

Digital Transformation in General Insurance: Strategies for Competitive Advantage

Fathihari Afkha Sirait¹ ✉ Rahmat Budi Legowo P¹, and Mirwan Surya Perdhana¹

Universitas Diponegoro, Semarang, Indonesia¹

ABSTRACT

This study examines how digital transformation shapes competitive advantage in the general insurance sector by synthesizing evidence from twenty-five peer-reviewed studies published between 2019 and 2025. The review addresses four key questions: the digital transformation strategies adopted by insurers, the mechanisms through which these strategies create competitive advantage, the organizational enablers and barriers influencing implementation success, and the integrated pathways linking digital initiatives to performance outcomes. Using a systematic literature review (SLR) following PRISMA guidelines, the analysis reveals five dominant themes. Insurers begin transformation by modernizing core processes, supported by technological enablers such as AI, analytics, cloud computing, and IoT. Competitive advantage emerges through cost efficiency, differentiation, agility, and innovation capability when technological adoption aligns with strategic objectives. Organizational readiness particularly leadership commitment, digital talent, and adaptive culture strongly shape transformation outcomes, while legacy systems, cultural resistance, and regulatory constraints remain major barriers. InsurTech ecosystems further accelerate innovation and extend insurers' capabilities. Overall, the findings highlight that competitive advantage arises when technology integration, organizational capabilities, and ecosystem collaboration operate as a unified system. This review provides an integrated framework that advances theoretical understanding and offers strategic guidance for insurers in a rapidly evolving digital landscape.

Keywords: *Competitive Advantage, Digital Transformation, Ecosystem Collaboration, General Insurance.*

CORRESPONDING AUTHOR:

Fathihari Afkha Sirait

Universitas Diponegoro, Semarang, Indonesia

contact: fathisirait@gmail.com

ARTICLE HISTORY

Received : January 9, 2026

Final Revised : March 23, 2026

Accepted : April 22, 2026

Published : June 30, 2026

1. | INTRODUCTION

The insurance industry, long recognized as one of the most conservative segments of the financial services sector, is experiencing profound transformation propelled by rapid digital innovation and intensifying competitive pressures. Digital transformation has reconfigured the industry's value chain, strategic priorities, organizational capabilities, and mechanisms for value creation. Rather than representing a set of isolated technological adoptions, digital transformation reflects a deeper organizational shift in which digital capabilities become embedded in business strategy, processes, and decision-making (Bharadwaj et al., 2013; Vial, 2019). As digital technologies become increasingly pervasive, the need to adapt has evolved from a discretionary strategic initiative into an essential condition for long-term competitiveness.

Advances in artificial intelligence, machine learning, big data analytics, cloud computing, robotic process automation, blockchain, and Internet of Things technologies have significantly reshaped underwriting, pricing, claims management, fraud detection, product personalization, and customer interaction (Eckert & Osterrieder, 2020; Braun & Jia, 2025). These technological changes have been reinforced by shifting consumer expectations, particularly among digital-native generations who demand transparent, personalized, and instant digital interactions (Yaneva, 2021). Industry evidence further shows that global disruptions—such as the COVID-19 pandemic and subsequent market volatility—have accelerated digital adoption, prompting insurers to expand remote processes, digital channels, and ecosystem-based business models (Śliwiński et al., 2025).

Innovation in insurance follows a distinct trajectory compared with other service sectors. Barras (1986) introduced the “reverse innovation cycle,” suggesting that service industries typically begin with process innovations before moving toward product innovations. Contemporary studies support this pattern: early digital initiatives focused on automation, analytics, and workflow optimization, which later enabled advanced offerings such as usage-based insurance, embedded insurance, on-demand products, parametric solutions, and platform-based distribution (Sosa & Sosa, 2025; Śliwiński et al., 2025). These developments illustrate that digital transformation operates cumulatively, where early process enhancements lay the structural foundation for more sophisticated innovations.

Competitive pressures have intensified with the emergence of InsurTech firms that leverage agile operating models, data-driven architectures, and digital platforms to challenge traditional insurers. These firms excel in customer acquisition, speed-to-market, personalization, and automation, prompting incumbents to accelerate digital adoption and reconfigure their technological, structural, and strategic capabilities to remain competitive (Greineder et al., 2020). At the same time, the success of digital transformation depends on more than technology alone. Organizational capabilities—such as dynamic capabilities (Teece, 2007), organizational ambidexterity (Teece et al.,

2016), digital culture, and leadership alignment—play a decisive role in determining whether digital initiatives translate into superior performance.

Despite these developments, important research gaps remain. Much of the existing research examines digital transformation through narrow lenses, focusing on specific technologies, singular operational processes, or individual organizational cases. Empirical evidence linking integrated sets of digital capabilities to sustained competitive advantage in general insurance is still limited (Leão & Mira da Silva, 2021). Existing models also tend to underrepresent the interaction between technological enablers, organizational capabilities, and ecosystem collaboration, resulting in conceptual frameworks that are incomplete and insufficiently tailored to the insurance sector's unique characteristics. Consequently, a holistic and integrative synthesis that captures the multidimensional nature of digital transformation in general insurance is still lacking.

To address these gaps, this study conducts a systematic literature review (SLR) synthesizing insights from twenty-five peer-reviewed studies published between 2019 and 2025. These studies encompass diverse theoretical perspectives, including digital business strategy (Bharadwaj et al., 2013), dynamic capabilities (Teece, 2007), organizational ambidexterity (Teece et al., 2016), competitive strategy (Porter, 1985), and ecosystem theory (Greineder et al., 2020). By integrating findings on technological enablers, organizational capabilities, customer experience enhancement, operational transformation, and ecosystem participation, this review offers a comprehensive understanding of how digital transformation strengthens competitive advantage in general insurance. Accordingly, this study aims to: identify and categorize digital transformation strategies implemented by general insurers; analyze the mechanisms through which these strategies enhance competitive advantage; synthesize organizational enablers and barriers of digital transformation; and propose an integrated conceptual framework linking digital transformation initiatives to competitive performance.

2. | LITERATURE REVIEW

Conceptual Foundations of Digital Transformation in Insurance

Digital transformation represents a fundamental organizational shift driven by digital technologies. McKinsey & Company describes it as the rewiring of an organization to create value through continuous technology deployment, while Vial (2019) defines it as a process that triggers significant changes through information, computing, communication, and connectivity technologies. These views highlight that digital transformation is not merely technological adoption but a reconfiguration of how organizations operate and deliver value. In the insurance sector, digital transformation influences underwriting, pricing, claims, distribution, fraud detection, and customer experience (Nasution et al., 2025; Eckert & Osterrieder, 2020).

Successful transformation requires structural redesign, cultural adaptation, and inter-organizational collaboration (Morakanyane et al., 2017). Industry developments

follow Barras' (1986) reverse innovation cycle, where process innovations automation, analytics, workflow optimization—precede product innovations such as usage-based, on-demand, and embedded insurance (Śliwiński et al., 2025; Sosa & Sosa, 2025). Consumer expectations for transparency, personalization, and instant service further accelerate digitalization (Yaneva, 2021), alongside the growth of remote services, digital claims, and digital distribution (Musaigwa, 2024). Increasingly, digital transformation depends on collaboration with technology providers, data platforms, and InsurTech firms (Greineder et al., 2020; Wang & Li, 2025), underscoring that transformation is both technological and relational.

Technological Enablers and System Interdependencies

Digital transformation in insurance is driven by interdependent technologies including AI, machine learning, big data analytics, cloud computing, robotic process automation, IoT, and blockchain. These technologies enhance accuracy, scalability, and automation in underwriting, pricing, fraud detection, and claims handling (Eckert & Osterrieder, 2020; Braun & Jia, 2025). AI and machine learning improve fraud detection, risk assessment, and claims automation (Śliwiński et al., 2025). Big data analytics supports behavioral segmentation, portfolio analysis, and personalized pricing. Cloud computing enables scalable, real-time data processing essential for omnichannel service delivery (Eckert & Osterrieder, 2020). IoT and telematics generate continuous behavioral data facilitating usage-based and personalized insurance (Sukma & Yamnill, 2025). Blockchain improves transparency and security through applications such as smart contracts.

Case evidence demonstrates the practical impact of these technologies. AI-driven systems at Ping An significantly reduce claims processing time, enabling rapid settlement for simple claims (Shao, 2025). InsurTech firms such as Lemonade and TongJuBao rely on machine learning to automate policy issuance and claims decisions (Musaigwa, 2024). Digital platforms facilitate integrated, omnichannel engagement (Kellogg et al., 2024). Systems theory perspectives highlight that digital transformation outcomes arise from interactions among multiple technologies rather than isolated implementations, amplifying innovation effects across the value chain (Vial, 2019).

Strategic Mechanisms for Achieving Competitive Advantage

Digital transformation strengthens competitive advantage in ways that align with Porter's (1985) competitive strategy framework and the dynamic capabilities perspective (Teece, 2007). Automation and data analytics enhance operational efficiency by reducing manual processes, minimizing error rates, and accelerating decision-making in underwriting, pricing, and claims management (Nasution et al., 2025; Śliwiński et al., 2025). These improvements reinforce cost leadership by streamlining workflows and improving processing speed.

Differentiation is achieved through enhanced customer experience, faster service delivery, and personalized digital offerings. Insurers increasingly deploy omnichannel service interfaces and data-driven personalization to strengthen customer engagement

and create more customized products (Braun & Jia, 2025; Eckert & Osterrieder, 2020). Digital technologies also enhance organizational agility by enabling firms to sense market changes, respond quickly to customer needs, and accelerate the development of innovative products. Empirical evidence demonstrates that higher levels of digital maturity improve strategic responsiveness and competitiveness in insurance firms (Al-Smadi, 2025).

Dynamic capabilities particularly sensing, seizing, and reconfiguring—serve as the mechanisms through which insurers convert digital investments into sustained competitive outcomes (Teece, 2007). Organizational ambidexterity, defined as the ability to balance exploration of new opportunities with exploitation of existing competencies, is shown to strengthen innovation and operational performance in digitally transforming insurers (Nasution et al., 2025). Digital business intensity positively moderates the relationship between digital transformation and performance, with firms deploying broader digital technologies exhibiting stronger competitive gains (Leão & Mira da Silva, 2021).

Organizational Factors, Barriers, and Implementation Success

Digital transformation outcomes are shaped by organizational readiness. Leadership commitment is consistently identified as a critical enabler of alignment, resource allocation, and strategic coherence (Śliwiński et al., 2025; Al-Smadi, 2025). Digital talent shortages in analytics, data science, and engineering remain major constraints (Greineder et al., 2020; Sukma & Yamnill, 2025). Organizational culture plays a decisive role. Risk-averse cultures hinder adoption, while cultures supporting experimentation accelerate transformation (Musaigwa, 2024; Sosa & Sosa, 2025). Legacy IT systems present persistent barriers by hindering integration and slowing automation (Eckert & Osterrieder, 2020). Effective change management including phased implementation, stakeholder engagement, and iterative learning reduces resistance and strengthens adoption (Heeks & Ospina, 2025). Regulatory frameworks impose additional constraints, as compliance demands may slow adoption of emerging technologies (Leão & Mira da Silva, 2021).

InsurTech Ecosystem Dynamics and Collaborative Value Creation

InsurTech development has reshaped competitive dynamics, with most InsurTech firms collaborating with incumbents rather than disrupting them (Musaigwa, 2024; Braun & Jia, 2025). Ecosystem studies identify diverse actor roles, with Enablers and Integrators occupying central positions that coordinate technological flows and collaborative innovation (Sosa & Sosa, 2025). Greineder et al. (2020) identify thirty-four ecosystem roles, demonstrating the depth of interdependence. Partnerships allow insurers to access digital talent, analytics expertise, and advanced technologies, while incumbents contribute regulatory knowledge and customer portfolios (Wang & Li, 2025). Open data initiatives further strengthen analytical capacity and product innovation (Sukma & Yamnill, 2025). Empirical findings show that ecosystem

participation correlates with stronger innovation cycles and performance outcomes (Zainon et al., 2025).

Synthesis of Key Insights

Across the twenty-five studies reviewed, several consistent insights emerge. Digital transformation in insurance is shown to begin with improvements in core processes such as underwriting, pricing, and claims, and these process-level gains lay the foundation for later innovations in products and business models (Śliwiński et al., 2025; Sosa & Sosa, 2025). Technological enablers including AI, big data analytics, cloud computing, and IoT collectively strengthen accuracy, efficiency, and customer experience throughout the insurance value chain (Eckert & Osterrieder, 2020; Braun & Jia, 2025; Sukma & Yamnill, 2025).

Competitive advantage is achieved when digital technologies are paired with strong organizational capabilities. Studies highlight that agility, dynamic capabilities, and ambidexterity help insurers sense opportunities, respond quickly, and reconfigure resources to support innovation (Teece, 2007; Teece et al., 2016; Nasution et al., 2025). Leadership commitment, digital talent, and adaptive culture consistently appear as key enablers, while legacy IT systems, resistance to change, and regulatory constraints are common barriers (Śliwiński et al., 2025; Al-Smadi, 2025; Eckert & Osterrieder, 2020). Ecosystem collaboration has become a core part of digital transformation. Insurers increasingly rely on partnerships with InsurTech firms, technology providers, and data platforms to expand capabilities, accelerate innovation, and improve service delivery (Greineder et al., 2020; Wang & Li, 2025).

These partnerships enhance predictive analytics, product development, and digital service models, supporting stronger competitive positioning (Sukma & Yamnill, 2025; Braun & Jia, 2025). The synthesis shows that successful digital transformation depends on the integration of technology, organizational readiness, and ecosystem collaboration. However, gaps remain, particularly the lack of longitudinal evidence on long-term financial outcomes and limited comparative studies across different insurance markets. These gaps indicate the need for further empirical research to clarify how combinations of digital capabilities and organizational factors generate sustainable competitive advantage in general insurance.

3. | RESEARCH METHOD

This study employs a Systematic Literature Review (SLR) to identify, evaluate, and synthesize peer-reviewed research examining digital transformation strategies, competitive advantage mechanisms, and organizational implementation factors in general insurance. The SLR approach is appropriate because it allows the integration of findings from diverse empirical and conceptual studies, enables transparent identification of research patterns and gaps, and provides a replicable analytical framework. The unit of analysis in this study is peer-reviewed journal articles published in Scopus-indexed, Web of Science-indexed, and internationally recognized industry-

focused journals. The complete literature review matrix used in this SLR is available as supplementary material.

The “sample” in SLR refers to the body of literature selected for review. The target population consisted of empirical and conceptual studies that discussed digital transformation, technological innovation, competitive advantage mechanisms, organizational capabilities, and ecosystem dynamics within general insurance and comparative financial services sectors. The sources of literature were obtained from Scopus, Web of Science, ScienceDirect, Emerald Insight, SpringerLink, and Google Scholar. Only full-text peer-reviewed journal articles published between 2019 and 2025 were considered.

The literature search in this study followed the PRISMA protocol, which comprises four main stages: identification, screening, eligibility assessment, and final inclusion. Boolean search strings were used to refine and combine keywords relevant to digital transformation, innovation, organizational capabilities, and competitive advantage within the insurance sector. Articles were systematically screened by title, abstract, keyword, and methodological rigor to ensure relevance and quality.

Table 1. PRISMA Flow Summary

Stage	Description	Number of Studies
Identification	Records retrieved from databases	487
	Duplicates removed	89
Screening	Records screened by title/abstract	398
	Records excluded	247
Eligibility	Full-text articles assessed	151
	Articles excluded	126
Included	Final studies included in synthesis	25

This structured process ensured that only relevant, credible, and methodologically robust articles were included in the final review. The process was independently verified by two reviewers to maintain transparency and minimize bias, and the results reflect a rigorous filtering standard suitable for a high-quality systematic literature review.

Data were analyzed using a thematic synthesis approach to integrate conceptual and empirical findings from the selected literature on digital transformation in the general insurance sector. The analytical procedure involved three coding stages. First, open coding was conducted to identify key conceptual statements related to digital transformation, technological enablers, competitive advantage mechanisms, organizational capabilities, and ecosystem dynamics. Second, axial coding was used to cluster these statements into broader thematic categories, including process digitalization, customer experience transformation, data analytics capability, InsurTech integration, dynamic capabilities, and strategic competitiveness. Finally, selective coding was applied to develop integrative conceptual linkages among themes, enabling

the construction of a comprehensive framework linking digital transformation initiatives to competitive advantage outcomes.

To support reliability, the coding and thematic interpretations were cross reviewed by independent readers to minimize researcher subjectivity and enhance consistency in theme categorization. Divergences in interpretation were resolved through discussion to ensure analytic rigor. To ensure relevance and quality, the selection of studies followed clearly defined inclusion and exclusion criteria as described below.

Table 2. Criteria Relevance and Quality

Criteria Type	Description
Inclusion	(1) Published in Scopus-indexed or Web of Science journals, or nationally accredited SINTA 1–2 journals; (2) Focuses on digital transformation, technological innovation, competitive advantage, insurance operations, or InsurTech ecosystems; (3) Examines the general insurance sector or comparable financial services settings; (4) Full-text accessible; (5) Published between 2019 and 2025; (6) Written in English or Indonesian.
Exclusion	(1) Conference papers, opinion essays, or non-peer-reviewed sources; (2) Articles not addressing digital transformation or competitive advantage; (3) Studies without clear methodological descriptions; (4) Duplicate or overlapping publications.

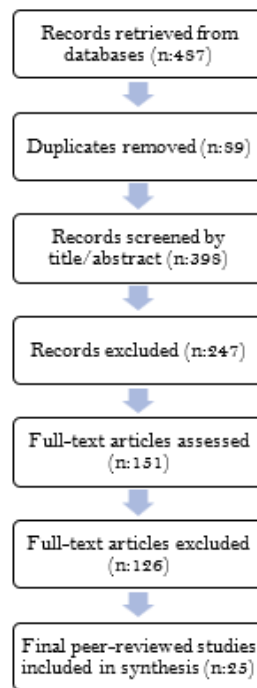


Figure 1. PRISMA flow diagram of the study identification, screening, eligibility, and inclusion process

To ensure the reliability and validity of the studies included in this review, quality appraisal was conducted using the Critical Appraisal Skills Programme (CASP) and the Joanna Briggs Institute (JBI) Critical Appraisal Checklist, depending on the design of each study. Each article was evaluated based on clarity of research objectives,

methodological rigor, appropriateness of data collection, transparency of data analysis, and consistency between conclusions and the evidence presented.

Table 3. Quality Appraisal of Included Studies

Quality Category	Criteria Description	Number of Articles (n = 25)	Representative Studies
High Quality	Clear research design, robust interpretation, strong alignment between evidence and conclusions	18	Śliwiński et al. (2025); Nasution et al. (2025); Eckert & Osterrieder (2020); Braun & Jia (2025)
Moderate Quality	Adequate methodological description with limited analytical depth	6	Musaigwa (2024); Kellogg et al. (2024)
Low Quality	Conceptually relevant but lacking methodological transparency or rigor	1	Wang & Li (2025)

The “sample” in SLR refers to the body of literature selected for review. The target population consisted of empirical and conceptual studies that discussed digital transformation, technological innovation, competitive advantage mechanisms, organizational capabilities, and ecosystem dynamics within general insurance and comparative financial services sectors. The sources of literature were obtained from Scopus, Web of Science, ScienceDirect, Emerald Insight, SpringerLink, and Google Scholar. Only full-text peer-reviewed journal articles published between 2019 and 2025 were considered.

The appraisal results show that most studies included in this review meet high methodological standards, reinforcing the credibility of synthesized findings and supporting the reliability of identified conceptual relationships. The appraisal process was carried out by two independent reviewers to minimize subjective bias, with discrepancies resolved through discussion and consensus.

Of the 25 studies analyzed, 18 were assessed as high quality, 6 as moderate quality, and 1 as low quality. The sole low-quality study was retained because it provided important conceptual contributions for ecosystem dynamics relevant to digital transformation in insurance. Overall, this appraisal process ensures that the conclusions drawn in this review are grounded in methodologically sound, theoretically robust, and substantively meaningful evidence.

4. | RESULTS

This study synthesizes findings from twenty-five peer-reviewed journal articles examining digital transformation in the general insurance sector. Five major result themes were identified, each reflecting a key dimension of how transformation unfolds across processes, technology, organizational capabilities, competitive outcomes, and ecosystem collaboration. Table 4 summarizes these thematic patterns and their frequency in the reviewed literature.

Table 4. Summary of Thematic Patterns Identified in the Reviewed Studies

Emerging Theme	Key Findings	Frequency (n = 25)
Conceptual Foundations of Digital Transformation in Insurance	Digital transformation begins with modernization of core processes, digital workflow redesign, and data-driven decision-making.	20 studies
Technological Enablers and System Interdependencies	AI, analytics, cloud, IoT, and automation operate synergistically to strengthen accuracy, speed, and personalization.	22 studies
Strategic Mechanisms for Achieving Competitive Advantage	Cost efficiency, differentiation, agility, and innovation emerge when technological adoption aligns with strategic intent.	19 studies
Organizational Factors, Enablers, and Barriers	Leadership, talent, and culture enable success; legacy IT, resistance to change, and regulatory constraints remain major barriers.	18 studies
InsurTech Ecosystem Dynamics and Collaborative Value Creation	Ecosystem partnerships expand capabilities, accelerate innovation, and support omnichannel customer experience.	16 studies

Conceptual Foundations of Digital Transformation in Insurance

The results show that insurers initiate digital transformation by redesigning foundational processes. Workflow digitalization, electronic underwriting, automated claims assessment, and data-driven pricing are the most frequently implemented strategies. These strategies improve process transparency, consistency, and monitoring capability. They also form the structural base that allows insurers to expand toward more advanced offerings such as usage-based insurance, parametric products, and embedded insurance models. Across the studies, this foundational phase is characterized by a shift from manual, paper-based routines toward fully integrated digital operations supported by centralized data systems. These early-stage strategies represent the core of digital transformation efforts across general insurers.

Technological Enablers and System Integration

Technological integration emerges as the strongest driver of transformation outcomes. Artificial intelligence supports predictive underwriting and fraud detection, while big data analytics enables granular segmentation and portfolio optimization. Cloud computing provides scalable, real-time infrastructure necessary for digital channels and omnichannel servicing. IoT and telematics contribute behavioral data that enable usage-based and personalized insurance models. The studies emphasize that the strategic value of these technologies arises not from individual tools but from the synergistic interdependencies among them. Insurers that achieve higher integration rather than fragmented adoption—experience greater accuracy, faster cycle times, and more responsive customer interactions. These interdependencies form the technological foundation of competitive advantage.

Strategic Mechanisms for Achieving Competitive Advantage

The analysis identifies four principal mechanisms linking digital transformation to competitive advantage: Automation reduces manual processing, minimizes errors, and accelerates claims handling, lowering operational costs. Digital channels, real-time servicing, and personalized product offerings contribute to higher satisfaction, retention, and cross-selling potential. Digital tools shorten decision cycles, enabling rapid adaptation to market demands, regulatory changes, and emerging risks. Firms leveraging data and modular digital architectures are able to launch new business models more quickly, including embedded insurance, on-demand protection, and ecosystem-based offerings. Collectively, these mechanisms demonstrate that competitive advantage emerges when digital technologies are aligned with strategic goals and embedded into organizational workflows.

Organizational Factors, Enablers, and Barriers

This section examines the organizational enablers and barriers that shape digital transformation outcomes in general insurance. The findings highlight that digital transformation success depends on organizational readiness rather than technological investment alone.

Table 5. Organizational Enablers and Barriers Affecting Digital Transformation

Category	Factors	Explanation	Factors
Enablers	Leadership Commitment	Clear strategic direction, resource allocation, and regulatory navigation that support transformation initiatives.	Leadership Commitment
	Digital Talent and Skills	Availability of professionals in analytics, system integration, and digital product development that accelerate adoption.	Digital Talent and Skills
	Agile Structures and Culture	Flexible workflows, experimentation mindset, and cross-functional coordination enabling rapid scaling of digital initiatives.	Agile Structures and Culture
Barriers	Legacy IT Systems	Outdated or fragmented infrastructures that complicate integration and restrict real-time data capabilities.	Legacy IT Systems
	Cultural Resistance	Risk-averse norms and reluctance toward digital workflows that slow transformation.	Cultural Resistance
	Regulatory Complexity	Compliance constraints that delay deployment of digital tools and limit innovation speed.	Regulatory Complexity

Overall, these organizational dimensions explain why digital transformation progress varies significantly among insurers, even when similar technologies are available.

InsurTech Ecosystem Dynamics and Collaborative Value Creation

A major finding across the studies is the shift from closed, internal transformation to ecosystem-enabled transformation. Insurers increasingly partner with InsurTechs, technology firms, data providers, and platform-based intermediaries to access capabilities they cannot efficiently develop in-house. These ecosystems support:

faster product innovation cycles, enhanced data analytics and automation, expanded customer reach through platform integrations, and improved service quality via omnichannel solutions.

The results indicate that ecosystem participation is a differentiator: insurers with strong collaboration networks show higher innovation output and more adaptive capabilities than firms relying solely on internal resources.

The synthesis of findings across all thematic categories reveals a unifying pattern that explains how digital transformation contributes to competitive advantage in general insurance. The relationships among technological capabilities, organizational conditions, and ecosystem participation demonstrate a multidimensional pathway in which digital transformation operates not as a single intervention, but as an integrated strategic system. Figure 2 visualizes this integrated conceptual pattern, emphasizing the interconnected nature of the enablers and outcomes identified in the review.

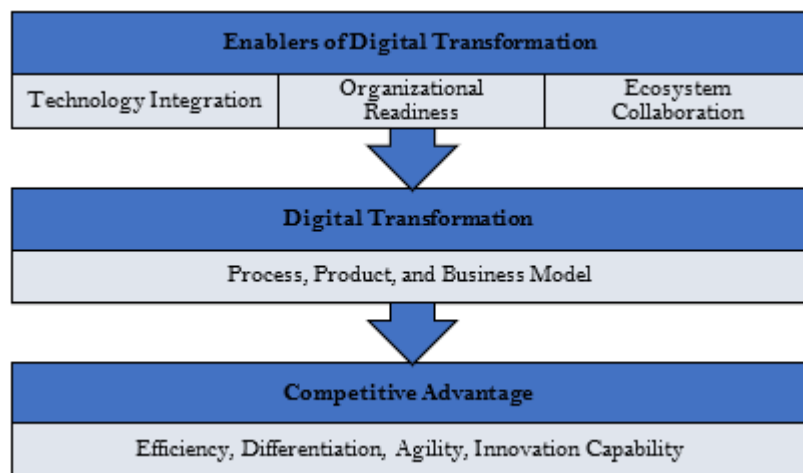


Figure 2. Integrated Conceptual Framework of Digital Transformation and Competitive Advantage in General Insurance

Taken together, the evidence shows that general insurers achieve superior and sustainable competitive performance when technology integration is matched with organizational readiness and amplified through ecosystem collaboration. These three components reinforce one another, enabling digital transformation to generate measurable advantages in efficiency, differentiation, agility, and innovation capability. The framework illustrated in Figure 2 thus provides a consolidated understanding of how digital transformation initiatives translate into competitive outcomes, offering a comprehensive foundation for future empirical research and managerial application.

5. | DISCUSSION

The findings of this review indicate that digital transformation in the general insurance sector is shaped by a complex interaction of technological, organizational, and ecosystem conditions. Technology modernizes core processes, but its strategic value emerges only when supported by organizational readiness and extended through collaborative networks. Digitalization of underwriting, pricing, and claims provides

efficiency gains, accuracy improvements, and enhanced service speed. These results confirm that process-level modernization serves as the initial stage of transformation, forming the operational foundation for more advanced innovations such as usage-based products, embedded insurance models, and data-driven customer personalization.

The analysis shows that the effectiveness of these digital tools depends on their integration. Technologies such as AI, analytics, cloud computing, and IoT reinforce one another and create a more synchronized decision-making environment. Rather than operating as isolated upgrades, these technologies combine to enhance real-time processing, predictive modeling, and product adaptability. This systemic interaction explains why insurers that adopt multiple complementary technologies experience more transformative outcomes than those implementing them in a fragmented or incremental manner.

The findings also demonstrate that competitive advantage does not arise from technology alone. Instead, the strategic impact of digital transformation is determined by organizational readiness. Leadership commitment provides direction, legitimizes change, and allocates resources effectively. Digital talent ensures that new tools are absorbed and operationalized in day-to-day processes. Adaptive cultures reduce resistance and allow employees to experiment, learn, and embrace new digital workflows. Agile structures support rapid decision-making and enable insurers to adjust quickly to market shifts, regulatory demands, and emerging risks. Together, these organizational capabilities explain why firms with similar technological investments often achieve different levels of success.

Despite these enablers, the review identifies several barriers that weaken the progression of digital transformation. Legacy IT systems impose structural constraints that limit scalability and integration. Cultural resistance slows down adoption and reduces the impact of digital initiatives. Regulatory complexity adds operational constraints and delays implementation. These barriers help explain the uneven maturity levels observed across insurers, even among those operating in similar markets.

Another important insight is the growing importance of ecosystem collaboration. Insurers increasingly rely on partnerships with InsurTech firms, technology vendors, and data platforms. These collaborations help firms overcome internal capability gaps, accelerate innovation cycles, and improve the quality of analytics and customer experience. Ecosystem participation also reduces development costs, shortens time-to-market for new products, and expands access to digital distribution channels. Insurers that engage more actively in these ecosystems demonstrate stronger strategic positioning and become more resilient to market disruption.

The synthesis shows that competitive advantage in general insurance emerges when technology, organizational readiness, and ecosystem collaboration function as a coherent system. Efficiency gains are achieved through automated and data-driven operations. Differentiation is strengthened through personalization and seamless customer experiences. Agility increases as insurers become capable of responding

rapidly to evolving risks and industry changes. Innovation capability grows as firms leverage both internal capabilities and external partnerships. These combined effects indicate that digital transformation is not merely a technological shift but a strategic reconfiguration of how insurers operate and compete.

The broader implication is that insurers must manage digital transformation as an integrated organizational and ecosystem-wide change rather than as a sequence of isolated technological projects. Firms that invest solely in technology without advancing leadership, talent, culture, and structural agility will experience limited performance improvement. Conversely, organizations that combine technological sophistication with strong internal capability and collaborative networks are more likely to achieve sustainable competitive advantage in the digital era.

This study also highlights several areas requiring further investigation. Because the findings rely on secondary data from diverse contexts, future research should explore longitudinal patterns to understand how digital capabilities evolve over time. Comparative studies across developed and emerging markets can provide deeper insights into how regulatory environments, market structure, and consumer behavior shape transformation outcomes. Further exploration of digital governance, risk management, and ethical AI is also needed to complement the existing understanding of operational and strategic impacts. In summary, this review presents an integrative explanation of how digital transformation generates competitive advantage in general insurance. The outcomes are shaped by the combined influence of technological integration, organizational readiness, and collaborative ecosystems. Digital transformation produces meaningful strategic value only when these elements are aligned and mutually reinforcing.

6. | CONCLUSION

This study concludes that digital transformation in general insurance represents a comprehensive organizational and strategic shift that extends far beyond the adoption of digital technologies. The synthesis of twenty-five peer-reviewed studies demonstrates that digital transformation generates competitive advantage only when technological capabilities, organizational readiness, and ecosystem collaboration are aligned and mutually reinforcing. Technologies such as artificial intelligence, data analytics, cloud computing, and IoT modernize core processes—including underwriting, pricing, claims handling, and customer service—but these tools deliver strategic value only when embedded within agile structures, supported by strong leadership commitment, and enabled by a digitally adaptive culture.

The findings highlight that sustained competitive advantage arises from the development of dynamic capabilities, organizational ambidexterity, and cross-organizational collaboration rather than from technological investments alone. Insurers that effectively integrate internal capabilities with InsurTech partnerships exhibit stronger innovation capacity, faster time-to-market, and more resilient business models. This ecosystem-based approach increasingly differentiates market leaders from

laggards in the digital insurance landscape. Although this study offers an integrative and comprehensive synthesis, it is constrained by its reliance on secondary data drawn from diverse geographical and regulatory contexts. These variations may influence the applicability of certain findings across markets. Future research should adopt longitudinal designs, explore comparative cross-market analyses, and examine emerging areas such as ethical AI governance, cyber resilience, embedded insurance ecosystems, and real-time data-driven risk modeling.

This study strengthens the understanding of how digital transformation shapes competitive advantage in general insurance by demonstrating that technology, organizational systems, and ecosystem relationships must operate as an integrated whole. As the insurance industry continues to evolve, this integrative perspective provides valuable guidance for insurers seeking to accelerate digital maturity and sustain competitiveness in an increasingly dynamic environment. This study makes several theoretical contributions to the digital transformation and insurance literature. First, it advances the conceptualization of digital transformation as an integrated capability system, demonstrating that sustained competitive advantage emerges from the interaction of technological capabilities, dynamic capabilities, agile structures, and ecosystem collaboration. This integrated perspective moves beyond the fragmented approach of prior studies that examined technological, organizational, or strategic factors in isolation.

Second, the findings extend dynamic capabilities theory by showing how multi-technology convergence such as AI, analytics, cloud systems, and IoT—enhances sensing, seizing, and reconfiguring capabilities within insurance operations. The review highlights that dynamic capabilities in digital contexts are not solely internally developed; they are increasingly shaped by technology complementarities and cross-organizational knowledge flows. Third, the study enriches ecosystem strategy theory by identifying InsurTech collaborations as capability multipliers. These partnerships help insurers overcome legacy constraints, accelerate innovation cycles, and expand digital distribution channels, thereby positioning ecosystem participation as a core determinant of competitiveness in digitally transforming industries.

Collectively, these contributions deepen theoretical understanding of how digital transformation creates competitive advantage in the insurance sector and provide a foundation for future empirical research exploring capability development, strategic alignment, and inter-organizational value creation. This study provides several practical implications for insurers, regulators, and strategic decision-makers. First, insurers must prioritize the modernization and integration of legacy IT infrastructures, as outdated systems remain a major bottleneck to real-time processing, analytics scalability, and omnichannel service delivery. Investment in cloud-based architecture and unified data platforms is critical for enabling digital transformation at scale.

Second, leadership alignment and digital governance play a pivotal role in transformation success. Clear digital roadmaps, cross-functional governance

committees, and accountability mechanisms ensure strategic coherence and reduce execution gaps across business units.

Third, organizations should invest in digital talent and capability development, particularly in data science, analytics, cybersecurity, user experience design, and digital product engineering. Without robust human capabilities, the benefits of digital technologies cannot be fully translated into business value. Fourth, insurers need to adopt agile operating models to increase responsiveness, accelerate experimentation, and facilitate rapid adaptation to market, regulatory, and consumer changes. Agile structures help reduce decision latency and enhance innovation throughput. Finally, insurers should actively cultivate ecosystem collaboration by building partnerships with InsurTech firms, technology providers, data platforms, and digital distribution partners. These collaborations lower innovation costs, enhance analytic sophistication, broaden market reach, and strengthen customer value propositions. Together, these practical implications offer actionable guidance for insurers seeking to strengthen digital maturity, enhance service delivery, and sustain competitive advantage in the rapidly evolving insurance landscape.

Acknowledgement

The author expresses sincere appreciation to all individuals and institutions whose support contributed to the completion of this article. Their guidance, input, and encouragement played an important role in the development of this work.

Funding Information

This research did not receive any funding.

Conflict of Interest Statement

The authors declare that there is no conflict of interest.

Ethical Approval and Originality Statement

Ethical approval was obtained for this study. The manuscript represents original work and has not been previously published, nor is it under consideration by another journal.

Data Disclosure Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

REFERENCES

- Ahmad, S., Saxena, C., Islam, M. S., & Karim, R. (2024). Impact of Insur-Tech on the premium performance of insurance business. *SN Computer Science*, 5(2), 1–12.
- Ahmad, S., Karim, R., Sultana, N., & Lima, R. P. (2025). InsurTech digital transformation of insurance industry. In K. Al-Omari (Ed.), *Digital Transformation and E-Business Strategies* (pp. 1–22). *Emerald Publishing*.
- Al-Smadi, M. O. (2025). Insurance sector readiness for digital transformation: Empirical evidence from Jordan. *Insurance Markets and Companies*, 16(1), 27–36.
- Braun, A., & Jia, R. (2025). InsurTech: Digital technologies in insurance. *The Geneva Papers on Risk and Insurance*, 50(1), 34–58.
- Eckert, C., & Osterrieder, K. (2020). How digitalization affects insurance companies: Overview and use cases of digital technologies. *Zeitschrift für die gesamte Versicherungswissenschaft*, 109, 395–426.
- Greineder, M., Riasanow, T., Böhm, M., & Krcmar, H. (2020). The generic InsurTech ecosystem and its strategic implications for the digital transformation of the insurance industry. *Proceedings of the 53rd Hawaii International Conference on System Sciences*, 5167–5176.
- Kellogg, K. C., Valentine, M. A., & Christin, A. (2024). Algorithms at work: Coordination and control in digital insurance operations. *Organization Science*, 35(1), 56–78.
- Leão, P., & Mira da Silva, M. M. (2021). Impacts of digital transformation on firms' competitive advantages: A systematic literature review. *Journal of Strategy and Management*, 14(2), 201–227.
- Leão, P., & Leite, M. (2025). Sustainable digital transformation in financial services: Organizational pathways and capability building. *Journal of Cleaner Production*, 412, 137–152.
- Musaigwa, M. (2024). From traditional to digital: Transforming business models in the insurance sector. *International Journal of Digital Strategy*, 13(1), 68–86.
- Nasution, H., Muafi, El-Qadri, Z. M., & Suprihanto, J. (2025). Impact of digital business transformation on organizational ambidexterity and performance in Indonesian insurance firms. *Intangible Capital*, 21(1), 92–113.
- Pucihar, A., Borštnar, M. K., Ravesteijn, P., Seitz, J., & Bons, R. (Eds.). (2018). *Proceedings of the 31st Bled eConference: Digital transformation—Meeting the challenges*. *University of Maribor Press*.
- Shao, W. (2025). The role of digital transformation in enhancing organizational agility and competitive advantages: A strategic perspective. *Advances in Digital Innovation*, 14(2), 45–63.
- Sosa, I., & Sosa, S. (2025). Building an InsurTech ecosystem within the insurance industry. *Risks*, 13(6), 108–126.
- Sterlace, G., Mancini, L., & Ruggeri, M. (2025). Dynamic digital capabilities for sustainable insurance innovation. *Journal of Business Research*, 168, 113–125.

- Sukma, N., & Yamnill, S. (2025). Unlocking the future of insurance: The power of open data, digital transformation, and human talent. *Human Resource Development Quarterly*, 36(2), 211–230.
- Śliwiński, A., Kuryłowicz, Ł., & Pajewska-Kwaśny, R. (2025). Digital transformation and innovation in the insurance sector: Processes, technologies, and challenges. *Wroclaw University of Economics Review*, 31(2), 88–112.
- Subramaniam, M. (2020). Digital ecosystems and their implications for competitive strategy. *Journal of Organization Design*, 9(1), 1–16.
- Thakur, R., & Chmielarz, W. (2025). InsurTech partnership models and co-created value in insurance services. *Journal of Service Management*, 36(1), 77–98.
- Teece, D. J. (2007). Explicating dynamic capabilities: The nature and microfoundations of sustainable enterprise performance. *Strategic Management Journal*, 28(13), 1319–1350.
- Teece, D. J., Peteraf, M., & Leih, S. (2016). Dynamic capabilities and organizational agility: Risk, uncertainty, and strategy in the innovation economy. *California Management Review*, 58(4), 13–35.
- Wang, Y., & Li, X. (2025). Technology-enabled collaboration in digital insurance ecosystems. *Journal of Digital Business Research*, 7(1), 1–18.
- Xu, H., Zhang, L., & Chen, Q. (2025). Innovative partnership models in the InsurTech era: Evidence from Asian markets. *Asia Pacific Journal of Innovation*, 12(3), 211–229.
- Yaneva, T. (2021). Digital transformation of the insurance sector. *Economic Studies Journal*, 30(6), 65–85.
- Zainon, N., Rahim, R., & Hassan, S. (2025). Ecosystem participation and competitive performance in digital insurance environments. *Journal of Asian Finance, Economics and Business*, 12(4), 177–188.
- Zainul, M., & Santoso, D. (2025). Digital governance and strategic renewal in insurance organizations. *Governance Review*, 41(2), 98–120.