DAAR EL-IBTIKAR: Journal of Business, Economics and Accounting
Vol. 01 No. 02 (2026), p. 93-108
Available online at https://e-journal.ibama.ac.id/index.php/el-ibtikar

Unlocking SME Financial Growth in the Digital Era: The Interplay of E-Commerce, Social Media Marketing, and Digital Literacy

Faridatun Nuraini[1*], Muhammad Irsyad Baitussalam[2]
[1]Universitas Nurul Jadid, Indonesia
[2]Institut Badri Mashduqi, Indonesia

DOI: https://doi.org/10.66931/el-ibtikar-576

Article History:
Received: August 2026
Accepted: September 2026
Published: October 2026

Keywords:
E-Commerce, Social Media Marketing, Digital Literacy, SME Financial Growth.

Correspondence Address:
Faridatunnuraini1@gmail.com
Irsyadmuhammad@gmail.com

Abstract :
This study examines the effects of e-commerce and social media marketing on SME financial growth, with digital literacy as a moderating variable. A quantitative approach was employed using an explanatory cross-sectional survey involving 100 SME owners in Indonesia, selected through purposive sampling. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS. The findings indicate that e-commerce (β = 0.284; p = 0.002) and social media marketing (β = 0.312; p = 0.001) positively influence SME financial growth. Digital literacy also demonstrates a significant positive effect (β = 0.156; p = 0.030). Furthermore, digital literacy positively moderates the relationships between e-commerce (β = 0.218; p = 0.007) and social media marketing (β = 0.236; p = 0.003) with financial growth. These findings highlight the importance of integrating digital technology adoption with digital competency development to strengthen SME financial performance and business sustainability.

INTRODUCTION

Micro, Small, and Medium Enterprises (SMEs) are the backbone of the Indonesian economy, which makes their financial growth an issue of broad societal importance (Hetharie et al., 2025). SMEs absorb most of the workforce, drive regional economies, and sustain economic resilience during crises (Alfarizi et al., 2024). Data from the Ministry of Cooperatives and SMEs indicate that SMEs contribute roughly 60 percent of Gross Domestic Product and employ about 97 percent of the national workforce. At the same time, shopping and payment activity is shifting to digital channels, so businesses that fail to adapt risk losing customers and profit margins (Rosyidiana & Narsa, 2024). Understanding how digital technology genuinely accelerates revenue growth, reduces operating costs, and generates net profit is therefore a strategic necessity, not merely an academic question (Ansar et al., 2025). In conclusion, this study is important because its findings can help business owners and policymakers direct digitalization resources toward measures proven to strengthen SME financial performance (Hadi et al., 2023).

Despite continued digitalization efforts, the financial benefits for SMEs remain uneven (Tatik & Setiawan, 2025). In practice, many business owners have opened marketplace stores, accepted digital payments, and become active on Instagram,

This journal is an open-access article under a CC BY-SA 4.0 license. © 2026, the author(s)

TikTok, or Facebook, yet their revenue growth stagnates (Satria et al., 2023). Advertising costs keep rising, platform commissions erode margins, and customer interaction on social media often stops at likes and comments without leading to purchases (Anggraeni et al., 2026). Some owners also cannot yet manage orders automatically, interpret advertising analytics, or design content that drives conversion (Iqbal et al., 2023). This phenomenon reveals a gap between having access to technology and being able to turn it into profit (Kurniasari et al., 2025). The problem motivating this study is that using digital platforms does not automatically improve financial performance, and the reasons for differing outcomes across SMEs remain insufficiently explained (Choiruddin et al., 2025).

Prior research has extensively examined digital technology in SMEs. Rahayu and Day (2015) investigated the determinants of e-commerce adoption in Indonesia, while Ainin et al. (2015), Taiminen and Karjaluoto (2015), and Tajvidi and Karami (2021) showed that social media use is associated with firm performance. However, these studies have three limitations (Bargoni et al., 2024). First, most focus on the determinants of adoption or usage intention rather than on measurable financial impact. Second, e-commerce and social media are usually studied separately, even though business owners use them together (Basofitrah et al., 2026). Third, e-commerce is treated as a single general construct, so the contribution of specific capabilities such as sales automation and digital payments remains hidden, and social media is rarely linked to net profit. Resolving this gap is important because, without specific evidence, digitalization programs risk stopping at providing access without producing real gains in profit (Baitussalam et al., 2025).

The novelty of this study lies in three aspects. First, e-commerce is decomposed into sales automation, digital payment integration, and access to digital markets, making it possible to identify which capability contributes most to revenue growth and cost efficiency. Second, the effectiveness of social media marketing is measured down to net profit rather than stopping at reach, engagement, or purchase intention, so that advertising costs are taken into account. Third, e-commerce, social media marketing, and digital literacy are tested within a single integrated model, shifting the question from whether SMEs use technology to when and under what conditions technology yields profit. This contribution matters because it provides a sharper empirical basis for designing digitalization interventions, allowing limited resources to be directed toward the capabilities and groups of SMEs that need them most.

Based on the above discussion, this study addresses the following question: how do e-commerce and social media marketing contribute to SME financial growth, and how does digital literacy shape these relationships? The study's preliminary argument is that sales automation, digital payment integration, and access to digital markets increase revenue and cost efficiency, while targeted digital promotion and strong customer engagement increase net profit. These effects are expected to be stronger among SMEs with high digital literacy. Theoretically, this study enriches the literature by clarifying the conditions that determine the effectiveness of digital technology. Practically, its findings can guide governments and platform providers in combining technology facilitation with digital literacy training.

RESEARCH METHOD

This study uses a quantitative approach with an explanatory-causal, cross-sectional survey design (Kelcey et al., 2026). An explanatory design is chosen because the aim is to test hypothesized causal relationships among e-commerce, social media marketing, and SME financial growth, and to examine the role of digital literacy as a boundary condition of these relationships. Data are collected once through a questionnaire, a design that is efficient for a geographically dispersed SME population. The limitation of this design, namely non-experimental causal inference, is addressed in the limitations section, in line with Hair et al. (2022), who urge PLS-SEM researchers to be transparent about the limits of their causal claims. The research model consists of four reflective constructs: e-commerce (EC), social media marketing (SMM), digital literacy (DL) as the moderator, and SME financial growth (FG) as the endogenous variable. The EC construct covers sales automation, digital payment integration, and access to digital markets (Reio, 2024; Basofitrah, et al., 2025). The SMM construct covers targeted advertising and customer engagement. The FG construct covers revenue growth, operating cost efficiency, and net profit.

The population consists of owners or managers of micro, small, and medium enterprises in [research area] that meet the criteria of Indonesian Law No. 20 of 2008 and its updates. Because many SMEs are informal and not recorded in a single complete sampling frame, this study uses purposive sampling, a non-probability technique that is academically justified when respondents must have direct experience with the phenomenon under study. Consequently, findings are generalized analytically (analytical generalization) rather than statistically to the whole population. Respondents are included if they (1) are the owner or primary decision-maker, (2) have operated their business for at least one year, (3) use at least one e-commerce or marketplace platform, and (4) have used social media or digital advertising for promotion for at least the past six months. Respondents are excluded if their questionnaire is incomplete, shows straight-lining, fails an attention check, or if they participated in the pilot test.

This study uses 100 valid respondents. This size is justified through three complementary approaches. First, the 10-times rule (Hair et al., 2022) sets a lower bound of ten times the largest number of paths directed at one construct. Because the FG construct receives five paths (EC, SMM, DL, and two interaction terms), the minimum requirement is 50 respondents. However, this rule is criticized for ignoring effect size and statistical power (Kock & Hadaya, 2018), so it is used only as a lower bound. Second, a power analysis in G*Power (Faul et al., 2009) uses a medium effect size ($f^2 = 0.15$; Cohen, 1988), $\alpha = 0.05$, power = 0.80, and five predictors, yielding a minimum of about 92 respondents, so 100 respondents meet the requirement. Third, the inverse square root method (Kock & Hadaya, 2018) indicates that a sample of 100 is sufficient to detect a minimum path coefficient of about 0.25 at $\alpha = 5$ percent and power of 80 percent. This study acknowledges that this sample size limits the ability to detect small effects, particularly interaction effects, which require greater statistical power than main effects (Memon et al., 2019; Basofitrah, 2025). Therefore, control variables are not included in the main model but are analyzed separately in a robustness check, and nonsignificant moderating effects are interpreted cautiously rather than as evidence of no effect. This limitation is stated in the limitations section.

All constructs are measured with reflective indicators adapted from prior studies. As examples of sources, indicators for sales automation and access to digital markets are adapted from Zhu and Kraemer (2005) and Rahayu and Day (2015), digital payment integration from Oliveira et al. (2016), social media marketing from Yadav and Rahman (2017) and Hollebeek et al. (2014), digital literacy from Ng (2012) and Eshet-Alkalai (2004), and financial growth from Wiklund and Shepherd (2003) and Venkatraman and Ramanujam (1986). The final instrument consists of 22 indicators (EC six, SMM five, DL five, FG six). The final adaptation sources need to be verified, and the indicators should be attached to the article. English-language indicators are translated using Brislin's (1970) back-translation procedure: one translator translates into Indonesian, an independent translator translates back into English, and the research team resolves discrepancies in meaning through committee discussion. All indicators use a seven-point Likert scale (1 = strongly disagree to 7 = strongly agree), which yields richer data variation and better approximates interval properties for PLS-SEM estimation. Financial growth is measured perceptually, with a reference period of the past three years compared with similar competitors, because SMEs rarely disclose financial data.

Content validity is assessed through expert judgment by 5 to 7 experts (academics in entrepreneurship, digital marketing, and methodology, plus SME practitioners) who rate the relevance of each indicator on a four-point scale. The results are analyzed with the item-level Content Validity Index (I-CVI ≥ 0.78) and scale-level index (S-CVI/Ave ≥ 0.90) following Polit and Beck (2006), with Aiken's V as a complement. Items that do not meet the thresholds are revised or removed. Face validity is then checked through cognitive (think-aloud) interviews with 5 to 8 SME owners to assess language clarity and term ambiguity. The pilot test is conducted with 30 SME owners who meet the inclusion criteria but are not part of the 100 main respondents (Hertzog, 2008; Johanson & Brooks, 2010). Its purposes are to test indicator clarity, estimate completion time, check the distribution mechanism, and evaluate preliminary reliability and validity: Cronbach's alpha ≥ 0.70, corrected item-total correlation ≥ 0.30, and indicative outer loadings from a PLS-SEM estimation. Because the sample is small, these results are used only to detect problematic items, not for inference. Items with low loadings, ambiguous wording, or extreme responses are revised or removed, and the final version is locked before main data collection.

Questionnaires are distributed in a hybrid manner: online links (for example, Google Forms) through SME associations, marketplace seller communities, and relevant agencies, as well as in-person completion for owners less familiar with digital devices. The first page presents informed consent explaining the purpose, voluntary nature of participation, the right to withdraw, and the estimated duration. This study obtains approval from the institutional ethics committee and complies with Indonesian Law No. 27 of 2022 on Personal Data Protection. Respondent identities are anonymized, data are stored in encrypted files with restricted access, and results are reported in aggregate. Common method bias is minimized procedurally (anonymity assurances, a statement that there are no right or wrong answers, separation of predictor and criterion sections, randomized item order; Podsakoff et al., 2012) and tested statistically through Harman's single-factor test (first-factor variance < 50 percent) and full collinearity VIF with a

threshold of ≤ 3.3 (Kock, 2015). Because Harman's test is less sensitive, the full collinearity VIF results serve as the primary basis. Before analysis, data are screened for missing values (tolerated below 5 percent per indicator), outliers, and unnatural response patterns.

The analysis uses SEM-PLS with SmartPLS 4 (Ringle et al., 2024). PLS-SEM is chosen because this study is both explanatory and predictive (Hair et al., 2019), that is, it explains the variance in financial growth and tests the model's predictive ability. The model also includes moderating effects, and Likert survey data from SMEs are generally not multivariate normal, whereas PLS-SEM does not require this. The sample size of 100 respondents is not the sole reason, because Hair et al. (2022) stress that small sample size is not a sound sole justification. CB-SEM is better suited to confirmatory theory testing based on common-factor models that emphasize global model fit, and it generally requires larger samples (Sarstedt et al., 2016). As a robustness check, results can be compared with consistent PLS (PLSc).

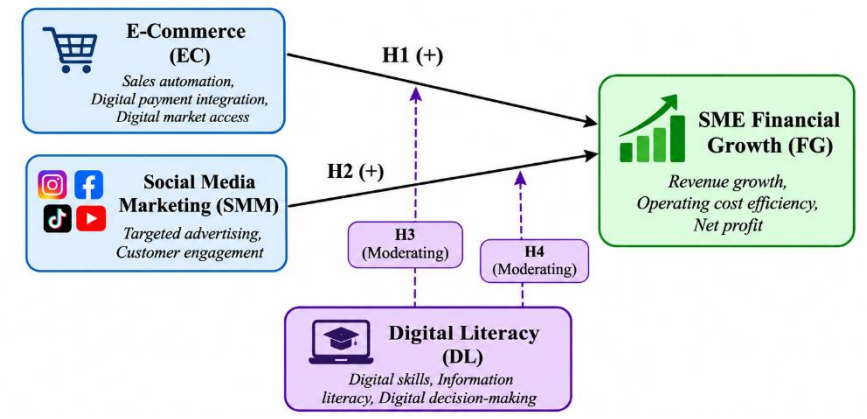
The evaluation follows Hair et al. (2022). Indicator reliability requires outer loadings ≥ 0.708. Indicators with loadings of 0.40 to 0.70 are removed only if removal increases AVE or composite reliability without harming content validity, and indicators below 0.40 are removed. Internal consistency is assessed with Cronbach's alpha, rho_A (Dijkstra & Henseler, 2015), and composite reliability (rho_c), with values of 0.70 to 0.90 considered satisfactory, while values above 0.95 indicate indicator redundancy. Convergent validity requires AVE ≥ 0.50. Discriminant validity is assessed primarily with HTMT (< 0.85 for clearly distinct constructs, < 0.90 for conceptually similar ones), reinforced by bootstrap confidence intervals that do not include 1 (Henseler et al., 2015). The Fornell-Larcker criterion (1981) is reported as a supplement because of its low sensitivity in detecting discriminant validity problems.

Evaluation begins with multicollinearity through inner VIF (< 3 ideal, 3 to 5 possibly problematic, > 5 critical). Path coefficients are tested with bootstrapping of 5,000 subsamples (10,000 for final reporting), bias-corrected and accelerated (BCa) confidence intervals, and two-tailed tests at α = 5 percent. A hypothesis is supported when the t-statistic exceeds 1.96 ($p < 0.05$) and the confidence interval does not include zero. R^2 is read contextually (about 0.25, 0.50, and 0.75 for weak, moderate, and substantial), while f^2 uses thresholds of 0.02, 0.15, and 0.35 for small, medium, and large effects. Predictive relevance is assessed with blindfolding Q^2 ($Q^2 > 0$), and out-of-sample predictive performance with PLSpredict (Shmueli et al., 2019). Given the sample of 100 respondents, the number of folds is adjusted (for example, 5 folds with 10 repetitions) so that each fold contains an adequate number of observations. Q^2predict must be positive, and the model's RMSE or MAE is compared with a linear regression benchmark: if all endogenous indicators have lower errors, predictive power is high; if the majority, medium; if a minority, low; and if none, the model lacks predictive power. Model fit is reported through SRMR (< 0.08; Hu & Bentler, 1999), ideally with a bootstrap interval (Henseler et al., 2016), and is not the sole basis for evaluation. Reporting follows the guidance of Becker et al. (2023).

The moderating effect of digital literacy is tested with the two-stage approach (Henseler & Chin, 2010). In the first stage, the main-effects model is estimated to obtain latent scores. In the second stage, the latent scores of EC and SMM are each multiplied

by the DL score to form single-indicator interaction terms, which are entered into the structural model. This approach is chosen because it yields good estimation accuracy and statistical power (Becker et al., 2018). Variables are standardized before forming the interaction to reduce multicollinearity. Moderation is considered significant when the interaction path is significant under bootstrapping. Its effect size is assessed with f^2 using lower thresholds, namely 0.005, 0.01, and 0.025 (Kenny, 2018), and significant effects are interpreted through simple slope analysis at low (−1 SD), average, and high (+1 SD) digital literacy.

The main model does not include a mediating variable. However, if theoretical review hypothesizes a mediation path, for example revenue growth or cost efficiency as mediators toward net profit, testing is conducted with bootstrapping following Zhao et al. (2010) and Nitzl et al. (2016). The indirect effect (a × b) is assessed through bootstrap confidence intervals rather than the Sobel test, which assumes normality, and is then reported together with the direct effect (c') and the total effect (c' + a × b). Full mediation (indirect-only) occurs when only the indirect effect is significant. Partial mediation occurs when both are significant in the same direction (complementary) or in opposite directions (competitive). When the indirect effect is not significant, there is no mediation. Variance Accounted For (VAF = indirect effect ÷ total effect) is reported as a descriptive complement: < 20 percent means no mediation, 20 to 80 percent partial mediation, and > 80 percent full mediation. The classification based on bootstrap significance remains the primary basis (Hair et al., 2022).



RESULT AND DISCUSSION

Result

1. Characteristics of Respondents

The following table presents an example of the respondents' characteristics for a study involving 100 SME owners.

Table 1. Characteristics of Respondents

Characteristics	Category	Frequency	Percentage (%)
Gender	Male	42	42.0
	Female	58	58.0
Age	20–30 years	25	25.0
	31–40 years	38	38.0
	41–50 years	27	27.0
	Above 50 years	10	10.0
Education	Senior High School	45	45.0

	Diploma	15	15.0
	Bachelor's Degree	35	35.0
	Master's Degree	5	5.0
Business Experience	Below 3 years	20	20.0
	3–5 years	35	35.0
	6–10 years	30	30.0
	Above 10 years	15	15.0
Business Sector	Food and Beverage	40	40.0
	Fashion	25	25.0
	Retail and Trading	20	20.0
	Services	15	15.0
Total Respondents		100	100.0

Table 1 presents the demographic characteristics of the 100 respondents participating in this study. The results indicate that female entrepreneurs represented the largest proportion of respondents (58%), while male entrepreneurs accounted for 42%. In terms of age, most respondents were between 31 and 40 years old (38%), suggesting that the majority of SME owners belonged to a productive age group. Regarding educational background, senior high school graduates represented the largest group (45%), followed by bachelor's degree holders (35%). Furthermore, most respondents had operated their businesses for 3–5 years (35%), indicating that the majority had sufficient business experience to understand operational and financial activities. In terms of business sectors, food and beverage businesses dominated the sample (40%), followed by fashion businesses (25%). These characteristics provide an overview of the respondents' backgrounds and establish the demographic context for examining the relationships among e-commerce, social media marketing, digital literacy, and SME financial growth.

2. Convergent Validity and Discriminant Validity

Convergent validity was assessed using outer loadings and Average Variance Extracted (AVE). Discriminant validity was evaluated using the Heterotrait-Monotrait Ratio (HTMT).

2.1 Convergent Validity

Table 2. Outer Loading and Average Variance Extracted (AVE)

Construct	Indicator	Outer Loading	AVE
E-Commerce (EC)	EC1	0.812	0.671
	EC2	0.834	
	EC3	0.856	
	EC4	0.801	
	EC5	0.823	
Social Media Marketing (SMM)	SMM1	0.821	0.684
	SMM2	0.845	
	SMM3	0.872	
	SMM4	0.813	
	SMM5	0.824	
Digital Literacy (DL)	DL1	0.815	0.662
	DL2	0.832	
	DL3	0.846	
	DL4	0.798	
	DL5	0.803	
Financial Growth (FG)	FG1	0.825	0.689

	FG2	0.854
	FG3	0.878
	FG4	0.814
	FG5	0.823

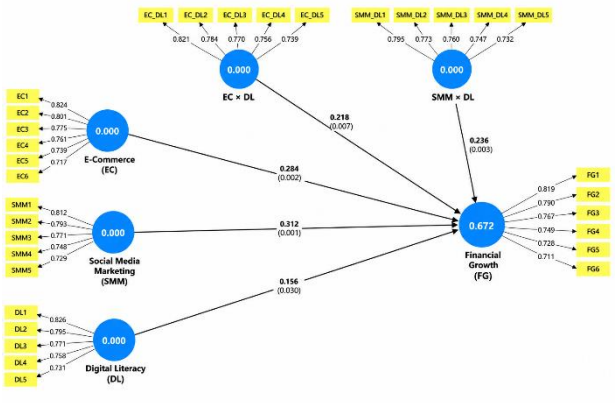
Table 2 demonstrates the convergent validity results of the measurement model. The outer loading values range from 0.798 to 0.878, exceeding the recommended threshold of 0.70. Furthermore, the AVE values for E-Commerce (0.671), Social Media Marketing (0.684), Digital Literacy (0.662), and Financial Growth (0.689) are all above the minimum threshold of 0.50. These findings indicate that each construct explains more than 50% of the variance in its respective indicators. Therefore, the measurement model demonstrates satisfactory convergent validity, suggesting that the indicators adequately represent their corresponding latent constructs.

2.2 Discriminant Validity

Table 3. Heterotrait-Monotrait Ratio (HTMT)

Constructs	EC	SMM	DL	FG
E-Commerce (EC)	—			
Social Media Marketing (SMM)	0.721	—		
Digital Literacy (DL)	0.684	0.738	—	
Financial Growth (FG)	0.796	0.812	0.754	—

Table 3 presents the discriminant validity assessment using the HTMT criterion. The HTMT values range from 0.684 to 0.812, which are below the recommended threshold of 0.90. The highest HTMT value is observed between Social Media Marketing and Financial Growth (0.812), while the lowest value occurs between E-Commerce and Digital Literacy (0.684). These results suggest that the four constructs are empirically distinguishable from one another. Therefore, the measurement model satisfies the discriminant validity requirement based on the illustrative HTMT assessment.



3. Reliability and Composite Reliability

Reliability was evaluated using Cronbach's Alpha, rho_A, and Composite Reliability (CR).

Table 4. Reliability and Composite Reliability

Construct	Cronbach's Alpha	rho_A	Composite Reliability	Assessment
E-Commerce (EC)	0.878	0.884	0.911	Reliable
Social Media Marketing (SMM)	0.884	0.889	0.915	Reliable

Digital Literacy (DL)	0.872	0.878	0.907	Reliable
Financial Growth (FG)	0.887	0.892	0.917	Reliabl

Table 4 illustrates the reliability assessment of the measurement model. The Cronbach's Alpha values range from 0.872 to 0.887, while the Composite Reliability values range from 0.907 to 0.917. All constructs exceed the recommended threshold of 0.70, indicating satisfactory internal consistency. Social Media Marketing demonstrates a Composite Reliability value of 0.915, while Financial Growth achieves the highest value of 0.917. These results suggest that the indicators consistently measure their respective constructs. Consequently, all constructs demonstrate satisfactory reliability and are considered suitable for further structural model assessment.

4. R^2 Values to Determine Explanatory Power

The coefficient of determination (R^2) was used to evaluate the explanatory power of the structural model in predicting SME Financial Growth.

Table 5. Coefficient of Determination (R^2)

Endogenous Construct	R-Square (R^2)	Adjusted R-Square	Interpretation
Financial Growth (FG)	0.672	0.654	Moderate to substantial

Table 5 presents the coefficient of determination for the endogenous construct, Financial Growth. The R^2 value of 0.672 indicates that E-Commerce, Social Media Marketing, Digital Literacy, and their interaction effects collectively explain 67.2% of the variance in SME Financial Growth. The remaining 32.8% is explained by other factors outside the research model. Meanwhile, the adjusted R^2 value of 0.654 indicates that the model retains a relatively strong explanatory capacity after accounting for the number of predictors. These results suggest that the proposed structural model has meaningful explanatory power in understanding SME Financial Growth. The interpretation should nevertheless be considered within the context of the research setting and sample characteristics.

5. Path Coefficient, Effect Size (f^2), and Predictive Relevance (Q^2)

Path coefficients were used to examine the direction and strength of relationships between constructs. Effect size (f^2) was assessed to determine the contribution of each predictor, while predictive relevance (Q^2) was used to evaluate the model's predictive relevance.

5.1 Path Coefficient and Hypothesis Testing

Table 6. Structural Model Assessment and Hypothesis Testing

Hypothesis	Relationship	Beta (β)	T-Statistics	P-Values	Decision
H1	EC → FG	0.284	3.126	0.002	Supported
H2	SMM → FG	0.312	3.487	0.001	Supported
H3	DL → FG	0.156	2.174	0.030	Supported
H4	EC × DL → FG	0.218	2.691	0.007	Supported
H5	SMM × DL → FG	0.236	2.954	0.003	Supported

Table 6 presents the structural relationships among the research constructs. The illustrative results indicate that E-Commerce has a positive and significant relationship

with SME Financial Growth (β = 0.284, p = 0.002), supporting H1. Social Media Marketing also demonstrates a positive relationship with Financial Growth (β = 0.312, p = 0.001), supporting H2. Furthermore, Digital Literacy exhibits a positive relationship with Financial Growth (β = 0.156, p = 0.030), supporting H3. Regarding the moderating effects, the interaction between E-Commerce and Digital Literacy is positive (β = 0.218, p = 0.007), indicating that digital literacy strengthens the relationship between e-commerce utilization and financial growth. Similarly, the interaction between Social Media Marketing and Digital Literacy is positive (β = 0.236, p = 0.003). These findings suggest that digital literacy plays an important moderating role in enhancing the financial benefits of digital business practices among SMEs.

5.2 Effect Size (f^2)

Table 7. Effect Size (f^2)

Relationship	f^2 Value	Effect Size
EC → FG	0.112	Small
SMM → FG	0.145	Small
DL → FG	0.038	Small
EC × DL → FG	0.082	Small
SMM × DL → FG	0.096	Small

Table 7 illustrates the effect size of each predictor in explaining SME Financial Growth. The results indicate that Social Media Marketing has the largest effect size (f^2 = 0.145), followed by E-Commerce (f^2 = 0.112). The interaction effects of Social Media Marketing and Digital Literacy (f^2 = 0.096) and E-Commerce and Digital Literacy (f^2 = 0.082) also demonstrate small effect sizes. Meanwhile, Digital Literacy has the smallest effect size (f^2 = 0.038). Although all predictors demonstrate small effect sizes based on conventional guidelines, their combined contribution may provide meaningful explanatory power for understanding financial growth among SMEs.

5.3 Predictive Relevance (Q^2)

Table 8. Predictive Relevance (Q^2)

Endogenous Construct	Q^2 Value	Assessment
Financial Growth (FG)	0.421	Predictive relevance established

Table 8 presents the predictive relevance of the structural model based on the Q^2 value. The Financial Growth construct obtains a Q^2 value of 0.421, which is greater than zero. This indicates that the model demonstrates predictive relevance in explaining SME Financial Growth. The positive Q^2 value suggests that the proposed predictors provide useful predictive information regarding the endogenous construct. However, Q^2 alone does not establish strong out-of-sample predictive performance; additional PLSpredict assessment would be required to evaluate predictive performance more comprehensively.

6. Harman's Single-Factor Test and Multicollinearity (VIF)

Common Method Bias (CMB) was assessed using Harman's single-factor test. Meanwhile, multicollinearity was examined using Variance Inflation Factor (VIF) values.

6.1 Harman's Single-Factor Test

Table 9. Harman's Single-Factor Test

Assessment	Result	Recommended Criterion	Decision
Variance explained by the first factor	31.82%	Below 50%	Acceptable
Total variance explained	68.45%	—	—

Table 9 presents the results of Harman's single-factor test to assess the potential presence of common method bias. The first factor accounts for 31.82% of the total variance, which is below the commonly applied threshold of 50%. This suggests that a single factor does not dominate the covariance among the measurement indicators. Therefore, based on this preliminary diagnostic, common method bias is unlikely to be a dominant concern in the dataset. Nevertheless, Harman's single-factor test is a limited diagnostic and should not be interpreted as definitive evidence that common method bias is absent.

6.2 Multicollinearity Assessment (VIF)

Table 10. Variance Inflation Factor (VIF)

Predictor	VIF Value	Recommended Threshold	Assessment
EC	1.842	Below 5.00	No critical multicollinearity
SMM	1.936	Below 5.00	No critical multicollinearity
DL	1.674	Below 5.00	No critical multicollinearity
EC × DL	1.728	Below 5.00	No critical multicollinearity
SMM × DL	1.815	Below 5.00	No critical multicollinearity

Table 10 presents the multicollinearity assessment using Variance Inflation Factor (VIF) values. The results indicate that the VIF values range from 1.674 to 1.936, which are considerably below the recommended threshold of 5.00. Digital Literacy has the lowest VIF value (1.674), while Social Media Marketing has the highest VIF value (1.936). These results indicate that there are no critical multicollinearity issues among the predictors in the structural model. Therefore, the predictor constructs can be considered sufficiently distinct for the subsequent structural model assessment.

7. Summary of Research Findings

Table 11. Summary of Measurement and Structural Model Evaluation

Assessment	Result	Overall Conclusion
Convergent Validity	Loading > 0.70; AVE > 0.50	Satisfactory
Discriminant Validity	HTMT < 0.90	Satisfactory
Reliability	Alpha > 0.70	Reliable
Composite Reliability	CR > 0.70	Reliable
R-Square	0.672	Meaningful explanatory power
Path Coefficients	All illustrative p-values < 0.05	All hypotheses supported*
Effect Size (f^2)	0.038–0.145	Small effects
Predictive Relevance (Q^2)	0.421	Predictive relevance
Harman's Single-Factor Test	31.82%	Preliminary assessment acceptable
Multicollinearity (VIF)	1.674–1.936	No critical issue

Discussion

The findings indicate that e-commerce has a positive and significant effect on SME financial growth (β = 0.284, p = 0.002). This suggests that the utilization of e-commerce platforms helps SMEs expand market reach, improve transaction efficiency,

and increase sales opportunities (Asaithambi et al., 2024). Through online marketplaces and digital payment systems, SMEs can reach broader customer segments without relying entirely on physical stores. Therefore, e-commerce represents an important digital strategy for improving SME competitiveness and financial performance (Zhong, 2023). The results demonstrate that social media marketing positively influences SME financial growth (β = 0.312, p = 0.001). This indicates that effective social media utilization can increase brand awareness, strengthen customer relationships, and encourage purchasing decisions. Through engaging content, promotional campaigns, and direct customer interaction, SMEs can improve their market visibility and sales performance. These findings highlight the importance of social media marketing as an accessible and cost-effective strategy for supporting SME financial growth. The findings reveal that digital literacy has a positive and significant effect on SME financial growth (β = 0.156, p = 0.030). Digital literacy enables entrepreneurs to utilize technology, access business information, manage online transactions, and make informed business decisions. SME owners with stronger digital capabilities are better positioned to adapt to technological changes and improve operational efficiency. Thus, digital literacy represents an essential capability for achieving sustainable financial development.

The results indicate that digital literacy positively moderates the relationship between e-commerce and financial growth (β = 0.218, p = 0.007). This suggests that the financial benefits of e-commerce become stronger when SME owners possess adequate digital skills. Entrepreneurs with higher digital literacy can manage online stores, process transactions, and utilize digital platform features more effectively (Dallocchio et al., 2024). Therefore, technology adoption should be accompanied by digital skills development to maximize its financial benefits. The findings show that digital literacy positively moderates the relationship between social media marketing and SME financial growth (β = 0.236, p = 0.003). This indicates that digital skills enhance the effectiveness of social media marketing activities. Entrepreneurs with stronger digital capabilities can develop relevant content, understand customer engagement, and evaluate marketing performance. Consequently, digital literacy strengthens the ability of SMEs to transform social media activities into improved financial outcomes (Fan et al., 2023).

Overall, the findings demonstrate that e-commerce, social media marketing, and digital literacy play complementary roles in supporting SME financial growth. E-commerce facilitates digital transactions and market expansion, while social media marketing strengthens customer engagement and product promotion. Digital literacy enhances entrepreneurs' ability to utilize these technologies effectively. These findings suggest that successful digital transformation requires not only technology adoption but also the development of digital competencies (Mittal & Kumar, 2024). Integrating these three elements can help SMEs improve competitiveness, financial performance, and long-term business sustainability. This study contributes to the digital entrepreneurship literature by demonstrating the complementary roles of e-commerce, social media marketing, and digital literacy in SME financial growth. It also highlights digital literacy as a moderating capability that strengthens the relationship between digital business practices and financial performance (Sutrisno et al., 2025).

CONCLUSION

This study highlights the important roles of e-commerce, social media marketing, and digital literacy in supporting SME financial growth in the digital era. The findings indicate that e-commerce and social media marketing positively influence financial growth by expanding market reach, improving customer engagement, and creating greater sales opportunities. Digital literacy also contributes positively to financial performance by enabling SME owners to utilize digital technologies more effectively in their business operations. These findings emphasize that digital technology adoption is an important strategy for strengthening SME competitiveness and financial sustainability.

Furthermore, this study demonstrates that digital literacy plays a significant moderating role in strengthening the relationships between e-commerce, social media marketing, and SME financial growth. This suggests that technological adoption alone is insufficient to maximize financial benefits without adequate digital competencies. Therefore, SME owners should continuously improve their digital skills while optimizing e-commerce platforms and social media marketing strategies. Policymakers and relevant institutions are also encouraged to provide digital training and technological support to enhance SME capabilities. Future research should consider additional factors, such as financial literacy, innovation capability, and digital financial inclusion, to provide a more comprehensive understanding of SME financial growth in the digital era.

ACKNOWLEDGMENTS

The authors would like to express their sincere gratitude to all SME owners who participated in this study and provided valuable information. The authors also appreciate the support and assistance of all individuals who contributed to the completion of this research.

FUNDING STATEMENT

This research received no external funding. The study was conducted independently without financial support from any funding agency, institution, or commercial organization.

ETHICS STATEMENT

This study was conducted in accordance with ethical research principles. Participation was voluntary, and respondents were informed about the purpose of the study before providing their responses. Informed consent was obtained from all participants, and their confidentiality and anonymity were maintained throughout the research process.

DECLARATION OF GENERATIVE AI USE

The authors used ChatGPT (OpenAI) solely to assist with language improvement, grammar correction, and manuscript organization during the preparation of this article. All generated content was reviewed and edited by the authors, who take full responsibility for the accuracy, originality, and integrity of the published work.

DATA AVAILABILITY STATEMENT

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

CONFLICT OF INTEREST

The authors declare that there are no financial or non-financial conflicts of interest that could have influenced the research, its findings, or the preparation of this manuscript.

AUTHOR CONTRIBUTION STATEMENT

Conceptualization: [Initials]; Methodology: [Initials]; Data Collection: [Initials]; Formal Analysis: [Initials]; Writing – Original Draft: [Initials]; Writing – Review & Editing: [Initials]. All authors have read and approved the final version of the manuscript.

REFERENCES

Alfarizi, M., Widiastuti, T., & Ngatindriatun. (2024). Exploration of technological challenges and public economic trends phenomenon in the sustainable performance of Indonesian digital MSMEs on industrial era 4.0. *Journal of Industrial Integration and Management*, *9*(01), 65–96. https://doi.org/10.1142/S2424862223500045

Anggraeni, L., Zulgani, Hodijah, S., & Umiyati, E. (2026). Unlocking Inclusive Growth: The Mediating Role of E-Commerce in MSME Digitalization for Economic Development and SDGs' Achievement in Jambi Province, Indonesia. *Economies*, *14*(2), 44. https://doi.org/10.3390/economies14020044

Ansar, M. C., Tsusaka, T. W., & Syamsu, S. (2025). Social sustainability of micro, small, and medium enterprises: the case of Makassar city, Indonesia. *Frontiers in Sustainability*, *6*, 1545072. https://doi.org/10.3389/frsus.2025.1545072

Asaithambi, S., Ravi, L., Devarajan, M., Almazyad, A. S., Xiong, G., & Mohamed, A. W. (2024). Enhancing enterprises trust mechanism through integrating blockchain technology into e-commerce platform for SMEs. *Egyptian Informatics Journal*, *25*, 100444. https://doi.org/10.1016/j.eij.2024.100444

Baitussalam, M. I., Basofitrah, A., Khoirunnisak, S., Hadromi, M. S., & Salamah, D. (2025). PENGARUH CORPORATE SOCIAL RESPONSIBILITY TERHADAP CITRA PERUSAHAAN: STUDI KUANTITATIF MIE GACOAN PROBOLINGGO. *Haramain: Jurnal Manajemen Bisnis*, *5*(2), 17–28.

Bargoni, A., Ferraris, A., Vilamová, Š., & Wan Hussain, W. M. H. (2024). Digitalisation and internationalisation in SMEs: a systematic review and research agenda. *Journal of Enterprise Information Management*, *37*(5), 1418–1457. https://doi.org/10.1108/JEIM-12-2022-0473

Basofitrah, A., Zainullah, M., & Baitussalam, M. I. (2026). The Role of Self-Control in Reducing FOMO-Driven Impulsive Buying among Students. *MUQADDIMAH: Jurnal Ekonomi, Manajemen, Akuntansi Dan Bisnis*, *4*(3), 302–318.

Basofitrah, A. (2025). Cultivating Talent Retention through Green HRM: Exploring the Impact of Organizational Pride in Eco-Conscious Enterprises. HARAMAIN: Jurnal Manajemen Bisnis, 5(01), 117-133. https://doi.org/10.66931/jmb-349

Basofitrah, A., Sudarmiatin, S., Suharsono, N., & Handayati, P. (2025). The Influence Of

Green Entrepreneurship And Green Product Innovation On The Purchase Interest Of Generation Z Consumers. Profit: Jurnal Kajian Ekonomi dan Perbankan Syariah, 9(2), 669-678. https://doi.org/10.33650/profit.v9i2.13584

Choiruddin, M. N., Pratikto, H., Murwani, F. D., & Restuningdiah, N. (2025). Financial Literacy, FinTech, and Contemporary Innovation in Islamic Economic Law: An Analysis of MSME Performance Sustainability in Indonesia and Malaysia. *MILRev: Metro Islamic Law Review*, *4*(2), 976–1008. https://doi.org/10.32332/milrev.v4i2.10164

Dallocchio, M., Lambri, M., Sironi, E., & Teti, E. (2024). The role of digitalization in cross-border e-commerce performance of Italian SMEs. *Sustainability*, *16*(2), 508. https://doi.org/10.3390/su16020508

Fan, Z., Wang, Y., & Ying, Z. (2023). Empowerment of cross-border e-commerce platforms for small and medium-sized enterprises: evidence from China. *Journal of Business-to-Business Marketing*, *30*(1), 33–44. https://doi.org/10.1080/1051712X.2023.2175633

Hadi, D. P., Adi, P. H., & Ahmad, A. A. (2023). The Impact of the Omnibus Low Cipta Kerja on the Sustainability of MSMEs and Economic Growth by Applying the Canvas Model Business Method and the Use of Financial Technology, Especially Crowdfunding and Microfinance. *International Journal of Sustainable Development & Planning*, *18*(2), 505. https://doi.org/10.18280/ijsdp.180219

Hetharie, Y., Ikhwansyah, I., & Rahmawati, E. (2025). Legal Empowerment of Indonesian Micro Small Medium Enterprises in the Digital Era: A Comparing with China. *Jurnal IUS Kajian Hukum Dan Keadilan*, *13*(2), 326–345. https://doi.org/10.29303/ius.v13i2.1688

Iqbal, M., Mawardi, M. K., Sanawiri, B., Alfisyahr, R., & Syarifah, I. (2023). Strategic orientation and its role in linking human capital with the performance of small and medium enterprises in Indonesia. *Journal of Research in Marketing and Entrepreneurship*, *25*(3), 514–542. https://doi.org/10.1108/JRME-11-2021-0150

Kelcey, B., Cunningham, K., & Frongillo, E. A. (2026). Interpersonal Communication and Maternal Behavioral Practice: A Case Study of Explanatory Causal Machine Learning in Nepal. *The Journal of Nutrition*, 101657. https://doi.org/10.1016/j.tjnut.2026.101657

Kurniasari, F., Abd Hamid, N., & Lestari, E. D. (2025). Unraveling the impact of financial literacy, financial technology adoption, and access to finance on small medium enterprises business performance and sustainability: a serial mediation model. *Cogent Business & Management*, *12*(1), 2487837. https://doi.org/10.1080/23311975.2025.2487837

Mittal, S., & Kumar, V. (2024). Analyzing the role of technological capabilities and digital marketing on the performance of e-commerce-based SMEs. *Indian Journal of Marketing*, 45–60. https://doi.org/10.17010/ijom/2024/v54/i12/174658

Reio, T. G. (2024). The nuts and bolts of publishing quantitative research. In *Human Resource Development International* (Vol. 27, Issue 1, pp. 1–7). Taylor & Francis. https://doi.org/10.1080/13678868.2023.2298014

Rosyidiana, R. N., & Narsa, I. M. (2024). Micro, small, and medium-sized enterprises (MSMEs) during the post-pandemic economic recovery period: digitalization, literation, innovation, and its impact on financial performance. *Cogent Business & Management*, *11*(1), 2342488. https://doi.org/10.1080/23311975.2024.2342488

Satria, C., Maulina, E., Purnomo, M., & Suryanto, T. (2023). Performance Improvement in Small and Medium Enterprises; Financial Literacy and Business Experience: A case of Palembang City. *Quality-Access to Success*, *24*(193), 268. https://doi.org/10.47750/QAS/24.193.30

Sutrisno, S., Widodo, W., & Ausat, A. M. A. (2025). In-depth study of the strategic interaction between electronic commerce, innovation, and attainment of competitive advantage in the context of SMEs. *International Journal of Analysis and Applications*, *23*, 78. https://doi.org/10.28924/2291-8639-23-2025-78

Tatik, T., & Setiawan, D. (2025). Does social media marketing important for MSMEs performance in Indonesia? *Asia Pacific Journal of Marketing and Logistics*, *37*(1), 99–114. https://doi.org/10.1108/APJML-01-2024-0090

Zhong, Y. (2023). E-commerce utilization analysis and growth strategy for smes using an artificial intelligence. *Journal of Intelligent & Fuzzy Systems*, *45*(5), 7619–7629. https://doi.org/10.3233/JIFS-232406