

Digital payment adoption and managerial preferences in Madura's culinary tourism sector: Evidence from the analytic hierarchy process

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Abstract

This study investigates the payment preferences of culinary tourism managers in Madura, with particular attention to the adoption of the Quick Response Code Indonesian Standard (QRIS) as a non-cash payment method. Employing the Analytic Hierarchy Process (AHP), the research identifies the key factors influencing payment decisions among managers across four districts in Madura. The results indicate that convenience is the most influential factor, followed by utility and safety. At the same time, QRIS remains the least preferred payment option compared to cash and other non-cash alternatives. Barriers to QRIS adoption include technical challenges, limited digital literacy, and insufficient infrastructure. The study underscores the need to strengthen technological infrastructure and enhance digital awareness to accelerate the adoption of non-cash payments within Madura's culinary tourism sector. These findings contribute to the growing body of literature on financial inclusion and digital transformation in tourism, offering practical insights for policymakers and industry stakeholders seeking to promote inclusive digital economies.

Keywords: *Analytic Hierarchy Process; Non-cash payment; QRIS*

JEL Classification: G23, D12, C44

INTRODUCTION

The tourism sector is widely recognized for its significant impact on the economy, as it connects various industries and stimulates economic activity through increased transactions and cash flow, thereby boosting overall output. A growing demand for tourism-related products—driven by an enhanced destination image—positively influences national production, income, and employment (Wandirad et al., 2021). Food plays a central role in the broader tourism industry, shaping tourists' experiences and providing producers with opportunities to diversify their income and expand distribution

strategies. Consequently, culinary tourism serves as a strategic foundation for regional development, strengthening local food networks and generating mutual benefits for sectors such as agriculture (Fountain, 2022).

In Indonesia, the creative economy—particularly in the culinary, fashion, and craft subsectors—constitutes a significant portion of the national gross domestic product (GDP). For instance, culinary tourism alone contributes over 42 percent of annual GDP (Kemenparekraf, 2020). The creative economy also serves as a means of poverty alleviation (Insana et al., 2022) and is closely linked to cultural activities (Nurdiansyah et al., 2023). Madura Island, one of Indonesia's regional attractions, possesses substantial yet underutilized local potential. While batik has been the primary heritage asset developed thus far, Madura's distinctive culinary offerings—such as the renowned Madura duck—reflect valuable local knowledge that could be leveraged as regional branding icons and competitive strategies in the era of global capitalism (Sephiana et al., 2022; Rakhmawati, 2023).

One of the main challenges hindering Madura's tourism industry's growth is limited integration with digital financial systems. Enhanced digital financial inclusion could facilitate transactions, improving safety and convenience for both businesses and tourists (Zhang, Liu, & Pu, 2023). Despite this potential, Indonesia's overall financial inclusion rate remains relatively low (Haloho & Pratomo, 2023), and the adoption of the Quick Response Code Indonesian Standard (QRIS) in Madura's culinary tourism sector remains limited. Although digital payment systems are becoming increasingly popular across Indonesia, the specific factors and challenges affecting the adoption of QRIS in Madura's culinary tourism industry have not been sufficiently explored. Understanding these factors can help policymakers and other stakeholders address gaps in financial inclusion and technological infrastructure.

Digital payments refer to electronic transactions conducted through digital platforms, such as online banking applications, digital wallets, or other electronic payment systems. These systems enable cashless financial transactions using digital methods such as bank transfers, credit cards, or mobile payments. The likelihood of adopting digital payments depends on perceptions of usefulness, ease of use, social acceptance, trust, and uncertainty (Alkhwaldi et al., 2023). Digital payments offer several advantages, including improved economic stability, transparency, and efficiency, and they can even reduce government expenditure. However, challenges remain, including limited access, technological dependency, and the risk of exacerbating inequality among populations lacking adequate infrastructure (Klapper, 2023; Bapat & Khandelwal, 2023; Bhuiyan et al., 2024).

Bank Indonesia introduced the Quick Response Code Indonesian Standard (QRIS) as a national QR code payment standard to promote digital payment adoption, facilitate faster transactions, and support the development of the digital economy (Bank Indonesia, 2019; Sofwatunnisa et al., 2023). QRIS enables contactless payments through scanning and can be used in both merchant-presented and customer-presented modes. The intention to use QRIS is influenced by factors such as perceived usefulness, ease of use, user understanding, and external factors, including social influence, monetary value, security, and privacy (Karniawati et al., 2021). While QR-based payments are often considered safer and more efficient—particularly in the post-pandemic era—they also pose risks such as fraud, data theft, and reliance on compatible devices and stable internet connections (Achord et al., 2017; Susanto et al., 2022).

Empirical studies across Indonesia reveal mixed findings regarding the acceptance of non-cash payments. In Surabaya, people prefer online non-cash transactions for convenience but favor in-person cash payments for speed (Perkasa, 2023). In Batam, perceptions of convenience, benefit, and risk significantly influence interest in non-cash payments for public transportation (Mauliza & Purba, 2023). Research conducted in Binjai and Malang indicates that QRIS is valued for its utility and efficiency; however, adoption is constrained by the limited number of merchants, unreliable internet connectivity, and transaction fees (Harahap, 2023; Fauziyah & Prajawati, 2023). In Jakarta and Lampung, cash remains dominant due to immediate liquidity needs and uneven QRIS deployment, although many merchants acknowledge QRIS's potential to streamline transactions and enhance security (Yulianti, 2023; Ramdanti et al., 2023). Notably, no prior research has specifically examined culinary tourism managers' preferences for non-cash payment methods in Madura.

In this context and given the gaps identified in previous studies, this research aims to explore culinary tourism managers' perceptions and preferences regarding the use of digital payments, with particular emphasis on QRIS. The study is expected to contribute to the literature on financial inclusion, tourism, and financial technology in Indonesia, while also offering policy recommendations to strengthen financial inclusion within the tourism sector.

METHODS

AHP model

The Analytic Hierarchy Process (AHP) is a structured approach to decision-making that accommodates both rational and intuitive judgments when selecting the best alternative among several options evaluated against multiple criteria. In this process, the decision-maker performs pairwise comparison assessments, which are then used to develop overall priorities and determine the ranking of alternatives. The AHP model allows for some degree of inconsistency in assessments and provides a mechanism for improving consistency (Saaty & Vargas, 2012).

The AHP approach is based on three fundamental principles. The first is decomposition, which involves breaking down a complex problem into a hierarchical framework consisting of clusters, sub-clusters, and sub-sub-clusters. The second principle is comparative assessment, which entails comparing all possible pairs of elements within a cluster relative to their parent cluster to determine local priorities. The third is composition or synthesis, which combines the local priorities of the elements with those of their parent elements to obtain global priorities across the hierarchy.

In AHP, consistency is a crucial concept. There is always the possibility of inconsistency in pairwise comparisons, and the principle of transitivity must be observed—if one element is preferred to a second, and the second to a third, then the first should also be preferred to the third. Because perfect consistency is difficult to achieve, the concept of deviation from consistency was introduced, with the recommendation that the level of inconsistency not exceed ten percent (Rusydiana & Devi, 2013).

Data collection was conducted through structured interviews using questionnaires based on Saaty's scale to identify the most relevant alternatives for decision-making. Respondents compared elements using the preference scale presented in Table 1.

Table 1. Preference scale

Intensity of Interest	Definition	Explanation
1	Equal importance	Two activities contribute equally to the objective
2	Weak	
3	Moderate importance	Experience and judgment slightly favor one activity over another.
4	Moderate plus	
5	Strong importance	Experience and judgment strongly favor one activity over another
6	Strong plus	
7	Very strong or demonstrated importance	An activity is strongly favored over another; its dominance is demonstrated in practice.
8	Very very strong	
9	Extreme importance	The evidence favoring one activity over another is of the highest possible order of affirmation.

Source: Saaty & Vargas, 2012

The AHP method evaluates decision-making by comparing alternatives based on predefined criteria. The criteria used in the AHP framework (Figure 1)—utility, convenience, safety, prevalence, and rules—were derived from a combination of literature review and expert consultation. Studies by Alkhwaldi et al. (2023) and Bhuiyan et al. (2024) highlight these factors as critical in influencing digital payment adoption. Preliminary interviews with culinary tourism managers in Madura also provided practical insights into the relevance of these criteria. Pairwise comparisons were conducted by asking respondents to rank each criterion's importance relative to the others, and the resulting weights were used to determine overall preferences.

In this study, the utility criterion refers to the use of payment instruments to enhance business performance, increase profits, improve efficiency, or reduce transaction costs. Convenience relates to the ease, speed, and comfort of using payment instruments, depending on the user's knowledge and skills and the availability of technical support. Safety refers to the extent to which payment instruments reduce risks such as financial loss, data theft, and inaccurate transaction recording. Prevalence, or habitual use, denotes the tendency to adopt a payment method commonly used by people in one's social or professional environment, such as family members, colleagues, buyers, or sellers. The rules or regulations criterion concerns the use of payment platforms that comply with government policies designed to create a safe, efficient, and reliable payment system.

The AHP model in this study considered three alternative payment mechanisms: cash payments, QRIS payments, and other non-cash methods such as debit cards, EDC machines, e-wallets, e-money, or internet banking. The hierarchical structure was specifically developed to analyze these payment preferences, as illustrated in Figure 1.

The consistency of the pairwise comparison matrix was assessed using the Consistency Ratio (CR), calculated as the ratio between the Consistency Index (CI) and the Random Index (RI). A CR value below 0.10 indicates acceptable consistency (Saaty & Vargas, 2012). In this study, all CR values obtained were within this threshold, confirming the reliability of the priority weights.

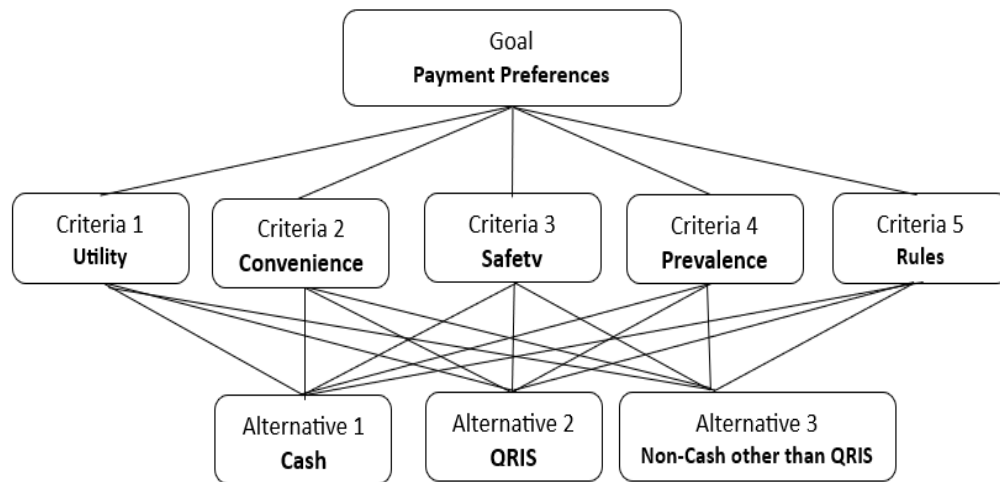


Figure 1. AHP Model Framework
Source: Saaty and Vargas, 2012

Sampling techniques

Respondents were selected using the SIPADU database, an Android-based tourism information system that provides integrated data on tourism in Madura. The SIPADU application offers comprehensive information about tourist destinations, accommodations, amenities, and related services. It was chosen as the sampling frame because it contains extensive information on culinary tourism businesses across Madura’s four districts, ensuring diversity in terms of business size and operational duration. Respondents were selected based on their performance rankings within the SIPADU database, with priority given to the highest-rated restaurants.

Culinary tourism, categorized under the amenities section in SIPADU, was filtered by district to identify potential participants. Four locations were selected from each of Madura’s districts—Bangkalan, Sampang, Pamekasan, and Sumenep—with priority given to top-ranked establishments. If a selected respondent declined to participate, an alternative respondent from the same district was selected. In total, sixteen respondents participated in the study, comprising four from each district.

Data were collected through structured interviews conducted between September and October 2023. The interviews focused on payment preferences, QRIS adoption, and perceived challenges. Key questions included: “What factors influence your choice of payment methods?” and “What are the main challenges in using QRIS at your establishment?”

RESULTS AND DISCUSSION

Respondent characteristics

Before presenting a detailed description of the respondents' characteristics, it is important to provide an overview that contextualizes the participants' demographic and business backgrounds. The following section outlines the distribution of respondents by district of origin, gender, and length of business operation, offering a foundation for the subsequent analysis of payment preferences and adoption patterns.

Table 2. Respondent characteristics

District of origin	N	Share (%)
Bangkalan	4	25.00
Sampang	4	25.00
Pamekasan	4	25.00
Sumenep	4	25.00
Gender		
Male	6	37.50
Female	10	62.50
Length of business (years)		
> 60	3	18.75
31 - 60	3	18.75
20 - 30	2	12.50
10 - 19	8	50.00
Total	16	100.00

Respondents were deliberately selected from the four districts of Madura—Bangkalan, Sampang, Pamekasan, and Sumenep—resulting in a balanced composition of sixteen culinary establishments. In terms of gender, women constituted the majority (62.50%), including business owners and managers, or their designated representatives, who were able to participate in the interviews. The remaining 37.50% were men.

Regarding business longevity, three establishments (18.75%) had operated for more than 60 years, another three (18.75%) for more than 30 years, two (12.50%) for more than 20 years, and the majority—eight establishments (50.00%)—for 10-19 years. This distribution suggests that most culinary tourism enterprises in Madura have long-standing operational experience, indicating sustained participation and resilience within the regional tourism sector.

These profiles provide a contextual foundation for understanding how demographic and business characteristics may shape the adoption of digital payment systems among culinary tourism managers.

Adoption of non-cash payment methods

Table 3 presents the use of payment instruments among respondents managing culinary tourism establishments in Madura. The questions explored in this section include the following: (1) whether the business provides non-cash payment options such as QRIS, debit cards, EDC machines, e-wallets, e-money, or internet banking; (2) whether the business uses the QRIS payment method; and (3) whether the business employs other non-cash payment systems, including debit cards, EDC machines, e-wallets, e-money, or internet banking.

The results show that 13 of the 16 establishments (81.25%) used some form of non-cash payment method—such as debit cards, EDC machines, mobile banking, or QRIS—in their transactions. However, the frequency of QRIS usage varied considerably. None of the respondents reported always using QRIS, while eight respondents (50%) stated that they often or sometimes used it. Three respondents (18.75%) reported using QRIS only rarely, and five respondents (31.25%) reported never using it.

Interestingly, although the majority of respondents (81.25%) reported using non-cash payment systems, QRIS adoption remained relatively low. This contrast suggests that while non-cash transactions are increasingly accepted, specific barriers continue to inhibit the broader adoption of QRIS. Such barriers may include limited technical support, unfamiliarity with the system, or perceptions of procedural complexity. These findings

align with previous studies that highlight similar challenges in the diffusion of digital payment systems in regional contexts (Zhang et al., 2023; Harahap, 2023).

Table 3. Use of payment instruments

Non-cash use	N	Share (%)
Yes	13	81.25
No	3	18.75
Use of QRIS		
Always	0	0.00
Often	3	18.75
Sometimes	5	31.25
Once	3	18.75
Never	5	31.25
Other non-cash payment methods		
Always	0	0.00
Often	5	31.25
Sometimes	5	31.25
Once	1	6.25
Never	5	31.25
Total	16	100.00

Regarding other non-cash payment instruments besides QRIS, none of the respondents reported always using them, suggesting that cash payments remain dominant in most transactions. Five respondents (31.25) reported often using other non-cash methods; another five (31.25) used them occasionally; one respondent (6.25) reported rarely using them; and five respondents (31.25) stated they had never used any non-cash payment method other than QRIS.

Overall, these findings illustrate that while the digitalization of payments is gradually penetrating Madura’s culinary tourism sector, adoption remains partial and inconsistent. The presence of both technological and behavioral barriers—such as limited digital literacy, insufficient infrastructure, and persistent reliance on cash—continues to hinder the full integration of digital financial systems.

AHP results: Criteria weights and preferences

Five criteria were evaluated through AHP, namely utility, convenience, safety, prevalence, and rules. The AHP analysis revealed that convenience was the most significant factor influencing non-cash payment preferences, with a weight of 33.01 percent (Table 4). This finding indicates that ease of use, transaction speed, and the availability of adequate technical support play crucial roles in respondents’ payment method choices.

Table 4. Preferences for use of payment instruments

No	Criteria	AHP	Rank	W	CR
C1	Utility	0.1939	2	0.1334	0.0738
C2	Convenience	0.3301	1		
C3	Safety	0.1651	4		
C4	Prevalence	0.1651	3		
C5	Rules	0.1459	5		
No	Alternative	AHP	Rank	W	CR
A1	Cash	0.6402	1	0.7217	0.0000
A2	QRIS	0.1401	3		
A3	Non-Cah other than QRIS	0.2197	2		

The second most important criterion identified by respondents was *utility*, which received a weight of 0.1939 or 19.39 percent. Respondents perceived that the use of payment instruments could enhance business performance, increase profitability, improve efficiency, and reduce transaction costs. The next two criteria, *safety* and *prevalence*, each received equal weight of 0.1651 (16.51 percent), reflecting moderate consideration of security concerns and social influence in payment method adoption. The least influential criterion was rules or regulations, which accounted for 0.1459 (14.59%) of the preference value, suggesting that compliance with policy frameworks was not a major determinant of respondents' payment choice.

To assess the degree of consistency among respondents' judgments regarding the preference criteria, the rater's level of agreement (*w*) was examined. The obtained *w* value of 0.1334 and Consistency Ratio (CR) of 0.0738 indicate satisfactory agreement among respondents, implying that their assessments of the decision criteria were consistent and reliable.

In terms of preferred payment methods, management respondents showed a strong inclination toward cash transactions, which received the highest AHP score of 0.6402 (64.02%). Non-cash payments other than QRIS (NTSQ)—including debit cards, EDC machines, and e-wallets—ranked second with a score of 0.2197 (21.97 percent). The QRIS payment method ranked last, with a weight of 0.1401 (14.01%). The rater agreement value of 0.7217 and CR of 0.0000 further indicate that respondents' views on payment method preferences were consistent.

Examined alongside respondents' characteristics and transaction practices, the AHP results reveal distinct behavioral patterns in payment adoption. By analyzing these results alongside demographic characteristics (Table 2), actual payment practices (Table 3), and qualitative explanations of QRIS usage, three distinct respondent groups emerge.

The first group consists of respondents who have exclusively used cash payment methods. Their primary reason is the perceived ease of cash transactions for both business owners and employees. Many members of this group are older managers or individuals with limited formal education, which may hinder their ability to adapt to digital systems.

The second group includes respondents who had previously used QRIS or other non-cash systems but discontinued their use due to frequent technical difficulties. Common challenges mentioned by this group include unstable internet connections from specific service providers and prior experiences with fraud or transaction errors, which have diminished their trust in digital payments.

The third group comprises respondents who actively use QRIS but reported that the majority of their customers continue to prefer cash transactions. On average, QRIS payments occur only once or twice a month at their establishments. Members of this group emphasized the need for greater awareness of transaction deductions associated with QRIS use. They expressed interest in improved outreach and education initiatives to promote QRIS adoption among both business owners and consumers.

Discussion

In Madura's culinary tourism sector, cash payments remain the preferred method over QRIS. This finding aligns with Perkasa (2023), who reported that offline shoppers in Surabaya favored cash transactions because they were easier to use and faster to process. Similarly, Yulianti (2023) found that MSME actors in Jakarta preferred cash payments due to their simplicity and the immediate liquidity they provide. These preferences underscore the central role of convenience in determining payment choices. Cash remains the most liquid and widely accepted form of payment, particularly in

regions with limited digital infrastructure and low levels of digital literacy. This pattern mirrors trends in other developing economies, where cash persists as the dominant payment mode due to habit and trust factors (Bapat & Khandelwal, 2023).

For QRIS and other digital payment systems to replace cash effectively, they must match cash in terms of speed, simplicity, and affordability. Alkhwaldi et al. (2023) emphasize that perceived ease of use and perceived usefulness are fundamental determinants of digital payment adoption, consistent with the Technology Acceptance Model (TAM) introduced by Davis (1989). When users perceive QRIS as the fastest, easiest, and most cost-effective payment method, its adoption is likely to increase naturally.

These findings closely align with the Technology Acceptance Model, which posits that perceived ease of use and perceived usefulness are the principal determinants of technology adoption (Davis, 1989). Within this framework, the convenience factor identified through AHP reflects perceived ease of use, as it captures users' perceptions that digital payments simplify and expedite transactions. Similarly, the utility criterion aligns with perceived usefulness, suggesting that culinary tourism managers value non-cash payments when such methods enhance business performance and operational efficiency. This theoretical connection suggests that QRIS adoption in Madura can be better understood through the TAM, where perceptions of ease and utility drive adoption.

Furthermore, the Unified Theory of Acceptance and Use of Technology (UTAUT) highlights the importance of social influence and facilitating conditions in shaping behavioral intentions (Venkatesh et al., 2023). The prevalence and rule factors identified in this study align with these UTAUT dimensions, suggesting that social norms and supportive institutional structures jointly affect managers' willingness to adopt digital payment systems.

Despite increasing use of non-cash payments in Indonesia, QRIS remains underutilized in Madura. The main barriers include technical issues, limited awareness, and inadequate infrastructure. These challenges are consistent with the findings of Susanto et al. (2022), who identified device incompatibility, unreliable internet connections, and concerns about fraud and data security as major obstacles to digital payment adoption. Bhuiyan, Akter, and Islam (2024) similarly emphasize that technological readiness and digital literacy are critical for the successful implementation of digital payments in developing economies.

The study identified three distinct user categories—non-users, intermittent users facing technical challenges, and occasional users constrained by customer habits—demonstrating a multifaceted adoption landscape that requires tailored interventions. Comparable challenges have been documented in other emerging markets, where inadequate infrastructure and cultural factors impede transitions toward cashless economies (Fauziyah & Prajawati, 2023). Addressing these barriers demands not only technological improvements but also education and trust-building initiatives that enhance user confidence and competence.

Another important finding of this study concerns the role of social influence and habitual behavior in shaping payment preferences. The prevalence criterion, one of the significant factors influencing respondents' decisions, indicates that individuals tend to adopt payment methods that are common within their social and commercial networks. According to the UTAUT framework, social factors exert substantial influence on technology adoption decisions (Venkatesh et al., 2023). In Madura, where cash transactions remain the social norm, shifting public perception toward digital payments

requires sustained efforts to promote QRIS as a reliable and beneficial alternative. Similar patterns have been observed globally; for instance, in Southeast Asia, mobile payment adoption accelerated through social endorsement and network effects, helping overcome initial reluctance (Sofwatunnisa et al., 2023). Engaging community leaders and leveraging peer networks may therefore be effective strategies to promote QRIS adoption in Madura's culinary tourism industry.

From a policy perspective, the findings highlight the urgent need for robust digital infrastructure and supportive regulatory frameworks to advance financial inclusion through digital payments. The Indonesian government's initiative to standardize QR code payments via QRIS represents a positive step; however, its success depends on concurrent investments in internet accessibility and digital literacy programs. Zhang et al. (2023) demonstrated in their study of Chinese cities that digital financial inclusion significantly enhances tourism development by facilitating transactions and improving visitor experiences. Similarly, the World Bank (2023) emphasizes that inclusive digital financial systems can stimulate economic growth by integrating populations previously excluded from formal financial networks.

For Madura, achieving this goal requires context-specific policies that address local infrastructural constraints and sociocultural conditions. Collaborative efforts among government agencies, financial institutions, and tourism stakeholders will be essential to fostering an ecosystem that supports QRIS and other non-cash payment options.

This study contributes to the existing literature on financial technology adoption in tourism by providing empirical evidence from a regional Indonesian context that is often underrepresented in research. While digital payment adoption is advancing rapidly in major urban centers, Madura's culinary tourism sector exemplifies the challenges peripheral regions face in adapting to digital transformation. The study enriches current understanding by identifying specific factors—convenience, utility, safety, prevalence, and regulatory alignment—that influence payment preferences in this distinct context.

Future research should expand the sample size and incorporate consumer perspectives to provide a more comprehensive view of the digital payment ecosystem. Longitudinal studies would also be valuable in assessing the effects of targeted interventions, such as digital literacy programs and infrastructure development, on QRIS adoption rates. Such research would not only enhance academic discourse but also yield actionable insights for policymakers seeking to foster inclusive digital economies in the tourism sector and beyond.

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Furthermore, the Unified Theory of Acceptance and Use of Technology (UTAUT) highlights the importance of social influence and facilitating conditions in shaping behavioral intentions (Venkatesh et al., 2023). The prevalence and rule factors identified in this study align with these UTAUT dimensions, suggesting that social norms and supportive institutional structures jointly affect managers' willingness to adopt digital payment systems.

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Beyond the theoretical implications, the findings also provide important policy insights for enhancing digital financial inclusion in regional tourism sectors. From a policy perspective, the results highlight the urgent need for robust digital infrastructure and supportive regulatory frameworks to advance the use of digital payments. The Indonesian government's initiative to standardize QR code transactions through QRIS represents a positive step; however, its success depends on parallel investments in internet accessibility and digital literacy programs.

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This study contributes to the growing literature on financial technology adoption in tourism by offering empirical evidence from a regional Indonesian context that remains underrepresented in research. While digital payment adoption is advancing rapidly in major urban centers, Madura's culinary tourism sector exemplifies the persistent challenges peripheral regions face in digital transformation. The findings enrich the understanding of key determinants—convenience, utility, safety, prevalence, and regulatory alignment—that shape payment preferences in this distinct context.

CONCLUSION AND RECOMMENDATIONS

Conclusion

This study confirms that convenience is the primary factor influencing culinary tourism managers' preferences in Madura when selecting non-cash payment mechanisms, followed by utility. Although non-cash payments are gradually increasing, cash remains the most preferred payment method, while QRIS adoption remains relatively limited.

The findings reveal three main categories of QRIS non-users: individuals or businesses that have never used the system, those who encounter technical difficulties during its implementation, and those who have adopted it but are unable to maximize its potential due to limited understanding or inadequate infrastructure.

These results underscore the need to enhance digital literacy and strengthen technological infrastructure to accelerate the adoption of non-cash payments within Madura's culinary tourism sector. Furthermore, this research contributes to a deeper understanding of the interconnections among financial inclusion, tourism, and financial technology in Indonesia. The insights generated provide a valuable foundation for policymakers seeking to formulate more effective strategies for expanding the regional digital payment ecosystem.

This study also demonstrates the applicability of the Analytic Hierarchy Process (AHP) in tourism finance research within regional Indonesian contexts, showcasing its value in identifying priority determinants of digital payment adoption across local business sectors.

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business sectors.

Recommendations

To accelerate the use of non-cash payments in Madura's culinary tourism sector, the government must strengthen digital infrastructure by ensuring reliable internet access and resilient communication networks that can support financial technologies such as QRIS, electronic wallets, and internet banking. Such improvements are essential to facilitating smooth, secure digital transactions.

Promoting and developing Madura's culinary tourism also requires coordinated efforts among government bodies, tourism industry stakeholders, and local communities. Collaborative initiatives could include developing distinctive local food products that serve as regional branding tools and tourist attractions, thereby reinforcing the economic potential of culinary tourism.

Culinary tourism managers are encouraged to diversify their payment systems by offering multiple non-cash options and educating customers on their use. Doing so would enhance transaction efficiency and expand their customer base.

Finally, future research should broaden its scope to include consumer perspectives and evaluate the impact of targeted interventions—such as digital literacy programs and infrastructure development—on QRIS adoption rates. Such efforts are crucial for advancing the transition toward inclusive digital payment systems and strengthening the sustainability of regional tourism economies.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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