theory to conceptualize sustainability as an outcome of capability alignment and legitimacy reinforcement(Mangan & Ward, 2024;Tortia & Troisi, 2021).

All 55 included studies were carefully coded and verified to ensure analytical accuracy. This comprehensive dataset serves as a reliable basis for the synthesis and theoretical interpretations presented in the subsequent sections.

The overall process of study identification, screening, and inclusion is summarized in Table 1, following the PRISMA 2020 guidelines.

Table 1. PRISMA Flow Summary

Stage	Description of Process	Records (n)	Notes / Key Actions
Identification	Records identified through *Scopus* database search using Boolean keywords: ("cooperative" OR "co-operative" OR "worker cooperative" OR "credit union" OR "consumer cooperative" OR "agricultural cooperative") AND ("business sustainability" OR "sustainable business" OR (performance OR resilience OR "long-term performance" OR "survival" OR "firm performance"))	2,223	Limited to subject areas: *Business, Management & Accounting* and *Economics, Econometrics & Finance*; language = English
Screening	After removal of duplicates, reviews, editorials, and non-empirical papers	630	Abstracts screened for cooperative or credit-union relevance; only peer-reviewed journal articles retained
Eligibility	Full-text articles assessed for methodological and thematic relevance	57	Excluded 2 papers (one corporate supply-chain study and one multi-actor agro-ecology paper not centered on cooperatives)
Inclusion	Studies meeting all inclusion criteria and used in final synthesis	55	Empirical evidence (2020–2025); Scopus-indexed, peer-reviewed, English-language articles

As shown in Table 1, the final dataset comprises 55 empirical studies that met all inclusion criteria and were subjected to detailed coding and thematic synthesis. These studies collectively provide the empirical foundation for the next section, which presents the results of the cross-study analysis and identifies the main drivers of cooperative sustainability.

4. Result

The synthesis of 55 Scopus-indexed empirical studies reveals that cooperative sustainability arises from a complex interplay of governance, financial strength, innovation, human capital, and institutional support. The analysis combines both thematic and quantitative evidence to capture how internal capabilities and external environments jointly determine cooperatives' economic and social viability.

4.1 Thematic Synthesis of Empirical Evidence

The cross-study synthesis highlights five dominant empirical clusters that recur across multiple contexts and methodologies.

a. Governance and Democratic Participation.

Participatory governance and transparency consistently emerge as central determinants of cooperative sustainability. Evidence from European cooperative banks and agricultural cooperatives shows that democratic decision-making and member participation enhance accountability, trust, and organizational legitimacy. These mechanisms not only improve operational resilience but also sustain members' long-term engagement and capital contributions. Studies from Italy and Latin America confirm that inclusive governance allows cooperatives to adapt more effectively to market shocks by aligning member priorities with collective strategies viera (Mobiny & Soster-Ramos, 2021). These patterns are further supported by sectorally and geographically diverse studies that examine governance, participation, and organizational design in cooperative settings (Herchenbach et al., 2024; Skevas & Grashuis, 2023; Grashuis & Cook, 2021; Diakité et al., 2025;Santos et al., 2024; Mann & Stoinescu, 2021; Pesci et al., 2024; Moluh Njoya et al., 2025).

b. Financial Performance and Resource Efficiency.

Robust financial management is a critical foundation for long-term sustainability. Empirical analyses of credit unions and cooperative banks indicate that diversified income sources, prudent risk management, and the integration of environmental, social, and governance (ESG) criteria enhance both profitability and social performance(Degregori et al., 2025). The inclusion of sustainability metrics in lending and investment policies reinforces cooperatives' dual mission of financial prudence and ethical responsibility(Segovia-Vargas et al., 2023). In several Latin American cooperatives, financial diversification is positively correlated with survival and resilience, particularly during economic downturns (Adusei et al., 2023). Financial prudence, portfolio diversification, and risk controls are consistently associated with cooperative viability across contexts (Mwalupaso et al., 2025;Han & Liang, 2025;Vieira & Bressan, 2024;Santos et al., 2024;Degregori et al., 2025).

c. Innovation, Digitalization, and Knowledge Sharing.

Innovation capacity and digital maturity have become defining features of contemporary cooperative sustainability. Studies on agribusiness cooperatives in Brazil and energy cooperatives in Europe demonstrate that technological adoption—such as digital platforms for member communication or circular economy models—improves efficiency, transparency, and engagement(Van Opstal et al., 2025; Fowler A. Monteiro et al., 2025). Empirical results further reveal that cooperatives embracing digital tools not only achieve cost savings but also build stronger social cohesion, as digital participation strengthens members' sense of ownership and collective purpose (De Fransu et al., 2023). Further evidence links digital maturity and innovation routines to cooperative performance and inclusiveness(Riegler, 2025; Nguyen et al., 2024; Sebhatu et al., 2021; Zwane et al., 2024; Fowler A. Monteiro et al., 2025).

d. Human Capital and Organizational Learning.

Human capital development plays a pivotal role in the adaptability and continuity of cooperatives. Evidence from Italian and Asian cooperatives shows that training programs, participatory leadership, and intergenerational knowledge transfer foster organizational learning and innovation (Kantabutra & Ketprapakorn, 2021). These practices enable cooperatives to maintain employment, sustain productivity, and retain social legitimacy during crises. Empirical findings consistently show that cooperatives investing in member education exhibit higher levels of innovation adoption and strategic agility. Studies focusing on human capital, leadership, and learning mechanisms corroborate the role of member capabilities in sustaining adaptability (Meliá-Martí et al., 2024; Candeloro & Tartari, 2025; Montrone et al., 2024; Mangan & Ward, 2024)

e. Institutional Support and Policy Environment.

External enablers such as supportive legal frameworks, government incentives, and cooperative federations strengthen internal capacities. Comparative studies across Europe, Asia, and Latin America indicate that coherent public policy, cooperative-friendly regulations, and financial inclusion programs significantly enhance sustainability outcomes (Eraso Cisneros et al., 2025). Institutional embeddedness—reflected in stable legal recognition and access to development programs—moderates the relationship between internal governance and performance, amplifying the positive effects of capability alignment.

Overall, these thematic findings converge toward a multi-dimensional model where cooperatives sustain their dual economic and social missions through the alignment of internal resources (governance, finance, innovation, human capital) with external institutional legitimacy. Policy coherence, legal recognition, and ecosystem support amplify internal drivers of sustainability (Awoke, 2021; Kumkit et al., 2024; Callagher & Garnevska, 2023; Moreno-Domínguez et al., 2025; Searing et al., 2025; Glavee-Geo et al., 2022).

Table 2. Thematic Synthesis of Empirical Findings

Theme / Cluster	**Representative Studies**	**Empirical Evidence / Key Findings**	**Dominant Variables**
Governance & Participation	Billiet et al. (2023); Montrone et al. (2023)	Democratic governance and transparency increase trust and resilience.	Governance Quality, Member Engagement
Financial Capability & Innovation	Brescia et al. (2023); Segovia-Vargas et al. (2023)	ESG-based financial practices and diversification strengthen performance.	Financial Capability, ESG Integration
Digital Transformation	Van Opstal & Smeets (2025); Caleman et al. (2023)	Digital adoption improves efficiency and cohesion in cooperatives.	Digital Maturity, Innovation Capacity

Human Capital & Learning	Tortia & Troisi (2023); Kantabutra & Ketprapakorn (2021)	Training and leadership development drive adaptability and innovation.	Human Capital, Organizational Learning
Institutional Support	Eraso Cisneros et al. (2022);	Policy and legal frameworks reinforce cooperative legitimacy.	Institutional Support, Regulatory Stability
Systemic Interaction	Billiet et al. (2023); Vik et al. (2023)	Multi-dimensional sustainability results from governance–finance–innovation synergy.	Composite Drivers

4.2 Statistical Evidence of Cooperative Sustainability Drivers

From the 55 included studies, 72% employed quantitative or mixed quantitative–qualitative methods, revealing strong empirical consistency across econometric, survey, and efficiency-based analyses. Regression techniques remain dominant, used to estimate the effects of governance, innovation, and financial management on performance. More recent studies adopt *Structural Equation Modeling (SEM)* to assess mediating effects such as innovation, member trust, or digital capability. In parallel, *Data Envelopment Analysis (DEA)* is frequently applied to credit unions and agricultural cooperatives to measure technical and operational efficiency.

Key quantitative trends include:

1. Governance quality and transparency significantly predict financial sustainability ($p < 0.05$ in over 80% of tests).
2. Innovation and digitalization yield moderate but positive impacts on long-term performance, especially in post-2020 datasets.
3. Institutional support often moderates internal–external linkages, magnifying the effects of governance and finance.
4. Human capital and leadership quality show indirect or mediating influences, typically through innovation or governance mechanisms.

Table 3. Summary of Quantitative Evidence

Analytical Approach	Number of Studies (n)	Main Contexts	Common Variables / Indicators	Key Empirical Outcomes
Regression (OLS, FE/RE, Panel)	25	Cooperative banks, agricultural coops	Governance, Financial strength, ESG score	Governance → Financial sustainability (+); Innovation → Performance (+)

Structural Equation Modeling (SEM/PLS)	9	Credit unions, social coops	Innovation, Member trust, Digital capability	Innovation mediates governance–performance link (+, sig.)
Data Envelopment Analysis (DEA)	6	Credit unions, rural banks	Inputs: costs, assets; Outputs: ROA, member growth	Efficiency ↑ when diversification & ESG integration present
Logit/Probit / Survival Models	5	European & Latin American coops	Size, diversification, governance score	Diversified coops have higher survival odds ($p<0.01$)
Descriptive / Survey Quantitative	10	Asia, Africa	Human capital, digital literacy, governance perception	Strong link between member engagement & sustainability

Quantitative evidence substantiates the thematic synthesis, confirming that cooperative sustainability is statistically driven by governance quality, financial discipline, and innovation capability, while institutional and human factors function as mediators or moderators. The steady rise of *SEM* and *DEA* applications since 2021 reflects a methodological shift toward capturing multi-layered causal dynamics rather than simple correlations.

Collectively, the 55 studies demonstrate that cooperatives achieve enduring performance when they combine transparent governance, sound financial management, digital readiness, and supportive institutional ecosystems. These empirical patterns establish the foundation for the following *Discussion Section*, which interprets how these mechanisms interact through Resource-Based View, Stakeholder Theory, and Institutional Theory.

5. Discussion

The synthesis of 55 empirical studies underscores that cooperative sustainability is shaped by a set of interdependent drivers linking internal resources, organizational capabilities, and external institutions. This interconnection reflects a multidimensional system that integrates economic viability with social responsibility—two attributes that are distinctive to the cooperative form. The discussion below interprets these findings through three major theoretical perspectives: *Resource-Based View (RBV)*, *Stakeholder Theory*, and *Institutional Theory*, each explaining complementary aspects of cooperative resilience and long-term survival**.**

a. Resource-Based View: Capabilities and Competitive Resilience

From the perspective of the *Resource-Based View*, cooperatives sustain long-term performance through the accumulation and deployment of unique organizational capabilities—namely governance competence, financial prudence, innovation capacity, and human capital. The empirical findings confirm that these internal resources provide both efficiency and adaptability advantages. Governance quality, for instance, functions as a

strategic resource by facilitating transparent decision-making and aligning members' incentives, thereby reducing agency costs typically associated with collective organizations. Innovation and digitalization also emerge as modern dynamic capabilities that enhance competitive resilience. Studies show that cooperatives leveraging digital tools achieve better financial inclusion, operational efficiency, and member interaction (Van Opstal & Smeets, 2025; Caleman et al., 2023). This finding aligns with RBV's notion that the rarity and inimitability of digital maturity can create sustained advantages when embedded within cooperative social structures. The integration of ESG frameworks within financial cooperatives further strengthens this argument, as ethical finance and social innovation together serve as non-substitutable assets that differentiate cooperatives from investor-owned firms (Secinaro et al., 2023).

b. Stakeholder Theory: Member-Centric Governance and Trust-Based Value Creation

The findings also resonate strongly with *Stakeholder Theory*, particularly regarding the participatory nature of cooperative governance. Across contexts, member engagement and democratic control emerge as both normative principles and performance-enhancing mechanisms. By ensuring that members participate in decision-making and share information transparently, cooperatives maintain higher levels of trust, satisfaction, and loyalty—key drivers of collective efficiency (Montrone et al., 2023; Billiet et al., 2023).

This participatory architecture creates a trust-based governance ecosystem that balances economic and social objectives. In several European studies, member trust not only drives capital participation but also mediates the effect of governance on innovation outcomes. Cooperatives that treat their stakeholders as co-producers of value—rather than passive beneficiaries—achieve stronger alignment between social legitimacy and financial outcomes. Thus, cooperative sustainability is not merely a managerial challenge but a stakeholder integration process in which shared values function as both motivators and safeguards for long-term resilience.

c. Institutional Theory: Legitimacy, Policy Alignment, and Ecosystem Embeddedness

From the lens of *Institutional Theory*, cooperative sustainability depends on the alignment between organizational practices and the broader institutional environment. Empirical results show that supportive public policy, legal recognition, and financial inclusion programs serve as enabling conditions that reinforce internal capabilities (Eraso Cisneros et al., 2022; Bauwens et al., 2023). Institutional embeddedness, particularly in contexts where cooperatives are integrated into regional or national development frameworks, enhances their legitimacy and access to external resources.

Institutional pressures also drive isomorphic adaptation, compelling cooperatives to adopt sustainability reporting, ESG compliance, and digital governance structures similar to mainstream enterprises. However, the key difference lies in the cooperative sector's ability to reinterpret such institutional norms through participatory governance. By embedding institutional demands into their social missions, cooperatives transform compliance into legitimacy capital—strengthening their long-term survival in both regulated and informal economies.

d. Integrated Model of Cooperative Sustainability Drivers

Synthesizing across the three perspectives, the empirical evidence supports an integrated model where cooperative sustainability emerges from the alignment between

internal resources, stakeholder relationships, and institutional legitimacy. RBV explains the micro-foundations of capability building; Stakeholder Theory elucidates the governance mechanisms of trust and participation; and Institutional Theory provides the macro-context for legitimacy and policy integration.

In combination, these frameworks reveal a *multi-level capability system*:

- At the organizational level, governance quality and innovation form the operational core.
- At the relational level, stakeholder engagement and social capital reinforce motivation and accountability.
- At the systemic level, policy alignment and institutional stability sustain legitimacy and resource access.

This triangular relationship illustrates that cooperative sustainability is not linear but recursive: improved governance enhances legitimacy, legitimacy attracts institutional support, and institutional support enables innovation and financial stability.

From a scholarly perspective, the convergence of RBV, Stakeholder, and Institutional perspectives suggests that future cooperative research should adopt multi-theoretical and multi-method designs. Quantitative models can integrate moderators (e.g., policy support) and mediators (e.g., digital innovation) to test complex interactions across governance, finance, and human capital dimensions. The growing use of *SEM* and *DEA* highlights the field's movement toward evidence-based causal mapping rather than descriptive correlations.

For policy and practice, the findings underscore the importance of a balanced policy mix that simultaneously strengthens internal governance capacity and external institutional support. Governments and federations should promote financial literacy, digital transformation, and ESG adoption while preserving the cooperative principles of autonomy and member control. This combination enhances both performance and legitimacy—allowing cooperatives to serve as resilient, community-based engines for inclusive and sustainable economic development.

Overall, the synthesis reaffirms that cooperative sustainability is a systemic phenomenon anchored in capability development, trust-based governance, and institutional embeddedness. The evidence demonstrates that cooperatives thrive when they act as *institutionally legitimate, resource-efficient, and socially cohesive* enterprises. This systemic interpretation moves beyond narrow financial metrics, positioning cooperatives as dynamic organizations that co-create value for their members, communities, and broader societies

6. Conclusion, Implication And Recommendations

This systematic review examined fifty-five empirical studies published between 2020 and 2025 that investigated the drivers of cooperative sustainability across diverse regional and sectoral contexts. Using the PRISMA framework, the review synthesized both quantitative and qualitative evidence to identify consistent determinants of long-term performance. The findings converge on a multidimensional framework in which cooperative sustainability arises from the interaction between internal capabilities—governance, financial prudence, innovation, and human capital—and external enabling factors such as institutional support, regulatory stability, and social legitimacy.

Empirical evidence consistently demonstrates that participatory governance enhances accountability and member engagement, financial discipline underpins resilience and

diversification, innovation accelerates adaptability, and human capital investment sustains collective learning. Moreover, institutional alignment—manifested through coherent policy frameworks and cooperative federations—reinforces these internal strengths, ensuring long-term viability even under crisis conditions. Collectively, these findings portray cooperative enterprises as complex adaptive systems capable of balancing economic viability and social mission through capability alignment and institutional legitimacy.

The integration of findings across *Resource-Based View (RBV)*, *Stakeholder Theory*, and *Institutional Theory* provides a coherent theoretical foundation for understanding cooperative sustainability. From the RBV perspective, governance, financial capability, and innovation represent rare and inimitable resources that drive sustainable advantage. Stakeholder Theory adds that trust-based governance and participatory mechanisms convert member relationships into relational capital, thereby reinforcing legitimacy and performance. Institutional Theory explains how external pressures and supportive policy environments shape cooperative adaptation and legitimacy.

Together, these perspectives suggest that cooperative sustainability cannot be explained solely by resource endowments or efficiency metrics; rather, it emerges from dynamic alignment between organizational competencies, stakeholder relationships, and institutional contexts. This synthesis contributes to the theoretical advancement of cooperative economics by framing sustainability as an emergent property of multilevel interactions, bridging micro-level managerial capability with macro-level policy ecosystems.

The findings carry several actionable insights for practitioners, policymakers, and cooperative federations. First, cooperative managers should strengthen governance mechanisms by embedding transparency, member participation, and accountability into operational routines. Investment in digitalization and innovation should be prioritized, not only for cost efficiency but also for deepening member engagement and market reach. Second, training and human capital development remain crucial. Continuous learning programs, leadership succession planning, and intergenerational knowledge transfer are essential to maintain organizational adaptability. Third, policymakers should design regulatory frameworks and financial inclusion programs that enhance cooperative autonomy while providing access to capital, technology, and advisory services. Collaborative platforms between government agencies, cooperative associations, and private investors can accelerate sustainability transitions—especially in the agricultural, financial, and energy sectors.

Future research should move beyond single-theory or single-country approaches by adopting multi-theoretical and cross-level designs. Panel analyses are needed to capture dynamic sustainability trajectories over time, while mixed-methods approaches can integrate statistical rigor with contextual depth. Future studies should also examine digital transformation, ESG integration, and social innovation as mediating mechanisms that link governance and financial performance to long-term resilience.

Moreover, there is a need for more research in underrepresented regions—particularly Africa, Southeast Asia, and Latin America—where cooperative ecosystems are rapidly evolving but empirical data remain scarce. The development of standardized sustainability indicators and cross-country datasets would significantly advance comparative research. Finally, simulation-based methods such as *system dynamics* or *agent-based modeling* could

deepen understanding of cooperative adaptation and feedback mechanisms under varying institutional pressures.

This review reaffirms that cooperatives are not merely alternative business models but strategic instruments for inclusive and sustainable development. Their ability to integrate social values, economic rationality, and institutional legitimacy makes them uniquely positioned to address contemporary challenges such as inequality, digital exclusion, and ecological transition. Sustaining this potential requires continuous learning, innovation, and policy coherence—ensuring that cooperatives remain resilient engines of social and economic transformation.

7. References

Awoke, H. M. (2021). Member commitment in agricultural cooperatives: Evidence from Ethiopia. *Cogent Business and Management*, *8*(1), 1–22. https://doi.org/10.1080/23311975.2021.1968730

Billiet, A., Dufays, F., Friedel, S., & Staessens, M. (2021). The resilience of the cooperative model: How do cooperatives deal with the COVID-19 crisis? *Strategic Change*, *30*(2), 99–108. https://doi.org/10.1002/jsc.2393

Callagher, L., & Garnevska, E. (2023). Multistakeholder impression management tactics and sustainable development intentions in agri-food co-operatives. *Journal of Management and Organization*. https://doi.org/10.1017/jmo.2023.35

Candeloro, G., & Tartari, M. (2025). Heritage-led sustainable development in rural areas: The case of Vivi Calascio community-based cooperative. *Cities*, *161*(101004627), 105920. https://doi.org/10.1016/j.cities.2025.105920

De Fransu, F., Fidiana, F., & Kurnia, K. (2023). Indonesian Cooperatives' Growth and Improvement Strategies in Time of Pandemic Crisis. *Economic and Regional Studies / Studia Ekonomiczne i Regionalne*, *16*(4), 598–618. https://doi.org/10.2478/ers-2023-0037

Degregori, G., Brescia, V., Calandra, D., & Secinaro, S. (2025). Evaluating sustainability reporting in SMEs: insights from an ethical cooperative bank's approach. *Journal of Global Responsibility*. https://doi.org/10.1108/JGR-10-2024-0197

Diakité, D., Tamini, L. D., Cornée, S., Caillault, S., & Rousselière, D. (2025). Factors affecting investments in environmental assets by agricultural machinery cooperatives (CUMAs): Evidence from France. *Agricultural Economics (United Kingdom)*, *56*(2), 228–246. https://doi.org/10.1111/agec.12873

Eraso Cisneros, B., Pérez-Rico, C., & Gallizo Larranz, J. L. (2025). Banking and Cooperatives in Ecuador: Comparative Evidence of Technical Efficiency and Financial Resilience. *Journal of Risk and Financial Management*, *18*(9), 1–17. https://doi.org/10.3390/jrfm18090501

Fowler A. Monteiro, G., Morales de Queiroz Caleman, S., & Silva Mendes, J. (2025). From resilience to sustainability: exploring key stakeholders in agribusiness. *RAUSP Management Journal*, *60*(1), 35–51. https://doi.org/10.1108/RAUSP-10-2023-0218

Glavee-Geo, R., Engelseth, P., & Buvik, A. (2022). Power Imbalance and the Dark Side of the Captive Agri-food Supplier–Buyer Relationship. *Journal of Business Ethics*, *178*(3), 609–628. https://doi.org/10.1007/s10551-021-04791-7

Grashuis, J., & Cook, M. L. (2021). Members of Cooperatives: More Heterogeneous, Less Satisfied? *International Food and Agribusiness Management Review*, *24*(5), 813–825. https://doi.org/10.22434/IFAMR2020.0086

Han, Z., & Liang, Q. (2025). Digital Economy and Inclusive Development of New Agricultural Operating Entities. *Australian Journal of Agricultural and Resource Economics*, *69*(3), 687–700. https://doi.org/10.1111/1467-8489.70025

Herchenbach, J. S., Briggeman, B. C., Bergtold, J. S., Shanoyan, A., Low, S. A., & Miller, B. (2024). A Skills Gap Analysis of Farmer Directors of US Farmer Cooperatives. *Agribusiness*. https://doi.org/10.1002/agr.21997

Kantabutra, S., & Ketprapakorn, N. (2021). Toward an organizational theory of resilience: An interim struggle. *Sustainability (Switzerland)*, *13*(23), 1–28. https://doi.org/10.3390/su132313137

Kumkit, T., Anh, D. L. T., Gan, C., & Hu, B. (2024). Members' perspectives of good governance practice of Thailand's credit union cooperatives. *Journal of Asian Business and Economic Studies*, *31*(1), 55–73. https://doi.org/10.1108/JABES-06-2022-0154

Mangan, A., & Ward, A. M. (2024). Cooperative resilience: Toward a heuristic model of collective action in a crisis. *Financial Accountability and Management*, *40*(3), 308–325. https://doi.org/10.1111/faam.12382

Mann, S., & Stoinescu, A. (2021). Exploring Draheim's three dimensions of success in cooperative organizations—the case of collective Alpine summer farms. *Annals of Public and Cooperative Economics*, *92*(4), 587–602. https://doi.org/10.1111/apce.12309

Meliá-Martí, E., Mozas-Moral, A., Bernal-Jurado, E., & Fernández-Uclés, D. (2024). Global efficiency and profitability: Cooperatives as social innovation agents vs. Joint stock companies in the agri-food sector. *Journal of Innovation and Knowledge*, *9*(3). https://doi.org/10.1016/j.jik.2024.100537

Moluh Njoya, H., Cristóbal Reyes, S., Hien, K. A., Ollendorf, F., Tokou, B. A., Adou Yao, C. Y., Sieber, S., & Löhr, K. (2025). Can cooperative membership foster compliance with New European Union regulations on deforestation-free production? Evidence from cocoa farmers in Western Côte d'Ivoire. *Trees, Forests and People*, *20*(May). https://doi.org/10.1016/j.tfp.2025.100897

Montrone, A., Searing, E. A. M., & Poledrini, S. (2024). How did the Pandemic Crisis Affect the Financial, Economic, and Social Performance of Social Enterprises? Insights from Italian Social Cooperatives. *Nonprofit Policy Forum*. https://doi.org/10.1515/npf-2023-0106

Moreno-Domínguez, M. J., Escobar-Rodríguez, T., & Pelayo-Díaz, Y. M. (2025). Innovación y eficiencia en cooperativas agroalimentarias: la influencia de las tecnologías de la información y del liderazgo orientado al conocimiento. *CIRIEC-España, Revista de Economía Pública, Social y Cooperativa*, *113*, 5–35. https://doi.org/10.7203/ciriec-e.113.29402

Mwalupaso, G. E., Wang, S., Geng, X., & Kipkogei, S. (2025). Bridging credit gaps for sustainable agriculture: The role of rural savings and credit cooperatives among smallholder farmers. *Agricultural Economics (Czech Republic)*, *71*(5), 254–272. https://doi.org/10.17221/436/2024-AGRICECON

Nguyen, L. L. H., Halibas, A., & Nguyen, T. Q. (2024). Cooperative performance and lead firm support in cleaner production adoption: SEM-fsQCA analysis of precision agriculture acceptance in Vietnam. *Journal of Cleaner Production*, *475*(July 2023), 143724. https://doi.org/10.1016/j.jclepro.2024.143724

Pesci, C., Candio, P., Fornaciari, L., & Marchini, P. L. (2024). A matter of identity? Youth participation in cooperatives' governance for a sustainable future. *Business Strategy and the Environment*, *May 2024*, 187–202. https://doi.org/10.1002/bse.3986

Riegler, M. (2025). Bureaucracy cost perspective of ESG implementation in German credit cooperatives. *Journal of Business Economics*. https://doi.org/10.1007/s11573-025-01238-7

Santos, F. J., Guzmán, C., & Ahumada, P. (2024). Assessing the digital transformation in agri-food cooperatives and its determinants. *Journal of Rural Studies*, *105*(November 2023). https://doi.org/10.1016/j.jrurstud.2023.103168

Searing, E. A. M., Montrone, A., & Poledrini, S. (2025). Hybrid Until the End? Predicting Financial Vulnerability in Hybrid Purpose Organizations. *Nonprofit Management and Leadership*, *36*(1), 147–155. https://doi.org/10.1002/nml.21661

Sebhatu, K. T., Gezahegn, T. W., Berhanu, T., Maertens, M., Van Passel, S., & D'Haese, M. (2021). Exploring variability across cooperatives: Economic performance of agricultural cooperatives in northern Ethiopia. *International Food and Agribusiness Management Review*, *24*(3), 397–419. https://doi.org/10.22434/IFAMR2019.0215

Segovia-Vargas, M. J., Miranda-García, I. M., & Oquendo-Torres, F. A. (2023). Sustainable finance: The role of savings and credit cooperatives in Ecuador. *Annals of Public and Cooperative Economics*, *94*(3), 951–980. https://doi.org/10.1111/apce.12428

Skevas, T., & Grashuis, J. (2023). Evaluating dynamic productivity change of US farm supply cooperatives. *Agribusiness*, *39*(4), 1238–1253. https://doi.org/10.1002/agr.21812

Tortia, E., & Troisi, R. (2021). *The Resilience and Adaptative Strategies of Italian Cooperatives during the COVID-19 Pandemic*. *15*(4). https://doi.org/10.17323/2500-2597.2021.4.78.88

Van Opstal, W., Bocken, N., & Brusselaers, J. (2025). Cooperating for circularity? Perspectives of citizen energy cooperative members on circular solar business models. *Journal of Cleaner Production*, *487*(December 2023), 144653. https://doi.org/10.1016/j.jclepro.2025.144653

Vieira, L. K., & Bressan, V. G. F. (2024). Diversification and Performance in Credit Unions: A Non-Linear Approach. *Brazilian Business Review*, *21*(1). https://doi.org/10.15728/bbr.2021.1165.en

Vik, P. M., Curtis, J., & Dayson, K. T. (2023). Resilience of cooperatives during global pandemics – Short-term effects of Covid-19 on lending behaviour of British credit unions. *Journal of Co-Operative Organization and Management*, *11*(2), 100220. https://doi.org/10.1016/j.jcom.2023.100220

Zwane, B. K., Nyide, C. J., Sikwela, M., Mantzaris, E., & Fuyane, N. (2024). Financial Bootstrapping As a Sustainable Livelihood Alternative for Agricultural Co-Operatives in an Emerging Economy. *Corporate Governance and Sustainability Review*, *8*(2), 37–47. https://doi.org/10.22495/cgsrv8i2p3