Volume 7 Issue 1 (2026) Pages 127 - 147
Economics and Digital Business Review
e-ISSN: 2774-2563

Sustainable Digital Marketing and Service Quality as Drivers of Customer Loyalty: The Mediating Role of Trust in MSMEs

Flowry Charles Pangkey[1], Lilly Linne Kainde[2]
[1,2] Fakultas Ekonomi dan Bisnis, Universitas Klabat

Abstract

This study examines the influence of Sustainable Digital Marketing (SDM) and Service Quality on customer trust and loyalty in Micro, Small, and Medium Enterprises (MSMEs), focusing on youth-based community markets in North Sulawesi. Using a descriptive–correlational design, data were collected from 325 respondents and analyzed through Partial Least Squares Structural Equation Modeling (PLS-SEM) to evaluate both direct and indirect relationships. The results indicate that SDM has a significant direct effect on customer loyalty but does not affect trust, suggesting that sustainability-oriented digital communication strengthens loyalty through value alignment rather than relational confidence. Service Quality strongly enhances trust but does not directly influence loyalty, indicating that trust functions as a key psychological bridge in forming long-term customer commitment.

Mediation analysis confirms that trust significantly mediates the relationship between Service Quality and Customer Loyalty, while the relationship between SDM and loyalty is not mediated by trust. Overall, the study extends Commitment–Trust Theory within the MSME context and highlights that customer loyalty can emerge through two pathways: directly through sustainable digital practices and indirectly through trust developed from consistent service delivery. These findings emphasize the importance of integrating ethical digital communication with reliable and empathetic service performance to strengthen long-term loyalty among young consumers.

Keywords: sustainable digital marketing; service quality; trust; customer loyalty; MSMEs.

Corresponding author :
Email Address : linne@unklab.ac.id

INTRODUCTION

In an era characterized by information overload and hyper-connectivity, sustainability principles — including transparency, social responsibility, environmental stewardship, consumer education, and stakeholder engagement — have become central in shaping how value is created and communicated to consumers (Odoom et al., 2025; White et al., 2025). These principles no longer function merely as ethical complements but as strategic mechanisms influencing trust formation, reputation development, and shared value creation (Rastogi, 2024; Risdwiyanto et al., 2023). Within the Sustainable Development Goals

DOI : 10.37531/ecotal.v7i1.3638

(SDGs) framework, sustainability has shifted from a voluntary initiative to a competitive necessity, even for Micro, Small, and Medium Enterprises (MSMEs) operating under resource constraints (White et al., 2025).

The economic relevance of MSMEs is particularly evident in developing countries. In Indonesia, MSMEs account for more than 97% of total employment and contribute approximately 60% of national GDP (BPS, 2023). Despite their significant economic role, MSMEs face structural limitations in capital, technology, and marketing capabilities, which restrict their ability to maintain sustainable competitive positioning. This creates a paradox: economically dominant yet strategically vulnerable. The challenge becomes more complex in digital environments where marketing communication is abundant but consumer trust is increasingly fragile.

Digital transformation compels organizations to redesign marketing paradigms toward adaptive and creative value delivery. Traditional promotional approaches are progressively ineffective in influencing modern purchasing decisions. However, excessive reliance on aggressive digital promotion may undermine sustainability values and erode consumer confidence (Khalufi et al., 2025). Contemporary consumers increasingly demand ethical transparency, environmentally responsible products, and socially meaningful corporate behavior (Odoom et al., 2025). Consequently, Sustainable Digital Marketing (SDM) emerges not merely as promotional activity but as an ethical relational communication mechanism that constructs long-term engagement (Sharabati et al., 2024; Rastogi, 2024).

At the same time, service quality remains a fundamental relational driver. Classic SERVQUAL dimensions — reliability, responsiveness, assurance, empathy, and tangibility — have consistently been linked to satisfaction, trust, and loyalty (Madueke & Eyupoglu, 2024; Sharma et al., 2024). With the expansion of digital services, the model has evolved into E-SERVQUAL, incorporating security, usability, and interactivity (Zuo et al., 2022). These developments indicate that service quality functions not only as operational performance but as a trust-building signal.

Despite the growing body of research on sustainability and loyalty, several gaps remain. First, most sustainability research focuses on large corporations, whereas empirical studies examining sustainable digital marketing within MSMEs remain limited (Risdwiyanto et al., 2023; Rastogi, 2024). Existing studies predominantly investigate sectors such as banking, hospitality, and e-commerce (Sharabati et al., 2024), leaving community-based MSMEs underexplored (Fatimah & Tyas, 2022; Sagala & Őri, 2024).

Second, the role of trust remains theoretically inconsistent. Some studies treat trust as a direct predictor of loyalty (Mujianto et al., 2023), while others position it as a mediator between relational drivers and loyalty outcomes (Ashiq & Hussain, 2024; Yesitadewi & Widodo, 2024; Khalufi et al., 2025). This inconsistency suggests the need for a unified relational framework.

Third, integration of sustainable digital marketing and service quality through trust mechanisms is still limited, mainly examined in tourism and healthcare sectors (Han et al., 2021; Shie et al., 2022), rather than in MSME community-based markets.

To address these gaps, this study extends the Commitment–Trust Theory (Morgan & Hunt, 1994). The theory posits that trust and commitment act as central mediating constructs enabling long-term relational exchange. Recent studies confirm that trust plays a decisive role in digital relationship formation and sustainability-oriented markets (Rajagukguk, 2023; Madueke & Eyupoglu, 2024). Unlike previous research emphasizing satisfaction or

DOI : 10.37531/ecotal.v7i1.3638

reputation, this study positions trust as the primary psychological mechanism linking SDM and service quality to loyalty within MSMEs.

Following the COVID-19 pandemic, MSMEs accelerated digital adoption but often prioritized short-term performance over sustainability considerations such as transparency and environmentally responsible production (Bima & Agus, 2025; Zhang et al., 2025). This study focuses on youth-driven community markets in North Sulawesi, where shared values and social identity influence sustainable consumption behavior (Karimi et al., 2022; Orellano et al., 2022). Interestingly, loyalty remains relatively weak despite consistent demand, indicating that satisfaction alone is insufficient to sustain relational commitment.

Accordingly, this study investigates the effects of Sustainable Digital Marketing and service quality on customer trust and loyalty and examines the mediating role of trust in MSMEs. The research contributes theoretically by refining Commitment–Trust Theory in small-business contexts and practically by providing strategic guidance for sustainability-oriented digital transformation

Sustainable Digital Marketing (SDM) reflects the integration of ethical communication, transparency, and sustainability values into digital interactions between firms and consumers. Sustainability-oriented digital practices signal organizational integrity and benevolence, two primary antecedents of trust formation in relational exchange theory. When firms disclose production processes, environmental responsibility, and stakeholder involvement, consumers perceive reduced opportunism and higher credibility (Sharabati et al., 2024; Yesitadewi & Widodo, 2024). In the MSME context, where formal branding is limited, such signaling mechanisms become especially important in mitigating uncertainty and strengthening relational confidence. Therefore, SDM should function as a cognitive assurance mechanism that enhances trust.

H1: Sustainable Digital Marketing positively influences customer trust in MSMEs.

Beyond trust formation, sustainability communication can directly foster loyalty through value congruence. Consumers increasingly develop affective attachment toward firms that reflect their ethical and environmental beliefs. This shared-value alignment creates identification with the firm, which encourages repeat patronage and advocacy independent of transactional evaluation (Rastogi, 2024; Odoom et al., 2025). For MSMEs competing through relational proximity rather than scale advantage, sustainability narratives may serve as differentiation mechanisms that directly generate loyalty.

H2: Sustainable Digital Marketing positively influences customer loyalty in MSMEs.

Service quality represents competence-based trust formation. According to SERVQUAL theory, reliability, responsiveness, assurance, and empathy function as performance signals demonstrating capability and dependability (Parasuraman et al., 1988). Consistent fulfillment of service promises reduces perceived risk and strengthens confidence in future interactions (Madueke & Eyupoglu, 2024). This mechanism is particularly critical in MSMEs where customers rely more heavily on interpersonal interaction than institutional guarantees.

H3: Service quality positively influences customer trust in MSMEs.

Service quality may also directly stimulate loyalty through experiential satisfaction and perceived relational care. Personalized service and responsive interaction enhance emotional attachment and switching resistance, encouraging repeated transactions and

DOI : 10.37531/ecotal.v7i1.3638

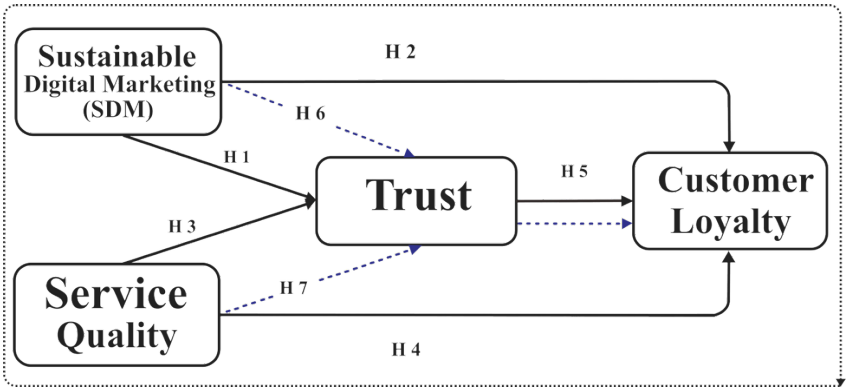
recommendations (Zuo et al., 2022; Sharma et al., 2024). Thus, service performance is expected to produce behavioral loyalty beyond cognitive trust mechanisms.
H4: Service quality positively influences customer loyalty in MSMEs.

Within Commitment–Trust Theory, trust functions as the core mechanism transforming relational exchange into long-term commitment. Trust lowers uncertainty and increases willingness to maintain relationships even when alternatives exist (Morgan & Hunt, 1994; Rajagukguk, 2023). Therefore, customers who perceive reliability and integrity in MSMEs are more likely to maintain ongoing patronage.
H5: Customer trust positively influences customer loyalty in MSMEs.

Trust also acts as a mediating psychological process linking relational signals to loyalty outcomes. Ethical communication (SDM) and competence demonstration (service quality) first shape consumer confidence before commitment emerges (Ashiq & Hussain, 2024; Khalufi et al., 2025). In relational markets dominated by social proximity, such as community-based MSMEs, loyalty is unlikely to form without prior trust development.
H6: Customer trust mediates the relationship between Sustainable Digital Marketing and customer loyalty in MSMEs.
H7: Customer trust mediates the relationship between service quality and customer loyalty in MSMEs.

The conceptual framework that illustrates the hypotheses developed in this study is presented in **Figure 1**.

Figure 1. *Conceptual Framework*



RESEARCH DESIGN AND METHODOLOGY

This study employed a descriptive correlational quantitative design because the main objective was to identify and measure the strength and direction of relationships among Sustainable Digital Marketing (SDM), service quality, trust, and customer loyalty within MSMEs, rather than to test causality or compare group differences. This design was considered most appropriate because it allows for an empirical examination of associations between variables as they exist naturally, without manipulation or experimental control. Unlike explanatory or causal-comparative designs that aim to determine cause-and-effect relationships, the descriptive correlational approach focuses on describing how strongly and in what way variables are interrelated in a real-world context. Furthermore, a descriptive correlational design provides flexibility to generalize findings across similar MSME contexts while maintaining ethical feasibility and practical relevance in field data

DOI : 10.37531/ecotal.v7i1.3638

collection. Therefore, this approach aligns with the study's intent to present a statistical description of how SDM and service quality relate to consumer trust and loyalty among youth-based community MSMEs in North Sulawesi. Respondents were chosen based on the requirement of being young individuals from religious groups, specifically GMIM (Gereja Masehi Injili di Minahasa). To qualify for participation, individuals needed to have finished the catechism process, remain unmarried, and be under 30 years old. These criteria were chosen to reflect the target demographic of active church-based youth who frequently engage with MSME products in their communities. To reach this group effectively, purposive sampling ensured alignment with the research scope, while the snowball method allowed church youth elders to recommend additional participants who met the requirements. This approach provided a more comprehensive and contextually relevant sample base for the study.

Participants in this study consisted of young members of religious communities, particularly of GMIM (Gereja Masehi Injili di Minahasa). For this study, respondents were required to have completed the catechism process in the church, be unmarried, and be 30 years old or younger. This demographic was selected because they are predominantly active church-based youth who engage the most with MSME (Micro, Small, and Medium Enterprises) products in their local communities. This demographic was primarily accessed through purposive sampling to meet the defined scope of the study, and additionally, church youth elders were able to recommend other suitable participants through the snowball sampling technique. In total, 325 respondents took part in this study. This sample size was determined using the "5 times rule" proposed by Hair et al. (2017) for PLS-SEM analyses, where the minimum sample size should be ten times the number of measurement indicators or paths directed to any latent construct. Given that the research instrument comprised 65 indicators, the targeted sample size was 325 in order to attain sufficient statistical power, reliability, and stable estimation of parameters. The number of responses obtained and used clearly satisfied this requirement, additionally strengthening the validity of the structural model and the overall research. The study examined only GMIM youth communities in North Sulawesi, which limits the ability to generalize the findings to other populations that are outside this religious and socio-cultural context. Trust behaviors and patterns of digital engagement among GMIM youth may be different from youth in other denominations or other geographical areas. Hence, the findings are best understood in the context of the faith-based community MSMEs, and subsequent studies are warranted to validate the model across other and varied cultural and demographic backgrounds.

The questionnaire consisted of structured items developed from validated measurement scales used in previous studies. It was divided into five variable sections with a total of 65 indicators**,** each measured on a 7-point Likert scale ranging from 1 ("strongly disagree") to 7 ("strongly agree"). Prior to the main data collection, the instrument was pretested on 30 respondents with similar characteristics to the target population to ensure clarity, reliability, and face validity. The pilot test yielded Cronbach's alpha values above 0.80 for all constructs, indicating strong internal consistency and confirming that all items were suitable for further analysis. Table 1 presents a summary of the research variables, their theoretical sources, and the number of measurement items used in the questionnaire.

Table 1. *Variable*

Variable	Dimension/Indicator Source	Item	Sample Code
Sustainable Digital	Adapted from Paris et al. (2016); Hameed et al. (2023); Maduku et al. (2024); Prieto-Sandoval et al.	25	TD1–TD5, Green1–

DOI : 10.37531/ecotal.v7i1.3638

Marketing (SDM)	(2022); De Luca et al. (2022) covering *Transparency & Disclosure*, *Green and Ethical Offerings*, *Social Environment Impact*, *Consumer Education & Empowerment*, and *Stakeholder Engagement & Collaboration*		Green5, SEI1–SEI5, CEE1–CEE5, SEC1–SEC5
Service Quality	Based on Parasuraman et al. (1988); Zuo et al. (2022); Trung, P.N. (2024). covering *Tangibility*, *Reliability*, *Responsiveness*, *Assurance*, and *Empathy*	24	TA1–TA4, RE1–RE5, RS1–RS5, AS1–AS5, EM1–EM5
Trust	Adapted from Shie et al. (2022); Castaldo et al. (2016); Druica et al. (2021)	9	TR1–TR9
Customer Loyalty	Adapted from Jai et al. (2022); Cuesta-Valino et al. (2022) covering *Behavioral, Attitudinal, Advocacy, and Resistance to Switching*	7	CL1–CL7
Total Item		65	

All items showed factor loadings greater than 0.70 and average variance extracted (AVE) values above 0.50, confirming convergent validity. Discriminant validity was established using the Fornell-Larcker criterion, and no multicollinearity was observed (VIF < 5). These results support the reliability and construct validity of the instrument used in this study.

In order to keep the information accurate, valid, and reliable, the data collection process was performed in a defined order. Research started with the appropriate documentation and permitting stage, where ethical clearance was submitted to the university and research committee, while coordination was made with the GMIM congregational youth elders across Bitung, North Minahasa, Manado, Tomohon, and Southeast Minahasa to gain access for data collection. To ensure the clarity, consistency, and reliability of the questionnaire items, a pilot test was conducted with 30 respondents for the main data collection. Results from the pilot test, indicating a Cronbach's alpha coefficient of greater than 0.80, suggested that the instrument was reliable and comprehended by the target population. The main survey was carried out between the 7th and 21st of October 2025. For this, a two-week period was set, and the questionnaires were made available in printed format through GMIM youth coordinators and in electronic format through Google Forms. Before the survey, each participant was made aware of the study's purpose, informed of the confidentiality of their responses, and informed that their participation was voluntary. Valid questionnaires totalled 325, 100% of the suggested threshold using the "5 times rule" (Hair et al. 2017). Given that this threshold is the minimum suggested, the sample size also meets the requirements for PLS-SEM. Statistical power of 0.80 at medium effect size is the expectation, and this sample size surpasses the minimum within the PLS-SEM framework. The 100% response rate is the result of the systematic and transparent data collection methodology, inspiring confidence that all data returned were of complete quality. Incentives and thorough reminder communication, explaining the incentive, were fundamental in achieving this response. Small community merchandise, provided for respondents completing the survey within the timeframe, was a token incentive. Finally, all responses were assessed for quality so that seamless integration could be designed for all completed data, with the correct, uncompleted, and patterned responses removed. The end result is both systemically and methodologically sound data collection.

DOI : 10.37531/ecotal.v7i1.3638

In this study, data analysis was performed by means of Partial Least Squares-Structural Equation Modeling (PLS-SEM) through the SmartPLS 4 software, which was supported by a series of analytical steps to ensure the robustness and accuracy of the predictive model. Most importantly, a complete and descriptive statistical analysis was first performed to summarize the characteristics of the respondents, namely, gender, age, domicile, and congregation origin, as well as the mean and standard deviation of each indicator. Subsequently, the measurement model (outer model) was assessed to evaluate indicator reliability, internal consistency, and the construct validity of each measurement model. Reliability of the constructs was measured through Cronbach's alpha and composite reliability (CR), which, for the purposes of this analysis, was deemed acceptable for values greater than 0.70, while convergent validity was confirmed through factor loadings, which must exceed 0.70, and average variance extracted (AVE) values must exceed 0.50. For discriminant validity, the Fornell–Larcker criterion and the heterotrait-monotrait (HTMT) ratio were used to ensure that each of the constructs was empirically distinct from each of the others. After confirming the validity and reliability of all constructs, the analysis was then directed to the structural model (inner model) to evaluate the hypothesized relationships proposed involving Sustainable Digital Marketing (SDM), Service Quality (SERVQUAL), Trust, and Customer Loyalty. The relevant indicators of path coefficients, R^2, and predictive relevance (Q^2) were assessed to evaluate the strength and explanatory power of the model. To evaluate the indirect effects and ascertain the significance of trust acting as a mediating variable, mediation testing was carried out utilizing bootstrapping with 5,000 resamples. All evaluations were performed at a significance threshold of 5% ($p < 0.05$). The employment of this sequential analytical strategy confirmed that the culminating model was not only statistically valid but also theoretically integrated and representative of the actual relationships among the variables studied in community-based MSMEs in North Sulawesi.

RESULT AND DISCUSSIONS

Respondent Demographic

To provide a clearer overview of the characteristics of the participants involved in this study, a demographic summary of the respondents is presented. The demographic profile includes key variables such as gender, age, education level, employment status, primary source of personal expenses, personal income, purchase frequency of local screen-printing products, and activeness in GMIM youth communities. These characteristics support the contextual understanding of the sample and ensure the validity and relevance of the findings within the MSME consumer landscape. Based on the demographic characteristics of the respondents, the majority were female (55.4%), and most belonged to the 21–24 age group (27.7%), followed closely by the 25–28 age group (26.2%). In terms of education, most participants held a Sarjana degree (47.1%), while a substantial portion had SMA/SMK education (42.2%). Regarding employment status, respondents were primarily private employees (30.2%) and students (29.8%). A significant share of the participants reported having their own income (56.0%), although a considerable portion still depended on parents or guardians (41.5%) as their main source of personal expenses. Most respondents did not have a fixed income above Rp3 million, with 37.5% reporting no income and 36.3% earning more than Rp3 million. In purchasing behavior, the majority stated they occasionally purchase local screen-printing products (32.6%), while 28.0% reported buying them rarely. Furthermore, respondents were largely active in their community, with 72.9% identifying as

DOI : 10.37531/ecotal.v7i1.3638

active members of GMIM youth communities.

Table 2. Demographic of the Respondents

Characteristic	Category	Sample (n)	Percentage (%)
Gender	Male	145	44.6
	Female	180	55.4
Total		325	100.0
Age (Years)	17–20 Year	84	25.8
	21–24 Year	90	27.7
	25–28 Year	85	26.2
	more 29 Year	66	20.3
Total		325	100.0
Education Level	Diploma (D1–D3)	24	7.4
	Pascasarjana (S2/S3)	9	2.8
	Sarjana	153	47.1
	SMA/SMK	137	42.2
	SMP	2	0.6
Total		325	100.0
Occupation	Belum bekerja	61	18.8
	Pegawai Negeri Sipil	31	9.5
	Pegawai Swasta	98	30.2
	Pelajar/Mahasiswa	97	29.8
	Wirausaha	38	11.7
Total		325	100.0

Descriptive Statistics

Based on the results of the descriptive analysis presented in Table 3, the measurement scale used ranged from 1 (minimum) to 7 (maximum). Examination of the mean and standard deviation values shows that all variables obtained relatively high mean scores, ranging from 5.79 to 6.12. These values are close to the upper end of the measurement scale, indicating that respondents' perceptions across all constructs were generally positive. Among the variables, TRAVG (Trust) recorded the highest mean value of 6.13 with a standard deviation of 1.036, followed closely by ASAVG (Assurance) with a mean of 6.11 and REAVG (Reliability) with a mean of 6.10, suggesting strong confidence in service performance. In contrast, GreenAVG had the lowest mean score at 5.79, although this value still reflects a high level of agreement among respondents. The standard deviation values, which ranged from 1.0249 to 1.0967, indicate moderate variability in responses. However, the variation is not substantial, allowing the conclusion that respondents' perceptions across all measured variables were relatively consistent.

Table 3. Descriptive Statistic Result

Variable	N	Minimum	Maximum	Mean	Std. Deviation
TDAVG	325	1.0	7.0	5.858	1.0648
GreenAVG	325	1.0	7.0	5.794	1.0967

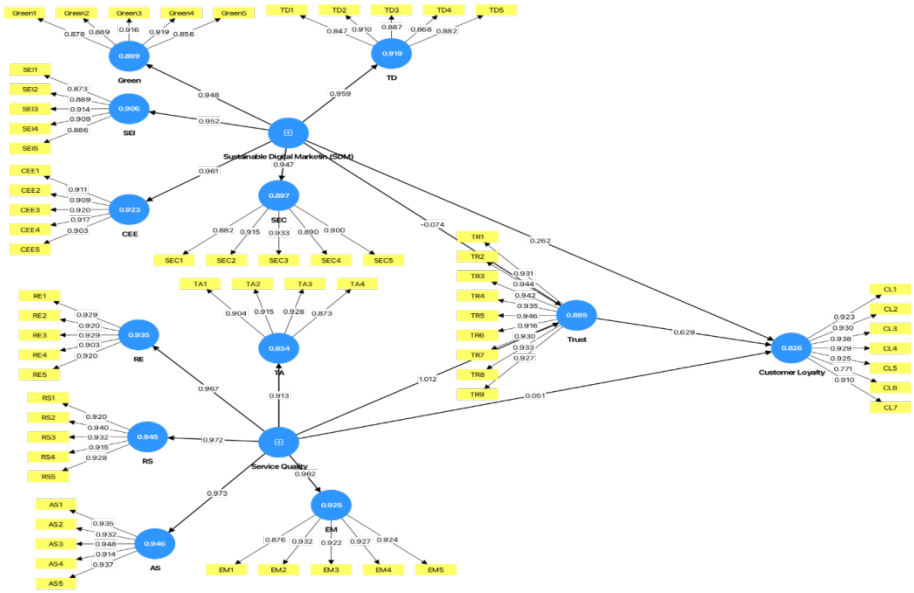
DOI : 10.37531/ecotal.v7i1.3638

SEIAVG	325	1.0	7.0	5.807	1.0774
CEEAVG	325	1.0	7.0	5.837	1.0731
SECAVG	325	1.0	7.0	5.905	1.0687
TAAVG	325	1.0	7.0	5.946	1.0631
REAVG	325	1.0	7.0	6.099	1.0310
RSAVG	325	1.0	7.0	6.083	1.0361
ASAVG	325	1.0	7.0	6.109	1.0739
EMAVG	325	1.0	7.0	6.043	1.0249
TRAVG	325	1.0	7.0	6.127	1.0360
CLAVG	325	1.0	7.0	5.993	1.0684

Measurement Model

Before proceeding to the hypothesis testing or structural model analysis, it is essential to first evaluate the outer model, also referred to as the measurement model. This step ensures that the research model is both conceptually and statistically sound and that the measurement instruments adequately capture the intended constructs. Validation testing in the measurement model stage is conducted to examine the accuracy and reliability of the indicators in representing their respective variables, thereby confirming the appropriateness of the model for subsequent analysis (Sarstedt et al., 2021).

Figure 2. Measurement Model Testing Results



Convergent Validity

Before evaluating the structural model, an assessment of the outer measurement model was conducted to examine the reliability and validity of each indicator. Table 4 presents the factor loadings for all constructs, showing the extent to which each indicator reflects its respective latent variable. Based on the results, all indicators demonstrate loading values above the recommended threshold of 0.70, indicating strong convergent validity and confirming that each item appropriately measures its underlying construct.

DOI : 10.37531/ecotal.v7i1.3638

Table 4. Constructs, Indicator and Factor Loading

Constructs	Indicator	Factor Loading
AS (Assurance)	AS1	0.935
	AS2	0.932
	AS3	0.948
	AS4	0.914
	AS5	0.937
CEE (Consumer Education & Empowerment)	CEE1	0.911
	CEE2	0.909
	CEE3	0.920
	CEE4	0.917
	CEE5	0.903
CL (Customer Loyalty)	CL1	0.923
	CL2	0.930
	CL3	0.938
	CL4	0.929
	CL5	0.925
	CL6	0.771
	CL7	0.910
EM (Empathy)	EM1	0.876
	EM2	0.932
	EM3	0.921
	EM4	0.927
	EM5	0.924
Green (Green & Ethical Offering)	Green1	0.878
	Green2	0.889
	Green3	0.916
	Green4	0.919
	Green5	0.856
RE (Reliability)	RE1	0.929
	RE2	0.920
	RE3	0.929
	RE4	0.903
	RE5	0.920
RS (Responsiveness)	RS1	0.920
	RS2	0.939
	RS3	0.932
	RS4	0.915
	RS5	0.928
SEC (Stakeholder Engagement & Collaboration)	SEC1	0.882
	SEC2	0.915
	SEC3	0.933
	SEC4	0.890
	SEC5	0.900
SEI (Social Environment Impact)	SEI1	0.873
	SEI2	0.889
	SEI3	0.914
	SEI4	0.909
	SEI5	0.886

DOI : 10.37531/ecotal.v7i1.3638

Constructs	Indicator	Factor Loading
TA (Tangibility)	TA1	0.904
	TA2	0.915
	TA3	0.928
	TA4	0.873
TD (Transparency & Disclosure)	TD1	0.847
	TD2	0.910
	TD3	0.887
	TD4	0.868
	TD5	0.882
TR (Trust)	TR1	0.931
	TR2	0.944
	TR3	0.942
	TR4	0.935
	TR5	0.946
	TR6	0.916
	TR7	0.930
	TR8	0.933
	TR9	0.927

Discriminant Validity

To assess discriminant validity within the measurement model, this study examined three criteria commonly used in PLS-SEM analysis, namely the Average Variance Extracted (AVE), cross-loading values, and the Fornell–Larcker criterion. The Fornell–Larcker test compares the square root of the AVE of each construct with its correlations to other constructs. As shown in Table 5, the diagonal values which represent the square root of the AVE for each variable are consistently higher than their corresponding correlations with other constructs. This pattern indicates that each construct shares more variance with its own indicators than with other latent variables. Therefore, based on the Fornell–Larcker criterion, the measurement model in this study meets xx

Table 5. Fornell-Lacker Criterion

	AS	CEE	Customer Loyalty	EM	Green	RE	RS	SEC	SEI	Service Quality	Sustainable Digital Marketing (SDM)	TA	TD	Trust
AS	0,933													
CEE	0,808	0,912												
Customer Loyalty	0,865	0,815	0,905											
EM	0,936	0,828	0,880	0,916										
Green	0,761	0,864	0,751	0,791	0,892									
RE	0,925	0,816	0,820	0,890	0,776	0,920								
RS	0,942	0,839	0,854	0,917	0,769	0,944	0,927							
SEC	0,846	0,916	0,830	0,856	0,838	0,841	0,865	0,904						
SEI	0,786	0,892	0,747	0,798	0,917	0,811	0,800	0,861	0,894					

DOI : 10.37531/ecotal.v7i1.3638

Service Quality	0,973	0,864	0,882	0,962	0,816	0,966	0,975	0,889	0,841	0,884				
Sustainable Digital Marketin (SDM)	0,845	0,961	0,832	0,863	0,947	0,850	0,860	0,948	0,951	0,896	0,854			
TA	0,837	0,869	0,799	0,853	0,842	0,867	0,857	0,865	0,862	0,911	0,896	0,906		
TD	0,819	0,902	0,813	0,835	0,908	0,802	0,817	0,891	0,872	0,854	0,959	0,829	0,879	
Trust	0,947	0,804	0,895	0,919	0,740	0,903	0,928	0,844	0,767	0,946	0,833	0,815	0,806	0,934

In addition to the Fornell–Larcker assessment, discriminant validity was further examined through the cross-loading analysis. This method evaluates whether each indicator loads more strongly on the construct it is intended to measure compared to all other constructs. The results presented in Table 6 show that the loading values of each indicator on its associated construct are higher than the cross-loadings on unrelated constructs. These findings confirm that the indicators display good discriminant power, and collectively, the results demonstrate that the measurement model possesses adequate discriminant validity.

Table 6. Result of the Cross Loading

	AS	CEE	Customer Loyalty	EM	Green	RE	RS	SEC	SEI	Service Quality	Sustainable Digital Marketin (SDM)	TA	TD	Trust
AS1	0,935	0,747	0,803	0,855	0,724	0,881	0,873	0,770	0,746	0,905	0,783	0,773	0,742	0,874
AS1	0,935	0,747	0,803	0,855	0,724	0,881	0,873	0,770	0,746	0,905	0,783	0,773	0,742	0,874
AS2	0,932	0,772	0,799	0,859	0,695	0,875	0,909	0,816	0,743	0,916	0,801	0,800	0,782	0,898
AS2	0,932	0,772	0,799	0,859	0,695	0,875	0,909	0,816	0,743	0,916	0,801	0,800	0,782	0,898
AS3	0,948	0,765	0,812	0,895	0,718	0,880	0,883	0,794	0,741	0,921	0,798	0,783	0,777	0,872
AS3	0,948	0,765	0,812	0,895	0,718	0,880	0,883	0,794	0,741	0,921	0,798	0,783	0,777	0,872
AS4	0,914	0,755	0,827	0,890	0,708	0,827	0,873	0,791	0,715	0,900	0,786	0,790	0,770	0,891
AS4	0,914	0,755	0,827	0,890	0,708	0,827	0,873	0,791	0,715	0,900	0,786	0,790	0,770	0,891
AS5	0,937	0,733	0,796	0,870	0,705	0,851	0,855	0,775	0,721	0,897	0,775	0,760	0,752	0,886
AS5	0,937	0,733	0,796	0,870	0,705	0,851	0,855	0,775	0,721	0,897	0,775	0,760	0,752	0,886
CEE 1	0,719	0,911	0,714	0,741	0,802	0,754	0,772	0,809	0,856	0,786	0,878	0,802	0,803	0,715
CEE 1	0,719	0,911	0,714	0,741	0,802	0,754	0,772	0,809	0,856	0,786	0,878	0,802	0,803	0,715
CEE 2	0,712	0,909	0,727	0,749	0,778	0,717	0,741	0,819	0,791	0,766	0,866	0,770	0,826	0,705
CEE 2	0,712	0,909	0,727	0,749	0,778	0,717	0,741	0,819	0,791	0,766	0,866	0,770	0,826	0,705
CEE 3	0,736	0,920	0,726	0,745	0,809	0,755	0,751	0,828	0,820	0,783	0,881	0,786	0,817	0,738
CEE 3	0,736	0,920	0,726	0,745	0,809	0,755	0,751	0,828	0,820	0,783	0,881	0,786	0,817	0,738
CEE 4	0,734	0,917	0,753	0,755	0,776	0,729	0,770	0,823	0,821	0,787	0,875	0,807	0,826	0,727
CEE	0,734	0,917	0,753	0,75	0,776	0,72	0,77	0,82	0,82	0,787	0,875	0,80	0,82	0,72

DOI : 10.37531/ecotal.v7i1.3638

	AS	CEE	Customer Loyalty	EM	Green	RE	RS	SEC	SEI	Service Quality	Sustainable Digital Marketing (SDM)	TA	TD	Trust
4				5		9	0	3	1			7	6	7
CEE 5	0,785	0,903	0,796	0,788	0,775	0,765	0,792	0,898	0,780	0,817	0,883	0,797	0,839	0,779
CEE 5	0,785	0,903	0,796	0,788	0,775	0,765	0,792	0,898	0,780	0,817	0,883	0,797	0,839	0,779
CL1	0,849	0,746	0,923	0,855	0,718	0,805	0,813	0,769	0,702	0,857	0,777	0,780	0,758	0,876
CL2	0,813	0,746	0,930	0,812	0,681	0,780	0,809	0,752	0,679	0,829	0,754	0,753	0,723	0,834
CL3	0,778	0,723	0,938	0,800	0,665	0,732	0,772	0,751	0,656	0,795	0,739	0,721	0,719	0,824
CL4	0,776	0,737	0,929	0,796	0,659	0,719	0,760	0,746	0,657	0,786	0,746	0,709	0,743	0,791
CL5	0,839	0,789	0,925	0,851	0,708	0,797	0,819	0,813	0,719	0,850	0,805	0,753	0,799	0,868
CL6	0,590	0,634	0,771	0,624	0,632	0,550	0,592	0,624	0,617	0,613	0,660	0,584	0,640	0,626
CL7	0,806	0,779	0,910	0,810	0,696	0,783	0,816	0,789	0,699	0,827	0,783	0,742	0,760	0,824
EM1	0,847	0,728	0,791	0,876	0,662	0,785	0,838	0,762	0,703	0,853	0,756	0,716	0,743	0,841
EM1	0,847	0,728	0,791	0,876	0,662	0,785	0,838	0,762	0,703	0,853	0,756	0,716	0,743	0,841
EM2	0,878	0,808	0,807	0,932	0,756	0,856	0,873	0,823	0,760	0,913	0,824	0,830	0,772	0,854
EM2	0,878	0,808	0,807	0,932	0,756	0,856	0,873	0,823	0,760	0,913	0,824	0,830	0,772	0,854
EM3	0,880	0,751	0,783	0,921	0,713	0,851	0,858	0,777	0,715	0,900	0,779	0,793	0,751	0,853
EM3	0,880	0,751	0,783	0,921	0,713	0,851	0,858	0,777	0,715	0,900	0,779	0,793	0,751	0,853
EM4	0,836	0,767	0,839	0,927	0,750	0,787	0,817	0,784	0,758	0,867	0,804	0,781	0,770	0,832
EM4	0,836	0,767	0,839	0,927	0,750	0,787	0,817	0,784	0,758	0,867	0,804	0,781	0,770	0,832
EM5	0,848	0,739	0,812	0,924	0,742	0,795	0,814	0,776	0,718	0,870	0,791	0,783	0,790	0,828
EM5	0,848	0,739	0,812	0,924	0,742	0,795	0,814	0,776	0,718	0,870	0,791	0,783	0,790	0,828
Green 1	0,673	0,795	0,676	0,712	0,878	0,696	0,676	0,730	0,814	0,726	0,848	0,749	0,839	0,670
Green 1	0,673	0,795	0,676	0,712	0,878	0,696	0,676	0,730	0,814	0,726	0,848	0,749	0,839	0,670
Green 2	0,602	0,736	0,627	0,623	0,889	0,630	0,626	0,692	0,810	0,658	0,816	0,701	0,783	0,592
Green 2	0,602	0,736	0,627	0,623	0,889	0,630	0,626	0,692	0,810	0,658	0,816	0,701	0,783	0,592
Green 3	0,663	0,777	0,629	0,697	0,916	0,686	0,680	0,760	0,855	0,722	0,860	0,766	0,806	0,636
Green 3	0,663	0,777	0,629	0,697	0,916	0,686	0,680	0,760	0,855	0,722	0,860	0,766	0,806	0,636
Green 4	0,701	0,760	0,656	0,712	0,919	0,713	0,685	0,736	0,844	0,740	0,847	0,760	0,795	0,656
Green 4	0,701	0,760	0,656	0,712	0,919	0,713	0,685	0,736	0,844	0,740	0,847	0,760	0,795	0,656
Green 5	0,749	0,782	0,759	0,778	0,856	0,735	0,760	0,816	0,764	0,790	0,849	0,775	0,825	0,741
Green 5	0,749	0,782	0,759	0,778	0,856	0,735	0,760	0,816	0,764	0,790	0,849	0,775	0,825	0,741
RE1	0,838	0,742	0,735	0,788	0,705	0,929	0,861	0,766	0,744	0,879	0,774	0,790	0,727	0,830
RE1	0,838	0,742	0,735	0,788	0,705	0,929	0,861	0,766	0,744	0,879	0,774	0,790	0,727	0,830
RE2	0,824	0,728	0,730	0,771	0,727	0,920	0,834	0,734	0,766	0,864	0,774	0,790	0,734	0,810
RE2	0,824	0,728	0,730	0,771	0,727	0,920	0,834	0,734	0,766	0,864	0,774	0,790	0,734	0,810

DOI : 10.37531/ecotal.v7i1.3638

	AS	CEE	Customer Loyalty	EM	Green	RE	RS	SEC	SEI	Service Quality	Sustainable Digital Marketing (SDM)	TA	TD	Trust
RE3	0,875	0,770	0,784	0,826	0,716	0,929	0,873	0,796	0,755	0,898	0,795	0,788	0,747	0,847
RE3	0,875	0,770	0,784	0,826	0,716	0,929	0,873	0,796	0,755	0,898	0,795	0,788	0,747	0,847
RE4	0,852	0,770	0,763	0,841	0,710	0,903	0,878	0,789	0,739	0,896	0,789	0,818	0,744	0,832
RE4	0,852	0,770	0,763	0,841	0,710	0,903	0,878	0,789	0,739	0,896	0,789	0,818	0,744	0,832
RE5	0,864	0,743	0,762	0,868	0,715	0,920	0,894	0,781	0,729	0,909	0,778	0,800	0,735	0,835
RE5	0,864	0,743	0,762	0,868	0,715	0,920	0,894	0,781	0,729	0,909	0,778	0,800	0,735	0,835
RS1	0,890	0,777	0,782	0,871	0,734	0,912	0,920	0,795	0,753	0,924	0,804	0,827	0,767	0,852
RS1	0,890	0,777	0,782	0,871	0,734	0,912	0,920	0,795	0,753	0,924	0,804	0,827	0,767	0,852
RS2	0,895	0,786	0,797	0,865	0,715	0,897	0,939	0,815	0,754	0,923	0,807	0,812	0,766	0,868
RS2	0,895	0,786	0,797	0,865	0,715	0,897	0,939	0,815	0,754	0,923	0,807	0,812	0,766	0,868
RS3	0,877	0,780	0,805	0,838	0,705	0,860	0,932	0,824	0,749	0,898	0,805	0,775	0,769	0,886
RS3	0,877	0,780	0,805	0,838	0,705	0,860	0,932	0,824	0,749	0,898	0,805	0,775	0,769	0,886
RS4	0,840	0,772	0,790	0,830	0,701	0,833	0,915	0,792	0,721	0,877	0,785	0,770	0,746	0,830
RS4	0,840	0,772	0,790	0,830	0,701	0,833	0,915	0,792	0,721	0,877	0,785	0,770	0,746	0,830
RS5	0,861	0,773	0,782	0,845	0,710	0,869	0,928	0,780	0,728	0,898	0,784	0,788	0,737	0,865
RS5	0,861	0,773	0,782	0,845	0,710	0,869	0,928	0,780	0,728	0,898	0,784	0,788	0,737	0,865
SEC1	0,694	0,824	0,686	0,731	0,734	0,680	0,711	0,882	0,779	0,736	0,842	0,724	0,785	0,690
SEC1	0,694	0,824	0,686	0,731	0,734	0,680	0,711	0,882	0,779	0,736	0,842	0,724	0,785	0,690
SEC2	0,800	0,809	0,746	0,796	0,752	0,782	0,797	0,915	0,744	0,825	0,846	0,781	0,798	0,775
SEC2	0,800	0,809	0,746	0,796	0,752	0,782	0,797	0,915	0,744	0,825	0,846	0,781	0,798	0,775
SEC3	0,773	0,851	0,742	0,767	0,765	0,768	0,806	0,933	0,791	0,809	0,874	0,764	0,815	0,772
SEC3	0,773	0,851	0,742	0,767	0,765	0,768	0,806	0,933	0,791	0,809	0,874	0,764	0,815	0,772
SEC4	0,743	0,834	0,761	0,762	0,787	0,758	0,763	0,890	0,800	0,797	0,868	0,814	0,815	0,758
SEC4	0,743	0,834	0,761	0,762	0,787	0,758	0,763	0,890	0,800	0,797	0,868	0,814	0,815	0,758
SEC5	0,813	0,824	0,814	0,814	0,749	0,810	0,830	0,900	0,777	0,852	0,856	0,824	0,817	0,817
SEC5	0,813	0,824	0,814	0,814	0,749	0,810	0,830	0,900	0,777	0,852	0,856	0,824	0,817	0,817
SEI1	0,649	0,729	0,613	0,677	0,843	0,674	0,645	0,714	0,873	0,700	0,816	0,739	0,747	0,616
SEI1	0,649	0,729	0,613	0,677	0,843	0,674	0,645	0,714	0,873	0,700	0,816	0,739	0,747	0,616
SEI2	0,712	0,789	0,665	0,728	0,819	0,738	0,721	0,755	0,889	0,764	0,843	0,783	0,776	0,686
SEI2	0,712	0,789	0,665	0,728	0,819	0,738	0,721	0,755	0,889	0,764	0,843	0,783	0,776	0,686
SEI3	0,683	0,777	0,640	0,682	0,823	0,709	0,703	0,741	0,914	0,731	0,841	0,747	0,768	0,665
SEI3	0,683	0,777	0,640	0,682	0,823	0,709	0,703	0,741	0,914	0,731	0,841	0,747	0,768	0,665
SEI4	0,736	0,807	0,685	0,712	0,831	0,756	0,736	0,797	0,909	0,775	0,866	0,796	0,792	0,719
SEI4	0,736	0,807	0,685	0,712	0,831	0,756	0,736	0,797	0,909	0,775	0,866	0,796	0,792	0,719
SEI5	0,729	0,880	0,731	0,764	0,786	0,746	0,766	0,838	0,886	0,788	0,882	0,788	0,811	0,737

DOI : 10.37531/ecotal.v7i1.3638

	AS	CEE	Customer Loyalty	EM	Green	RE	RS	SEC	SEI	Service Quality	Sustainable Digital Marketing (SDM)	TA	TD	Trust
SEI5	0,729	0,880	0,731	0,764	0,786	0,746	0,766	0,838	0,886	0,788	0,882	0,788	0,811	0,737
TA1	0,812	0,810	0,816	0,832	0,758	0,811	0,806	0,842	0,756	0,863	0,831	0,904	0,783	0,802
TA1	0,812	0,810	0,816	0,832	0,758	0,811	0,806	0,842	0,756	0,863	0,831	0,904	0,783	0,802
TA2	0,715	0,800	0,676	0,749	0,780	0,748	0,738	0,766	0,805	0,795	0,820	0,915	0,756	0,692
TA2	0,715	0,800	0,676	0,749	0,780	0,748	0,738	0,766	0,805	0,795	0,820	0,915	0,756	0,692
TA3	0,818	0,812	0,754	0,815	0,754	0,835	0,834	0,829	0,777	0,875	0,828	0,928	0,766	0,794
TA3	0,818	0,812	0,754	0,815	0,754	0,835	0,834	0,829	0,777	0,875	0,828	0,928	0,766	0,794
TA4	0,676	0,719	0,635	0,682	0,761	0,738	0,718	0,682	0,791	0,758	0,763	0,873	0,692	0,653
TA4	0,676	0,719	0,635	0,682	0,761	0,738	0,718	0,682	0,791	0,758	0,763	0,873	0,692	0,653
TD1	0,660	0,739	0,719	0,690	0,718	0,618	0,646	0,747	0,667	0,681	0,781	0,653	0,847	0,655
TD1	0,660	0,739	0,719	0,690	0,718	0,618	0,646	0,747	0,667	0,681	0,781	0,653	0,847	0,655
TD2	0,752	0,830	0,748	0,750	0,813	0,737	0,753	0,826	0,783	0,778	0,874	0,740	0,910	0,742
TD2	0,752	0,830	0,748	0,750	0,813	0,737	0,753	0,826	0,783	0,778	0,874	0,740	0,910	0,742
TD3	0,736	0,796	0,724	0,725	0,799	0,729	0,715	0,780	0,797	0,761	0,851	0,758	0,887	0,711
TD3	0,736	0,796	0,724	0,725	0,799	0,729	0,715	0,780	0,797	0,761	0,851	0,758	0,887	0,711
TD4	0,749	0,783	0,697	0,770	0,758	0,730	0,751	0,778	0,717	0,776	0,820	0,719	0,868	0,736
TD4	0,749	0,783	0,697	0,770	0,758	0,730	0,751	0,778	0,717	0,776	0,820	0,719	0,868	0,736
TD5	0,703	0,811	0,687	0,734	0,894	0,705	0,720	0,786	0,857	0,753	0,885	0,768	0,882	0,696
TD5	0,703	0,811	0,687	0,734	0,894	0,705	0,720	0,786	0,857	0,753	0,885	0,768	0,882	0,696
TR1	0,890	0,759	0,810	0,849	0,692	0,840	0,881	0,801	0,720	0,885	0,785	0,760	0,758	0,931
TR2	0,906	0,733	0,825	0,863	0,682	0,868	0,886	0,778	0,717	0,903	0,767	0,785	0,736	0,944
TR3	0,892	0,740	0,833	0,854	0,682	0,843	0,856	0,792	0,720	0,878	0,777	0,733	0,759	0,942
TR4	0,896	0,732	0,824	0,871	0,702	0,850	0,885	0,797	0,718	0,895	0,779	0,762	0,757	0,935
TR5	0,882	0,736	0,818	0,850	0,678	0,861	0,855	0,761	0,702	0,880	0,758	0,748	0,724	0,946
TR6	0,856	0,752	0,841	0,849	0,694	0,820	0,857	0,784	0,713	0,867	0,776	0,756	0,744	0,916
TR7	0,890	0,767	0,828	0,848	0,697	0,846	0,877	0,802	0,723	0,886	0,790	0,767	0,764	0,930
TR8	0,889	0,783	0,869	0,883	0,714	0,845	0,872	0,795	0,721	0,898	0,799	0,804	0,785	0,933
TR9	0,859	0,749	0,874	0,852	0,674	0,813	0,829	0,779	0,707	0,857	0,769	0,736	0,742	0,927

A third approach used to evaluate discriminant validity involves examining the Average Variance Extracted (AVE). Hair Jr. et al. (2017) state that an AVE value above 0.50 indicates that a construct explains more than half of the variance of its indicators. As shown in Table 7, all constructs in this study have AVE values exceeding this threshold, demonstrating that each variable meets the recommended standard. Therefore, based on the AVE assessment, the discriminant validity of the measurement model is confirmed. The next step is the reliability test. We use the reliability test measurement approach to ensure

DOI : 10.37531/ecotal.v7i1.3638

that different items measure the same construct in order to obtain consistent results (Ghozali, 2017). Three indicators Cronbach Alpha (CA), rho_A, Composite Reliability (CR), and AVE were used in this study's reliability test. Minimum values of 0.5 are recommended for AVE, while 0.7 and 0.5 are recommended for CA, rho_A, and CR, respectively (Fornell & Lacker, 1981). Test results are shown in Table 6. Strong reliability is shown by all variables, with AVE>0.5, CA, rho_A, and CR > 0.7.

Table 7. Result of the Reliability Test

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
AS	0,963	0,963	0,971	0,871
CEE	0,949	0,949	0,961	0,832
Customer Loyalty	0,963	0,967	0,969	0,820
EM	0,952	0,953	0,963	0,840
Green	0,935	0,936	0,951	0,795
RE	0,955	0,955	0,965	0,847
RS	0,959	0,959	0,968	0,859
SEC	0,944	0,944	0,957	0,818
SEI	0,937	0,938	0,952	0,800
Service Quality	0,988	0,988	0,988	0,782
Sustainable Digital Marketing (SDM)	0,985	0,985	0,985	0,730
TA	0,927	0,930	0,948	0,820
TD	0,926	0,928	0,945	0,773
Trust	0,982	0,982	0,984	0,872

Goodness of fit

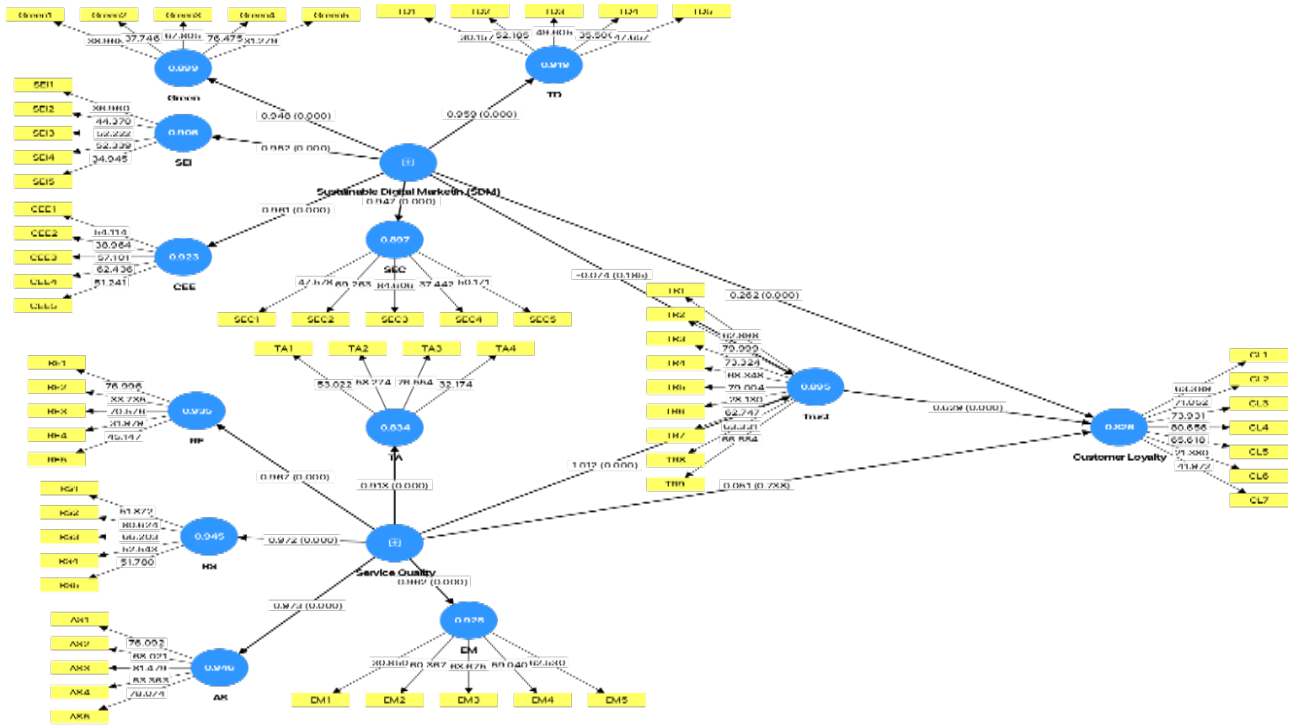
Presents the goodness-of-fit results generated from the PLS-SEM model evaluation. This assessment provides an indication of how well the model aligns with the observed data. Several fit parameters are commonly reviewed in this analysis, such as SRMR, d_ULS, d_G, Chi-square, and NFI. Based on the values shown in Table 7, the SRMR scores for both the saturated model (0.049) and the estimated model (0.050) fall well below the recommended threshold of 0.08, suggesting that the model exhibits an acceptable level of fit, although their evaluation depends on bootstrap-based comparisons rather than fixed cutoffs. The available indicators particularly the SRMR values suggest that the model demonstrates an adequate degree of fit and reflects a stable relationship between the constructs in the structural model.

4.3 Structural Model

Before evaluating the structural model, the measurement model is examined, and all validity and reliability indicators are validated. The intended objective is to examine each of the study's hypotheses. In particular, the structural model or hypothesis is tested by assessing the significance of the path coefficient using the PLS Boothstrapping function in SmartPLS statistical software. Figure 3 displays the findings of the structural model testing, which are summarized in Table 9.

DOI : 10.37531/ecotal.v7i1.3638

Figure 3. PLS Bootstrapping Structural Model Testing Results



Based on the hypothesis testing results presented in Table 8, the interpretation of the structural model focuses on the T-statistics and P-values to determine whether each path relationship is statistically significant. The findings indicate that the majority of relationships in the model show strong significance. Several paths from Service Quality exhibit extremely high T-statistics and P-values of 0.000, confirming significant effects on Assurance (T = 179.150), Empathy (T = 114.917), Reliability (T = 148.480), Responsiveness (T = 139.650), Tangibility (T = 52.487), and Trust (T = 20.765). These results suggest that service quality contributes substantially to strengthening multiple dimensions within the model. Sustainable Digital Marketing (SDM) demonstrates significant positive effects on several variables, including Consumer Education & Empowerment (T = 127.890; P = 0.000), Green (T = 83.525; P = 0.000), Stakeholder Engagement & Collaboration (T = 90.078; P = 0.000), Social Environment Impact (T = 103.296; P = 0.000), and Transparency & Disclosure (T = 135.481; P = 0.000). SDM also has a significant direct impact on Customer Loyalty (T = 3.759; P = 0.000), indicating its important role in shaping loyalty outcomes. Furthermore, Trust is shown to significantly influence Customer Loyalty (T = 4.837; P = 0.000), suggesting that trust functions as a key driver in strengthening customer loyalty within the model. On the other hand, a few relationships do not reach statistical significance. Service Quality on Customer Loyalty shows a non-significant effect (T = 0.335; P = 0.738), and SDM on Trust also does not achieve significance (T = 1.326; P = 0.185). These results imply that while both constructs contribute strongly to several dimensions, their direct influence on these particular paths is limited. The findings highlight that Service Quality and Sustainable Digital Marketing play crucial roles in shaping several core constructs within the model, while Trust emerges as a significant predictor of loyalty. Nonetheless, not all relationships are statistically meaningful, reflecting the selective influence of each variable in the model's structure.

DOI : 10.37531/ecotal.v7i1.3638

Table 8. Hypothesis Testing Results

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Service Quality -> AS	0,973	0,973	0,005	179,150	0,000
Service Quality -> Customer Loyalty	0,051	0,036	0,152	0,335	0,738
Service Quality -> EM	0,962	0,961	0,008	114,917	0,000
Service Quality -> RE	0,967	0,967	0,007	148,480	0,000
Service Quality -> RS	0,972	0,972	0,007	139,650	0,000
Service Quality -> TA	0,913	0,913	0,017	52,487	0,000
Service Quality -> Trust	1,012	1,009	0,049	20,765	0,000
Sustainable Digital Marketin (SDM) -> CEE	0,961	0,961	0,008	127,890	0,000
Sustainable Digital Marketin (SDM) -> Customer Loyalty	0,262	0,263	0,070	3,759	0,000
Sustainable Digital Marketin (SDM) -> Green	0,948	0,948	0,011	83,525	0,000
Sustainable Digital Marketin (SDM) -> SEC	0,947	0,947	0,011	90,078	0,000
Sustainable Digital Marketin (SDM) -> SEI	0,952	0,952	0,009	103,296	0,000
Sustainable Digital Marketin (SDM) -> TD	0,959	0,958	0,007	135,481	0,000
Sustainable Digital Marketin (SDM) -> Trust	-0,074	-0,071	0,056	1,326	0,185
Trust -> Customer Loyalty	0,629	0,643	0,130	4,837	0,000

Table 9, presents the results of the mediation (indirect) analysis, which evaluates whether Trust serves as an intervening variable between the exogenous constructs and Customer Loyalty. The findings show that Service Quality demonstrates a significant indirect effect on Customer Loyalty through Trust, with a T-statistic of 4.933 and a P-value of 0.000, indicating a strongly supported mediating relationship. This means that trust successfully transmits the influence of service quality toward enhancing customer loyalty. In contrast, Sustainable Digital Marketing (SDM) does not show a significant indirect effect on Customer Loyalty through Trust. The mediation path from SDM to Trust and subsequently to Loyalty yields a T-statistic of 1.334 and a P-value of 0.182, both exceeding the threshold for statistical significance. This indicates that trust does not serve as a meaningful mediator in the SDM–loyalty relationship within this model. The mediation analysis demonstrates that Trust functions as a significant mediator only for the relationship between Service Quality and Customer Loyalty, while the indirect effect of SDM through Trust is not supported.

Table 9. Result of the Mediating (Indirect) Analysis

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Service Quality -> Customer Loyalty	0,637	0,647	0,129	4,933	0,000

DOI : 10.37531/ecotal.v7i1.3638

Sustainable Digital Marketin (SDM) -> Customer Loyalty	-0,047	-0,044	0,035	1,334	0,182
Service Quality -> Trust -> Customer Loyalty	0,637	0,647	0,129	4,933	0,000
Sustainable Digital Marketin (SDM) -> Trust -> Customer Loyalty	-0,047	-0,044	0,035	1,334	0,182

Conclusions

The findings of this study confirm that Sustainable Digital Marketing (SDM) and service quality act as important drivers of customer loyalty in MSMEs, consistent with the Commitment–Trust Theory (Morgan & Hunt, 1994). this study shows that H1 is not supported because Sustainable Digital Marketing (HR) does not significantly influence trust, although previous theories state that transparency and digital ethics are supposed to build a perception of honesty (Sharabati et al., 2024; Yesitadewi & Widodo, 2024), The result also indicates that the sustainability issue may not be a major concern for the younger age group, which is possibly one of the reasons sustainability-oriented marketing activities have little impact on their trust in MSMEs; H2 is supported because HR has been shown to increase loyalty directly, in line with the view that sustainable marketing practices strengthen long-term relationships; H3 is supported because service quality strongly influences trust as affirmed by SERVQUAL and previous findings (Parasuraman et al., 1988; Madueke & Eyupoglu, 2024); H4 is not supported because service quality has no direct effect on loyalty; H5 is supported because trust has been shown to increase loyalty, in line with the Commitment–Trust Theory (Morgan & Hunt, 1994) and previous research that affirms the role of trust as the basis for commitment and loyal behavior (Mujianto et al., 2023); H6 is not supported because trust does not mediate the relationship between SDM and loyalty; and H7 are supported because trust mediates the relationship between service quality and loyalty as affirmed by the literature on the role of trust as a link between service quality and long-term relationships (Rajagukguk, 2023; Khalufi et al., 2025). this research is in line with previous theories and studies that service quality is the main driver of the formation of trust and loyalty in MSMEs, while SDM play a more direct role in loyalty but are not strong enough to build trust as a mediation mechanism.

This study contributes to the literature by clarifying how Sustainable Digital Marketing (SDM) and Service Quality shape customer loyalty in MSMEs, emphasizing the selective mediating role of trust in line with the Commitment and Trust Theory. The findings show that SDM directly enhances loyalty, supporting prior research on sustainability-driven consumer behavior, while service quality remains the strongest driver of trust, which in turn increases loyalty. Practically, the study highlights the need for MSMEs to combine transparent, ethical digital communication with consistent and empathetic service delivery to build stronger relational bonds with young consumers. However, the study is limited by its self-reported data, focus on a single demographic group, and cross-sectional design. Future research should consider longitudinal approaches, broader samples, and qualitative methods to capture deeper insights into how sustainability and service interactions shape trust and loyalty over time.

References :

Alzoubi, H. M., & Inairat, M. (2020). Do perceived service value, quality, price fairness, and service recovery shape customer satisfaction and delight? A practical study in the service telecommunication context. *Uncertain Supply Chain Management, 8*(3), 579–588.

DOI : 10.37531/ecotal.v7i1.3638

Ashiq, R., & Hussain, A. (2024). Exploring the effects of e-service quality and e-trust on consumers' e-satisfaction and e-loyalty: Insights from online shoppers in Pakistan. *Journal of Electronic Business & Digital Economics, 3*(2), 117–141. https://doi.org/10.1108/JEBDE-09-2023-0019

Badan Pusat Statistik. (2023). *Profil industri mikro dan kecil 2023*. https://www.bps.go.id/id/publication/2024/09/18/52d85cbe9de005b6f5d69f95/profil-industri-mikro-dan-kecil-2023.html

Bima Ramadhani, & Agus Hermawan. (2025). E-commerce dan kelestarian lingkungan: Analisis dampak dan upaya berkelanjutan. *Jurnal Rimba: Riset Ilmu Manajemen Bisnis dan Akuntansi, 3*(2), 229–240. https://doi.org/10.61132/rimba.v3i2.1760

Castaldo, S., Grosso, M., Mallarini, E., & Rindone, M. (2016). The missing path to gain customers loyalty in pharmacy retail: The role of the store in developing satisfaction and trust. *Research in Social and Administrative Pharmacy, 12*(5), 699–712.

Chuenyindee, T., Ong, A. K. S., Ramos, J. P., Prasetyo, Y. T., Nadlifatin, R., Kurata, Y. B., & Sittiwatethanasiri, T. (2022). Public utility vehicle service quality and customer satisfaction in the Philippines during the COVID-19 pandemic. *Utilities Policy, 75*, 101336. https://doi.org/10.1016/j.jup.2022.101336

Cuesta-Valiño, P., Gutiérrez-Rodríguez, P., & Núñez-Barriopedro, E. (2022). The role of consumer happiness in brand loyalty: A model of satisfaction and brand image in fashion. *Corporate Governance: The International Journal of Business in Society, 22*(3), 458–473.

Druică, E., Ianole-Călin, R., Băicuş, C., & Dinescu, R. (2021). Determinants of satisfaction with services and trust in the information received in community pharmacies. *Healthcare, 9*(5), 562.

Fatimah, F., & Tyas, W. M. (2022). Service quality strategy based on sustainable marketing to increase consumer loyalty to SMEs in rural areas. *International Social Sciences and Humanities, 1*(2), 285–300.

Gregurec, I. (2025). Sustainable digital marketing: A systematic review and content analysis of current research. *Dubrovnik International Economic Meeting Proceedings, 10*(1), 51–61.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)* (2nd ed.). Sage.

Hameed, Z., Naeem, R. M., Mishra, P., Chotia, V., & Malibari, A. (2023). Ethical leadership and environmental performance: The role of green IT capital, green technology innovation, and technological orientation. *Technological Forecasting & Social Change, 194*, 122739. https://doi.org/10.1016/j.techfore.2023.122739

Han, J., Zuo, Y., Law, R., Chen, S., & Zhang, M. (2021). Service quality in tourism public health: Trust, satisfaction, and loyalty. *Frontiers in Psychology, 12*, 731279. https://doi.org/10.3389/fpsyg.2021.731279

Jai, T. C., Tong, X., & Chen, H. S. (2022). Building brand loyalty on social media: Theories, measurements, antecedents, and consequences. *Journal of Brand Management, 29*(1), 35–57.

Karimi, S., Liobikienė, G., & Alitavakoli, F. (2022). The effect of religiosity on proenvironmental behavior based on the theory of planned behavior. *Frontiers in Psychology, 13*, 745019. https://doi.org/10.3389/fpsyg.2022.745019

Khalufi, N. A. M., Sheikh, R. A., Khan, S. M. F. A., & Onn, C. W. (2025). Evaluating the impact of sustainability practices on customer relationship quality: An SEM-PLS

approach aligned with SDGs. *Sustainability, 17*(2). https://doi.org/10.3390/su17020798

Madueke, C. J., & Eyupoglu, S. (2024). Sustaining economic growth: E-service quality's role in fostering customer loyalty in Nigeria SMEs. *Sustainability, 16*(21), 9175. https://doi.org/10.3390/su16219175

Morgan, R. M., & Hunt, S. D. (1994). The commitment-trust theory of relationship marketing. *Journal of Marketing, 58*(3), 20–38. https://doi.org/10.1177/002224299405800302

Mujianto, M., Hartoyo, H., Nurmalina, R., & Yusuf, E. Z. (2023). The unraveling loyalty model of traditional retail to suppliers for business sustainability in the digital transformation era. *Sustainability, 15*(3), 2827. https://doi.org/10.3390/su15032827

Odoom, R., Odoom, P. T., Amu, P. Y., & Adams, M. (2025). Sustainable digital marketing practices and consumer brand engagement: A brand reputation mediation investigation. *Journal of Strategic Marketing*. https://doi.org/10.1080/0965254X.2025.2453690

Parasuraman, A., Zeithaml, V. A., & Berry, L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing, 64*(1), 12–40.

Rastogi, T., Agarwal, B., & Gopal, G. (2024). Exploring the nexus between sustainable marketing and customer loyalty with the mediating role of brand image. *Journal of Cleaner Production, 440*, 140808. https://doi.org/10.1016/j.jclepro.2024.140808

Risdwiyanto, A., Sulaeman, M. M., & Rachman, A. (2023). Sustainable digital marketing strategy for long-term growth of MSMEs. *Journal of Contemporary Administration and Management, 1*(3), 180–186. https://doi.org/10.61100/adman.v1i3.70

Sagala, G. H., & Őri, D. (2024). Toward SMEs digital transformation success: A systematic literature review. *Information Systems and e-Business Management, 22*(4), 667–719. https://doi.org/10.1007/s10257-024-00682-2

Sharabati, A. A. A., Ali, A. A. A., Allahham, M. I., Hussein, A. A., Alheet, A. F., & Mohammad, A. S. (2024). The impact of digital marketing on the performance of SMEs. *Sustainability, 16*(19), 8667. https://doi.org/10.3390/su16198667

Sharma, V., Jangir, K., Gupta, M., & Rupeika-Apoga, R. (2024). Does service quality matter in FinTech payment services? *International Journal of Information Management Data Insights, 4*(2), 100252. https://doi.org/10.1016/j.jjimei.2024.100252

White, K., Cakanlar, A., Sethi, S., & Trudel, R. (2025). The past, present, and future of sustainability marketing. *Journal of Business Research, 187*, 115056. https://doi.org/10.1016/j.jbusres.2024.115056

Yesitadewi, V. I., & Widodo, T. (2024). The influence of service quality, perceived value, and trust on customer loyalty via customer satisfaction. *Quality Access to Success, 25*(198), 418–426. https://doi.org/10.47750/QAS/25.198.44

Zhang, C., Teng, W., & Liu, Z. (2025). Does managerial short-termism affect corporate social responsibility? *Finance Research Letters, 73*, 106581. https://doi.org/10.1016/j.frl.2024.106581

Zuo, W., Bai, W., Zhu, W., He, X., & Qiu, X. (2022). Changes in service quality of sharing accommodation: Evidence from Airbnb. *Technology in Society, 71*, 102092. https://doi.org/10.1016/j.techsoc.2022.102092