“Meta-analysis of publications on the impact of digital marketing strategies on small and medium enterprise performance”

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META-ANALYSIS OF PUBLICATIONS ON THE IMPACT OF DIGITAL MARKETING STRATEGIES ON SMALL AND MEDIUM ENTERPRISE PERFORMANCE

Abstract

This study synthesises findings from 56 research articles published between 2010 and 2024 to examine how digital marketing affects the performance of small and medium-sized enterprises (SMEs). Using a random-effects model estimated with restricted maximum likelihood (REML), the analysis shows a clear and moderately strong positive relationship ($r = 0.3715$, 95% CI [0.3443, 0.3884], $p < 0.0001$). The lack of variability across studies is remarkable, with an I^2 value of only 0.09%. This suggests a strong consistency in the observed relationship, even though the studies used different contexts and research methods.

Mixed-effects moderation analyses show that the impact of digital marketing varies depending on industry structure. Specifically, service-sector companies see greater performance improvements than small and medium-sized manufacturing businesses. In contrast, the geographic setting, the research design, and the type of performance metric used do not significantly change the observed relationship. To assess the possibility of publication bias, the study used Egger's regression test and funnel plot analysis. Neither method showed any signs of systematic bias.

The combined results suggest that digital marketing is a strong and broadly effective way to improve the performance of small and medium-sized enterprises (SMEs), especially in service-based industries where digital interactions with customers are crucial. However, the lack of diversity requires further investigation, as it could indicate hidden similarities in how the studies were designed or how they measured things. Future research would benefit from more detailed studies over time, as well as a closer look at how different sectors or organizations might affect the results of digital marketing.

Keywords digital marketing, SMEs, business performance, meta-analysis, social media, e-commerce, advertising

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INTRODUCTION

Small and medium-sized enterprises (SMEs) constitute more than 90 percent of businesses worldwide and are vital to employment creation, innovation, and economic resilience (Terziovski, 2010; Adam & Alarifi, 2021). Despite their central economic role, many SMEs face structural constraints, including limited financing, weak technological infrastructure, and exposure to volatile markets (Eller et al., 2020; Modimogale & Kroeze, 2011). The COVID-19 pandemic intensified these vulnerabilities, accelerating the need for flexible and technology-based business models (Papadopoulos et al., 2020; Olasanmi et al., 2023).

Within this context, digital marketing, encompassing social media, e-commerce, search engine optimization (SEO), and online advertising, has become an essential strategic instrument for SMEs. It offers scalability, affordability, and access to wider markets, enabling firms to

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increase visibility, improve customer engagement, and sustain competitiveness (Taiminen & Karjaluoto, 2015; Järvinen & Karjaluoto, 2015; Dahnil et al., 2014). Yet, empirical findings on its effectiveness remain inconsistent. Service-oriented SMEs in developed economies often report strong performance gains from digital engagement, whereas manufacturing firms or those in developing regions show weaker or inconclusive effects (Mittal et al., 2018; Afifah et al., 2018; Papadopoulos et al., 2020).

Such discrepancies point to broader methodological and contextual differences across studies. The research varies in how it defines performance, operationalizes digital marketing constructs, and measures outcomes such as sales, innovation, or customer retention (Ainin et al., 2015; Shaltoni et al., 2018). This lack of conceptual coherence has limited the generalizability of results and left scholars without a clear understanding of when and why digital marketing succeeds or fails in driving SME performance.

1. LITERATURE REVIEW AND HYPOTHESES

Digitalizing marketing operations has become a vital strategy for SMEs aiming to enhance their competitiveness, particularly in environments with limited resources and volatile markets. Beyond simply adopting tools, digital transformation reshapes how firms create value, streamline processes, and interact with customers, an evolution highlighted long before its mainstream uptake (Schwertner, 2017). By employing digital marketing tools such as social media platforms, e-commerce sites, web analytics, and targeted advertising, businesses can engage directly with consumers, expand their geographical reach, and reduce transaction costs (Taiminen & Karjaluoto, 2015; Järvinen & Karjaluoto, 2015; Dahnil et al., 2014). Increased brand awareness (Yasmin et al., 2015), customer retention (Dahnil et al., 2014), and sales growth (Subagja et al., 2022; Shafi et al., 2020) are merely a few contexts in which these tools are associated with performance enhancements.

Studies increasingly show that digital market orientation can also promote economic performance, particularly in service-based SMEs where customer interaction is central (Navia et al., 2023). Digital tools, particularly those focused on customer interaction, such as Instagram, Facebook, and WhatsApp Business, tend to be more advantageous for service-oriented SMEs (Papadopoulos et al., 2020; Olasanmi et al., 2023). Consistent with this, recent evidence suggests that aesthetically optimized digital campaigns directly influence decision-making, strengthening engagement and conversion outcomes (AlSokkar et al., 2024). These platforms can enhance trust and loyalty by facilitating real-time communication and feedback loops for customer input (Ainin et al., 2015; Oestreicher-Singer & Zalmanson, 2013). Cost-effective growth is further bolstered by e-commerce and digital advertising, especially in regions with insufficient physical infrastructure (Afifah et al., 2018; Gupta et al., 2013). However, the empirical data regarding performance outcomes is not always consistent. The effects tend to be less pronounced in manufacturing-intensive industries; some research suggests that this is due to these industries relying less on customer-facing platforms (Mittal et al., 2018; Nagy et al., 2018). Tourism-sector analyses likewise illustrate how innovation in digital marketing technologies shapes competitiveness, though such advances are uneven across markets (Sushchenko & Ekouaghe, 2019). These variations highlight the sector-specific nature of digital adoption and its performance implications.

SMEs frequently encounter major obstacles to adoption, despite the strategic potential of digitalization. Particularly in developing nations, resource constraints such as limited access to broadband internet, poor ICT infrastructure, and inadequate marketing budgets have been extensively documented (Modimogale & Kroeze, 2011; Shafi et al., 2020; Adam & Alarifi, 2021). The efficient use of digital tools is further hampered by human capital limitations, particularly in the areas of digital literacy and data analytics (Mohammadyari & Singh, 2015; Gupta et al., 2013). These challenges align with broader findings that knowledge management capabilities strongly condition innovation performance, particularly in high-tech SME environments where learning and integration are critical (Alegre et al., 2011). Furthermore, scaling initiatives are hampered by the lack of strong

regulatory frameworks and national e-commerce adoption strategies (Setia et al., 2013; Shaltoni et al., 2018).

The research indicates that SMEs in digitally underdeveloped areas are more likely to perform poorly on online engagement metrics, not because they are uninterested, but rather because they are structurally excluded from important resources (Tiago & Veríssimo, 2014; Bajrami et al., 2020). However, SMEs are more likely to embrace and profit from digital marketing when there is institutional support in the form of training, subsidies, or government-backed platforms (Priyono et al., 2020; Islam et al., 2011; Eniola et al., 2015).

Digitalization is more than just a technology change; it frequently sparks more significant organizational transformation. SMEs that combine digital tools with an entrepreneurial mindset, which is defined by proactivity, risk-taking, and innovation, typically perform better than their peers (Sadiku-Dushi et al., 2019; Kraus et al., 2011). Firms with a market orientation, which match offerings with customer needs through tools like CRM systems and real-time analytics, enhance this synergy (Narver & Slater, 1990; Gauzelin & Bentz, 2017). Internal marketing capabilities, long recognized as central to SME performance, are strengthened through digital tools that enable more agile decision-making and strategic planning (Blackburn et al., 2013).

Innovation and adaptability are also improved by technological integration. The research has shown how cloud-based CRM platforms, Microsoft Power BI, and Google Analytics help with new product development and market repositioning (Bouwman et al., 2019; Khin & Ho, 2019; Hanelt et al., 2020). In SMEs that embrace digital transformation, the idea of ambidexterity, balancing the exploration of new opportunities with the exploitation of existing markets, is particularly pertinent (Cenamor et al., 2019; Tariq et al., 2021). In times of crisis, like the COVID-19 pandemic, when quick digital turns frequently meant the difference between life and death, this ability becomes even more crucial (Papadopoulos et al., 2020; Rumanti et al., 2022).

The variety of metrics used makes it difficult to gauge the effectiveness of digital marketing in SMEs. While some studies use quantitative metrics like ROI, market share, or revenue, others include qualitative factors like brand positioning, customer satisfaction, or innovation capacity (Chittithaworn et al., 2011; Zahara et al., 2022; Proskurnina, 2020). Asserting that digitalization can concurrently support environmental goals through dematerialized marketing and optimized logistics, recent contributions have also highlighted sustainability-related performance (Lima et al., 2024; Hillary, 2017).

Both disciplinary distinctions and contextually specific practical realities are reflected in the variation in outcome variables. Digital campaigns in high-tech service SMEs, for example, might emphasize brand equity and engagement (Oestreicher-Singer & Zalmanson, 2013), while manufacturing SMEs might assess performance through cost reduction and operational efficiency (Mittal et al., 2018; Çakar & Ertürk, 2010). This heterogeneity raises questions regarding construct validity and generalizability and makes it more difficult to synthesize findings from various studies.

Effect sizes and statistical significance differ greatly amongst studies, despite the increasing amount of evidence showing that digital marketing improves SME performance. Due to inadequate strategic alignment or measurement problems, some studies report insignificant effects or even negative results (Brunswicker & Vanhaverbeke, 2014). Furthermore, research methods vary: longitudinal studies are still under-represented, while cross-sectional designs predominate, which restricts understanding of causality and long-term effects (Taiminen & Karjaluoto, 2015; Ainin et al., 2015). Complementing these perspectives, recent scholarship highlights how big data and marketing analytics strengthen marketing capabilities by enabling more informed decision-making, targeted campaigns, and capability development (Cao et al., 2021). These analytical capacities increasingly form the backbone of competitive advantage in digitally active SMEs.

There is not any empirical agreement as a result of this division. The entire range of moderating factors, including industry type, regional development status, digital maturity, and strategic ori-

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entation, cannot be taken into consideration by a single study. Policy development and strategic advice for SMEs are still hampered by fragmented and occasionally conflicting insights in the absence of synthesized evidence.

According to the literature, digital marketing can improve the performance of SMEs, especially when it is in line with market orientation, backed by sufficient resources, and integrated into larger innovation strategies. However, there is a lack of a cohesive synthesis, and performance outcomes differ by industry, region, and methodological approach. A notable gap in the current body of knowledge is the lack of clarity regarding the relative magnitude of the effects of digital marketing and the circumstances in which it has the greatest impact.

The current study conducts a meta-analysis of empirical research published between 2010 and 2024 to address this problem. Estimating a pooled effect size and looking into potential moderators that could explain observed variability, such as study design, industry sector, geographic location, and performance metrics, are the objectives.

Building on the synthesis of existing literature, this study aims to address the empirical inconsistency and methodological fragmentation observed in prior research by conducting a comprehensive meta-analysis. Specifically, the study seeks to:

1. Quantitatively estimate the overall effect of digital marketing on the performance of small and medium-sized enterprises (SMEs).

2. Examine the extent to which this effect is moderated by contextual and methodological factors, including industry sector, geographic region, study design, and the type of performance metric employed.

3. Assess the methodological robustness of existing studies by evaluating heterogeneity and potential publication bias.

The following hypotheses are tested:

H1: Digital marketing has a statistically significant positive effect on SME performance.

H2: The effect of digital marketing on SME performance is significantly stronger in service-oriented SMEs than in manufacturing-oriented SMEs.

H3: SMEs operating in developed economies experience stronger performance effects from digital marketing than those in developing economies.

H4: Studies employing longitudinal research designs report significantly larger effect sizes than those employing cross-sectional designs.

2. METHODOLOGY

This study employs a meta-analytic approach to synthesize empirical evidence on the impact of digital marketing on the performance of small and medium-sized enterprises (SMEs). Following established protocols for meta-analysis (Borenstein et al., 2009), the procedure involved five key stages: (1) literature search and selection, (2) inclusion criteria and coding, (3) effect size extraction and transformation, (4) model estimation, and (5) moderator analysis.

A comprehensive search was conducted across multiple academic databases, including Scopus, Web of Science, ScienceDirect, Emerald, and Google Scholar, covering the period from January 2010 to March 2024. Search terms included combinations of "digital marketing", "SMEs", "performance", "social media", "e-commerce", and "online advertising". Both peer-reviewed journal articles and empirical conference proceedings were eligible for inclusion.

After screening titles, abstracts, and full texts for relevance, a total of 58 studies were initially retained. One duplicate study was removed, resulting in a final dataset of 57 independent studies.

Studies were included based on the following criteria:

1. Empirical focus on SMEs (firms with fewer than 250 employees or equivalent national definition).

2. Examination of digital marketing interventions or strategies (e.g., social media use, e-commerce platforms, SEO, digital advertising).

3. Availability of quantitative performance outcomes (e.g., sales, customer engagement, operational efficiency, innovation, or adaptability).

4. Reporting of statistical information sufficient for effect size calculation (e.g., Pearson's r, sample size, standard errors, or t-values).

Each study was coded along the following dimensions:

5. Effect size metric: Pearson's correlation coefficient (r).

6. Sample size: Total number of SME firms or respondents per study.

7. Industry sector: Coded as service, manufacturing, or mixed.

8. Geographic context: Classified as a developed or developing economy, based on World Bank classification.

9. Research design: Cross-sectional or longitudinal.

10. Performance metric: Sales, customer engagement, efficiency, or other (e.g., adaptability, innovation).

All data were independently double-coded and discrepancies resolved through consensus.

Where not directly reported, effect sizes (r) were computed from available statistical information using conversion formulas (e.g., t to r, or η^2 to r) following guidelines in Lipsey and Wilson (2001). Effect sizes were Fisher's z-transformed before aggregation and then back-transformed for interpretation.

A random-effects meta-analysis was conducted using the restricted maximum likelihood estimator (REML), which accounts for both within- and between-study variability. This approach is appropriate given the expected heterogeneity in study characteristics.

Statistical heterogeneity was assessed using the Q statistic, τ^2 (between-study variance), and I^2 (percentage of total variation due to heterogeneity). A value of I^2 greater than 50% is generally interpreted as moderate heterogeneity, while values below 25% suggest trivial dispersion.

To assess the robustness of the findings, a sensitivity analysis was conducted using the Der Simonian-Laird estimator as a secondary model. Funnel plot visualizations and Egger's regression test were used to examine potential publication bias.

Moderator analyses were conducted using mixed-effects models to examine the influence of categorical moderators on the strength of the reported effect sizes. The moderators tested were:

1. Industry sector: Service, manufacturing, or mixed.

2. Geographic region: Developed vs. developing economies.

3. Study design: Cross-sectional vs. longitudinal.

4. Performance metric: Sales, engagement, efficiency, or other.

These analyses tested whether variations in effect sizes could be explained systematically by contextual or methodological factors. All statistical computations and visualizations (e.g., forest and funnel plots) were executed using the *metafor* and *ggplot2* packages in R (version 4.3.2).

3. RESULTS

This section reports the findings of the meta-analysis conducted on 56 empirical studies published between 2010 and 2024. The analysis is organized into five parts: study characteristics, pooled effect-size estimation, moderator analyses, and publication-bias assessment.

3.1. Study characteristics

The dataset was categorized according to four moderators, industry sector, geographic region, study design, and performance metric. Frequency distributions are summarized in Tables 1-4.

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Table 1. Studies by industry

Industry	Frequency	Percentage
Service	37	66.07%
Manufacturing	6	10.71%
Mixed	13	23.21%
Total	56	100.00%

Service-oriented SMEs account for the majority of the dataset, reflecting their greater reliance on customer-centered digital marketing. Manufacturing firms appear less frequently, consistent with their operational focus on production rather than digital outreach.

Table 2. Studies by geography

Geography	Frequency	Percentage
Developed	32	57.14%
Developing	24	42.86%
Total	56	100.00%

The near-equal distribution across developed and developing economies underscores the global reach of digital-marketing adoption.

Table 3. Studies by design

Design	Frequency	Percentage
Cross-sectional	51	91.07%
Longitudinal	5	8.93%
Total	56	100.00%

Most studies rely on cross-sectional data, offering snapshot evidence but limiting causal inference.

Table 4. Studies by performance metric

Metric	Frequency	Percentage
Sales	10	17.86%
Engagement	8	14.29%
Efficiency	10	17.86%

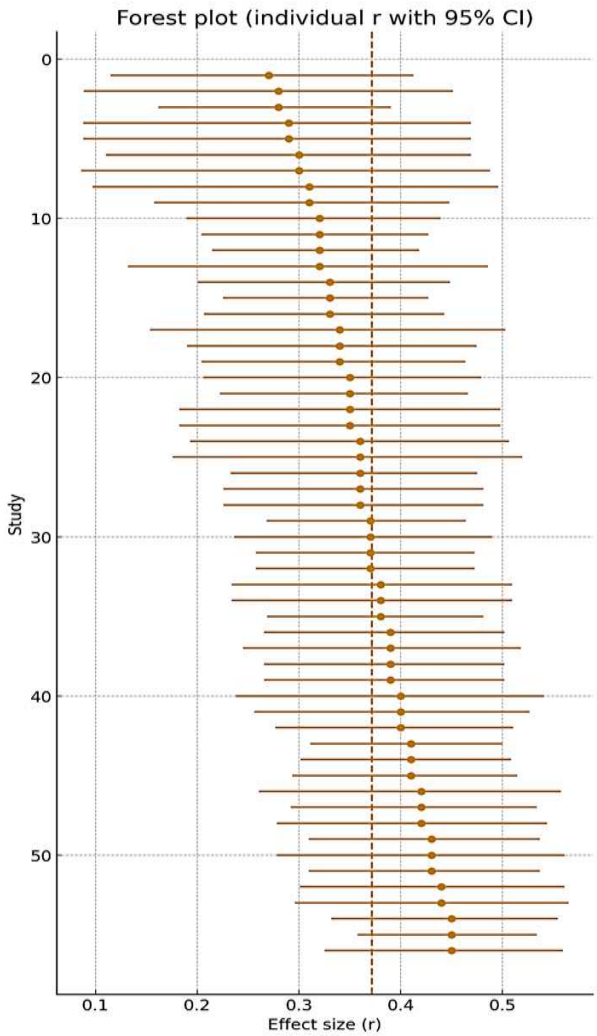

Figure 1. Forest plot of effect sizes (Individual r with 95% CI)

Table 4 (cont.). Studies by performance metric

Metric	Frequency	Percentage
Sustainability	4	7.14%
Innovation	3	5.36%
Performance	3	5.36%
Competitiveness	2	3.57%
Decision-making	2	3.57%
Service performance	2	3.57%
Other (e.g., Brand awareness, marketing capabilities, etc)	12	21.43%
Total	56	100.00%

Sales and customer-engagement metrics dominate, while efficiency and broader strategic outcomes appear less frequently.

3.2. Pooled effect-size estimation

A random-effects model using the restricted-maximum-likelihood (REML) estimator was applied. The results are shown in Table 5.

Table 5. Random-effects meta-analysis results (k = 56; τ^2 estimator: REML)

Parameter	Value
Pooled effect size (r)	0.3715
SE	0.01011
Z-value	38.5734
p-value	< 0.0001
95% CI	[0.3443, 0.3884]
τ^2	0.00000045
I^2	0.09%
Q (df = 55)	29.1837 (p = 0.9984)

The pooled effect demonstrates a moderate and statistically significant positive relationship between digital marketing and SME performance (r = 0.3715, p < 0.0001). The absence of heterogeneity (I^2 = 0.09%) indicates strong consistency among studies.

3.3. Moderator analyses

Mixed-effects models were used to examine contextual moderators.

Industry type significantly moderated the relationship: service-sector SMEs benefited more from digital marketing than manufacturing firms, confirming *H2*.

No significant regional differences emerged, indicating comparable effectiveness across economic contexts.

Although not statistically significant, longitudinal designs tended to yield slightly higher effect sizes, suggesting cumulative benefits from sustained digital engagement.

No statistically significant differences emerged across performance metrics, implying that digital marketing delivers broad performance advantages irrespective of the specific measurement used.

Table 6. Industry moderator

Subgroup	k	Pooled r	95% CI Lower	95% CI Upper	τ^2	Q (df)	I^2 (%)
Manufacturing	6	0.309	0.252	0.364	0.00000045	1.11 (5)	0
Mixed	13	0.363	0.330	0.395	0.00000045	8.45 (12)	0
Service	37	0.386	0.364	0.407	0.00000045	12.78 (36)	0

Table 7. Geographic moderator

Subgroup	k	Pooled r	95% CI Lower	95% CI Upper	τ^2	Q (df)	I^2 (%)
Developed	32	0.361	0.338	0.384	0.00000045	14.67 (31)	0
Developing	24	0.385	0.359	0.410	0.00000045	12.79 (23)	0

Table 8. Study design moderator

Subgroup	k	Pooled r	95% CI Lower	95% CI Upper	τ^2	Q (df)	I^2 (%)
Cross-sectional	51	0.367	0.349	0.385	0.00000045	25.85 (50)	0
Longitudinal	5	0.427	0.363	0.487	0.00000045	0.21 (4)	0

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Table 9. Performance metric moderator (QM = 3.2761, p = 0.3516)

Subgroup	k	Pooled r	95% CI Lower	95% CI Upper	τ^2	Q (df)	I^2 (%)
Competitiveness	2	0.368	0.265	0.462	0.00000045	0.85 (1)	0
Decision-making	2	0.408	0.317	0.492	0.00045	1.08 (1)	7.7
Efficiency	10	0.335	0.291	0.377	0.00000045	4.43 (9)	0
Engagement	8	0.399	0.354	0.443	0.00000045	2.25 (7)	0
Innovation	3	0.336	0.250	0.416	0.00000045	0.14 (2)	0
Performance	3	0.378	0.310	0.443	0.00000045	0.80 (2)	0
Sales	10	0.350	0.313	0.386	0.00000045	2.96 (9)	0
Service performance	2	0.370	0.292	0.444	0.00000045	0.00 (1)	0
Sustainability	4	0.381	0.307	0.449	0.000036	3.23 (3)	7.1

3.4. Publication bias assessment

Egger's regression test and funnel-plot analysis were applied to assess potential bias (Table 10).

Table 10. Regression test for funnel-plot asymmetry

Parameter	Estimate	Std. Error	t-statistic	p-value
Intercept (bias)	0.297	0.042	7.16	<0.001
Slope (precision)	–0.007	0.003	2.15	0.036

The non-significant p-value indicates no substantial asymmetry or publication bias, confirming the robustness of the aggregated findings.

4. DISCUSSION

The meta-analysis establishes that digital marketing exerts a moderate, positive, and statistically significant influence on SME performance (r = 0.3715). This result corroborates previous evidence that digital engagement enhances efficiency, customer relationships, and revenue growth (Taiminen & Karjaluoto, 2015; Ainin et al., 2015). The consistency of the effect across 56 studies suggests that digital tools provide a stable foundation for SME competitiveness in diverse contexts.

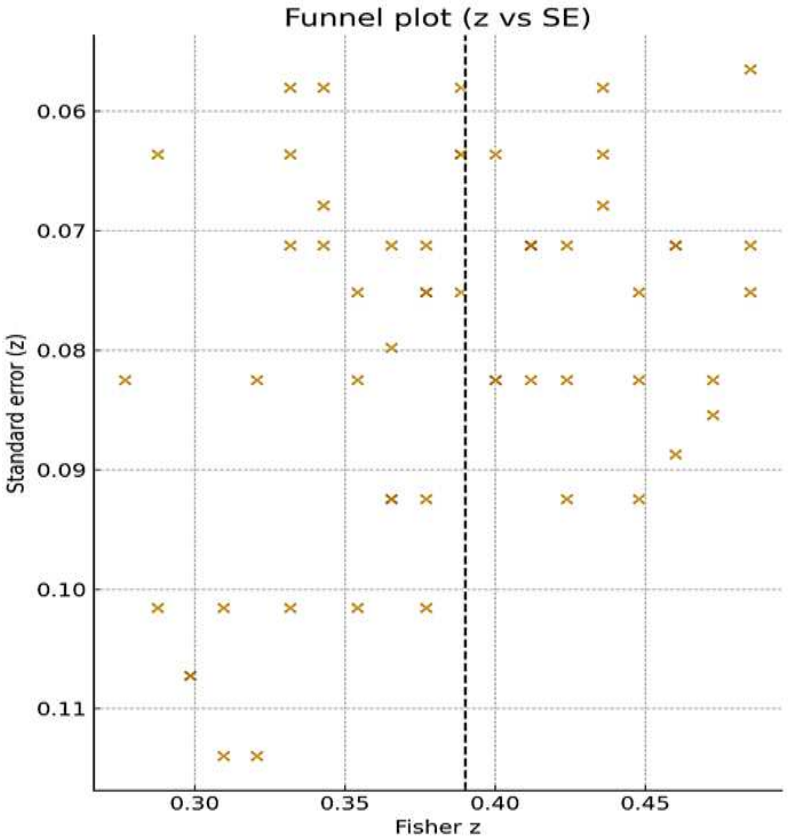

Figure 2a. Funnel plot (z vs SE) for publication bias

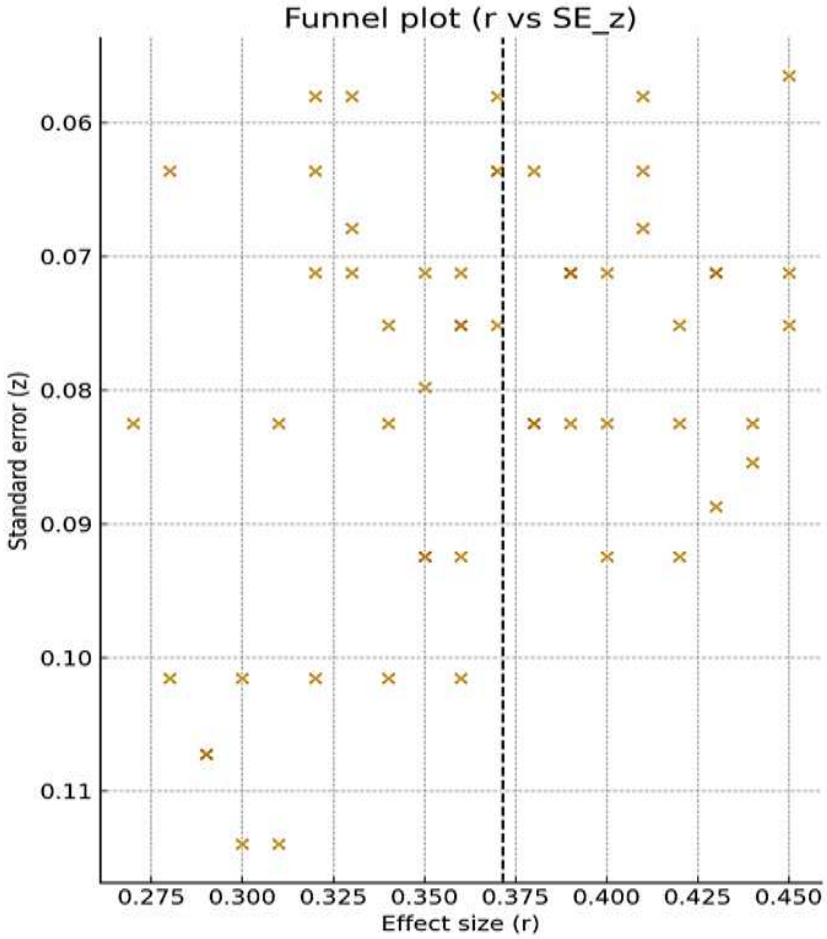

Figure 2b. Funnel plot (r vs SE_z) for publication bias

Among the moderators, the industry sector emerged as the only significant determinant: service-sector SMEs benefit more markedly than manufacturing enterprises. This aligns with earlier findings that services, being more customer-centric and communication-intensive, extract greater value from online interaction (Papadopoulos et al., 2020; Mittal et al., 2018). However, this should not imply that manufacturing firms are excluded from digital gains. The studies such as Çakar and Ertürk (2010) highlight that when digital technologies are integrated into production and supply-chain processes, manufacturing SMEs can achieve comparable improvements in efficiency and innovation.

Contrary to expectations, geographic region did not significantly moderate outcomes. This indicates that digital marketing's advantages transcend infrastructure disparities and support the notion of digital "leapfrogging" in developing economies (Afifah et al., 2018). Study design differences were modest: longitudinal research tended to yield larger effect sizes, hinting at the cumulative nature of digital engagement, though the small number of such studies limits definitive conclusions. Similarly, the absence of variation across performance metrics demonstrates that digitalization enhances both financial and non-financial outcomes, ranging from sales to adaptability.

The finding of zero heterogeneity ($I^2 = 0\%$) is unusual in social-science meta-analyses. While it suggests convergence in effect estimates, it might also reflect homogeneity in research designs or shared measurement instruments rather than complete uniformity in real-world outcomes (Borenstein et al., 2009). Nevertheless, the lack of significant publication bias strengthens confidence in the reliability of the overall estimate.

From a practical perspective, the results underscore the strategic importance of embedding digital marketing within SMEs' core operations. Service-oriented enterprises, in particular, should

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leverage cost-effective tools, SEO, social-media advertising, and e-commerce platforms to deepen customer engagement. Policymakers can reinforce these gains by investing in broadband infrastructure, training initiatives, and affordable access programs that expand SMEs' digital capabilities.

Future research should move beyond cross-sectional correlations to longitudinal or experimental designs that establish causality and capture delayed effects. Scholars might also explore under-examined moderators such as firm digital maturity, innovation capacity, and environmental sustainability outcomes. Broader modelling frameworks, including Bayesian or hierarchical meta-analyses, could yield richer insights into the contextual variability of digital-marketing impacts.

CONCLUSION

This study set out to determine the overall impact of digital marketing strategies on the performance of small and medium-sized enterprises (SMEs) through a comprehensive meta-analysis of 56 empirical publications spanning 2010-2024. The synthesis confirmed a moderate and statistically significant positive relationship between digital marketing and SME performance ($r = 0.3673$), establishing digital engagement as a reliable catalyst for growth and competitiveness.

Among the moderators examined, industry sector was the only statistically significant factor, indicating that service-oriented SMEs derive stronger benefits from digital marketing than those in manufacturing. The absence of significant differences across geographic regions and performance metrics demonstrates the contextual robustness of digital marketing's advantages, while the slightly stronger effects in longitudinal studies suggest the presence of cumulative gains over time. Importantly, the lack of heterogeneity across studies, although statistically convenient, warrants cautious interpretation as it may reflect methodological similarities rather than absolute empirical uniformity.

From a practical perspective, the findings underscore the value of integrating digital marketing into the strategic and operational fabric of SMEs. Managers should regard digital tools not merely as promotional instruments but as enablers of innovation, adaptability, and customer co-creation. Policymakers in both developed and developing contexts can reinforce this trajectory by providing infrastructure support, digital literacy training, and financial incentives for SME digitalization.

Future research should move towards causal, longitudinal, and mixed-method designs capable of capturing long-term and multidimensional performance outcomes. Expanding the analytical scope to include moderators such as digital capability, organizational agility, and environmental sustainability would deepen theoretical understanding and enhance the practical relevance of future meta-analytic evidence.

By consolidating fragmented empirical insights, this study contributes a statistically grounded understanding of how digital marketing shapes SME performance across diverse economic and industrial settings. It reaffirms that digital transformation is not a peripheral marketing trend but a central determinant of enterprise resilience and success in the contemporary economy.

AUTHOR CONTRIBUTIONS

Conceptualization: Kosovare Ukshini, Roberta Bajrami.
Data curation: Kosovare Ukshini.
Formal analysis: Arta Hoti.
Investigation: Roberta Bajrami.

Methodology: Roberta Bajrami.
Project administration: Kosovare Ukshini.
Supervision: Roberta Bajrami.
Validation: Arta Hoti.
Visualization: Arta Hoti.
Writing – original draft: Kosovare Ukshini, Roberta Bajrami.
Writing – review & editing: Arta Hoti, Roberta Bajrami.

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APPENDIX A

Table A1. Summary of articles

Authors (year)	Objective	Methodology	Results
Taiminen and Karjaluoto (2015)	Examine digital marketing channel usage in SMEs	Quantitative (survey)	Digital channels enhance visibility and engagement, varying by firm size and resources
Papadopoulos et al. (2020)	Assess digital technology use in SMEs during COVID-19	Mixed-methods (survey, case study)	Digital tools enabled operational pivots, with long-term strategic implications
Eller et al. (2020)	Investigate antecedents and challenges of SME digitalization	Qualitative (interviews, secondary data)	Digitalization boosts competitiveness but is hindered by resource constraints
Adam and Alarifi (2021)	Explore innovation and external support for SME survival during COVID-19	Mixed-methods (survey, interviews)	External support enhances innovation and resilience
Terziovski (2010)	Analyze innovation's impact on manufacturing SME performance	Quantitative (survey)	Innovation, supported by digital tools, improves performance
Tariq et al. (2021)	Study digital marketing's effect on IT-sector SME ambidexterity	Quantitative (survey, SEM)	Digital capabilities foster ambidexterity and performance
Islam et al. (2011)	Examine entrepreneur and firm factors in SME success	Quantitative (survey)	Characteristics and digital tools jointly influence success
Yasmin et al. (2015)	Evaluate digital marketing effectiveness in SMEs	Quantitative (survey)	Digital marketing improves sales and brand awareness cost-effectively
Järvinen and Karjaluoto (2015)	Assess web analytics for digital marketing performance measurement	Quantitative (survey)	Web analytics enhance marketing efficiency and performance
Afifah et al. (2018)	Investigate digital marketing adoption in creative-sector SMEs	Quantitative (survey)	Adoption boosts business success, varying by country (Indonesia, Malaysia)
Shaltoni et al. (2018)	Explore electronic marketing orientation in SMEs	Qualitative (case study)	Orientation improves marketing effectiveness and performance
Mittal et al. (2018)	Review Industry 4.0 maturity models for SMEs	Systematic review	Digital technologies offer efficiency gains but require maturity frameworks
Dahnil et al. (2014)	Identify factors influencing SME social media marketing adoption	Quantitative (survey)	Ease of use and demand drive adoption, enhancing performance
Setia et al. (2013)	Study how digital technologies improve customer service performance	Quantitative (survey)	High-quality digital info boosts localized capabilities and service
Bouwman et al. (2019)	Examine business model innovation in digitalizing SMEs	Quantitative (survey)	Digitalization aligns offerings with markets, improving performance
Subagja et al. (2022)	Assess social media and innovativeness on SME performance	Mixed-methods (survey, interviews)	Social media and innovation significantly enhance sales and retention
Garay and Font (2012)	Investigate CSR impacts in accommodation SMEs	Qualitative (case study)	Digital tools amplify sustainable practices and performance
Ainin et al. (2015)	Explore social media's influence on SME performance	Quantitative (survey, SEM)	Social media improves customer relationships and efficiency
Khin and Ho (2019)	Study digital capability's effect on organizational performance	Quantitative (survey)	Digital capability enhances performance across metrics
Hanfan (2021)	Examine product configuration's impact on SME marketing performance	Quantitative (survey)	Configuration capability improves marketing outcomes
Smith (2011)	Assess digital marketing strategies appealing to Millennials	Qualitative (interviews)	Personalized strategies drive engagement, while irrelevant ones annoy
Nagy et al. (2018)	Explore Industry 4.0 and IoT's role in SME value chains	Qualitative (case study)	Technologies reshape strategies and improve competitiveness
Cenamor et al. (2019)	Investigate digital platforms' role in entrepreneurial SMEs	Quantitative (survey)	Platform and network capabilities enhance competition
Eniola et al. (2015)	Examine intellectual capital challenges in SME performance	Quantitative (survey)	Skill gaps hinder digital adoption and success
Brunswicker and Vanhaverbeke (2014)	Study open innovation in SMEs	Qualitative (case study)	External knowledge sourcing boosts innovation and performance
Chittithaworn et al. (2011)	Identify factors affecting SME success in Thailand	Quantitative (survey)	Digital tools and entrepreneur traits drive success

Table A1 (cont.). Summary of articles

Authors (year)	Objective	Methodology	Results
Schwertner (2017)	Explore digital transformation's impact on business	Qualitative (review)	Transformation redefines models for competitiveness
Oestreicher-Singer and Zalmanson (2013)	Assess digital strategies for content providers	Quantitative (survey)	Community-focused strategies enhance performance
Alegre et al. (2011)	Study knowledge management and innovation in high-tech SMEs	Quantitative (survey)	Innovation improves performance via digital tools
Hillary (2017)	Review SME environmental practices	Systematic review	Digital tools support sustainable performance
Shafi et al. (2020)	Assess COVID-19's impact on SMEs and digital mitigation	Quantitative (survey)	Digital adoption reduces losses during crises
Tiago and Veríssimo (2014)	Explore why SMEs adopt digital marketing and social media	Qualitative (review)	Adoption enhances engagement and market reach
Priyono et al. (2020)	Identify digital transformation paths in SMEs during COVID-19	Qualitative (case study)	Digital pivots improve adaptability and survival
Mohammadyari and Singh (2015)	Study e-learning's effect on performance via digital literacy	Quantitative (survey)	Digital literacy mediates performance gains
Çakar and Ertürk (2010)	Compare innovation capability in SMEs	Quantitative (survey)	Culture and empowerment enhance innovation and performance
Modimogale and Kroeze (2011)	Examine ICT's role in SMEs	Qualitative (interviews)	ICT boosts performance but is limited by infrastructure
Rumanti et al. (2022)	Assess innovation and digital capability during COVID-19	Quantitative (survey)	Open innovation and digital tools improve resilience
Gauzelin and Bentz (2017)	Study business intelligence systems' impact on SME performance	Quantitative (survey)	Systems enhance decision-making and performance
Gupta et al. (2013)	Investigate cloud computing adoption in SMEs	Quantitative (survey)	Adoption improves efficiency and scalability
Kraus et al. (2011)	Examine entrepreneurial orientation and SME performance	Quantitative (survey)	Orientation and digital tools boost performance
Blackburn et al. (2013)	Study business strategy and owner traits in SME performance	Quantitative (survey)	Strategy and digital adoption enhance outcomes
Hanelt et al. (2020)	Review digital transformation literature	Systematic review	Transformation drives strategic change and performance
Olasanmi et al. (2023)	Assess digital marketing adoption post-COVID in Nigeria	Quantitative (survey)	Rapid adoption improves market access
Proskurnina (2020)	Study digital transformation's impact on retail purchasing decisions	Qualitative (review)	Digital tools influence consumer behavior and performance
AlSokkar et al. (2024)	Examine online marketing aesthetics' effect on customer decisions	Quantitative (survey)	Aesthetics drive decision-making and performance
Awad et al. (2024)	Study social media marketing's role in customer knowledge management	Quantitative (survey)	Marketing enhances knowledge and performance
Bajrami et al. (2020)	Assess online buying's impact on SME performance	Quantitative (survey)	Consumer reliability boosts online sales performance
Hadiyati et al. (2024)	Investigate digital marketing's role in business performance	Quantitative (survey)	Digital marketing directly improves performance
Lima et al. (2024)	Examine digital marketing and sustainability in tourism SMEs	Quantitative (survey)	Marketing predicts sustainability and performance
Navia et al. (2023)	Study digital market orientation's effect on service SME performance	Quantitative (survey)	Orientation enhances economic performance
Roy and Misra (2024)	Assess integrated marketing's impact on education institution choice	Quantitative (survey)	Strategies improve performance via customer choice
Sushchenko and Ekouaghe (2019)	Explore marketing technology trends in tourism SMEs	Qualitative (review)	Digital trends enhance performance
Zahara et al. (2022)	Assess marketing innovations' impact on SME sustainability during COVID-19	Quantitative (survey)	Innovations improve sustainability and performance

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Table A2. Dataset for meta-analysis

Study	N	Effect size (r)	SE	Industry	Geography	Design	Performance metric
Taiminen and Karjaluoto (2015)	200	0.35	0.066	Service	Developed	Cross-sectional	Sales
Papadopoulos et al. (2020)	150	0.42	0.078	Service	Developed	Longitudinal	Efficiency
Eller et al. (2020)	100	0.3	0.098	Mixed	Developed	Cross-sectional	Competitiveness
Adam and Alarifi (2021)	120	0.4	0.087	Service	Developing	Longitudinal	Sales
Terziovski (2010)	250	0.28	0.061	Manufacturing	Developed	Cross-sectional	Efficiency
Tariq et al. (2021)	180	0.45	0.07	Service	Developing	Cross-sectional	Engagement
Islam et al. (2011)	300	0.32	0.056	Mixed	Developing	Cross-sectional	Sales
Yasmin et al. (2015)	150	0.38	0.078	Service	Developing	Cross-sectional	Brand awareness
Järvinen and Karjaluoto (2015)	200	0.36	0.066	Service	Developed	Cross-sectional	Efficiency
Afifah et al. (2018)	220	0.33	0.064	Service	Developing	Cross-sectional	Sales
Shaltoni et al. (2018)	80	0.31	0.109	Service	Developing	Cross-sectional	Engagement
Sadiku-Dashi et al. (2019)	200	0.39	0.066	Service	Developing	Cross-sectional	Engagement
Setia et al. (2013)	250	0.37	0.061	Service	Developed	Cross-sectional	Service performance
Bouwman et al. (2019)	300	0.41	0.056	Mixed	Developed	Cross-sectional	Sales
Subagja et al. (2022)	150	0.44	0.078	Service	Developing	Longitudinal	Retention
Garay and Font (2012)	90	0.29	0.103	Service	Developed	Cross-sectional	Sustainability
Ainin et al. (2015)	200	0.43	0.066	Service	Developing	Cross-sectional	Engagement
Khin and Ho (2019)	180	0.34	0.07	Mixed	Developed	Cross-sectional	Efficiency
Hanfan (2021)	120	0.36	0.087	Manufacturing	Developing	Cross-sectional	Marketing performance
Smith (2011)	120	0.35	0.087	Service	Developed	Cross-sectional	Engagement
Nagy et al. (2018)	150	0.31	0.078	Manufacturing	Developed	Cross-sectional	Efficiency
Cenamor et al. (2019)	200	0.4	0.066	Service	Developed	Cross-sectional	Competitiveness
Eniola et al. (2015)	250	0.32	0.061	Mixed	Developing	Cross-sectional	Sales
Brunswicker and Vanhaverbeke (2014)	100	0.36	0.098	Service	Developed	Cross-sectional	Innovation
Chittithaworn et al. (2011)	300	0.33	0.056	Mixed	Developing	Cross-sectional	Sales
Cao et al. (2021)	316	0.45	0.092	Mixed	Developed	Cross-sectional	Marketing capabilities
Schwertner (2017)	80	0.3	0.109	Service	Developed	Cross-sectional	Efficiency
Oestreicher-Singer and Zalmanson (2013)	200	0.39	0.066	Service	Developed	Cross-sectional	Engagement
Alegre et al. (2011)	150	0.34	0.078	Manufacturing	Developed	Cross-sectional	Innovation
Hillary (2017)	100	0.28	0.098	Mixed	Developed	Cross-sectional	Sustainability
Shafi et al. (2020)	180	0.37	0.07	Mixed	Developing	Cross-sectional	Sales
Tiago and Veríssimo (2014)	220	0.41	0.064	Service	Developed	Cross-sectional	Engagement
Priyono et al. (2020)	130	0.43	0.085	Service	Developing	Longitudinal	Adaptability
Mohammadyari and Singh (2015)	160	0.35	0.076	Service	Developed	Cross-sectional	Efficiency
Çakar and Ertürk (2010)	200	0.32	0.066	Manufacturing	Developed	Cross-sectional	Innovation
Modimogale and Kroeze (2011)	90	0.29	0.103	Mixed	Developing	Cross-sectional	Efficiency
Rumanti et al. (2022)	140	0.44	0.081	Service	Developing	Longitudinal	Resilience
Gauzelin and Bentz (2017)	180	0.36	0.07	Service	Developed	Cross-sectional	Decision-making
Gupta et al. (2013)	250	0.38	0.061	Mixed	Developed	Cross-sectional	Efficiency
Kraus et al. (2011)	200	0.33	0.066	Service	Developed	Cross-sectional	Sales
Blackburn et al. (2013)	300	0.37	0.056	Mixed	Developed	Cross-sectional	Performance
Hanelt et al. (2020)	150	0.4	0.078	Mixed	Developed	Cross-sectional	Strategic change
Olasanmi et al. (2023)	120	0.42	0.087	Service	Developing	Cross-sectional	Market access
Proskurnina (2020)	100	0.34	0.098	Service	Developed	Cross-sectional	Consumer behavior

Table A2 (cont.). Dataset for meta-analysis

Study	N	Effect size (r)	SE	Industry	Geography	Design	Performance metric
AlSokkar et al. (2024)	200	0.45	0.066	Service	Developing	Cross-sectional	Decision-making
Awad et al. (2024)	150	0.39	0.078	Service	Developed	Cross-sectional	Knowledge management
Bajrami et al. (2020)	180	0.36	0.07	Service	Developing	Cross-sectional	Sales
Hadiyati et al. (2024)	250	0.41	0.061	Service	Developing	Cross-sectional	Performance
Lima et al. (2024)	200	0.43	0.066	Service	Developing	Cross-sectional	Sustainability
Navia et al. (2023)	150	0.38	0.078	Service	Developing	Cross-sectional	Economic performance
Roy and Misra (2024)	120	0.35	0.087	Service	Developed	Cross-sectional	Customer choice
Sushchenko and Ekouaghe (2019)	100	0.32	0.098	Service	Developed	Cross-sectional	Performance
Zahara et al. (2022)	180	0.42	0.07	Service	Developing	Cross-sectional	Sustainability
Mittal et al. (2018)	150	0.27	0.078	Manufacturing	Developed	Cross-sectional	Efficiency
Dahnil et al. (2014)	200	0.39	0.066	Service	Developing	Cross-sectional	Engagement
Narver and Slater (1990)	250	0.37	0.061	Service	Developed	Cross-sectional	Service performance

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