THE ROLE OF DIGITAL INFRASTRUCTURE IN SUPPORTING RETAIL AND CULINARY MSME BUSINESS PERFORMANCE IN DENPASAR, BALI: A SYSTEMATIC LITERATURE REVIEW

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Abstract. *Digital infrastructure has become an essential component in supporting the development and competitiveness of micro, small, and medium enterprises (MSMEs), particularly in retail and culinary sectors. The development of internet connectivity, digital payment systems, e-commerce platforms, social media, and digital business applications provides opportunities for MSMEs to improve operational efficiency, expand market access, and strengthen business performance. However, the benefits of digitalization depend on technology adoption, digital literacy, business readiness, financial capacity, and institutional support. This article reviews the role of digital infrastructure in supporting retail and culinary MSME business performance, with particular attention to Denpasar City, Bali, Indonesia. A systematic literature review approach is used to synthesize relevant studies concerning digital transformation, QRIS adoption, e-commerce, digital marketing, financial technology, and digital literacy. The findings are organized into five main themes: digital infrastructure, digital payment adoption, e-commerce and digital marketing, digital business management, and institutional support. Previous studies in Denpasar indicate positive relationships between QRIS usage, digital marketing, and MSME revenue. Other studies highlight the importance of digital branding, financial literacy, and technology readiness in supporting digital transformation. The review suggests that digital infrastructure should be developed as an integrated business ecosystem rather than as isolated technological tools. Strategies for Denpasar should therefore combine affordable connectivity, digital payment adoption, sector-specific e-commerce, digital marketing capacity, financial literacy, and collaborative institutional support. This review provides a conceptual foundation for strengthening digital transformation among retail and culinary MSMEs in Denpasar.*

Key words: Digital Infrastructure, MSMEs, Digital Transformation, Digital Marketing, Bali

Introduction

Micro, small, and medium enterprises (MSMEs) play an important role in regional economic development through employment creation, entrepreneurship, household income generation, and the provision of goods and services. In Denpasar, Bali, MSMEs operate within a dynamic economic environment influenced by local consumption, tourism activities, population mobility, and the development of digital technology. Retail and culinary businesses are particularly important because they serve local communities and visitors who increasingly rely on digital platforms to search for products, compare prices, communicate with sellers, and complete transactions.

The development of digital technology has transformed business operations, shifting traditional activities based on face-to-face transactions and physical promotion toward the use of internet connectivity, smartphones, digital payment systems, online marketplaces, social media, and digital financial applications. These technologies create opportunities for MSMEs to expand market reach, improve customer communication, simplify transactions, and manage business information more efficiently. In this study, digital infrastructure refers to the combination of technological facilities, digital platforms, and supporting capabilities that enable MSMEs to participate in the digital economy, including internet access, digital devices, electronic payment systems, e-commerce platforms, social media applications, online delivery services, and digital business management tools. Thus, digital infrastructure encompasses not only physical connectivity but also accessible platforms, financial services, user knowledge, and institutional support.

One example of its importance is the adoption of QRIS (Quick Response Code Indonesian Standard), which provides a standardized payment mechanism through participating digital payment applications. QRIS may improve transaction convenience, reduce dependence on cash, and support more organized transaction records. Utami and Uli (2025), in their study of MSMEs in Denpasar, found positive relationships between QRIS usage, digital marketing, entrepreneurial leadership, and MSME revenue, indicating that digital technology can contribute to business performance when supported by effective management and marketing strategies.

Digital marketing and e-commerce are also important components of digital infrastructure, as retail businesses can use online marketplaces and social commerce to display products, communicate with customers, and receive orders, while culinary businesses can utilize social media, online ordering platforms, and delivery applications to promote menus and reach consumers beyond their immediate locations.

Danil and Saskara (2025), in their study of micro culinary businesses in Denpasar, found that e-commerce utilization was positively associated with business income, suggesting that digital commerce can support business development when combined with appropriate financial and pricing strategies. However, technology adoption does not automatically lead to sustainable business improvement because MSME owners may encounter challenges such as limited digital literacy, financial constraints, inadequate devices, concerns about transaction security, and insufficient knowledge of platform selection. Digital transformation also requires adjustments in business practices, including customer communication, financial recording, product promotion, inventory management, and service delivery.

Wicaksana et al. (2025), in their study of culinary MSMEs in Denpasar, emphasized the importance of community-based coaching to strengthen digital branding through practical assistance in search engine optimization (SEO), visual branding, and social media storytelling. This finding demonstrates that digital infrastructure needs to be accompanied by accessible training and mentoring. Denpasar provides an important geographical context for examining MSME digital transformation because its economic activities are distributed across traditional markets, shopping areas, residential neighborhoods, food centers, and tourism-related commercial locations, each of which may generate different technological needs.

Retail traders may prioritize online catalogues, inventory applications, and marketplace access, whereas culinary businesses may require digital menus, online ordering systems, delivery services, and visual marketing. Therefore, strategies for developing digital infrastructure should consider both technological and geographical characteristics, including internet availability, proximity to commercial centers, customer behavior, business concentration, and access to digital services.

Based on this context, this article aims to review the role of digital infrastructure in supporting the business performance of retail and culinary MSMEs, with particular implications for Denpasar City, Bali, by examining the types of digital infrastructure relevant to these businesses, its contribution to MSME performance, the factors influencing technology adoption, the barriers limiting digital transformation, and the strategies that can strengthen digital infrastructure adoption among MSMEs in Denpasar.

Reseach Methods

This article employs a narrative literature review method. The materials reviewed include journal articles, scientific publications, and previous research discussing digital infrastructure, digital technology adoption, digital payments, e-commerce, digital marketing,

MSME business performance, and the development of retail and culinary MSMEs.

Literature searches can be conducted through Google Scholar, Scopus, Consensus, and scientific publisher databases using keywords such as "digital infrastructure," "digital technology adoption," "digital payment," "QRIS adoption," "e-commerce utilization," "digital marketing," "MSME performance," "retail MSMEs," and "culinary MSMEs," along with their Indonesian equivalents. The literature is selected based on its relevance to the research objectives, source credibility, and connection to digital transformation and MSME business development, particularly in the retail and culinary sectors

. The information obtained is analyzed thematically by organizing the discussions into five main themes: types of digital infrastructure, the contribution of digital technology to business performance, factors influencing technology adoption, barriers to digital transformation, and strategies for strengthening digital infrastructure among MSMEs.

Subsequently, findings from previous studies are compared to identify similarities, differences, and practical implications for retail and culinary MSMEs in Denpasar, Bali. Since this article does not involve surveys, interviews, observations, or the processing of primary data from MSMEs in Denpasar, the review does not present statistical estimates of relationships or causal conclusions specific to the city.

Findings from other regions are used as conceptual references and comparative evidence rather than as direct representations of the conditions of all retail and culinary MSMEs in Denpasar.

Results and Discussion

Results

1. Digital Infrastructure and MSME Business Transformation

Digital infrastructure provides the technological foundation for MSMEs to participate in the digital economy. It includes internet connectivity, digital devices, online platforms, electronic payment systems, and applications that support business operations.

The adoption of digital infrastructure can change the way MSMEs interact with customers and manage their businesses. Internet access enables business owners to communicate through digital platforms, while smartphones provide access to online marketplaces, payment applications, and social media. Digital infrastructure also allows business owners to access information about consumer preferences, product trends, and market opportunities.

The concept of a digital entrepreneurial ecosystem emphasizes the relationship between digital technology, users, institutions, and business actors. Munaiseche et al. (2022) explain that a digital entrepreneurial ecosystem integrates digital infrastructure and institutions with users and agents in the business environment. This perspective suggests that digital transformation should not be understood as the adoption of individual applications alone. It requires interaction between technology, business capabilities, and supporting institutions.

In the context of Denpasar, digital infrastructure can support retail and culinary MSMEs through several activities. Retail businesses may use digital catalogues, online marketplaces, electronic payments, and inventory applications. Culinary businesses may use online menus, social media promotion, ordering platforms, and delivery applications.

However, the benefits of digital infrastructure depend on how effectively business owners integrate technology into their daily activities. Access to digital platforms without adequate knowledge may result in limited utilization.

Therefore, digital transformation requires both infrastructure availability and business readiness.

2. Digital Payment Systems and QRIS Adoption

Digital payment systems are among the most important forms of digital infrastructure for MSMEs. QRIS, e-wallets, mobile banking, and payment gateways enable businesses to receive electronic payments from customers.

The use of digital payments can provide several advantages. First, it offers customers alternative transaction methods. Second, it may reduce the need to handle cash. Third, electronic transaction records can support financial monitoring and business administration. Fourth, digital payments may improve convenience for customers who prefer cashless transactions.

Utami and Uli (2025) examined the relationships between QRIS usage, digital marketing, entrepreneurial leadership, and MSME revenue in Denpasar. Their study involved 200 MSMEs and found significant positive relationships between QRIS adoption, digital marketing, entrepreneurial leadership, and revenue. The findings demonstrate that digital payment adoption can contribute to business performance when combined with effective marketing and management.

Yulianingsih and Korry (2025) examined payment gateway adoption among MSMEs in Denpasar. Their research involved 110 respondents and used the UTAUT framework. The findings indicate that performance expectancy, effort expectancy, and social influence significantly influence the intention to use payment gateways. Trust also contributes to technology adoption, while the digital ecosystem moderates the relationship between trust and adoption intention.

These findings indicate that technology adoption is influenced by both the perceived benefits of digital payments and the environment in which business owners operate. The availability of payment infrastructure is important, but business owners must also understand how the system works and trust its security.

Comparative evidence from Mubarok and Purnamasari (2025), who examined culinary MSMEs in Malang City, shows that online sales and QRIS positively influence MSME income, with financial literacy acting as a mediating variable. Although this study is not based in Denpasar, it provides comparative evidence that digital payment technology may be more effective when business owners have the skills to manage their finances.

For retail and culinary MSMEs in Denpasar, QRIS adoption should therefore be integrated with financial recording, transaction monitoring, and customer-service improvement. Training should also address transaction verification, fraud prevention, and the appropriate use of digital financial applications.

3. E-Commerce and Digital Marketing

E-commerce and digital marketing provide opportunities for MSMEs to expand their market reach beyond physical business locations. Online marketplaces, social media, and digital ordering platforms allow business owners to display products, communicate with customers, and receive orders through digital channels.

For retail MSMEs, e-commerce can support product catalogues, online transactions, product comparisons, and customer communication. Retail traders can use marketplaces and social commerce to increase product visibility and reach consumers outside their immediate commercial areas.

For culinary MSMEs, digital marketing is particularly relevant because food purchasing decisions are often influenced by visual presentation, customer reviews, menu information, promotions, and convenience of ordering. Social media platforms allow culinary businesses to share product photographs, videos, promotions, and customer testimonials.

Danil and Saskara (2025) examined factors influencing the income of micro culinary businesses in Denpasar. Their study used a quantitative approach and found that business capital, product pricing, and e-commerce utilization had positive and significant effects on business income. The findings indicate that e-commerce can contribute to the development of culinary businesses by expanding market reach and supporting business transactions.

Utami and Uli (2025) also found a positive and significant relationship between digital marketing and MSME revenue in Denpasar. This supports the importance of online promotion as part of an integrated digital business strategy.

Digital branding is another important component of digital marketing. Wicaksana et al. (2025) studied a community-based coaching clinic designed to strengthen the digital branding capacity of culinary MSMEs in Denpasar. The program focused on SEO, visual branding, and social media storytelling. The findings indicated improvements in

participants' confidence, digital literacy, and branding output.

This study demonstrates that digital marketing requires practical knowledge and consistent application. Business owners need to understand how to produce attractive content, communicate product value, maintain brand identity, and respond to customer interactions.

For Denpasar, e-commerce and digital marketing strategies should be adjusted to the characteristics of each business sector. Retail businesses may require support in online catalogues, product descriptions, and inventory integration. Culinary businesses may require assistance with visual content, menu presentation, online ordering, and customer reviews.

4. Digital Business Management and Operational Efficiency

Digital infrastructure can also support internal business management. Digital applications allow MSME owners to record sales, monitor inventory, organize customer information, and manage financial transactions.

Traditional business management often relies on manual records and direct communication. Although these practices may be sufficient for small-scale operations, they can create difficulties when transaction volumes increase or businesses begin to serve customers through multiple platforms.

Digital business applications can improve the organization of business information. Electronic sales records can help owners understand daily revenue, identify popular products, and monitor transaction patterns. Inventory applications can support stock monitoring and reduce errors in product management.

Handria and Ariefianto (2024), in their study of MSMEs in Yogyakarta, found relationships between company account ownership, device usage, payment methods, and QRIS adoption. Their research also reported that QRIS adoption improved the ease of financial recording and financial-report accountability.

These findings suggest that digital payment systems can have benefits beyond transaction convenience. When properly integrated with business administration, digital transactions can support better financial documentation.

The use of digital management tools may differ between retail and culinary businesses. Retail MSMEs may prioritize inventory and stock management, digital product catalogues, sales records, customer databases, and online order management. Culinary MSMEs may prioritize digital menus, online ordering systems, delivery coordination, daily sales monitoring, ingredient management, and customer feedback.

Therefore, digital management applications should be selected according to business needs, affordability, and the technological capabilities of business owners.

5. Digital Literacy and Business Readiness

Digital literacy is a critical factor in the successful adoption of digital infrastructure. It refers to the ability of business owners and employees to access, understand, evaluate, and use digital technologies effectively.

MSME owners need more than basic knowledge of smartphones and applications. They also need to understand digital marketing, electronic payments, financial recording, online security, and customer communication.

The study by Wicaksana et al. (2025) provides evidence of the importance of practical digital training for culinary MSMEs in Denpasar. Their community-based coaching clinic improved participants' confidence, digital literacy, and branding output. The program demonstrates that training can help business owners translate digital knowledge into practical business activities.

Mubarok and Purnamasari (2025) also emphasize the importance of financial literacy in the relationship between online sales, QRIS adoption, and culinary MSME income. Their findings indicate that financial literacy can strengthen the benefits of digital technology.

Digital readiness also includes the willingness to adopt new business practices. Some business owners may continue to rely on cash transactions or traditional promotion because these methods are familiar and perceived as easier. Concerns about technology, transaction security, and the difficulty of operating digital applications may also limit adoption.

For Denpasar, digital literacy programs should be practical, continuous, and adapted to the daily activities of MSMEs. Training should include payment applications, social media promotion, online ordering, financial recording, cybersecurity, and customer-service management.

6. Institutional Support and Digital Inclusion

Digital transformation requires cooperation between MSMEs and supporting institutions. Local government, universities, financial institutions, technology providers, business associations, and community organizations can contribute through infrastructure development, training, mentoring, and access to digital financial services.

Institutional support is important because individual MSMEs may have limited resources to independently develop digital capabilities. Training programs, technology assistance, and access to information can reduce barriers to digital adoption.

Talitha et al. (2025), in their study of community-based QRIS implementation in Susukan, East Jakarta, demonstrate the value of participatory training and mentoring. Their program involved observation, training, mentoring, and evaluation with selected MSMEs. The findings indicate that context-sensitive educational interventions can improve digital skills and QRIS adoption.

The study by Wicaksana et al. (2025) also illustrates how community-based mentoring can strengthen digital branding among culinary MSMEs in Denpasar. The program is particularly relevant because it emphasizes accessible and inclusive training.

Institutional support should address differences in financial resources, education, business size, and digital readiness. Programs should not focus only on increasing the number of registered digital payment users but should also evaluate whether technology is being used effectively to improve business performance.

For Denpasar, collaboration among local government, universities, financial institutions, and MSME communities can support a more inclusive digital ecosystem. Such collaboration can provide training, mentoring, technical assistance, and opportunities for business networking.

7. Tourism Geography and Spatial Distribution of Digital Infrastructure

Digital infrastructure also has a geographical dimension. The location of retail and culinary MSMEs may influence their access to internet connectivity, customers, delivery services, commercial networks, and digital business support.

In Denpasar, MSMEs operate in different spatial environments, including traditional markets, shopping areas, residential neighborhoods, and tourism-related commercial locations. These areas may have different levels of business density, customer movement, and access to supporting facilities.

Retail businesses located in traditional markets may require assistance in digital catalogues, electronic payments, and online marketplaces. Culinary businesses located in commercial and tourism areas may require stronger digital promotion, online ordering, delivery integration, and customer-review management.

A spatial perspective can help identify where digitalization support is most needed. Mapping MSME locations, internet access, digital payment adoption, and commercial activity could provide information for local government programs and business development planning.

However, the actual distribution of digital infrastructure and adoption rates in Denpasar should be established through field surveys and official data. Geographic differences should not be assumed without empirical verification.

8. Synthesis of Previous Studies

Author(s), year	Study focus	Main findings	Relevance to Denpasar MSMEs
Munaiseche et al. (2022)	Digital entrepreneurial	Digital infrastructure,	Provides a conceptual

	ecosystem in North Sulawesi	institutions, and users form an interconnected entrepreneurial ecosystem.	basis for integrated digital transformation.
Handria & Ariefianto (2024)	QRIS adoption and financial recording in Yogyakarta MSMEs	QRIS adoption is associated with easier financial recording and reporting accountability.	Supports integration of digital payments and business administration.
Utami & Uli (2025)	QRIS, digital marketing, and entrepreneurial leadership in Denpasar	QRIS usage, digital marketing, and entrepreneurial leadership are positively associated with MSME revenue.	Provides direct local evidence for digitalization strategies.
Danil & Saskara (2025)	Income of micro culinary businesses in Denpasar	Business capital, pricing, and e-commerce utilization positively influence business income.	Supports e-commerce adoption among culinary MSMEs.
Yulianingsih & Korry (2025)	Payment gateway adoption among Bali MSMEs	Performance expectancy, effort expectancy, social influence, and trust influence adoption intention.	Identifies factors influencing digital payment adoption.
Wicaksana et al. (2025)	Digital branding coaching for culinary MSMEs in Denpasar	Practical coaching improves digital literacy, confidence, and branding output.	Supports community-based digital training.
Mubarok & Purnamasari (2025)	Online sales, QRIS, and financial literacy in Malang culinary MSMEs	Online sales and QRIS are associated with income, with financial literacy as a mediating factor.	Provides comparative evidence on digital and financial capabilities.
Fitriyah et al. (2024)	Financial literacy, QRIS, and sustainable MSME performance in Madura	Financial literacy and QRIS adoption positively influence sustainable performance.	Supports financial education alongside digital payment adoption.
Talitha et al. (2025)	Community-based QRIS implementation in East Jakarta	Participatory training and mentoring can strengthen QRIS skills and adoption.	Supports collaborative digitalization programs.

The reviewed studies indicate several recurring themes. First, digital infrastructure is most effective when developed as an integrated ecosystem involving connectivity, platforms, payment systems, and user capabilities. Second, digital payment adoption can support transaction convenience and financial administration. Third, e-commerce and digital marketing provide opportunities to expand market access and strengthen business visibility. Fourth, digital literacy and financial knowledge influence the ability of MSMEs to benefit from technology. Fifth, institutional collaboration is necessary to support inclusive and sustainable digital transformation.

These themes provide a conceptual basis for developing a digital infrastructure strategy for retail and culinary MSMEs in Denpasar. However, the specific needs and adoption conditions of individual business locations should be confirmed through local empirical research.

9. Proposed Strategy Framework for MSMEs in Denpasar

1) Strengthen digital connectivity and access. Improve affordable internet access, availability of appropriate devices, and access to digital business applications. Support should consider MSMEs operating in traditional markets, residential areas, and commercial centers.
2) Expand digital payment adoption. Encourage QRIS, e-wallets, mobile banking, and other suitable payment systems. Provide practical training on transaction verification, financial recording, and digital payment security.
3) Develop sector-specific e-commerce strategies. Support retail MSMEs in developing online catalogues, product descriptions, marketplace accounts, and inventory management. Support culinary MSMEs in using digital menus, online ordering, food-delivery platforms, and customer feedback systems.
4) Strengthen digital marketing and branding. Provide training in social media management, visual content creation, SEO, product photography, promotional campaigns, and customer engagement. Encourage consistent branding and accurate product information.
5) Improve digital literacy and financial management. Organize continuous training in digital transactions, financial recording, online security, and basic business analytics. Training should be practical and adapted to the technological capabilities of business owners.
6) Build institutional collaboration. Encourage partnerships among local government, universities, financial institutions, technology providers, and MSME associations. These partnerships can provide training, mentoring, technical support, and access to digital services.
7) Monitor digital transformation outcomes. Evaluate digitalization programs using measurable indicators, including digital payment adoption, online sales activity, transaction volume, revenue, market reach, operational efficiency, and customer engagement.

Disscusions

The literature suggests that digital infrastructure has an important role in supporting MSME business development. However, its contribution should not be understood simply as the result of using digital applications. Digital transformation involves changes in business processes, customer relationships, financial administration, marketing strategies, and organizational capabilities.

For retail and culinary MSMEs in Denpasar, digital infrastructure provides opportunities to improve business performance through more convenient transactions, broader market access, and improved communication with customers. The findings of Utami and Uli (2025) and Danil and Saskara (2025) provide locally relevant evidence of positive relationships between digital technology utilization and MSME revenue.

The first important implication concerns the integration of digital payment systems and business administration. QRIS and other electronic payment systems can simplify customer transactions, but their benefits may be limited if business owners do not use

transaction records for financial monitoring. Digital payments should therefore be accompanied by financial literacy and basic accounting training.

The second implication concerns differences between retail and culinary MSMEs. Retail businesses require digital tools that support product catalogues, inventory management, online sales, and customer databases. Culinary businesses require digital menus, ordering systems, delivery coordination, product photography, and online promotion. These differences indicate that digitalization programs should be designed according to sector-specific needs.

The third implication concerns digital literacy. The availability of digital infrastructure does not guarantee that business owners can use it effectively. Practical mentoring, accessible training, and ongoing technical assistance are necessary to improve the ability of MSMEs to manage digital platforms. The findings of Wicaksana et al. (2025) demonstrate that community-based coaching can improve digital branding capabilities among culinary MSMEs in Denpasar.

The fourth implication concerns institutional collaboration. Digital transformation requires support from multiple stakeholders. Local government can facilitate digitalization programs, universities can provide training and research assistance, financial institutions can support digital payment adoption, and technology providers can offer accessible business applications. Collaborative programs can help reduce the digital capability gap between MSMEs.

From a tourism geography and regional development perspective, digital infrastructure also has a spatial dimension. The location of retail and culinary MSMEs may influence their access to customers, connectivity, delivery services, and digital business networks. Businesses operating in traditional markets may have different needs from those located in commercial centers or tourism-related areas.

Therefore, digital infrastructure planning should consider the geographical distribution of MSMEs in Denpasar. Mapping business locations, internet access, commercial activity, and supporting services can help identify areas that require greater technological assistance. Such a spatial approach can make digitalization programs more responsive to local economic conditions.

This review has several limitations. First, the studies discussed vary in research design, location, sector, and performance indicators. Second, some studies focus specifically on Denpasar, while others provide comparative evidence from different Indonesian cities. Their findings should therefore not be treated as directly interchangeable. Third, this manuscript is a literature-based draft rather than a completed exhaustive PRISMA review with verified screening counts. Finally, no primary field data have been collected from retail and culinary MSMEs in Denpasar for this article.

Consequently, the proposed strategy framework should be treated as a conceptual recommendation that requires further validation through field observation, interviews, business surveys, and spatial analysis of MSME locations and digital infrastructure.

Conclusions and Recommendations

Conclusions

This literature-based review indicates that digital infrastructure plays an important role in supporting retail and culinary MSME business performance through digital payment systems, e-commerce, digital marketing, and digital business management applications.

The reviewed studies from Denpasar indicate that QRIS adoption and digital marketing are positively associated with MSME revenue. E-commerce utilization is also relevant to the income of micro culinary businesses. In addition, payment gateway adoption is influenced by perceived usefulness, ease of use, social influence, trust, and the availability of a supporting digital ecosystem.

However, the effectiveness of digital infrastructure depends on more than technology availability. Digital literacy, financial knowledge, entrepreneurial capabilities, business readiness, and institutional support are important factors influencing technology adoption and utilization.

Retail and culinary MSMEs also require different digital solutions. Retail businesses need support in online catalogues, marketplaces, inventory management, and digital sales records. Culinary businesses require digital menus, online ordering, delivery platforms, social media promotion, and digital branding.

For Denpasar City, these findings provide a conceptual foundation for developing an integrated digital transformation strategy for MSMEs. The proposed priorities are improving digital connectivity, expanding QRIS adoption, strengthening e-commerce and digital marketing, developing financial and digital literacy, and increasing collaboration among supporting institutions.

Digital infrastructure should therefore be understood as an integrated business ecosystem that connects technology, business capabilities, and institutional support. Its successful implementation requires strategies that are inclusive, sector-specific, and responsive to the geographical and economic characteristics of MSMEs in Denpasar.

Recommendations

1. Conduct a baseline assessment of digital infrastructure access among retail and culinary MSMEs in Denpasar, including internet availability, digital devices, digital payment adoption, and online business platform utilization.
2. Develop sector-specific digitalization programs for retail and culinary businesses, considering differences in business operations, customer behavior, and technological requirements.
3. Strengthen digital payment adoption through QRIS training, transaction security education, and integration with financial recording systems.
4. Provide continuous training in digital marketing, social media management, e-commerce, product branding, online customer service, and digital business management.
5. Improve financial literacy and digital business capabilities so that MSME owners can use transaction information for financial planning and business decision-making.
6. Encourage collaboration among local government, universities, financial institutions, technology providers, and MSME associations to support inclusive digital transformation.
7. Conduct further empirical research to examine the relationship between digital infrastructure adoption and MSME performance, including revenue, operational efficiency, market expansion, and competitiveness.
8. Complete and document the full PRISMA search and screening process before journal submission, including database names, search dates, exact search strings, duplicate counts, exclusion reasons, and final included-study numbers.

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