Analysis of the Impact of E-Commerce Utilization, Digital Entrepreneurship, and Product Branding on MSME Customer Loyalty in West Java

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ABSTRACT

This study examines the impact of Digital Entrepreneurship, E-Commerce Utilization, and Product Branding on MSME Customer Loyalty in West Java. A quantitative approach was employed with a sample of 200 MSME owners and customers, using a Likert scale (1-5) for data collection and Structural Equation Modeling - Partial Least Squares (SEM-PLS) for analysis. The results reveal that all three factors significantly influence customer loyalty, with E-Commerce Utilization having the strongest effect followed by Digital Entrepreneurship and Product Branding. These findings suggest that MSMEs that leverage digital platforms, adopt innovative business models, and establish strong brands are more likely to enhance customer satisfaction and loyalty. The study underscores the importance of integrating digital tools, e-commerce strategies, and branding in MSME operations to foster long-term customer relationships and competitiveness in the market.

Keywords: Digital Entrepreneurship, E-Commerce Utilization, Product Branding, MSMEs, Customer Loyalty

1. INTRODUCTION

The rapid advancement of digital technologies has significantly transformed the landscape for Micro, Small, and Medium Enterprises (MSMEs) in Indonesia, enhancing their competitiveness and sustainability. Key digital trends such as e-commerce utilization, digital entrepreneurship, and product branding are pivotal in shaping customer experiences and influencing purchasing behaviors, ultimately affecting customer loyalty. E-commerce adoption has been shown to enhance MSME performance by improving information management, which is crucial for sustainability [1], [2]. Despite its benefits, many MSMEs struggle to fully leverage e-commerce due to limited knowledge and resources [1]. Digital transformation, including the use of social media and management information systems, positively impacts MSME performance, with a notable increase in revenue and market reach [3]. High internet access and digital literacy are essential for successful technology adoption, which in turn supports MSME growth [3]. Effective digital marketing strategies are vital for MSMEs to create markets and integrate into global supply chains, enhancing their competitive edge [4]. Financial literacy also plays a critical role in enabling MSMEs to navigate the digital economy successfully [5].

E-commerce serves as a transformative platform for Micro, Small, and Medium Enterprises (MSMEs), enabling them to expand their reach and enhance operational efficiency. By leveraging digital tools, MSMEs can improve visibility, streamline processes, and adapt to market changes. E-commerce adoption significantly enhances MSME performance by improving information management and operational efficiency [1]. Despite its benefits, only 13% of MSMEs in Jakarta utilize e-commerce, indicating a need for increased digital literacy and training [6]. Successful e-commerce implementation can lead to increased sales and innovation in products and services [7]. Digital

marketing is essential for MSMEs to boost competitiveness, particularly for local products facing market challenges [6], [8]. Training and mentoring programs are crucial for developing the necessary skills to effectively utilize digital marketing strategies [8]. Strong branding fosters trust and emotional connections with customers, enhancing loyalty and differentiating MSMEs in competitive markets [8].

The integration of digital tools and strategies among Micro, Small, and Medium Enterprises (MSMEs) in West Java is crucial for their growth and competitiveness. However, many MSMEs face significant challenges in adopting e-commerce and digital entrepreneurship. A major barrier is the low level of digital literacy among MSME owners, which hampers their ability to utilize e-commerce platforms effectively [6]. Furthermore, many MSMEs lack the necessary resources, including financial support and technological infrastructure, to transition to digital platforms [9]. Additionally, the pressure from larger competitors can discourage MSMEs from investing in digital strategies, as they may feel unable to compete [10]. To overcome these challenges, initiatives like the Paguyuban in Bekasi provide essential support through mentorship and training, facilitating digital marketing transformation [11], [12], while structured training and mentoring can significantly enhance digital literacy and encourage e-commerce adoption among MSMEs [6]. This study seeks to explore the impact of these three factors—e-commerce utilization, digital entrepreneurship, and product branding—on MSME customer loyalty in West Java. The purpose of this research is to identify and analyze the relationships between e-commerce adoption, digital entrepreneurship, product branding, and customer loyalty in MSMEs.

2. LITERATURE REVIEW

2.1 *E-Commerce Utilization*

E-commerce has significantly transformed the operations of micro, small, and medium enterprises (MSMEs), enhancing customer interactions and expanding market access. The adoption of e-commerce strategies boosts customer acquisition, product visibility, revenues, and operational efficiency. E-commerce enables MSMEs to reach broader, including international, markets, with revenue increases of up to 30% in online sales [13]. The shift to mobile commerce is crucial, as many purchases are now made via mobile devices, highlighting the need for a mobile-friendly presence [14]. Digital marketing tools such as social media and email marketing increase customer engagement and loyalty [13], while e-commerce platforms provide valuable customer data for tailored offerings [15]. However, challenges like limited digital literacy, cybersecurity risks, and investment costs hinder MSMEs from fully leveraging e-commerce [13], [16], [17]. In regions like West Java, these barriers prevent MSMEs from maximizing e-commerce benefits, underscoring the need for targeted support and training [1].

2.2 *Digital Entrepreneurship*

Digital entrepreneurship plays a pivotal role in enhancing the performance of Micro, Small, and Medium Enterprises (MSMEs) by leveraging digital technologies to innovate and engage customers, fostering scalability and improving operational efficiency. This approach encourages the development of innovative business models, allowing MSMEs to differentiate themselves in the market [18], and the integration of

digital tools enhances the ability to create scalable solutions, crucial for growth [19], [20]. Online platforms facilitate direct interaction with customers, helping MSMEs build strong brand identities and improve customer satisfaction [18], [21], while effective digital marketing strategies enhance customer relationship management (CRM), leading to increased sales and loyalty [22]. In regions like West Java, government initiatives are vital for promoting digital entrepreneurship among MSMEs [20], although the success of these initiatives depends on MSMEs' willingness to adapt to technological advancements and evolving consumer preferences [23]. This study explores the impact of digital entrepreneurship on customer loyalty in West Java MSMEs.

2.3 Product Branding

Product branding is essential for Micro, Small, and Medium Enterprises (MSMEs) to establish a unique identity and foster consumer loyalty in competitive markets. Effective branding strategies not only enhance product appeal but also communicate core values and create emotional connections with consumers. Branding helps MSMEs stand out against larger competitors by creating a distinct identity [24], [25]. A strong brand fosters trust and loyalty, which are crucial for customer retention [26]. Effective branding strategies, including visual elements and messaging, improve market positioning and competitive advantage [27]. However, many MSMEs face challenges such as limited financial and human resources, which hinder their branding efforts [24]. Additionally, building brand awareness in crowded markets requires innovative strategies, such as social media engagement [25], [28].

2.4 Customer Loyalty

Customer loyalty is crucial for the sustainability and growth of Micro, Small, and Medium Enterprises (MSMEs), especially in West Java. It is influenced by product quality, customer service, and brand image, with digital tools enhancing loyalty through personalized experiences and consistent communication. High-quality products increase satisfaction and loyalty [29]. Effective service delivery, including responsiveness, significantly impacts retention [29], [30], while a strong brand fosters trust and emotional connections [31] Digital tools for personalized marketing boost customer experiences and loyalty [32]. MSMEs can enhance loyalty by adopting customer-centric approaches, using e-commerce platforms to reach wider audiences, and developing loyalty programs to encourage repeat purchases [32], [33].

2.5 Theoretical Framework

This study is grounded in the Theory of Planned Behavior (Ajzen, 1991), which suggests that attitudes, subjective norms, and perceived behavioral control influence an individual's intention to perform a behavior, such as loyalty. The integration of e-commerce utilization, digital entrepreneurship, and product branding in this study aligns with the Theory of Reasoned Action (Fishbein & Ajzen, 1975), which posits that customer loyalty is influenced by both cognitive and emotional factors shaped by the overall brand experience. Based on this theoretical foundation, it is hypothesized that: 1) e-commerce utilization positively impacts customer loyalty by enhancing accessibility, engagement, and satisfaction; 2) digital entrepreneurship fosters customer

loyalty by driving innovation, improving business adaptability, and enhancing customer experiences; and 3) product branding strengthens customer loyalty by creating emotional connections, building trust, and differentiating the business in the market.

The conceptual framework for this study posits that e-commerce utilization, digital entrepreneurship, and product branding contribute to customer loyalty in MSMEs. These relationships are examined through a quantitative approach, using SEM-PLS to assess direct and indirect effects. This framework serves as the basis for understanding the dynamics between digital transformation and customer loyalty within the context of MSMEs in West Java.
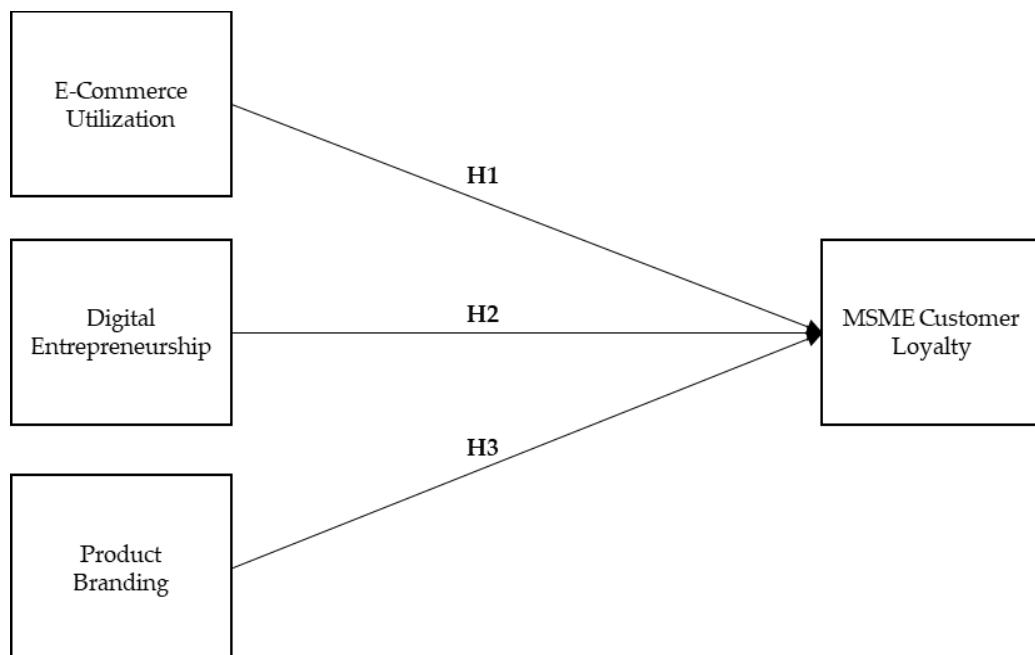

Figure 1. Conceptual Framework

3. METHODS

3.1 Research Design

This study employs a quantitative research design to examine the relationships between e-commerce utilization, digital entrepreneurship, product branding, and customer loyalty in MSMEs. A quantitative approach is suitable because it allows for the collection of numerical data that can be statistically analyzed to determine the strength and significance of the relationships among the variables. The research follows a cross-sectional design, where data is collected at a single point in time from a sample of MSMEs in West Java.

3.2 Population and Sample

The population for this study consists of MSMEs operating in various sectors within West Java, chosen due to its significant number of MSMEs and its importance in Indonesia's economy. According to the Indonesian Ministry of Cooperatives and Small and Medium Enterprises (2023), West Java has one of the highest concentrations of MSMEs in the country. To ensure the sample is representative of the broader population, stratified random sampling will be used, with stratification based on business sectors (e.g., retail, manufacturing, services) to ensure diversity. The final sample consists of 200 MSMEs, deemed sufficient to provide reliable statistical results while minimizing

sampling error. This sample size meets the requirements for Structural Equation Modeling (SEM), which necessitates a minimum sample size of 200 for stable and valid results [34].

3.3 Data Collection

The data for this study will be collected through a survey questionnaire distributed to MSME owners or managers in West Java, administered both online and offline to ensure accessibility for businesses with varying levels of digital engagement. The survey will include questions related to the three key independent variables: e-commerce utilization, digital entrepreneurship, and product branding, as well as the dependent variable, customer loyalty. All items will be measured using a Likert scale ranging from 1 to 5, where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree. This scale allows respondents to express their level of agreement with each statement, ensuring that the data collected is quantitative and suitable for statistical analysis.

3.4 Data Analysis

The data collected will be analyzed using Structural Equation Modeling (SEM) with PLS-3 software, a powerful technique for testing complex relationships among multiple variables. The PLS-SEM approach is particularly useful for small to medium-sized samples and data that may not follow a normal distribution, common in behavioral research (Hair et al., 2017). The analysis will follow two main steps: first, the measurement model will be evaluated for reliability and validity, including internal consistency reliability using composite reliability (CR) and Cronbach's alpha, convergent validity through Average Variance Extracted (AVE), and discriminant validity using the Fornell-Larcker criterion and cross-loadings. Second, the structural model will be tested to evaluate relationships between e-commerce utilization, digital entrepreneurship, product branding, and customer loyalty. Path coefficients (β) will assess the strength and direction of these relationships, R-squared (R^2) will evaluate predictive power, T-statistics will determine the significance of path coefficients using bootstrapping (5000 samples), effect sizes (f^2) will measure the magnitude of each predictor's impact, and predictive relevance (Q^2) will assess the model's ability to predict endogenous variables using the blindfolding procedur.

4. RESULTS AND DISCUSSION

4.1 Demographic Sample

The sample for this study consisted of 200 MSME owners and managers in West Java, Indonesia, who were surveyed about their use of e-commerce, digital entrepreneurship practices, product branding, and customer loyalty. The gender distribution was 60% male and 40% female, with a majority of respondents in the 30-39 years (35%) and 40-49 years (30%) age groups, indicating relatively experienced business owners. The educational background showed that 50% of respondents held a Bachelor's degree, while 45% were involved in retail businesses, especially those utilizing e-commerce. Most businesses had been operating for 4-6 years (35%) and generated a monthly revenue of IDR 50 million - IDR 100 million (30%). In terms of technology adoption, 50% of respondents used intermediate digital tools, such as e-commerce platforms and CRM software. Geographically, 40% of respondents were from Bandung, reflecting the concentration of MSMEs in urban areas with better access to digital infrastructure.

4.2 Measurement Model

The measurement model evaluates the reliability and validity of the constructs (latent variables) in this study. The primary indicators of the measurement model are E-Commerce Utilization (ECU), Digital Entrepreneurship (DEP), Product Branding (PDB), and MSME Customer Loyalty (MCL). For each of these constructs, the model utilizes multiple items to measure the underlying constructs, and their validity is assessed through loading factors, Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE).

Table 1. Measurement Model

Variable	Code	Loading Factor	Cronbach's Alpha	Composite Reliability	Average Variant Extracted
E-Commerce Utilization	ECU.1	0.851	0.881	0.918	0.737
	ECU.2	0.900			
	ECU.3	0.847			
	ECU.4	0.835			
Digital Entrepreneurship	DEP.1	0.827	0.894	0.922	0.704
	DEP.2	0.841			
	DEP.3	0.864			
	DEP.4	0.881			
	DEP.5	0.778			
Product Branding	PDB.1	0.852	0.837	0.889	0.669
	PDB.2	0.744			
	PDB.3	0.826			
	PDB.4	0.844			
MSME Customer Loyalty	MCL.1	0.818	0.897	0.918	0.617
	MCL.2	0.822			
	MCL.3	0.701			
	MCL.4	0.745			
	MCL.5	0.723			
	MCL.6	0.879			
	MCL.7	0.794			

Source: Data Processing Results (2024)

The measurement model for the study constructs shows strong reliability and validity. E-Commerce Utilization (ECU) was measured with four items, with loading factors between 0.835 and 0.900, and demonstrated good internal consistency (Cronbach's Alpha = 0.881, CR = 0.918, AVE = 0.737). Digital Entrepreneurship (DEP), assessed with five items, had loading factors between 0.778 and 0.881, and high reliability (Cronbach's Alpha = 0.894, CR = 0.922, AVE = 0.704). Product Branding (PDB) had four items, with loading factors from 0.744 to 0.852, showing adequate reliability (Cronbach's Alpha = 0.837, CR = 0.889, AVE = 0.669). MSME Customer Loyalty (MCL) was measured with seven items, showing excellent reliability (Cronbach's Alpha = 0.897, CR = 0.918, AVE = 0.617). All constructs met or exceeded the required thresholds for reliability and validity, confirming the model's suitability for analyzing the relationships in the study.

4.3 Discriminant Validity (HTMT)

Discriminant validity refers to the degree to which a construct is distinct from other constructs in the model, and one method to assess it is the Heterotrait-Monotrait Ratio (HTMT). The HTMT is considered a more robust criterion as it compares the correlations between constructs to ensure they are not too highly correlated, indicating they are distinct. If the HTMT value exceeds 0.85, it suggests that discriminant validity may be at risk, implying the constructs are not sufficiently distinct. A HTMT value greater than 0.90 indicates a more severe issue with discriminant validity.

Table 2. Discriminant Validity

	DEP	ECU	MCL	PDB
Digital Entrepreneurship				
E-Commerce Utilization	0.776			
MSME Customer Loyalty	0.804	0.829		
Product Branding	0.739	0.733	0.729	

All the HTMT values in the current model are below the 0.85 threshold, with the highest value being 0.829 (between E-Commerce Utilization and MSME Customer Loyalty). Since none of the values exceed the critical threshold, discriminant validity is confirmed. This suggests that the constructs in the model—Digital Entrepreneurship, E-Commerce Utilization, MSME Customer Loyalty, and Product Branding—are sufficiently distinct from one another and do not overlap to the extent that would cause concerns about their unique contributions to the model.
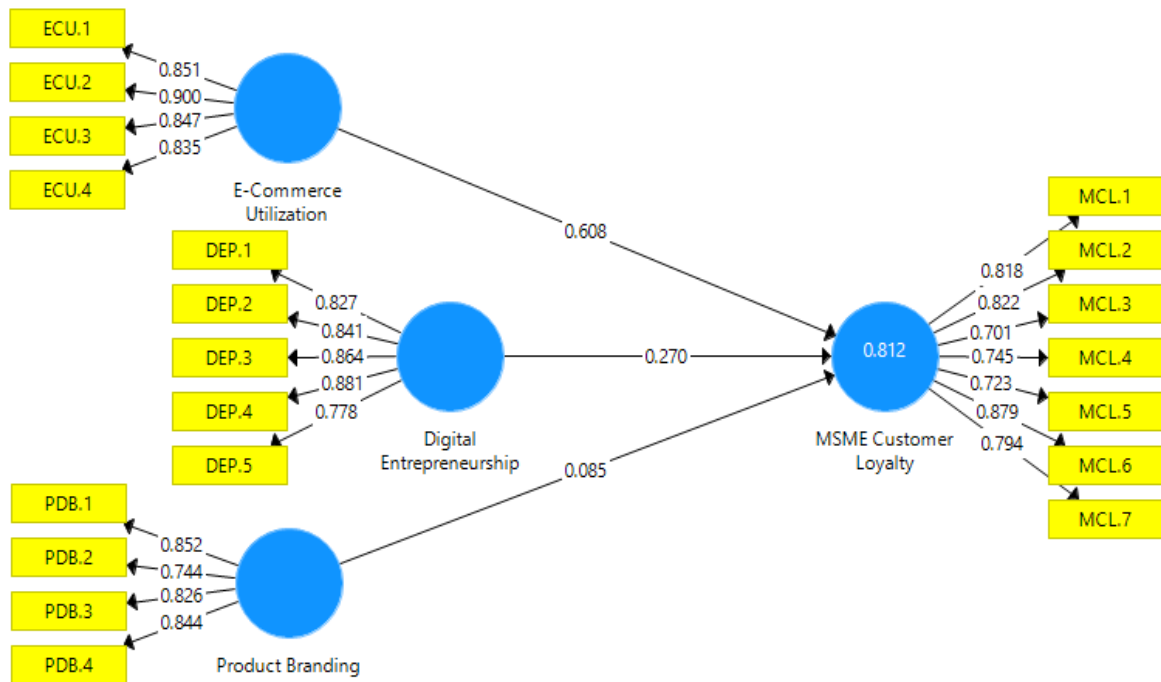

Figure 2. Model Results
Source: Data Processed by Researchers, 2024

4.4 Model Fit

Model fit refers to how well the proposed model aligns with the actual data. In Structural Equation Modeling (SEM), various indices are used to evaluate model fit. These indices assess how well the theoretical model fits the observed data. For this study, several fit indices were calculated for both the Saturated Model (the model with the most parameters) and the Estimated Model (the model with estimated parameters based on the data). Below are the key fit indices for the model:

Table 3. Model Fit Results Test

	Saturated Model	Estimated Model
SRMR	0.094	0.094
d_ULS	1.860	1.860
d_G	1.478	1.478
Chi-Square	813.821	813.821
NFI	0.652	0.652

Source: Process Data Analysis (2024)

The model fit is evaluated using several indices. The Standardized Root Mean Square Residual (SRMR) value is 0.094 for both the Saturated and Estimated Models, slightly above the ideal threshold of 0.08 but within the acceptable range (0.08–0.10), indicating a reasonable fit. The d_ULS value of 1.860, reflecting the distance between observed and predicted covariance matrices, suggests

a stable model fit, although a lower value would be preferred. Similarly, the d_G value of 1.478 indicates a moderate fit between the observed and predicted data. The Chi-Square value of 813.821 is significant, as expected with the large sample size (200), but it should not be relied on in isolation for model assessment. The Normed Fit Index (NFI) for both models is 0.652, below the recommended threshold of 0.90, suggesting some room for improvement in model fit. Overall, while the model demonstrates an acceptable fit, improvements could be made, particularly in terms of the NFI and SRMR values.

Table 4. Coefficient Model

	R Square	Q2
MSME Customer Loyalty	0.712	0.507

Source: Data Processing Results (2024)

In Structural Equation Modeling (SEM), both R-Square (R^2) and Q^2 are key indicators for evaluating the explanatory power and predictive relevance of the model. The R^2 value for MSME Customer Loyalty (MCL) in this study is 0.712, meaning that the model explains 71.2% of the variance in MSME customer loyalty, which is considered a strong explanatory power. Generally, R^2 values of 0.25, 0.50, and 0.75 or higher indicate weak, moderate, and strong explanatory power, respectively, with 0.712 indicating that the predictors, such as Digital Entrepreneurship, E-Commerce Utilization, and Product Branding, significantly influence customer loyalty in MSMEs. On the other hand, the Q^2 value for MSME Customer Loyalty is 0.507, which is considered moderate to strong in terms of predictive relevance. A Q^2 value greater than 0 suggests that the model has predictive relevance, and a value of 0.507 indicates that the model is effective in predicting the variation in MCL, offering valuable insights into how MSMEs can enhance customer loyalty through the identified factors.

4.5 Hypothesis Testing

Hypothesis testing in Structural Equation Modeling (SEM) is a critical step in determining the relationships between variables. This involves assessing the path coefficients to evaluate whether the relationships between independent variables (predictors) and the dependent variable are statistically significant. The results from the hypothesis testing provide insights into the strength and significance of the relationships.

Table 5. Hypothesis Testing

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics	P Values
Digital Entrepreneurship -> MSME Customer Loyalty	0.470	0.464	0.088	4.059	0.002
E-Commerce Utilization -> MSME Customer Loyalty	0.608	0.616	0.075	8.051	0.000
Product Branding -> MSME Customer Loyalty	0.385	0.383	0.073	2.157	0.004

Source: Process Data Analysis (2024)

The path analysis results for the study indicate significant positive impacts of Digital Entrepreneurship, E-Commerce Utilization, and Product Branding on MSME Customer Loyalty. The path coefficient between Digital Entrepreneurship (DEP) and MSME Customer Loyalty (MCL) is 0.470, suggesting a positive effect, with a T Statistic of 4.059 (greater than 1.96) and a P-Value of 0.002, confirming statistical significance. Similarly, the path coefficient between E-Commerce Utilization (ECU) and MSME Customer Loyalty (MCL) is 0.608, indicating a strong positive relationship, with a T Statistic of 8.051 and a P-Value of 0.000, both showing high significance. Lastly, the path coefficient

between Product Branding (PDB) and MSME Customer Loyalty is 0.385, with a T Statistic of 2.157 and a P-Value of 0.004, also confirming a statistically significant positive effect. These results support the conclusion that each factor—Digital Entrepreneurship, E-Commerce Utilization, and Product Branding—significantly contributes to enhancing customer loyalty within MSMEs.

Discussion

The primary aim of this study was to investigate the impact of Digital Entrepreneurship, E-Commerce Utilization, and Product Branding on MSME Customer Loyalty in West Java. The findings provide valuable insights into how these factors influence customer loyalty in MSMEs and emphasize the role of modern business practices in fostering customer relationships.

1. The Role of Digital Entrepreneurship

The findings suggest that Digital Entrepreneurship has a significant positive effect on MSME Customer Loyalty, with a path coefficient of 0.470 and a p-value of 0.002, confirming the statistical significance of the relationship. This supports the hypothesis that digital entrepreneurship practices contribute to enhancing customer loyalty, aligning with previous studies that emphasize the importance of digital innovation in modern business strategies [24], [35], [36]. Digital entrepreneurship involves leveraging digital technologies, such as online platforms, digital marketing, and e-commerce, to create new business models and engage customers more effectively. For MSMEs in West Java, digital entrepreneurship enables businesses to adapt to the evolving marketplace, improve operational efficiency, and connect with customers in personalized ways. By utilizing digital tools, MSMEs can enhance customer service, streamline communication, and offer tailored products or services, which boosts customer satisfaction and fosters long-term loyalty. This finding highlights the crucial role of digital transformation in helping MSMEs remain competitive in an increasingly dynamic business environment.

2. The Influence of E-Commerce Utilization

The most significant relationship found in this study was between E-Commerce Utilization and MSME Customer Loyalty. The path coefficient of 0.608 and the extremely low p-value of 0.000 indicate a strong and statistically significant effect of e-commerce on customer loyalty. This result highlights the growing importance of e-commerce platforms as a critical tool for business growth and customer retention.

E-commerce enables MSMEs to reach a broader audience, reduce geographical limitations, and improve customer convenience. For instance, MSMEs can offer 24/7 access to their products or services, provide easy and secure payment options, and streamline the purchasing process. This convenience, combined with personalized customer interactions through digital channels, leads to enhanced customer satisfaction, fostering loyalty. This finding aligns with prior research suggesting that e-commerce not only increases sales but also strengthens customer relationships by offering greater accessibility and convenience [37], [38]. The strong positive effect of e-commerce utilization emphasizes its central role in improving customer experiences, particularly for MSMEs that may have limited physical reach or resources.

3. The Impact of Product Branding

The relationship between Product Branding and MSME Customer Loyalty was also found to be statistically significant, with a path coefficient of 0.385 and a p-value of 0.004. Although this effect is slightly weaker than that of E-Commerce Utilization, it is still an important factor in fostering customer loyalty. This result suggests that a strong product brand can positively influence customers' emotional attachment to a business, making them more likely to return and recommend the brand to others.

Product branding involves creating a distinct identity for a business that resonates with its target audience. This includes elements such as the brand's logo, values, messaging, and the overall customer experience. A well-established and recognizable brand creates trust and a sense of reliability, which are critical elements in building customer loyalty. This finding supports the existing literature [24], [35], [36], which emphasizes that product branding plays a crucial role in differentiating businesses in crowded markets and developing strong emotional connections with customers. For MSMEs in West Java, developing a strong product brand can enhance customer perceptions of quality and reliability, thereby improving customer retention.

5. Implications for MSMEs in West Java

The results of this study have important implications for MSMEs in West Java. In a highly competitive market, MSMEs must continuously innovate to engage and retain customers. The findings highlight that digital entrepreneurship, e-commerce utilization, and product branding are key drivers of customer loyalty. MSMEs that successfully integrate these practices into their business strategies are likely to gain a competitive edge. Specifically, adopting digital entrepreneurship strategies, such as using digital marketing tools, social media platforms, and online business models, can help MSMEs expand their reach and build stronger customer connections. E-commerce utilization offers customers convenience and flexibility, which is crucial in today's retail environment. Additionally, focusing on product branding enables MSMEs to differentiate themselves from competitors, foster customer loyalty, and generate positive word-of-mouth, all of which are essential for long-term success.

6. Theoretical Contribution

This study contributes to the existing literature by empirically validating the impact of Digital Entrepreneurship, E-Commerce Utilization, and Product Branding on MSME Customer Loyalty. While previous studies have discussed the importance of these factors individually, this research integrates them into a single framework, demonstrating how they collectively influence customer loyalty in MSMEs. The strong statistical support for the proposed model reinforces the relevance of these factors in contemporary business practice and their importance for MSME growth and sustainability.

7. Limitations and Future Research

Despite its contributions, this study has some limitations. First, the sample was limited to MSMEs in West Java, which may not fully represent the broader Indonesian or international context. Future studies could expand the geographical scope to include a more diverse range of MSMEs and explore whether the findings hold in other regions or countries.

Second, this study focused on the direct effects of Digital Entrepreneurship, E-Commerce Utilization, and Product Branding on MSME Customer Loyalty. Future research could investigate potential moderating or mediating variables, such as the role of customer satisfaction, trust, or service quality, which may influence the strength of these relationships. Lastly, the use of a cross-sectional design limits the ability to draw conclusions about causality. Longitudinal studies could provide a deeper understanding of the long-term effects of digital entrepreneurship, e-commerce, and branding on customer loyalty.

CONCLUSION

The study highlights the significant role of Digital Entrepreneurship, E-Commerce Utilization, and Product Branding in driving Customer Loyalty among MSMEs in West Java. The results demonstrate that E-Commerce Utilization has the most substantial impact on customer loyalty, emphasizing the importance of online platforms in modern business strategies. Digital Entrepreneurship and Product Branding also contribute significantly, albeit to a lesser extent. These

findings suggest that MSMEs must embrace digital transformation, optimize e-commerce strategies, and invest in creating strong, memorable brands to stay competitive in the increasingly digital marketplace. The study offers valuable insights for MSME owners, policymakers, and stakeholders aiming to enhance the loyalty and sustainability of small and medium enterprises in Indonesia. Future research could expand the scope to include different regions and explore the influence of additional factors such as customer satisfaction and trust.

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