

Cooperative Strategy in Increasing the Competitiveness of MSMEs in the Digital Transformation Era

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ABSTRACT

The development of digital technology has brought major changes to economic activities, especially in the micro, small, and medium enterprises sector which plays an important role in economic growth. Changes in market behavior and increased use of technology encourage the need for cooperative-based economic institutional strengthening strategies to increase the competitiveness of MSMEs. This research aims to analyze cooperative strategies in increasing the competitiveness of MSMEs in the era of digital transformation. The method used is *a literature review* by analyzing 20 scientific articles in 2022–2026 related to cooperatives, MSMEs, and economic digitalization. The results of the study show that operational digitalization, the use of *e-commerce*, the strengthening of information systems, and the increase in the capacity of human resources have a significant impact on increasing the competitiveness of MSMEs. Cooperatives play a role in providing access to financing, business assistance, and the integration of MSMEs into the digital ecosystem. The findings also show that collaboration between cooperatives and digital technology is able to expand the market and increase business efficiency.

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1. INTRODUCTION

The development of digital technology has brought major changes in various sectors of life, including the economic and business sectors. Business activities are shifting from conventional systems to technology-based systems that are faster and more efficient. This change encourages business actors to adjust to increasingly modern trading patterns. The use of digital technology is an important part of supporting production, distribution, and marketing processes. This condition creates new opportunities for business actors to improve business performance (Priandika & Setiawansyah, 2023).

Micro, small, and medium enterprises have an important role in economic growth in various countries. This sector is the main source of employment and economic driver of the community. Small-scale business activities are growing in line with the increasing needs of diverse markets. Changes in

people's consumption patterns also affect the direction of small business development. Adaptability is an important factor in maintaining business sustainability (Munizu et al., 2023).

The development of the digital era presents various platforms that can be used to expand market reach. Internet-based media provides convenience in business promotions and transactions. Business actors can utilize technology to improve operational efficiency. Fast access to information supports more informed decision-making in running a business. This change encourages the emergence of an increasingly dynamic pattern of business competition (Rofiq, Suryadi, Anggraeni, Makhmut, & Aryati, 2023).

The role of business support institutions is an important part in supporting the development of small-scale economic sectors. The institution helps in strengthening business capacity through various coaching programs. Support in the form of training, mentoring, and access to resources is part of efforts to improve business capabilities. Synergy between business actors and supporting institutions has an impact on the development of economic activities. This condition strengthens the position of small businesses in the face of changes in the business environment (Khairunnisa, Al-Hasyir, Salzabil, & Jannah, 2024).

Research by (Aryani, Sari, Widara, & Jayusman, 2026) examine the MSME development strategy by the Cooperatives and SMEs Office in increasing local competitiveness by highlighting various factors that affect the competitiveness of small businesses. The results of the study show that the role of the government through the Cooperatives and SMEs Office is very significant in increasing the competitiveness of MSMEs through coaching, training, and market access facilitation programs. (Salsabila, Lestari, & Legiani, 2025) emphasizing the importance of the entrepreneurial incubation program in increasing the competitiveness of MSMEs in Cilegon City, where facilitation from the Cooperatives and MSMEs Office is able to help business actors in developing business capacity and business innovation. (Dzikrullah & Chasanah, 2024) found that cooperatives have a strategic role in increasing access to capital, mastery of technology, and the expansion of the MSME market, so that cooperatives can be an important link in strengthening the community-based economy. (Gea, Nikira, Khairunnisa, & Hayati, 2025) shows that cooperatives based on the needs of MSMEs with the application of digital technology in marketing are able to significantly increase business competitiveness. (Ompusunggu & Triani, 2023) affirms that the transformation *e-commerce* is an important factor in increasing MSME market access, and cooperatives can play a role as a provider of capital and a facilitator of digital technology adoption for small business actors.

The competitiveness of MSMEs is still at a level that is not optimal in the era of accelerating digital transformation which requires rapid adjustments to technology, innovation, and changes in market behavior. Many MSMEs face obstacles in accessing capital, low digital literacy, and limited use of *digital economy platforms* to expand their business reach. The role of cooperatives as supporting institutions for MSMEs has not been running optimally in providing technology-based services, so there is a gap between the potential for digitalization and implementation in the field. This condition is influenced by limited infrastructure, the lack of integration of cooperative systems with *the fintech* and *e-commerce* ecosystems, and the low digital managerial skills of business actors. This situation makes it difficult for MSMEs to compete in local and global markets and requires strengthening cooperative strategies that are adaptive to digital developments.

This research aims to analyze cooperative strategies in increasing the competitiveness of MSMEs in the era of digital transformation through institutional strengthening, technology utilization, and capacity building of business actors. This research also focuses on identifying forms of digitalization that can be applied by cooperatives in supporting MSMEs, analyzing the role of cooperatives in expanding market access through *online marketplace platforms*, and evaluating cooperative collaboration with digital ecosystems such as *fintech*, *e-commerce*, and modern logistics systems. The formulation of a digital-based cooperative development strategy is directed to increase the competitiveness of MSMEs in a sustainable manner in order to be able to contribute to community-based economic growth.

This research makes a theoretical contribution to the development of a study on the role of cooperatives in strengthening MSMEs in the digital *transformation era*, especially related to the integration of technology in the community-based economic system. Practically, the results of this research can be a reference for the government in developing policies to increase the competitiveness of MSMEs through the digitalization of cooperatives. MSME actors gain insight into the use of digital technology such as the use of *e-commerce* platforms, digital marketing, and technology-based payment systems in business development. Cooperatives can also use the results of this research as the basis for developing digital-based services to better suit the needs of members in the modern era.

Increasingly fierce global competition requires MSMEs to have adaptive capabilities to changes in technology and digital markets. In the *Industry 4.0 era*, digitalization is the main need to maintain business sustainability. Cooperatives have a strategic position in accelerating the adaptation of MSMEs to digital technology, even though this role has not been running optimally. A study of cooperative strategies in supporting MSMEs is needed so that small business actors are able to survive and develop in the midst of the rapid development of *the digital economy*.

The novelty of this research lies in the integration of the role of cooperatives and digital transformation in increasing the competitiveness of MSMEs which not only focus on financing or training, but also on the formation of a connected digital ecosystem. This research offers a cooperative strategy approach based on *digital ecosystem* that includes connectivity with *e-commerce*, *fintech*, digital logistics systems, and the use of analytical data in business decision-making. Cooperatives are positioned as *digital hubs* that function as centers for strengthening innovation and digital transformation for MSMEs.

This study is still limited to a conceptual approach based on literature studies without direct empirical testing in the field. Very rapid technological changes have made some references related to the digitalization of cooperatives and MSMEs have high dynamics. Variations in the condition of MSMEs in various regions also cause the results of the study to not be applied uniformly. Access to real-time data related to the implementation of cooperative digitalization is still limited, so the analysis does not fully describe the actual conditions comprehensively.

2. METHODS

This study uses *literature review research*, with 20 articles from 2022–2026 that are analyzed thematically to see patterns of strengthening cooperatives in increasing the competitiveness of MSMEs in the digital era. This study focuses on the integration of cooperative strategies, digital transformation, and the development of technology-based MSMEs that are developing in various recent scientific publications. The sources used include national and international journal articles that discuss the digitalization of MSMEs, the role of cooperatives, and strengthening the digital economy ecosystem.

This research uses *literature review research*, with 20 articles in 2022–2026 which are used to examine the main problems faced by MSMEs in the digitalization process and the role of cooperatives in supporting increased competitiveness. The results of the study show that there are still limitations in digital literacy, technology access, and integration of cooperative systems with fast-growing digital platforms. This study also highlights various challenges that arise in the implementation of digital strategies for MSMEs, including the unpreparedness of human resources and limited supporting infrastructure.

This study uses *literature review research*, with 20 articles in 2022–2026 that are analyzed to formulate the direction of cooperative strategy development in strengthening the competitiveness of MSMEs through digital transformation. The main purpose of this study is to summarize various strategic approaches that have been discussed in the scientific literature related to the digitalization of cooperatives and MSMEs. The results of the synthesis are used to provide an overview of a digital-based cooperative strengthening model that is able to increase market access, business efficiency, and the adaptability of MSMEs to technological changes.

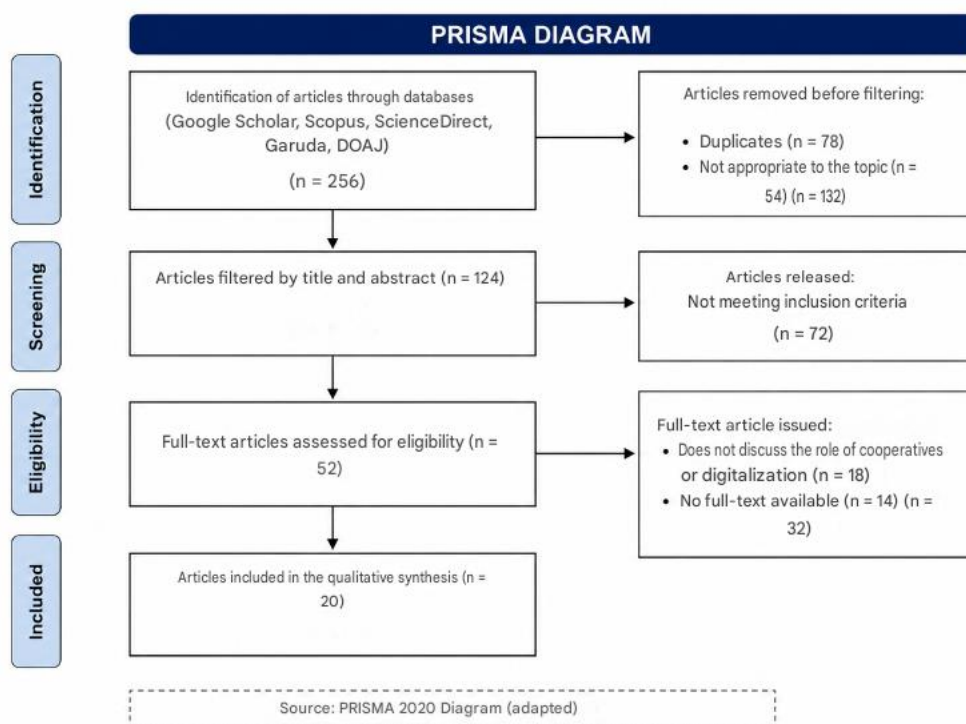


Figure 1. PRISMA Diagram

3. FINDINGS AND DISCUSSION

3.1. Findings

Table 1. Literature Review Results

Author	Problem	Purpose	Objek	Method	Result	Conclusion
(Valentino et al., 2025)	Daya saing UMKM sektor industri kreatif masih menghadapi hambatan berupa keterbatasan digitalisasi operasional, rendahnya inovasi produk, serta kurang optimalnya penguatan identitas merek di pasar digital yang	Menganalisis peningkatan daya saing UMKM melalui digitalisasi operasional, inovasi workshop, dan personalisasi brand	UMKM Civitartss sektor industri kreatif	literature review dan pendekatan deskriptif kualitatif	Digitalisasi operasional, kegiatan pelatihan berbasis workshop, serta strategi personalisasi brand identity mampu meningkatkan efektivitas pemasaran dan memperluas jangkauan pasar UMKM	Integrasi digitalisasi operasional dan inovasi branding memberikan pengaruh positif terhadap peningkatan daya saing UMKM kreatif

	semakin kompetitif					
(Khairunni sa et al., 2024)	Koperasi syariah belum sepenuhnya mampu mengoptimalkan perannya dalam mendukung pertumbuhan UMKM pada sektor perdagangan dan jasa yang masih menghadapi keterbatasan akses pembiayaan dan pengembangan usaha	Menganalisis peran koperasi syariah dalam meningkatkan pertumbuhan UMKM	UMKM sektor perdagangan dan jasa Kota Serang	Studi kasus kualitatif	Koperasi syariah memberikan kontribusi pada peningkatan akses modal, pendampingan usaha, dan penguatan kapasitas usaha UMKM	Koperasi syariah berperan dalam mendorong peningkatan daya saing UMKM melalui dukungan pembiayaan dan pembinaan usaha
(Dwika, Nurafni, Barus, Zhafira, & Hayati, 2025)	Pengembangan UMKM di Kota Medan masih terkendala oleh keterbatasan pendampingan kelembagaan koperasi serta belum maksimalnya dukungan program pemerintah daerah	Menganalisis peran koperasi dan Dinas Koperasi dalam pengembangan UMKM	UMKM Kota Medan	Kualitatif deskriptif	Koperasi berperan dalam meningkatkan motivasi usaha, memperluas akses permodalan, serta memperkuat jaringan usaha mikro	Peran koperasi dan lembaga pemerintah memberikan dampak positif terhadap peningkatan daya saing UMKM
(Priandika & Setiawansyah, 2023)	Sistem pengelolaan keuangan koperasi masih bersifat manual sehingga menghambat	Mengembangkan aplikasi digital accounting system untuk koperasi	Koperasi di Dinas UMKM Provinsi Lampung	Pengembangan sistem informasi berbasis aplikasi	Implementasi aplikasi keuangan digital meningkatkan efisiensi pengelolaan data, transparans	Digitalisasi sistem keuangan koperasi meningkatkan efektivitas pengelolaan dan

	efisiensi, transparansi, dan akurasi laporan keuangan koperasi				i laporan, serta akuntabilitas koperasi	memperkuat daya saing kelembagaan
(Rachmawati, Khasanah, Benned, & Susanto, 2023)	Rendahnya kemampuan sumber daya manusia UMKM dalam menghadapi perubahan digital menyebabkan keterbatasan dalam pengelolaan usaha modern	Meningkatkan kapasitas SDM UMKM melalui pelatihan berbasis digital	UMKM binaan Dinas Koperasi dan UKM	Pengabdian masyarakat	Pelatihan digital skill meningkatkan kemampuan manajerial, pemasaran, serta pengelolaan usaha berbasis teknologi	Penguatan SDM melalui pelatihan digital berdampak pada peningkatan daya saing UMKM
(Putra, Sanjaya, Praza, Ameliany, & Iryani, 2025)	Strategi pengembangan UMKM masih berfokus pada pelatihan dasar tanpa integrasi inovasi berbasis teknologi	Menganalisis strategi pengembangan UMKM berbasis pelatihan dan inovasi	UMKM Kabupaten Aceh Tengah	Kualitatif deskriptif	Program pelatihan meningkatkan produktivitas, kemampuan manajerial, dan kualitas produk UMKM	Pelatihan terstruktur berperan dalam peningkatan daya saing UMKM secara berkelanjutan
(Didah & Mukti, 2022)	Keterbatasan kompetensi sumber daya manusia UMKM, koperasi, dan BUMDes menyebabkan rendahnya kemampuan bersaing usaha mikro	Meningkatkan kapasitas SDM dalam pengelolaan usaha berbasis masyarakat	UMKM, koperasi, BUMDes desa Pasir Nanjung	Pengabdian masyarakat	Peningkatan kapasitas SDM meningkatkan kemampuan inovasi, manajemen usaha, dan produktivitas	Kompetensi SDM menjadi faktor penentu daya saing UMKM di tingkat lokal
(Widyawana, Barlianb, & ...)	Rendahnya kolaborasi antar pelaku UMKM	Menganalisis model kolaborasi enabler	UMKM nasional	mixed method	Kolaborasi antar pelaku usaha dan	Kolaborasi digital memperkuat ekosistem

Haryantoc, 2025)	dalam pemanfaatan teknologi digital menghambat terbentuknya ekosistem usaha yang terintegrasi	dalam digitalisasi UMKM			enabler digital meningkatkan efisiensi pemasaran dan perluasan jaringan usaha	UMKM dan meningkatkan daya saing
(Fajari, Saputra, Darrel, & Parhusip, 2024)	Distribusi pemanfaatan teknologi informasi pada UMKM belum merata sehingga efisiensi usaha masih rendah	Menganalisis peran teknologi informasi dalam peningkatan daya saing UMKM	UMKM daerah	Kuantitatif deskriptif	Pemanfaatan teknologi informasi meningkatkan efisiensi operasional dan efektivitas pemasaran	Teknologi informasi berperan dalam peningkatan daya saing UMKM
(Nasution, Dirbantoro, & Asido-Rossevelt, 2024)	Pengelolaan strategi usaha pada kelompok UMKM binaan masih belum terarah sehingga pendapatan belum optimal	Menganalisis penerapan manajemen strategi dalam peningkatan pendapatan UMKM	Kelompok UMKM binaan Dinas Koperasi	Kualitatif	Penerapan manajemen strategi meningkatkan pendapatan usaha melalui penguatan pemasaran dan pengelolaan produksi	Manajemen strategi berkontribusi pada peningkatan kinerja UMKM
(Kadir, Kunaifi, & Zainuddin, 2022)	Persaingan antar koperasi semakin ketat sehingga diperlukan strategi pemasaran yang adaptif	Menganalisis strategi pemasaran koperasi dalam meningkatkan daya saing	Koperasi BMT Sidogiri Capem Waru	Kualitatif deskriptif	Strategi pemasaran berbasis segmentasi pasar meningkatkan minat anggota dan daya saing koperasi	Strategi pemasaran efektif memperkuat posisi koperasi di pasar
(Budiningrum & Subiyantoro, 2023)	Pengelolaan laporan keuangan koperasi belum terintegrasi	Mengembangkan sistem informasi akuntansi koperasi berbasis digital	Koperasi di Indonesia	Pengembangan sistem informasi	Sistem akuntansi digital meningkatkan akurasi laporan dan transparansi	Sistem informasi akuntansi meningkatkan kualitas pengelolaan koperasi

	dengan sistem digital				i pengelolaan	
(Prasetiasari et al., 2023)	Rendahnya pemahaman hukum UMKM menyebabkan lemahnya perlindungan usaha di era digital	Meningkatkan kesadaran hukum UMKM	UMKM digital	Studi literatur	Peningkatan kesadaran hukum memperkuat perlindungan usaha dan legalitas UMKM	Aspek hukum mendukung peningkatan daya saing UMKM
(Handayani, Baining, & Agusriandi, 2025)	Akses pembiayaan UMKM masih terbatas sehingga menghambat pengembangan usaha	Menganalisis peran koperasi dalam pengembangan UMKM	UMKM Kota Jambi	Kualitatif	Koperasi memberikan akses pembiayaan modal kerja dan pendampingan usaha	Pembiayaan koperasi memperkuat perkembangan UMKM
(Hasanah & Suhma, 2025)	Pengelolaan data UMKM belum terstruktur sehingga menyulitkan perencanaan program pengembangan	Meningkatkan pemberdayaan UMKM melalui pengembangan database	UMKM Kabupaten Jember	Studi kasus	Pengembangan database meningkatkan efektivitas program pemberdayaan UMKM	Data terstruktur memperkuat strategi pengembangan UMKM
(Niravita et al., 2024)	Banyak UMKM belum memiliki legalitas usaha sehingga akses pasar terbatas	Meningkatkan legalitas usaha UMKM kopi	UMKM kopi Kabupaten Temanggung	Kualitatif deskriptif	Legalitas usaha meningkatkan akses pasar dan kepercayaan konsumen	Legalitas usaha meningkatkan daya saing UMKM
(Arjang, Ausat, & Prasetya, 2025)	Pemanfaatan sistem informasi dalam UMKM belum optimal dalam mendukung pengambilan	Menganalisis optimalisasi sistem informasi pada UMKM	UMKM digital	Kuantitatif	Sistem informasi meningkatkan efisiensi pengambilan keputusan dan pemasaran	Sistem informasi memperkuat daya saing UMKM

	keputusan bisnis						
(Maulida, Triyas, & Putri, 2024)	Hubungan koperasi dan UMKM belum sepenuhnya terintegrasi dalam aktivitas ekonomi	Menganalisis keterkaitan koperasi dan UMKM	UMKM simpan pinjam	Kualitatif	Sinergi koperasi dan UMKM meningkatkan pertumbuhan usaha dan efisiensi distribusi	Koperasi menjadi penguat perkembangan UMKM	
(Hadi, Wulansari, & Sunanto, 2026)	Minat beli produk UMKM masih rendah akibat keterbatasan strategi pemasaran	Menganalisis strategi pemasaran koperasi dalam meningkatkan minat beli	UMKM binaan koperasi	Kualitatif	Strategi pemasaran koperasi meningkatkan minat beli dan jangkauan pasar	Pemasaran koperasi memperkuat daya saing UMKM	
(Sahri, Tawakkal, Pajri, Sahita, & Veronyca, 2025)	Pemasaran digital UMKM masih belum optimal dalam menjangkau pasar yang lebih luas	Meningkatkan kemampuan pemasaran digital UMKM desa	UMKM desa Ngeper	Pengabdian masyarakat	Pelatihan pemasaran digital meningkatkan kemampuan promosi dan penjualan	Digital marketing meningkatkan daya saing UMKM	

3.2. Discussion

The development of digital transformation has provided significant changes to business management patterns in the MSME sector which has been dominated by conventional methods. These changes can be seen from the increasing use of digital technology in production, distribution, and marketing activities that encourage business efficiency. The results of the study show that operational digitalization is an important factor in increasing the competitiveness of MSMEs through accelerating business processes and expanding market reach. Strengthening digital-based brand identity is also an important element in building consumer trust in an increasingly competitive market. This condition shows that the ability to adapt to technology is one of the determinants of business success in the modern era.

Cooperatives have an important role in supporting the development of MSMEs through providing access to financing, business assistance, and facilitating capacity building for business actors. Various studies show that cooperatives are able to be a link between small business actors and wider economic resources. Cooperative support in the form of working capital financing helps MSMEs in maintaining the sustainability of business operations. The assistance provided by cooperatives also contributes to improving managerial skills and strengthening business networks. This role shows that cooperatives have a strategic function in strengthening the community-based economic structure.

The use of digital technology is a factor that drives major changes in the competitive pattern of MSME businesses. The use of *e-commerce* platforms provides convenience in expanding the market and increasing product sales volume. Digital-based information systems help business actors manage data,

make decisions, and improve operational efficiency. The integration of technology in business activities also opens up opportunities for collaboration between business actors through a more connected digital network system. This change creates a more dynamic business environment and demands high adaptability from MSME actors.

Strengthening human resources is an important aspect in supporting the success of digital transformation in the MSME sector. Digital technology-based training provides enhanced capabilities in modern business management, including digital marketing and system-based financial management. The increased competence of human resources has an impact on the ability to innovate products and improve the quality of business services. The role of supporting institutions such as cooperatives and related agencies is an important part of the capacity building process. The synergy between strengthening human resources and the use of digital technology creates a strong foundation for increasing the competitiveness of MSMEs.

The development of the digital ecosystem also affects the pattern of relations between cooperatives and MSMEs in economic activities. The connection between cooperatives, digital platforms, and business actors creates a more integrated economic system. The use of digital data helps cooperatives in designing business development strategies that are more on target. The use of digital systems also increases transparency in business management and strengthens trust between parties involved. This condition shows that digitalization not only has an impact on the technical aspects of business, but also on the broader structure of economic relations.

Changes in consumer behavior are another factor that affects the development of MSMEs in the digital era. Consumers tend to choose products that are easily accessible through digital platforms with clear and fast information. This encourages MSMEs to improve the quality of promotion and improve technology-based marketing strategies. The use of social media and digital platforms is the main means of building interaction with consumers. These changes in consumption patterns require business actors to be more responsive to the needs of the market that continues to grow.

The government's role in supporting the strengthening of MSMEs through cooperatives and empowerment programs is an important part of economic development. Various training, facilitation, and mentoring programs have been carried out to increase the capacity of business actors. This support helps MSMEs in accessing technology and expanding market networks. The involvement of government agencies also strengthens coordination in the development of a more structured business ecosystem. These efforts contribute to improving the quality of small and medium enterprises.

Digital-based marketing strategies are one of the approaches that are widely applied in increasing the competitiveness of MSMEs. The use of *digital marketing* allows business actors to reach consumers more widely without regional restrictions. Attractive marketing content is an important factor in increasing people's buying interest. The use of consumer data also helps business actors in developing more effective promotional strategies. This approach creates new opportunities in the development of technology-based businesses.

Strengthening business legality is a supporting factor in increasing consumer confidence in MSME products. Legality provides legal certainty and opens up wider access to formal markets. The business certification and licensing process is an important part of sustainable business development. Business actors' awareness of the importance of legality still needs to be increased through continuous assistance. This has an impact on increasing business competitiveness at the local and global levels.

The integration of information systems in business management has a positive impact on the efficiency and operational effectiveness of MSMEs. Digital systems help in the processing of sales data, financial management, and business planning. The use of information technology also accelerates the data-driven decision-making process. The connectivity between systems in the digital ecosystem strengthens coordination between business actors and supporting institutions. This change shows that digitalization is an important element in strengthening the competitiveness of MSMEs.

The collaboration model between cooperatives and MSMEs through a digital system provides great opportunities in the development of network-based businesses. The collaboration creates

efficiencies in product distribution and market expansion. The involvement of various parties in the digital economy system strengthens the position of MSMEs in business competition. The use of technology in collaboration also increases the effectiveness of communication and coordination between business actors. This relationship pattern shows that the development of MSMEs cannot be separated from the role of cooperatives in the digital ecosystem.

4. CONCLUSION

The results of the study show that the strengthening of the competitiveness of MSMEs in the era of digital transformation is greatly influenced by the ability to adapt to technology, the strengthening of the role of cooperatives, and the increase in the capacity of human resources. Business digitalization through the use of information systems, *e-commerce*, and digital marketing-based marketing has an impact on operational efficiency, market expansion, and improving the quality of business services. The role of cooperatives can be seen through the functions of financing, mentoring, and facilitating business development that help MSMEs in facing faster changes in business patterns. The integration between cooperatives and digital ecosystems such as *fintech*, online commerce platforms, and modern logistics systems creates new space for strengthening the competitiveness of MSMEs in various sectors. Findings from various literature show that MSMEs that are able to adopt digital technology in a targeted manner have a greater opportunity to develop and compete in local and global markets.

Strengthening MSMEs requires continuous support in the form of increasing digital literacy, technology-based training, and structured assistance from cooperatives and related institutions. Cooperatives need to develop an integrated digital-based service system in order to be able to provide access to financing, marketing, and business information more effectively. The government is expected to expand programs to strengthen the digital ecosystem through improving technology infrastructure and providing equitable internet access to support small business activities. MSME actors need to improve their ability to adapt to technological developments through the use of digital platforms for marketing and business management. Strengthening collaboration between cooperatives, MSMEs, and the technology sector needs to be directed at the formation of interconnected business networks in order to create a more competitive and sustainable economic ecosystem.

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