

Organizational Resilience and Strategic Capabilities for Transformational Entrepreneurship in Cooperative Microfinance Digital Service Transformation

Michael Surya Gunawan^{1*} , Budi W. Soetjipto² , Lily Sudhartio³ , Alice Angelina Bitsy⁴

¹Faculty of Economics and Business, Universitas Raharja, Indonesia

^{2,3}Faculty of Economics and Business, Universitas Indonesia, Indonesia

⁴Pandawan Researcher, New Zealand

¹michael.suryagunawan@raharja.info, ²bsoetjipto@gmail.com, ³lily.sudhartio@uib.ac.id, ⁴aa.bitsy@pandawan.ac.nz

*Corresponding Author

Article Info

Article history:

Submission June 10, 2026

Revised August 20, 2026

Accepted October 22, 2026

Published October 30, 2026

Keywords:

Competitive Advantage Strategy

Cooperative Microfinance

Digital Service Transformation

Organizational Resilience

Transformational

Entrepreneurship Behaviour



ABSTRACT

Cooperative-based Microfinance Institutions (MFIs) are reconfiguring their financial services through digital channels while operating under resource constraints, competitive pressure, and recurring disruption, which makes organizational capabilities decisive for service continuity and entrepreneurial renewal. However, empirical evidence on how psychological, relational, and strategic capabilities jointly shape Transformational Entrepreneurship Behaviour (TEB) in this setting remains limited. **This study examines** the relationships among psychological capital, leader–member exchange, organizational ambidexterity, Competitive Advantage Strategy (CAS), organizational resilience, and TEB, and interprets the results in terms of digital service transformation. **A quantitative cross-sectional** survey of 897 respondents from 223 cooperative-based MFIs across Indonesia was analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM) in SmartPLS 4. **CAS had significant positive effects** on organizational resilience and TEB, while organizational resilience and ambidexterity were significantly and positively related to TEB. Psychological capital, leader–member exchange, and ambidexterity did not significantly predict organizational resilience. Organizational resilience significantly mediated the relationship between CAS and TEB, whereas the other indirect effects were non-significant. Adjusted R² values were 0.536 for CAS, 0.526 for organizational resilience, and 0.621 for TEB. The **findings** indicate that differentiated, efficient, and threat-aware strategies, supported by resilience and ambidextrous capabilities, form the organizational base on which digital service transformation and entrepreneurial renewal in cooperative microfinance depend. Managerial implications for service continuity, digital service portfolio design, and capability building are outlined.

This is an open access article under the [CC BY 4.0](https://creativecommons.org/licenses/by/4.0/) license.



DOI: <https://doi.org/10.34306/ijcitsm.v6i2.292>

This is an open-access article under the CC-BY license (<https://creativecommons.org/licenses/by/4.0/>)

©Authors retain all copyrights

1. INTRODUCTION

The increasing complexity of global economic conditions, environmental uncertainty, and disruptions caused by the COVID-19 pandemic have intensified challenges to the sustainability of Microfinance Institu-

tions (MFIs). These institutions play an important role in supporting micro and small enterprises (MSEs) by providing financial accessibility, facilitating entrepreneurial activities, and encouraging socioeconomic development. However, limited organizational resources, intense market competition, and unexpected environmental changes often threaten their operational continuity. Under these circumstances, organizational resilience has become a critical capability that enables institutions to anticipate disruptions, respond effectively to emerging challenges, and adapt to changing business environments [1]. Strengthening resilience is therefore essential for cooperative-based MFIs seeking to maintain competitiveness while contributing to sustainable economic and community development.

The same pressures are reshaping how MFIs deliver their services. Financial technology, digital banking, and online lending have changed customer expectations about speed, convenience, and trust, and financial technology adoption is being pursued by microfinance institutions as a route to efficiency and productivity. Digital service transformation, understood here as the redesign, delivery, and management of financial and supporting services through digital channels and platforms, therefore becomes a strategic question for cooperative-based MFIs rather than a purely technical one. Digital services are consequently only as dependable as the organizational capabilities that operate, protect, and renew them, a view consistent with IT service management practices such as service catalogue and helpdesk management.

Organizational resilience alone may be insufficient to ensure long-term sustainability without entrepreneurial capabilities that encourage proactive decision-making, innovation, and strategic risk-taking. Transformational entrepreneurship behaviour (TEB) extends conventional entrepreneurial orientation by emphasizing the creation of economic value alongside broader social and community development through innovative initiatives, proactive business practices, and responsible risk-taking [2, 3]. For cooperative-based MFIs, TEB is particularly relevant because their operational objectives involve both organizational growth and financial services supporting underserved communities, which requires organizational capabilities, effective leadership relationships, and competitive strategies that support institutional adaptability.

Psychological capital, characterized by hope, optimism, self-efficacy, and individual resilience, is an important resource for maintaining positive organizational behaviour during uncertainty [4]. Leader–Member Exchange (LMX) emphasizes trust, mutual support, and effective relationships between organizational leaders and employees [5, 6]. Organizational ambidexterity enables institutions to balance the exploitation of existing resources with the exploration of new opportunities [7, 8]. Competitive Advantage Strategy (CAS) encourages organizations to develop differentiated services, improve operational efficiency, and respond strategically to competitive pressures. These capabilities are also the ones on which the operation and renewal of digital services rest.

Despite extensive research on organizational resilience, ambidexterity, and competitive advantage, their interconnected relationships with transformational entrepreneurship behaviour remain insufficiently examined within cooperative-based microfinance institutions. Previous studies have explored organizational resilience as a capability for anticipating, coping with, and adapting to environmental disruptions [9–11], and organizational ambidexterity and competitive strategies in relation to innovation and organizational performance [12–14]. Research on digital transformation has examined its effects on enterprise performance and on resilience, but it says comparatively little about the combination of psychological, relational, and strategic capabilities that allows cooperative-based MFIs to sustain and renew their services. Limited empirical attention has therefore been devoted to integrating these capabilities within a unified framework explaining TEB in the service context of Indonesian cooperative-based MFIs, where organizational sustainability depends on balancing financial competitiveness with socioeconomic responsibilities.

This study examines relationships among psychological capital, LMX, organizational ambidexterity, CAS, organizational resilience, and TEB, including resilience's mediating role [15, 16]. Survey data from 897 respondents across 223 Indonesian cooperative-based MFIs are analysed using PLS-SEM. Although the model includes no separate digital service construct, digital service transformation provides the context for interpreting these capabilities and their IT service management implications. Integrating psychological, organizational, and strategic perspectives, the study contributes theoretically by linking organizational resilience to transformational entrepreneurial outcomes; empirically by assessing organizational determinants and resilience's mediation, and managerially by identifying capabilities relevant to service continuity, digital renewal, and sustainable entrepreneurial development in cooperative-based MFIs. The findings offer a basis for prioritizing organizational capabilities when planning and managing digital services.

2. LITERATURE REVIEW

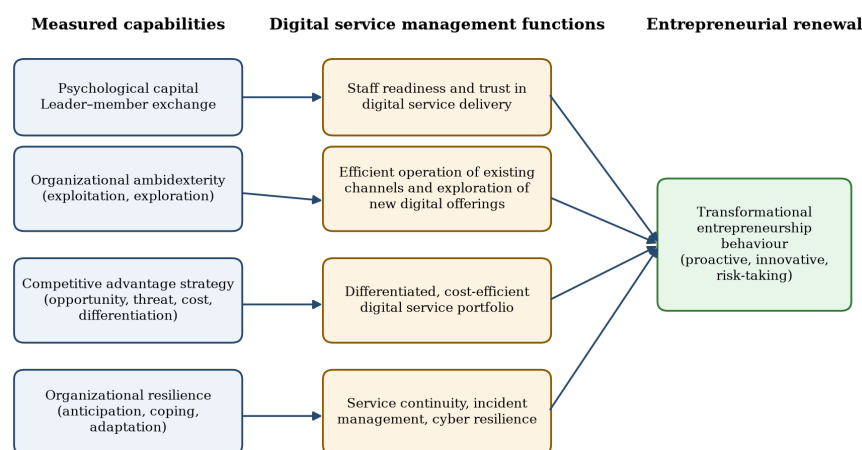
2.1. Transformational Entrepreneurship Behaviour and Organizational Capabilities

Transformational entrepreneurship behaviour (TEB) integrates proactive behaviour, innovation, and risk-taking with broader socioeconomic and community development objectives [17]. Unlike entrepreneurship primarily oriented toward financial performance, transformational entrepreneurship emphasizes the creation of sustainable economic and social value through collaborative and adaptive business practices [18, 19]. Within cooperative-based MFIs, TEB reflects the ability to develop innovative financial services, identify emerging market opportunities, and support the socioeconomic advancement of MSEs [20]. Digital technologies have become a principal arena for entrepreneurial transformation, as entrepreneurship and digital technology increasingly converge [21]. Its implementation requires organizational capabilities that facilitate strategic adaptation and sustainable business transformation [22, 23]. Organizational resilience refers to an institution's capacity to anticipate disruptions, cope with uncertainty, and adapt to changing environmental conditions [24]. It is closely associated with organizational ambidexterity, which enables institutions to simultaneously exploit existing resources and explore emerging business opportunities, while CAS supports institutional sustainability by strengthening operational efficiency, service differentiation, and strategic market positioning [11].

2.2. Digital Service Transformation and Service Management in Cooperative Microfinance

Digital service transformation refers to the redesign, delivery, and management of services through digital channels, platforms, and supporting information systems [25]. In financial services it spans digital credit, savings, and payment channels, digital customer interaction, and the data and security arrangements that sustain them [26]. Digital transformation in banking changes service quality, operational efficiency, customer experience, and exposure to cyber and financial risk, and user adoption of digital financial services depends on trust, security, and privacy concerns. For microfinance, financial technology adoption has been studied as a route to efficiency and productivity, risk governance and maturity have been modelled for ultra-micro financial institutions, big data and fintech frameworks address operational efficiency, financial inclusion, and scalability, and the perceived benefits and risks of financial technology shape its adoption by micro, small, and medium enterprises.

IT service management provides the managerial counterpart of this transformation. It treats services as managed outcomes whose design, delivery, support, and continuity depend on defined processes, such as service catalogue and helpdesk management, and on organizational capabilities that convert technology investment into service performance. Recent work emphasizes adaptive service design, digital service ecosystems that raise enterprise competitiveness, cyber-resilient IT service organizations in which leadership and employee capability protect continuity, digital resilience frameworks that combine digital innovation, adaptive capability, and collaboration, digital financial management as a source of adaptability, and links between information management, digital innovation, and organizational resilience.



Interpretive mapping: the capabilities and TEB are measured; digital service functions provide the service context.

Figure 1. Positioning of the measured capabilities within the digital service transformation of cooperative-based MFIs

These streams suggest that the dependability and renewal of digital services rest on organizational capabilities in addition to technology. Figure 1 positions the capabilities measured in this study within that logic. Organizational resilience, measured through anticipation, coping, and adaptation capabilities, corresponds to the capacity to maintain service continuity and recover from disruption. Organizational ambidexterity, measured through exploitation and exploration, corresponds to the balance between operating existing digital channels efficiently and exploring new digital service offerings.

Competitive advantage strategy, measured through opportunity exploitation, threat neutralisation, cost efficiency, differentiation, and cost advantage, corresponds to the design of differentiated and efficient service portfolios. Psychological capital and leader–member exchange describe the human and relational conditions under which employees operate and trust digital services, while TEB, measured through proactive, innovative, and risk-taking behaviours, describes the entrepreneurial renewal of service offerings. This mapping is interpretive, as the study measures organizational capabilities and TEB, with digital service transformation serving as the context in which their relationships are interpreted.

2.3. Psychological Capital and Organizational Resilience

Psychological capital (PsyCap) represents positive psychological resources comprising hope, optimism, self-efficacy, and resilience, which strengthen individuals' ability to manage uncertainty, maintain motivation, and respond constructively to organizational challenges [27, 28]. Resilience as a component of PsyCap refers to an individual's capacity to recover from setbacks, whereas organizational resilience refers to the institution's capacity to anticipate, cope with, and adapt to disruption, and the two are treated here as distinct constructs at different levels. In cooperative-based MFIs, employees and managers with strong psychological capital may contribute to organizational adaptability by maintaining confidence and commitment during operational disruptions, and in technology-enabled service delivery, perceived organizational support and service culture have been shown to influence frontline employee performance [29]. Accordingly, psychological capital is expected to strengthen institutional capabilities for responding to environmental uncertainty.

H1: Psychological capital positively influences organizational resilience.

2.4. Leader–Member Exchange and Organizational Resilience

Leader–Member Exchange (LMX) emphasizes the quality of reciprocal relationships between organizational leaders and employees, characterized by trust, communication, loyalty, and mutual support [30]. Leadership styles that inspire and develop employees are associated with stronger engagement in service organizations, and IT leadership has been linked to e-service quality [31–33]. Within cooperative-based MFIs, effective leader–member relationships may facilitate coordinated decision-making, including decisions on service incidents and digital channel changes, and reinforce organizational capacity to manage uncertainty.

H2: Leader–member exchange positively influences organizational resilience.

2.5. Organizational Ambidexterity and Organizational Resilience

Organizational ambidexterity describes the simultaneous pursuit of exploitation, which strengthens operational efficiency and resource utilization, and exploration, which encourages organizational learning and innovation [34–36]. Previous studies suggest that ambidextrous capabilities, including those built on information technology capabilities and digital technology affordances, enhance organizational adaptability and strengthen responses to environmental disruptions [37–39]. Consequently, balancing existing operational capabilities with innovation may contribute to organizational resilience.

H3: Organizational ambidexterity positively influences organizational resilience.

2.6. Competitive Advantage Strategy and Organizational Resilience

Competitive advantage strategy refers to organizational efforts to establish superior market positioning through differentiation, cost efficiency, resource utilization, and strategic responsiveness. Resource-based perspectives emphasize that valuable organizational capabilities and resources can generate competitive advantages that strengthen organizational sustainability [40, 41]. Previous research highlights the relationship between strategic innovation, competitive capabilities, and organizational resilience, including under conditions of information technological turbulence, and digital strategies are also reported to sustain competitive advantage in firms and small enterprises [4, 42, 43]. In cooperative-based MFIs, competitive strategies may therefore support institutional resilience by improving operational efficiency, maintaining customer relationships, and enabling responses to market uncertainty.

H4: Competitive advantage strategy positively influences organizational resilience.

2.7. Organizational Resilience and Transformational Entrepreneurship Behaviour

Organizational resilience provides the adaptive capacity required to sustain entrepreneurial activities during uncertainty and disruption. Resilient organizations can anticipate environmental changes, reorganize resources, and develop innovative responses that support organizational transformation [44]. Transformational entrepreneurship requires similar capabilities because proactive initiatives, innovation, and strategic risk-taking depend on institutional readiness to respond to emerging opportunities, and entrepreneurial capability, technology resilience, and competitive resilience have been linked in digitally exposed settings [45, 46]. Accordingly, organizational resilience is expected to facilitate transformational entrepreneurial behaviour in cooperative-based MFIs.

H5: Organizational resilience positively influences transformational entrepreneurship behaviour.

2.8. Organizational Ambidexterity and Transformational Entrepreneurship Behaviour

Organizational ambidexterity enables institutions to balance operational improvements with innovative entrepreneurial initiatives. By exploiting established capabilities while exploring new opportunities, organizations can strengthen proactive behaviour and develop innovative products and services [47, 48]. In cooperative-based MFIs, ambidextrous capabilities allow institutions to maintain existing financial services while identifying new market segments, exploring digital service offerings, and responding to evolving customer needs, in line with transformational entrepreneurship [49, 50]. Thus, organizational ambidexterity is expected to promote TEB.

H6: Organizational ambidexterity positively influences transformational entrepreneurship behaviour.

2.9. Competitive Advantage Strategy and Transformational Entrepreneurship Behaviour

Competitive advantage strategy encourages organizations to develop distinctive capabilities, improve service quality, and respond proactively to competitive pressures. Strategies emphasizing differentiation, efficiency, and market opportunities can facilitate innovative business practices and entrepreneurial transformation, and e-marketing strategy and business innovation improve service quality and income in micro, small, and medium enterprises [51, 52]. For cooperative-based MFIs, competitive strategies may encourage accessible financial solutions, innovative services, and new entrepreneurial opportunities for underserved communities, an aim that digital micro-entrepreneurship programs also pursue. These initiatives are consistent with transformational entrepreneurship, which integrates organizational competitiveness with broader socioeconomic objectives [53, 54]. Therefore, competitive advantage strategy is expected to strengthen transformational entrepreneurship behaviour.

H7: Competitive advantage strategy positively influences transformational entrepreneurship behaviour.

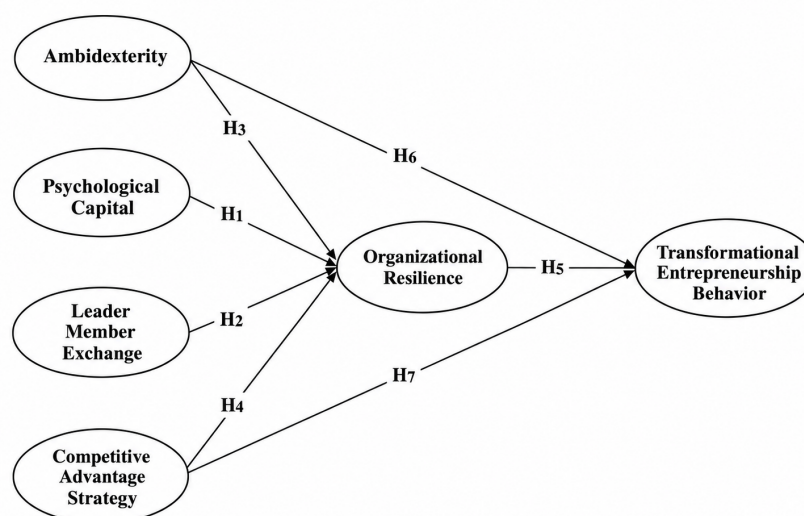


Figure 2. Research Model

Based on the theoretical foundations and hypotheses developed above, Figure 2 illustrates the proposed research model, which integrates seven hypothesized direct relationships to explain the organizational and strategic determinants of TEB in cooperative-based MFIs. The estimated model additionally included paths from psychological capital, leader–member exchange, and ambidexterity to competitive advantage strategy, which accounts for the variance explained in CAS reported in Section 4.3.

3. RESEARCH METHOD

3.1. Research Design

This study employed a quantitative, cross-sectional research design to examine the relationships among Psychological Capital (PsyCap), Leader–Member Exchange (LMX), Organizational Ambidexterity (AMB), Competitive Advantage Strategy (CAS), organizational resilience (OR), and Transformational Entrepreneurship Behaviour (TEB). A survey-based approach was adopted to collect primary data from cooperative-based MFIs across Indonesia. PLS-SEM was employed to evaluate the proposed relationships because of its suitability for examining complex models involving multiple latent constructs and higher-order dimensions. PLS-SEM is also widely applied in information technology and management research, including studies of cybersecurity resilience and organizational performance [55, 56]. The measured constructs are those listed above; digital service capability and IT service management maturity were not measured as separate constructs, and the digital service transformation perspective is applied at the level of interpretation and implications.

3.2. Population and Sample

The study involved 223 cooperative-based MFIs operating across five geographical regions of Indonesia: Sumatra and Banten (Regional 1), Jakarta and West Java (Regional 2), Central Java, Yogyakarta, and East Java (Regional 3), Kalimantan and Sulawesi (Regional 4), and Bali and Nusa Tenggara (Regional 5). The participating institutions operated under the guidance of PT KB Bukopin Tbk and were characterized by organizational sizes of more than five but fewer than 20 employees, with annual credit disbursements ranging from IDR 200 million to IDR 15 billion. Using purposive sampling, 897 respondents were recruited, including MFI managers, operational coordinators, account officers, and collectors. Respondents were distributed across the five regions, comprising 27%, 18%, 45%, 6%, and 4%, respectively. Approximately 69% were male, while 31% were female, and 88% were married. Work experience was five years or less for 17% of respondents, six to ten years for 55%, eleven to fifteen years for 16%, and more than fifteen years for 12%. Data were collected over seven months, from September 2022 to March 2023, during the pandemic recovery period, using structured questionnaires administered through Google Forms. The sample size was planned on a 5% significance level, an effect size of 0.15, and a statistical power of 95% with four predictors.

3.3. Measurement Instruments

Six constructs were measured using established multidimensional indicators adapted from the relevant literature and translated from English into Indonesian. PsyCap comprised hope, optimism, resilience, and self-efficacy, while LMX included affect, loyalty, contribution, and professional respect. Organizational ambidexterity was represented by exploration and exploitation, whereas CAS encompassed opportunity exploitation, threat neutralisation, cost efficiency, differentiation, and cost advantage [38]. OR was measured through anticipation, coping, and adaptation capabilities, while TEB consisted of transformational proactive, innovative, and risk-taking behaviours. All indicators were assessed using a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The complete measurement items are provided in Supplementary Material A.

3.4. Data Analysis

Data were analyzed using SmartPLS version 4.0.8.9 in two stages, the measurement model followed by the structural model. The measurement model was evaluated using Cronbach's alpha, composite reliability, and Average Variance Extracted (AVE) to establish internal consistency and convergent validity, and discriminant validity was examined using the Fornell–Larcker criterion and the Heterotrait–Monotrait Ratio (HTMT). The structural model was assessed through Variance Inflation Factors (VIF), path coefficients, coefficients of determination (R^2), effect sizes (f^2), predictive relevance (Q^2), and Standardized Root Mean Square Residual (SRMR). Values of 0.75, 0.50, and 0.25 were read as substantial, moderate, and weak R^2 , and f^2 values of 0.02, 0.15, and 0.35 as small, medium, and large effects. Bootstrapping with 500 resamples was employed to evaluate the statistical significance of direct and indirect relationships at a 5% significance level, with t statistics

above 1.96 indicating significance. The analysis also examined the mediating role of organizational resilience in the relationships between the proposed antecedents and TEB, consistent with established PLS-SEM procedures [57, 58]. The estimated model comprised ten structural paths, namely the seven hypothesized paths and the paths from psychological capital, leader–member exchange, and ambidexterity to CAS [59].

4. RESULTS AND DISCUSSION

4.1. Measurement Model Assessment

The measurement model was evaluated to determine the reliability and validity of the first-order dimensions representing the six research constructs. Internal consistency was assessed using Cronbach's alpha and Composite Reliability (CR), while convergent validity was examined through AVE.

Table 1. Measurement Model Assessment

Dimension	Alpha	CR	AVE
ADC	0.851	0.931	0.870
AFFECT	0.835	0.901	0.752
ANTC	0.840	0.904	0.758
CC	0.844	0.906	0.763
CONTRIBUTE	0.723	0.843	0.642
DIFF	0.870	0.911	0.721
EFFICACY	0.860	0.896	0.593
EP	0.788	0.875	0.703
EXPL	0.930	0.945	0.743
EXPR	0.872	0.904	0.614
HOPE	0.830	0.887	0.663
KB	0.776	0.855	0.596
LOYALTY	0.762	0.818	0.602
NA	0.892	0.933	0.823
OPTIMISM	0.897	0.924	0.708
PB	0.845	0.895	0.682
PROF RESPECT	0.748	0.857	0.666
RESILIENCE	0.735	0.834	0.561
TIB	0.835	0.901	0.752
TPB	0.837	0.902	0.754
TRTB	0.907	0.935	0.781

As presented in Table 1, all 21 first-order dimensions exceeded the conventional reliability threshold of 0.70, with Cronbach's alpha values ranging from 0.723 to 0.930 and composite reliability values ranging from 0.818 to 0.945. The AVE values ranged from 0.561 to 0.870, indicating acceptable convergent validity across the dimensions. Discriminant validity was established for all constructs: the square root of the AVE of each construct exceeded its correlations with the other constructs in the Fornell–Larcker assessment, and the HTMT assessment supported the same conclusion. These results support the reliability and validity of the measurement model.

4.2. Structural Model Assessment

Following the measurement model evaluation, the structural model was assessed to examine collinearity, explanatory power, effect sizes, predictive relevance, and model fit. Variance Inflation Factors (VIF) were used to identify potential collinearity among predictors, while adjusted coefficients of determination (R^2) assessed the explained variance of endogenous constructs. The relative contributions of individual relationships were examined using effect sizes (f^2). Table 2 consolidates these results with the reported model-level indicators to provide a concise assessment of structural performance.

Table 2. Structural Model Assessment

Structural Path	VIF	f^2	Effect size
PC → OR	1.192	0.035	Small
LMX → OR	1.235	0.032	Small
AMB → OR	1.958	0.025	Small
CAS → OR	2.185	0.334	Medium
OR → TEB	2.136	0.035	Small
AMB → TEB	1.951	0.032	Small
CAS → TEB	2.699	0.296	Medium
Model Indicators			
Adjusted R^2 (CAS)	0.536		
Adjusted R^2 (OR)	0.526		
Adjusted R^2 (TEB)	0.621		
SRMR	0.078		

As shown in Table 2, the VIF values ranged from 1.192 to 2.699, below the threshold of 5 and above 0.20, indicating no collinearity among the predictors. The adjusted R^2 values for CAS, organizational resilience, and TEB were 0.536, 0.526, and 0.621, respectively, indicating moderate explanatory power, and the predictive relevance of all endogenous constructs was positive ($Q^2 > 0$). The largest effect sizes among the hypothesized paths were observed for CAS on organizational resilience ($f^2 = 0.334$) and CAS on TEB ($f^2 = 0.296$), both medium, while the remaining hypothesized paths exhibited small effects (f^2 between 0.025 and 0.035). Across the ten structural paths of the estimated model, six effects were small, three were medium, and one was large, the large effect being the contribution of ambidexterity to CAS. The SRMR value of 0.078 was below the threshold of 0.10, indicating acceptable model fit.

4.3. Hypothesis Testing

The proposed structural relationships were evaluated through bootstrapping to examine the significance of direct and indirect effects. Table 3 presents the reported t-statistics, p-values, and corresponding hypothesis decisions for the seven direct relationships and four indirect pathways involving organizational resilience. The analysis identifies which psychological, relational, and strategic factors are associated with organizational resilience and transformational entrepreneurship behaviour in cooperative-based MFIs.

Table 3. Direct and Indirect Effect Testing Results

Relationship	t-stat.	p-value	Decision
Direct Effects			
H1: PC → OR	1.060	0.145	Not supported
H2: LMX → OR	1.032	0.151	Not supported
H3: AMB → OR	1.008	0.157	Not supported
H4: CAS → OR	4.122	0.000	Supported
H5: OR → TEB	2.781	0.037	Supported
H6: AMB → TEB	2.108	0.018	Supported
H7: CAS → TEB	7.607	0.000	Supported
Indirect Effects			
PC → OR → TEB	0.884	0.188	Not significant
LMX → OR → TEB	0.827	0.204	Not significant
AMB → OR → TEB	0.725	0.234	Not significant
CAS → OR → TEB	2.576	0.047	Significant

As presented in Table 3, four of the seven proposed direct relationships were statistically significant. Competitive advantage strategy demonstrated significant positive relationships with organizational resilience ($\beta = 0.601$) and TEB ($\beta = 0.541$), while organizational resilience ($\beta = 0.170$) and ambidexterity ($\beta = 0.156$) were also positively associated with TEB. Conversely, psychological capital, leader-member exchange, and ambidexterity did not significantly predict organizational resilience, with path coefficients between 0.054 and

0.125. The indirect-effect analysis identified a significant pathway from CAS to TEB through organizational resilience, whereas the corresponding pathways involving psychological capital, leader–member exchange, and ambidexterity were nonsignificant. Because the direct CAS–TEB path also remained significant, resilience operates as a partial mediator of the effect of CAS on TEB. In the full estimated model, psychological capital, leader–member exchange, and ambidexterity were significantly and positively associated with CAS, so that these factors are associated with resilience and TEB mainly through the strategic capability rather than directly.

4.4. Structural Model Interpretation

Figure 3 illustrates the estimated structural relationships among the research constructs, distinguishing statistically supported and unsupported direct paths, and Figure 3 compares the t statistics and effect sizes of the seven hypothesized paths.

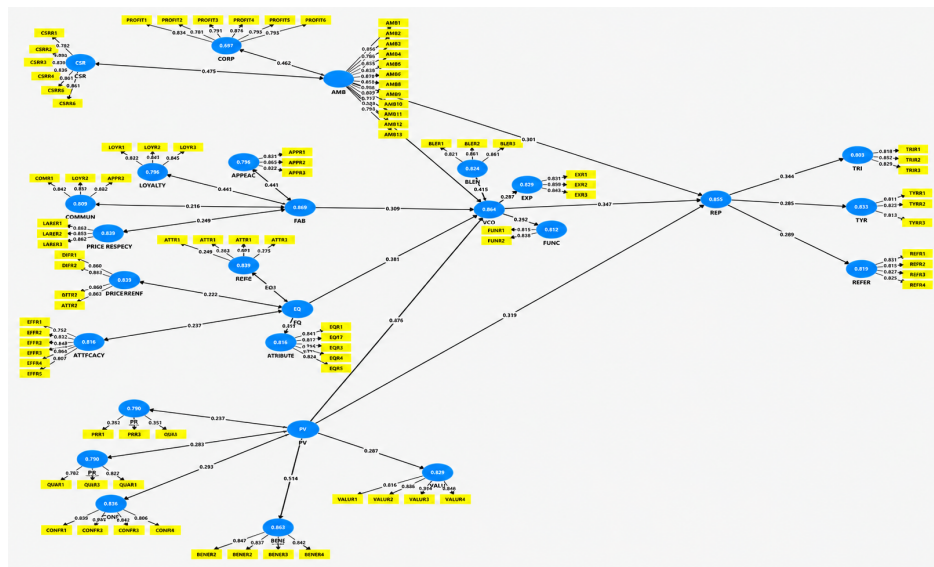


Figure 3. PLS-SEM Structural Model

As illustrated in Figure 3, the structural model identifies competitive advantage strategy as an important construct associated with both organizational resilience and transformational entrepreneurship behaviour. The significant relationships of organizational resilience and ambidexterity with TEB indicate that adaptive and innovative capabilities are relevant to entrepreneurial transformation, whereas the nonsignificant pathways from psychological capital, leader–member exchange, and ambidexterity to organizational resilience show that not all theoretically proposed antecedents are empirically supported. Figure 4 shows that the two CAS paths stand clearly apart from the others on both criteria. Their t-statistics exceed 4.0 and their effect sizes fall in the medium range, whereas the remaining significant paths, from organizational resilience and ambidexterity to TEB, lie between 2.1 and 2.8 and carry small effects, and the nonsignificant paths to resilience have t-statistics near 1.0. The figure indicates a hierarchy of influence in which strategy dominates and resilience and ambidexterity contribute modestly.

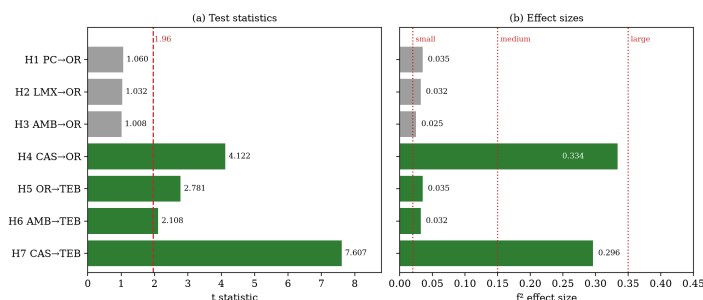


Figure 4. Test statistics (a) and effect sizes (b) of the seven hypothesized paths

4.5. Discussion

The findings highlight the importance of competitive advantage strategy in explaining organizational resilience and transformational entrepreneurship behaviour among Indonesian cooperative-based MFIs. The significant relationship between CAS and organizational resilience (H4) suggests that competitive capabilities are associated with stronger institutional adaptability, in line with earlier evidence on competitive strategy and resilience. Similarly, the significant relationship between CAS and TEB (H7) indicates that competitive strategies may encourage innovative initiatives, proactive decision-making, and entrepreneurial transformation, consistent with the resource-based perspective.

Organizational resilience also demonstrated a significant positive relationship with TEB (H5), indicating that institutions capable of anticipating disruptions, managing operational difficulties, and adapting to changing business conditions are more likely to demonstrate transformational entrepreneurial behaviour, which supports the conceptualization of resilience as an adaptive organizational capability. The effect is small, however, and resilience matters less for entrepreneurial behaviour than strategy does. Furthermore, organizational ambidexterity was significantly associated with TEB (H6), suggesting that the simultaneous pursuit of exploitation and exploration is associated with proactive and innovative entrepreneurial activities, which reinforces the importance of balancing established operational capabilities with emerging business opportunities in resource-constrained organizations.

Conversely, psychological capital, leader–member exchange, and organizational ambidexterity did not demonstrate significant direct relationships with organizational resilience (H1–H3), in contrast with theoretical expectations. One possible interpretation is that the resilience of cooperative-based MFIs is more closely associated with their strategic and competitive capabilities than with individual psychological or relational resources. The full model supports this reading, because these three factors were significantly associated with CAS, with ambidexterity showing the largest effect, and CAS in turn carried the strongest effect on resilience. Psychological, relational, and ambidextrous capabilities therefore appear to work through strategy rather than directly on resilience. Nevertheless, the nonsignificant findings do not establish that these factors are unimportant; alternative relationships and contextual conditions may warrant further investigation.

The indirect-effect analysis additionally suggests that organizational resilience mediates the relationship between CAS and TEB, whereas the indirect pathways involving psychological capital, leader–member exchange, and ambidexterity were not statistically significant. Because the direct effect remains the larger of the two, the role of resilience is less prominent than that of strategy. Overall, the findings demonstrate the importance of organizational competitiveness, resilience, and ambidextrous capabilities in cooperative-based MFIs while revealing limitations in the explanatory roles of several psychological and relational antecedents.

4.6. Implications for Digital Service Transformation

Read against the digital service literature, the results carry three implications for cooperative-based MFIs. First, the dominance of CAS suggests that digital service transformation is likely to succeed when it is anchored in a clear competitive strategy, meaning differentiated services, cost efficiency, and the neutralisation of threats from banks and fintech entrants, rather than in technology adoption alone, in agreement with evidence that digital innovation and digital strategies support competitive advantage and that digital banking adoption does not by itself secure resilience. Second, the significant but modest role of resilience, which comprises anticipation, coping, and adaptation, is consistent with the need for service continuity, incident management, and cyber resilience in digital service organizations, and it indicates that these capabilities support entrepreneurial renewal as well as continuity. Third, the significant effect of ambidexterity on TEB, together with its large effect on CAS, is consistent with the need to run existing digital channels efficiently while exploring new digital service offerings, an interpretation that remains to be tested with direct measures of digital service capability.

The study did not measure digital service capability, IT service management maturity, or cyber resilience directly, so the digital service reading is an interpretation of capabilities that were measured, and it frames testable propositions for future research instead of claiming findings about digital services themselves.

5. MANAGERIAL IMPLICATIONS

The findings provide practical implications for managers of cooperative-based microfinance institutions in Indonesia. First, managers should prioritize competitive advantage strategies by strengthening service differentiation, operational efficiency, and market responsiveness to improve organizational resilience and TEB.

In digital terms, this means designing a differentiated and cost-efficient digital service portfolio, such as digital savings, credit, and payment services that fit the needs of micro and small enterprise customers, rather than adopting technology without a strategic purpose. Second, MFIs should enhance organizational resilience through effective risk management, financial preparedness, and adaptive decision-making. For digital services, resilience should be anchored in IT service management practices, including service catalogue, helpdesk, incident, and continuity management, and in employee cybersecurity capability and leadership that protect service continuity. Third, managers should promote organizational ambidexterity by balancing the exploitation of existing resources with the exploration of new market opportunities and innovative financial services. A practical form is a digital service roadmap that keeps core channels reliable and efficient while piloting new services on a limited scale.

Furthermore, MFI managers should strengthen human resource capabilities and collaborative relationships through employee development, effective communication, and knowledge sharing, although psychological capital and leader–member exchange were not significant direct predictors of organizational resilience in this study. Such initiatives may serve as complementary managerial practices rather than established direct determinants of resilience, and their value is likely to be realized through strategy. Digital financial literacy and customer trust are part of the same agenda, because adoption of digital financial services depends on them. Finally, MFIs should integrate competitive strategies with socioeconomic development objectives by expanding responsible financing opportunities, supporting MSEs, and strengthening cooperation with financial institutions and relevant stakeholders, including the apex institutions that guide them, for example through shared digital service platforms and common risk governance.

6. CONCLUSION

This study examined the relationships among psychological capital, leader–member exchange, organizational ambidexterity, CAS, organizational resilience, and TEB within cooperative-based MFIs in Indonesia. Using survey data from 897 respondents representing 223 MFIs, the findings demonstrated that CAS was positively and significantly associated with organizational resilience and TEB. Organizational resilience and ambidexterity also exhibited significant positive relationships with TEB, whereas psychological capital, leader–member exchange, and ambidexterity showed nonsignificant direct relationships with organizational resilience. The mediation results further indicated that organizational resilience mediated the relationship between CAS and TEB, while the other examined indirect relationships were nonsignificant. Interpreted through the digital service lens, the findings indicate that the organizational base for digital service transformation in cooperative microfinance lies first in competitive strategy, and then in the resilience and ambidextrous capabilities that sustain and renew services. Practically, managers should prioritize competitive strategies, strengthen institutional resilience through service continuity and risk governance, and balance existing operational capabilities with innovative business opportunities.

Nevertheless, this study has several limitations. The purposive sampling approach and concentration of respondents in particular Indonesian regions may limit the generalizability of the findings, and the sample comprises institutions that were operating during data collection from September 2022 to March 2023, so dormant or closed institutions are not represented. Additionally, the cross-sectional research design restricts causal interpretation, while self-reported questionnaires and translated measurement items may introduce response and measurement biases. Organization-level constructs were measured through individual perceptions, respondents nested within institutions were analysed at the individual level, and common method bias and clustering were not formally tested. TEB was measured through proactive, innovative, and risk-taking behaviours, so the community and socioeconomic outcomes discussed in the literature were not measured, and cooperative-specific features such as member ownership and governance were not modelled.

Significance was assessed with 500 bootstrap resamples, and replication with a larger number of resamples and reported confidence intervals would strengthen the inference. The study also did not measure digital service capability, IT service management maturity, or cyber resilience directly. Future research should employ longitudinal designs, probability-based sampling, multilevel analysis, out-of-sample predictive assessment, and broader institutional coverage, and should add direct measures of digital service capability, service continuity, and cyber resilience to test the propositions advanced here.

7. DECLARATIONS

7.1. About Authors

Michael Surya Gunawan (MS)  <https://orcid.org/0009-0002-0350-9040>

Budi W. Soetjipto (BW)  <https://orcid.org/0000-0001-5670-0864>

Lily Sudhartio (LS)  <https://orcid.org/0000-0002-8414-2369>

Alice Angelina Bitsy (AA)  -

7.2. Author Contributions

Conceptualization: MS; Methodology: MS, BW, and LS; Validation: BW and LS; Formal Analysis: MS; Investigation: MS; Writing Original Draft Preparation: MS; Writing Review and Editing: BW, LS, and AA; Supervision: BW and LS; Project Administration: BW and LS. All authors, MS, BW, LS, and AA, discussed the results, contributed to the final version of the manuscript, have read and agreed to the published version of the manuscript, and agree to be accountable for all aspects of the work.

7.3. Data Availability Statement

The authors confirm that the data supporting the findings of this study are available within the article or its supplementary materials.

7.4. Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

7.5. Declaration of Conflicting Interest

The authors declare that they have no conflicts of interest, known competing financial interests, or personal relationships that could have influenced the work reported in this paper.

REFERENCES

- [1] M. Akulava and M. Guerrero, "Entrepreneurial gendered ambidexterity in belarusian smes," *The Journal of Technology Transfer*, vol. 48, no. 6, pp. 1919–1944, 2023.
- [2] E. Erika, R. T. H. Safariningsih, D. Cahyono, and N. Rangi, "Strategic integration of cloud cybersecurity for resilient digital business transformation," *ADI Journal on Recent Innovation*, vol. 7, no. 1, pp. 112–124, 2025.
- [3] S. Kosasi, I. D. A. E. Yuliani, U. Rahardja *et al.*, "Boosting e-service quality of online product businesses through it leadership," in *2022 International Conference on Science and Technology (ICOSTECH)*. IEEE, 2022, pp. 1–10.
- [4] J. Wang, R. Chen, and S. Zhang, "The mediating and moderating effect of organizational resilience on competitive advantage: evidence from chinese companies," *Sustainability*, vol. 14, no. 21, p. 13797, 2022.
- [5] Y. YahiaMarzouk and J. Jin, "Linking environmental scanning and organizational innovation with competitive advantage: evidence from egyptian smes," *Management & Sustainability: An Arab Review*, vol. 1, no. 2, pp. 170–195, 2022.
- [6] M. A. A. Budi, M. G. L. Putra, and L. H. Atrinawati, "Improving helpdesk capability in perum peruri through service catalog management based on itil v 3," *International Journal of Cyber and IT Service Management*, vol. 2, no. 2, pp. 117–126, 2022, <https://doi.org/10.34306/ijcitsm.v2i2.106>.
- [7] M. Kim, B. D. Oja, and C. Anagnostopoulos, "An expanded psychological capital (a-hero) construct for creativity: Building a competitive advantage for sport organisations," *European Sport Management Quarterly*, vol. 23, no. 3, pp. 722–744, 2023.
- [8] W. Su and S. Junge, "Unlocking the recipe for organizational resilience: A review and future research directions," *European Management Journal*, vol. 41, no. 6, pp. 1086–1105, 2023.
- [9] A. Ignatowicz, C. Tarrant, R. Mannion, D. El-Sawy, S. Conroy, and D. Lasserson, "Organizational resilience in healthcare: a review and descriptive narrative synthesis of approaches to resilience measurement and assessment in empirical studies," *BMC Health Services Research*, vol. 23, no. 1, p. 376, 2023.
- [10] D. P. Lazirkha, J. Hom, and V. Melinda, "Quality analysis of digital business services in improving customer satisfaction," *Startupreneur Business Digital (SABDA Journal)*, vol. 1, no. 2, pp. 156–166, 2022.

- [11] Y. Kristiana, V. A. H. Goeltom, and T. C. Nathalia, "Ai-driven pos, adaptable workload, and service culture influence on frontline employee performance," *Aptisi Transactions on Technopreneurship (ATT)*, vol. 7, no. 1, pp. 217–227, 2025, <https://doi.org/10.34306/att.v7i1.535>.
- [12] D. A. Shepherd and T. A. Williams, "Different response paths to organizational resilience," *Small Business Economics*, vol. 61, no. 1, pp. 23–58, 2023.
- [13] A. Garrido-Moreno, R. Martín-Rojas, and V. J. García-Morales, "The key role of innovation and organizational resilience in improving business performance: A mixed-methods approach," *International Journal of Information Management*, vol. 77, p. 102777, 2024.
- [14] M. Chi, W. Li, Y. J. Li, M. Zhou, and R. Huang, "Unraveling the paradoxical effects of digital transformation on organizational resilience: the role of customer and supplier concentrations," *Journal of Business Research*, vol. 191, p. 115268, 2025.
- [15] M. S. Bhambri, M. Venkatesan, and E. Jain, "Exploring the triad of psychological capital, social capital and organizational resilience: Insights from a systematic literature review," *Advances in Consumer Research*, vol. 2, pp. 4924–4940, 2025.
- [16] K. K. K. Htet, "The effect of employee resilience, high performance work systems, employee ambidexterity on organizational resilience and employee well-being at thukha mingalar medical & diagnostic center (kyawt kay khine htet, 2024)," Ph.D. dissertation, MERAL Portal, 2024.
- [17] S. M. Anggara, A. Hariyanto, A. A. Arman, N. B. Kurniawan *et al.*, "The development of digital service transformation framework for the public sector," *Ieee Access*, vol. 12, pp. 146 160–146 189, 2024.
- [18] S. E. Galaitsi, E. Pinigina, J. M. Keisler, G. Pescaroli, J. M. Keenan, and I. Linkov, "Business continuity management, operational resilience, and organizational resilience: Commonalities, distinctions, and synthesis: Galaitsi et al. business continuity management, operational resilience, and organizational resilience," *International Journal of Disaster Risk Science*, vol. 14, no. 5, pp. 713–721, 2023.
- [19] H. D. Trieu, P. Van Nguyen, T. T. Nguyen, H. M. Vu, and K. Tran, "Information technology capabilities and organizational ambidexterity facilitating organizational resilience and firm performance of smes," *Asia Pacific Management Review*, vol. 28, no. 4, pp. 544–555, 2023.
- [20] M. Gunawan, B. Soetjipto, and L. Sudhartio, "How to link organizational resilience to transformational entrepreneurship behavior as theoretical framework gap—a systematic literature review," *F1000Research*, vol. 12, p. 761, 2023.
- [21] E. Sulistyarningsih, W. Murti, and C. Ratnasih, "Analysis of e-marketing strategy and business innovation in optimizing improvement of service quality and its effect on msme income," *ADI Journal on Recent Innovation*, vol. 5, no. 2, pp. 155–167, 2024.
- [22] O. Kassotaki, "Review of organizational ambidexterity research," *Sage Open*, vol. 12, no. 1, p. 21582440221082127, 2022.
- [23] R. Hamblin, G. Plimmer, K. Badar, and K. Lasthuizen, "Organizational ambidexterity: A bibliometric review and framework for future public administration research," *Public Performance & management review*, vol. 47, no. 5, pp. 1073–1109, 2024.
- [24] Ī. Kumkale, "Organizational ambidexterity," in *Organizational mastery: the impact of strategic leadership and organizational ambidexterity on organizational agility*. Springer, 2022, pp. 1–22.
- [25] J. J. P. Latupeirissa, N. L. Y. Dewi, I. K. R. Prayana, M. B. Srikandi, S. A. Ramadiansyah, and I. B. G. A. Y. Pramana, "Transforming public service delivery: A comprehensive review of digitization initiatives," *Sustainability*, vol. 16, no. 7, p. 2818, 2024.
- [26] A. S. George, "Finance 4.0: The transformation of financial services in the digital age," *Partners Universal Innovative Research Publication*, vol. 2, no. 3, pp. 104–125, 2024.
- [27] M. Sarmento, C. Simoes, and L. F. Lages, "From organizational ambidexterity to organizational performance: The mediating role of value co-creation," *Industrial Marketing Management*, vol. 118, pp. 175–188, 2024.
- [28] B. Bhima, A. R. A. Zahra, T. Nurtino, and M. Z. Firli, "Enhancing organizational efficiency through the integration of artificial intelligence in management information systems," *APTISI Transactions on Management*, vol. 7, no. 3, pp. 282–289, 2023.
- [29] A. Al-kahtib, M. Alghababsheh, and M. Khattab, "The role of organizational ambidexterity and frugal innovation in enhancing circular supply chains: the effect of artificial intelligence capabilities," *Technological Forecasting and Social Change*, vol. 210, p. 123905, 2025.
- [30] B.-N. Hwang, Y.-P. Lai, and C. Wang, "Open innovation and organizational ambidexterity," *European*

- journal of innovation management*, vol. 26, no. 3, pp. 862–884, 2023.
- [31] M. Hu, J. Dou, and X. You, “Is organizational ambidexterity always beneficial to family-managed smes? evidence from china,” *Journal of Business Research*, vol. 167, p. 114184, 2023.
 - [32] S. S. Saleh and K. A. Auso, “The role of transformational leadership in enhancing competitive advantage for e-business analysis in organisational practices,” *Expert Systems*, vol. 42, no. 1, p. e13307, 2025.
 - [33] D. Hidayati, A. Andriyansah, G. P. Cesna, A. Y. Fauzi, D. Apriliasari, and U. Rahardja, “Building efficient iot systems with edge computing integration,” *International Journal of Cyber and IT Service Management (IJCITSM)*, vol. 4, no. 2, pp. 72–79, 2024, <https://doi.org/10.34306/ijcitsm.v4i2.163>.
 - [34] B. Korankye, Y. Hao, P. S. Borah, L. A. Odai, and I. Ahakwa, “Transformational leadership, esg performance, corporate reputation and competitive advantage: a serial mediation model,” *Business Process Management Journal*, vol. 31, no. 6, pp. 2182–2203, 2025.
 - [35] H. Aldabbas and N. Oberholzer, “The influence of transformational and learning through r&d capabilities on the competitive advantage of firms,” *Arab Gulf Journal of Scientific Research*, vol. 42, no. 1, pp. 85–102, 2024.
 - [36] B. Domini, A. S. Dewi, and G. P. Cesna, “Assessing the effects of artificial intelligence on startup performance: An analysis of transformational initiatives,” *IAIC Transactions on Sustainable Digital Innovation (ITSDI)*, vol. 5, no. 1, pp. 24–38, 2023.
 - [37] A. Alqatan, W. Simmou, M. Shehadeh, F. AlReshaid, M. Elmarzouky, and D. Shohaieb, “Strategic pathways to corporate sustainability: The roles of transformational leadership, knowledge sharing, and innovation,” *Sustainability*, vol. 17, no. 12, p. 5547, 2025.
 - [38] X. Du, N. Wang, S. Lu, A. Zhang, and S.-B. Tsai, “Sustainable competitive advantage under digital transformation: an eco-strategy perspective,” *Chinese Management Studies*, vol. 19, no. 3, pp. 758–782, 2025.
 - [39] C. Lukita, M. Hardini, S. Pranata, D. Julianingsih, and N. P. L. Santoso, “Transformation of entrepreneurship and digital technology students in the era of revolution 4.0,” *Aptisi Transactions on Technopreneurship (ATT)*, vol. 5, no. 3, pp. 291–304, 2023, <https://doi.org/10.34306/att.v5i3.356>.
 - [40] B. Dong, “Environmental dynamism’s influence on firm growth: Transformational leadership and strategic flexibility insights,” *The Journal of High Technology Management Research*, vol. 35, no. 2, p. 100499, 2024.
 - [41] W. Usino, M. M. Sari, F. P. Oganda, O. P. M. Daeli, and E. Smith, “Artificial intelligence integration for sustainable business model innovation insights from global startups,” *Smart Human-centered Emerging Research in Machine Intelligence*, vol. 1, no. 2, pp. 82–89, 2025.
 - [42] S. Ayaz, “Transformational leadership and dynamic capabilities in businesses: A review,” *Uluslararası Yönetim Akademisi Dergisi*, vol. 5, no. 3, pp. 602–621, 2022.
 - [43] A. H. Pratono, “The strategic innovation under information technological turbulence: the role of organisational resilience in competitive advantage,” *Competitiveness Review: An International Business Journal*, vol. 32, no. 3, pp. 475–491, 2022.
 - [44] N. Al-Qadasi, G. Zhang, I. Al-Jubari, M. A. Al-Awlaqi, and A. M. Aamer, “Entrepreneurship education and entrepreneurial behaviour: Do self-efficacy and attitude matter?” *The International Journal of Management Education*, vol. 22, no. 1, p. 100945, 2024.
 - [45] C. D. Duong, K. Wach, N. X. Vu, S. T. Ha, and B. N. Nguyen, “Entrepreneurial education, government policies and programmes, and entrepreneurial behaviour: A serial moderated mediation model,” *Entrepreneurial Business and Economics Review*, vol. 10, no. 4, pp. 37–54, 2022.
 - [46] J. Cui and R. Bell, “Behavioural entrepreneurial mindset: How entrepreneurial education activity impacts entrepreneurial intention and behaviour,” *The International Journal of Management Education*, vol. 20, no. 2, p. 100639, 2022.
 - [47] W. Alakaleek, Y. Harb, A. A. Harb *et al.*, “The impact of entrepreneurship education: A study of entrepreneurial outcomes,” *The International Journal of Management Education*, vol. 21, no. 2, p. 100800, 2023.
 - [48] A. Martín-Navarro, F. Velicia-Martín, J. A. Medina-Garrido, and P. R. Palos-Sánchez, “Impact of effectual propensity on entrepreneurial intention,” *Journal of Business Research*, vol. 157, p. 113604, 2023.
 - [49] Y. H. S. Al-Mamary and M. M. Alraja, “Understanding entrepreneurship intention and behavior in the light of tpb model from the digital entrepreneurship perspective,” *International Journal of Information Management Data Insights*, vol. 2, no. 2, p. 100106, 2022.

- [50] S. Bayona-Oré, "The theory of planned behaviour and the entrepreneurial intention of university students," *Journal of Turkish Science Education*, vol. 20, no. 1, pp. 136–149, 2023.
 - [51] C. Chikwira, E. Vengesai, and P. Mandude, "The impact of microfinance institutions on poverty alleviation," *Journal of Risk and Financial Management*, vol. 15, no. 9, p. 393, 2022.
 - [52] M. Vedaste and M. Celestin, "Assessment of the effect of financial inclusion policy on savings in microfinance institutions: Case of copedu plc," *International Journal of Interdisciplinary Research in Arts and Humanities*, vol. 8, no. 1, pp. 33–40, 2023.
 - [53] N. Hasan, A. K. Singh, and R. Dwivedi, "Determinants of fintech adoption by microfinance institutions in india to increase efficiency and productivity," *International Journal of Business Innovation and Research*, vol. 35, no. 3, pp. 393–411, 2024.
 - [54] R. S. K. Dabi, Nugraha, Disman, and M. Sari, "Capital structure, financial performance and sustainability of microfinance institutions (mfis) in ghana," *Cogent Economics & Finance*, vol. 11, no. 2, p. 2230013, 2023.
 - [55] M. C. López-Penabad, J. M. Maside-Sanfiz, Y. Agha, and A. Iglesias-Casal, "Microfinance institutions and corporate social responsibility. a scientometric study," *Future Business Journal*, vol. 10, no. 1, p. 90, 2024.
 - [56] A. P. M. Gama, R. E. Correia, M. Augusto, and F. Duarte, "Third-party signals in crowdfunded microfinance: which microfinance institutions boost crowdfunding among refugee entrepreneurs?" *Small Business Economics*, vol. 61, no. 2, pp. 559–586, 2023.
 - [57] D. Isfianadewi, "The role of sharia microfinance institutions in developing msme," *International Journal of Research in Business and Social Science (2147-4478)*, vol. 13, no. 1, pp. 252–266, 2024.
 - [58] L. Meria, A. Andriyansah, F. Sutisna, A. William, and L. Pasha, "Unveiling the role of smartpls and technology in analyzing hr dynamics for organizational effectiveness," *International Journal of Cyber and IT Service Management (IJCITSM)*, vol. 5, no. 1, pp. 71–80, 2025, <https://doi.org/10.34306/ijcitsm.v5i1.179>.
 - [59] R. Martín-Rojas, A. Garrido-Moreno, and V. J. García-Morales, "Building organizational resilience in smes: the key role of digital technologies, transformational leadership, and innovation," *Review of Managerial Science*, pp. 1–34, 2026.
-