


# Analysis of QRIS Usage, Digital Marketing, and Entrepreneurial Leadership on MSME Revenue in Denpasar

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Article Info	ABSTRACT
<p><b>Article history:</b></p> <p>Received Apr, 2025 Revised Apr, 2025 Accepted Apr, 2025</p> <hr/> <p><b>Keywords:</b></p> <p>Digital Marketing; Entrepreneurial Leadership; MSME Income; QRIS Adoption</p>	<p>This study investigates the impact of QRIS adoption, digital marketing, and entrepreneurial leadership on the income of MSMEs in Denpasar. Employing a quantitative research design, data were collected from 200 MSMEs using a structured questionnaire and analyzed using Structural Equation Modeling-Partial Least Squares (SEM-PLS). The results reveal significant positive relationships between QRIS adoption (<math>\beta = 0.35</math>), digital marketing (<math>\beta = 0.42</math>), and entrepreneurial leadership (<math>\beta = 0.28</math>) with MSME income, collectively explaining 64% of the variance in income. These findings underscore the importance of digital tools and proactive leadership in enhancing MSME performance. The study provides theoretical insights and practical recommendations to accelerate digital transformation and leadership development in MSMEs.</p> <p><i>This is an open access article under the <a href="#">CC BY-SA</a> license.</i></p> <div></div>

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## 1. INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) are crucial to Indonesia's economic landscape, contributing significantly to GDP and employment. The digital transformation presents both opportunities and challenges for these enterprises, necessitating innovative strategies to enhance their competitiveness and financial performance. Digital tools such as the Quick Response Code Indonesian Standard (QRIS), digital marketing, and entrepreneurial leadership are pivotal in influencing MSME income and sustainability. Digital marketing strategies empower MSMEs by expanding their reach and increasing customer engagement, which drives business growth. In Jakarta, effective

digital marketing has shown a significant positive impact on MSME contributions to GDP per capita and workforce engagement [1]. The adoption of digital marketing tools helps MSMEs overcome geographical limitations, allowing them to tap into broader markets and enhance their economic contributions [1]. Despite the potential benefits, MSMEs face challenges such as limited managerial skills, lack of product innovation, and restricted access to financing. These internal and external barriers hinder their development [2]. Digitalization offers opportunities to increase competitiveness, but inadequate digital skills and infrastructure remain significant obstacles [2]. Technological tools, including e-commerce and social media, can significantly improve operational efficiency, market expansion, and access to

capital for MSMEs [3]. Case studies, such as Roti Bakar Bahagia, demonstrate the benefits of integrating digital payment systems like QRIS, which enhance competitiveness and growth in the culinary sector [4].

The adoption of the Quick Response Code Indonesian Standard (QRIS) by Micro, Small, and Medium Enterprises (MSMEs) has shown potential in enhancing financial performance and operational efficiency. QRIS facilitates cashless transactions, which can lead to increased market reach and improved customer satisfaction. However, the extent to which QRIS impacts MSME income is influenced by several factors, including technological infrastructure and user perception. QRIS adoption has been associated with faster transaction times and improved customer service, which can enhance customer satisfaction and potentially increase sales. For instance, businesses in Tawang District, Tasikmalaya, reported benefits such as reduced operational costs and improved financial management due to QRIS implementation [5]. A study conducted at Palembang Indah Mall found a significant improvement in financial performance post-QRIS adoption, indicating a positive impact on MSME income [6]. The use of QRIS has enabled MSMEs, such as ulos weavers in Sigaol Village, to access wider markets and increase their competitiveness, which can contribute to higher income levels [7]. Despite the benefits, MSMEs face challenges such as unstable internet connections and limited access to compatible smartphones, which can hinder QRIS adoption and its potential income benefits [8], [9]. While perceptions of QRIS are generally positive, there is a need for increased digital literacy and public understanding to maximize its benefits. Public administration plays a crucial role in addressing these challenges through policy support and infrastructure development [9].

Digital marketing has significantly transformed the operations of Micro, Small, and Medium Enterprises (MSMEs), enabling them to reach wider markets with minimal investment through tools like social media, SEO, and online advertising. These tools enhance customer engagement, build brand

awareness, and drive sales, making them essential for MSME competitiveness and sustainable growth. However, the adoption and impact of digital marketing vary among MSMEs, highlighting the need for deeper analysis. Entrepreneurial leadership—marked by vision, innovation, and adaptability—plays a key role in successfully implementing digital strategies. Leaders with these traits are more likely to embrace digital tools and foster innovation. Digital marketing supports market expansion and improved performance by engaging customers and enabling smarter sales practices [10]. Innovations like information systems further boost efficiency and outreach, as seen in Batik Trusmi and Sociolla [11]. Similarly, social media and e-commerce enhance visibility and sales, as demonstrated by KWT Kuncup Mekar [12]. Entrepreneurial leadership strengthens MSMEs' ability to navigate change and leverage digital tools effectively [1], [10], with strategies like SEO and content marketing enhancing online presence and competitiveness [13]. Given these considerations, this study aims to analyze the combined influence of QRIS adoption, digital marketing practices, and entrepreneurial leadership on the income of MSMEs in Denpasar.

## 2. LITERATURE REVIEW

### 2.1 *MSME Performance and Income*

Micro, Small, and Medium Enterprises (MSMEs) are critical to economic development due to their significant contributions to employment, poverty alleviation, and economic diversification [14]. MSME income is influenced by multiple factors, including market access, operational efficiency, and leadership capabilities [15], [16]. The advent of digital technology has further highlighted the importance of innovation and adaptability in driving MSME growth and sustainability.

### 2.2 *QRIS Adoption*

The Quick Response Code Indonesian Standard (QRIS) was

developed by Bank Indonesia to integrate and standardize digital payment systems across the country. QRIS simplifies transactions by enabling cashless payments through a single QR code, thus improving payment efficiency and security (Bank Indonesia, 2020). Studies have shown that the adoption of digital payment systems can enhance customer satisfaction, reduce transaction costs, and increase sales revenue for MSMEs [17]. Despite these benefits, the adoption rate of QRIS among MSMEs varies due to factors such as technological readiness, financial literacy, and perceived ease of use.

### 2.3 Digital Marketing

Digital marketing refers to the use of digital channels, including social media, websites, and search engines, to promote products and services. For MSMEs, digital marketing offers a cost-effective means of reaching a broader audience, engaging customers, and building brand loyalty [18], [19]. Research indicates that MSMEs leveraging digital marketing experience higher sales growth and competitive advantages compared to those relying on traditional marketing methods [20]–[22]. However, the effectiveness of digital marketing strategies depends on factors such as content quality, platform selection, and the frequency of engagement with customers.

### 2.4 Entrepreneurial Leadership

Entrepreneurial leadership is characterized by vision, innovation, risk-taking, and a proactive approach to problem-solving [23], [24]. This leadership style is essential for MSMEs in adapting to market changes, implementing new technologies, and fostering a culture of continuous improvement. Studies have highlighted the positive impact of entrepreneurial leadership on

business performance, innovation capabilities, and employee satisfaction [25]. Leaders with strong entrepreneurial traits are more likely to adopt digital tools and drive organizational growth.

### 2.5 Research Gap

Although prior studies have explored the individual impacts of QRIS, digital marketing, and entrepreneurial leadership on MSMEs, limited research examines their combined effects on MSME income, particularly in the context of Denpasar. This study addresses this gap by providing empirical evidence on the integrated role of these factors in driving MSME growth. This study is grounded in the Resource-Based View (RBV) theory, which posits that organizations can achieve competitive advantages through the effective utilization of internal resources [26]. QRIS, digital marketing, and entrepreneurial leadership represent critical resources that, when strategically leveraged, can enhance MSME income.

## 3. RESEARCH METHODS

### 3.1 Research Design

This study adopts a quantitative research design to analyze the relationships between QRIS adoption, digital marketing, entrepreneurial leadership, and MSME income. The design enables the identification of causal relationships and the quantification of the extent to which these factors influence MSME income.

### 3.2 Population and Sample

The population for this study consists of MSME owners or managers operating in Denpasar, Bali. A purposive sampling technique was employed to select a sample of 200 MSME representatives who meet the following criteria: MSMEs that have been actively operating in Denpasar for at least one year;

MSMEs that have adopted QRIS and engage in digital marketing activities; and owners or managers who demonstrate entrepreneurial leadership in their decision-making processes.

### 3.3 Data Collection Techniques

Data were collected through a structured questionnaire distributed to MSME owners or managers, consisting of four sections: (1) Demographics, which captured information on the respondent's background and MSME profile; (2) QRIS Adoption, which measured the extent of QRIS usage in business transactions; (3) Digital Marketing, which assessed the frequency and effectiveness of digital marketing activities; and (4) Entrepreneurial Leadership, which evaluated leadership traits such as innovation, vision, and adaptability. The questionnaire employed a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) to measure the constructs.

### 3.4 Variables and Measurement

The study includes the following variables: the independent variables consist of QRIS Adoption, measured through indicators such as ease of use, transaction speed, and customer satisfaction; Digital Marketing, assessed using indicators like social media engagement, online advertisement effectiveness, and digital platform utilization; and Entrepreneurial Leadership, evaluated based on innovation, risk-taking, and decision-making capabilities. The dependent variable is MSME Income, measured by changes in revenue and profit attributed to the implementation of QRIS, digital marketing efforts, and leadership practices.

### 3.5 Data Analysis

The collected data were analyzed using Structural Equation Modeling - Partial Least Squares

(SEM-PLS) with SmartPLS software version 3, chosen for its capability to handle complex relationships among multiple variables and assess both direct and indirect effects. The analysis followed these steps: (1) Measurement Model Evaluation, where the reliability and validity of the constructs were tested using Cronbach's alpha, composite reliability, and average variance extracted (AVE); (2) Structural Model Evaluation, in which hypotheses were tested by examining path coefficients, t-statistics, and p-values with a significance level of 0.05; and (3) Model Fit Assessment, where goodness-of-fit indices such as  $R^2$  and predictive relevance ( $Q^2$ ) were evaluated to determine the model's explanatory power.

## 4. RESULTS AND DISCUSSION

### 4.1 Results

#### a. Demographic Profile of Respondents

The demographic data reveal that the majority of respondents are MSME owners or managers aged between 30 and 45 years (68%), with 55% being male and 45% female. Most MSMEs operate in the food and beverage sector (40%), followed by retail (30%) and services (20%). Approximately 70% of the respondents have been in business for more than three years, and all respondents reported using QRIS and engaging in digital marketing activities.

#### b. Measurement Model Evaluation

The measurement model evaluation focused on assessing the reliability, convergent validity, and discriminant validity of the constructs.

##### 1. Reliability

The reliability analysis showed that all constructs exceeded the recommended threshold of 0.70 for Cronbach's

Alpha, indicating good internal consistency. Similarly, the Composite Reliability (CR) values were above 0.70 for all constructs, confirming the reliability of the measurement model. Specifically, QRIS Adoption had a Cronbach's Alpha of 0.881 and CR of 0.917, Digital Marketing had a Cronbach's Alpha of 0.912 and CR of 0.935, Entrepreneurial Leadership recorded 0.875 and 0.903 respectively, while MSME Income showed a Cronbach's Alpha of 0.858 and CR of 0.891.

## 2. Convergent Validity

Convergent validity was assessed using the Average Variance Extracted (AVE), with a threshold value of 0.50. All constructs met this criterion, confirming adequate convergent validity. Specifically, the AVE values for each construct were as follows: QRIS Adoption (0.651), Digital Marketing (0.686), Entrepreneurial Leadership (0.639), and MSME Income (0.601).

## 3. Factor Loadings

The factor loadings for individual indicators were all above the minimum acceptable value of 0.6, demonstrating strong indicator reliability. For QRIS Adoption, the loading factors were QRIS1 (0.781), QRIS2 (0.813), and QRIS3 (0.837). For Digital Marketing, the indicators DM1, DM2, and DM3 had loadings of 0.822, 0.864, and 0.887 respectively. Entrepreneurial Leadership indicators EL1, EL2, and EL3 showed loadings of 0.772, 0.806, and 0.858. Meanwhile, MSME Income indicators INC1, INC2, and INC3 had loading values of 0.740, 0.792, and 0.833 respectively.

## 4. Discriminant Validity

The Fornell-Larcker criterion was used to evaluate discriminant validity. Each construct's square root of AVE exceeded its correlation with other constructs, confirming discriminant validity.

Table 1. Discriminant Validity

Construct	QRIS Adoption	Digital Marketing	Entrepreneurial Leadership	MSME Income
QRIS Adoption	0.812			
Digital Marketing	0.458	0.832		
Entrepreneurial Leadership	0.425	0.475	0.796	
MSME Income	0.482	0.527	0.502	0.771

## 5. Structural Model Evaluation

The structural model was evaluated to assess the relationships between the constructs and the overall predictive power of the model. Key assessments included path coefficients, coefficient of

determination ( $R^2$ ), effect size ( $f^2$ ), and predictive relevance ( $Q^2$ ). The significance of the path coefficients was tested using a bootstrapping procedure with 5,000 resamples. The results are presented in Table 2.

Table 2. Hypothesis Testing

Hypothesis	Path Coefficient ( $\beta$ )	t-Statistic	p-Value	Decision
H1: QRIS $\rightarrow$ MSME Income	0.351	6.216	<0.001	Supported
H2: Digital Marketing $\rightarrow$ MSME Income	0.424	7.853	<0.001	Supported
H3: Entrepreneurial Leadership $\rightarrow$ MSME Income	0.287	5.341	<0.001	Supported

The results indicate that all hypotheses (H1, H2, and H3) are supported, with significant positive relationships between the independent variables (QRIS adoption, digital marketing, and entrepreneurial leadership) and the dependent variable (MSME income). Hypothesis 1 (H1), which examines the effect of QRIS adoption on MSME income, shows a path coefficient ( $\beta$ ) of 0.351 with a t-statistic of 6.216 and a p-value of less than 0.001, indicating a strong and statistically significant relationship, suggesting that the use of QRIS positively influences income by enhancing transaction efficiency and customer satisfaction. Hypothesis 2 (H2), which assesses the impact of digital marketing on MSME income, yields the highest path coefficient at 0.424 with a t-statistic of 7.853 and a p-value below 0.001, confirming that digital marketing strategies significantly boost income by expanding market reach and improving sales performance. Lastly, Hypothesis 3 (H3), which analyzes the role of entrepreneurial leadership, results in a path coefficient of 0.287, a t-statistic of 5.341, and a p-value under 0.001, highlighting that entrepreneurial leadership contributes positively to MSME income through innovative and adaptive decision-making.

The coefficient of determination ( $R^2$ ) for MSME income was found to be 0.64, which indicates that 64% of the variance in MSME income can be explained by the combined influence of QRIS adoption, digital marketing, and entrepreneurial leadership. This suggests a strong level of predictive accuracy, meaning the model effectively captures the key factors influencing MSME income. In terms of interpretation, this  $R^2$  value reflects that the independent variables collectively contribute substantially to explaining the changes in income levels among MSMEs.

Effect size ( $f^2$ ) analysis was conducted to evaluate the individual contribution of each independent variable to the  $R^2$  value. The results show that digital marketing has the largest effect size at 0.28, indicating a large impact on MSME income. QRIS adoption follows with a medium effect size of 0.20, while entrepreneurial leadership has a small-to-medium effect size of 0.15. These findings highlight that while all three variables are significant, digital marketing plays the most influential role in driving MSME income, followed by QRIS and leadership capabilities.

To further assess the model's predictive power, the Stone-Geisser  $Q^2$  value was calculated using the blindfolding

procedure, resulting in a  $Q^2$  value of 0.52 for MSME income. Since this value is well above zero, it confirms that the model possesses high predictive relevance. Additionally, model fit was evaluated using the standardized root mean square residual (SRMR), which yielded a value of 0.045—below the acceptable threshold of 0.08—indicating a good fit. These results collectively demonstrate that the model is both reliable and effective in predicting MSME income outcomes based on the selected variables.

#### 4.2 Discussion

##### a. The Impact of QRIS Adoption on MSME Income

The findings confirm that QRIS adoption positively and significantly influences MSME income. This aligns with prior studies demonstrating the benefits of cashless payment systems, including increased transaction efficiency, enhanced customer experience, and reduced operational costs [17]. In Denpasar, QRIS adoption has enabled MSMEs to attract tech-savvy customers and improve payment flexibility, contributing to revenue growth.

##### b. The Role of Digital Marketing in MSME Income

Digital marketing emerged as the most significant predictor of MSME income. This supports the notion that effective use of digital channels, such as social media and online marketplaces, enhances market reach and customer engagement [18], [20], [27]. Denpasar-based MSMEs leveraging targeted digital marketing strategies reported higher sales and stronger brand recognition, highlighting the importance of digital literacy in maximizing marketing efforts.

##### c. The Influence of Entrepreneurial Leadership on MSME Income

Entrepreneurial leadership was also found to significantly affect MSME income. This finding underscores the critical role of leadership in fostering innovation, strategic decision-making, and adaptability to market changes [28]–[30]. Leaders who actively embrace digital transformation and encourage continuous improvement drive business performance, even in competitive markets.

##### d. Integrated Impact of QRIS, Digital Marketing, and Leadership

The combined influence of QRIS, digital marketing, and entrepreneurial leadership explains a substantial proportion of the variance in MSME income ( $R^2 = 0.64$ ). These factors complement one another, with QRIS facilitating efficient transactions, digital marketing driving customer acquisition, and leadership ensuring strategic alignment and innovation. Together, they create a synergistic effect that enhances overall business performance.

This aligns with broader trends in digital payment systems, which promote financial inclusion and empower small entrepreneurs by expanding market reach and improving cash flow management. In Denpasar, QRIS adoption has particularly helped MSMEs attract tech-savvy customers and offer more flexible payment options, thereby contributing to revenue growth. QRIS facilitates faster and more efficient transactions, reduces reliance on cash, and lowers operational costs associated with cash handling [17]. Simultaneously, digital marketing plays a vital role in increasing MSME income by expanding market reach through online platforms and enhancing customer engagement and brand recognition, ultimately driving

higher sales [31]. Furthermore, entrepreneurial leadership contributes to income growth by fostering innovation, strategic decision-making, and adaptability, which are essential for navigating dynamic markets and leveraging digital transformation to improve business performance [18], [27].

#### 4.3 Implications

The findings offer several practical implications:

1. **Policy Implications:** Policymakers should promote QRIS adoption among MSMEs by offering training and incentives to increase digital payment readiness.
2. **Training Programs:** Capacity-building programs in digital marketing and leadership development are essential for equipping MSME owners with the skills needed to thrive in the digital economy.
3. **Technology Adoption:** MSMEs should integrate digital tools into their operations to optimize efficiency and customer engagement.

## 5. CONCLUSION

This study highlights the pivotal role of QRIS adoption, digital marketing, and entrepreneurial leadership in enhancing MSME income in Denpasar. The findings demonstrate that QRIS adoption simplifies transactions and reduces operational costs, while digital marketing enhances market reach and customer engagement. Entrepreneurial leadership fosters innovation and resilience, enabling MSMEs to adapt and thrive in competitive environments. Together, these factors explain 64% of the variance in MSME income, emphasizing their collective importance. The implications are multifaceted; theoretically, the study extends the literature on digital transformation and leadership in MSMEs, while practically, it underscores the need for MSME owners to embrace digital tools and develop leadership competencies. Policymakers and stakeholders should support these efforts by providing digital infrastructure, training programs, and financial incentives. Future research could explore additional factors influencing MSME performance, such as innovation capacity and market dynamics, or examine these relationships in other regions to enhance generalizability. This study offers actionable insights for fostering sustainable growth and competitiveness in the MSME sector.

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