



The geography of digital marketing adoption among SMEs: A systematic literature review of urban–rural and regional inequalities

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Abstract

Purpose: This study conducts a systematic literature review (SLR) to synthesize the existing body of knowledge on the geographic dimensions of digital marketing adoption among small and medium-sized enterprises (SMEs), with particular emphasis on urban–rural divides and regional inequalities.

Design/methodology/approach: Following the PRISMA 2020 guidelines, a comprehensive search of Scopus, Web of Science, and Google Scholar databases was undertaken for peer-reviewed articles published between January 2010 and September 2025. From an initial pool of 2,847 records, 78 articles met the inclusion criteria and were subjected to thematic and content analysis. The review is organized around the Technology–Organization–Environment (TOE) framework enriched with spatial and institutional dimensions.

Findings: The review reveals that digital marketing adoption among SMEs is geographically uneven, shaped by a complex interplay of infrastructural deficits (broadband availability, digital infrastructure quality), human capital constraints (digital literacy, owner-manager competencies), institutional environments (government support programs, regulatory frameworks), and socio-cultural factors (local market orientation, risk aversion). Urban SMEs consistently outperform their rural counterparts in adopting social media marketing, search engine optimization, e-commerce platforms, and data-driven advertising. However, the COVID-19 pandemic has served as a partial equalizer, accelerating adoption in previously underserved regions. Regional disparities between the Global North and Global South remain pronounced. The review identifies five thematic clusters: (1) infrastructure and connectivity gaps, (2) human capital and digital skills, (3) institutional and policy enablers, (4) market structure and competitive dynamics, and (5) pandemic-induced digital acceleration.

Originality/value: This is the first systematic review to explicitly map the geographic and spatial dimensions of digital marketing adoption among SMEs, integrating urban–rural and cross-regional perspectives within a unified analytical framework. The study provides a spatially enriched TOE model, proposes a future research agenda, and offers actionable policy recommendations for bridging the digital marketing divide.

Keywords: Digital marketing, SMEs, urban–rural divide, digital divide, technology adoption, systematic literature review, regional inequality, TOE framework

Introduction

The digital transformation of marketing practices has fundamentally reshaped how businesses reach consumers, build brand awareness, and drive revenue growth (Kannan & Li, 2017; Verhoef *et al.*, 2021) ^[52, 101]. Digital marketing—encompassing social media marketing, search engine optimization (SEO), email marketing, content marketing, pay-per-click advertising, and data analytics—has become indispensable for firm competitiveness in an increasingly connected global economy (Chaffey & Ellis-Chadwick, 2019) ^[22]. For small and medium-sized enterprises (SMEs), which constitute approximately 90% of businesses and generate more than 50% of employment globally (World Bank, 2023) ^[108], the effective adoption of digital marketing tools represents both a strategic opportunity and an existential imperative. Yet the benefits of digital marketing are not uniformly accessible. A growing body of evidence suggests that geography matters profoundly in determining which SMEs can adopt, implement, and derive value from digital marketing technologies (Salemink *et al.*, 2017; Townsend *et al.*, 2013) ^[83, 93]. The concept of the "digital divide"—originally conceptualized as the gap in access to information and

communication technologies (ICTs) between different populations (Norris, 2001; Van Dijk, 2006) ^[68, 97]—has evolved into a multi-layered phenomenon encompassing first-level divides (access), second-level divides (usage and skills), and third-level divides (outcomes and benefits) (Wei *et al.*, 2011; Hargittai, 2002) ^[44, 103]. When applied to SMEs, these divides manifest spatially, with firms in rural, peripheral, and economically disadvantaged regions systematically lagging behind their urban and metropolitan counterparts (Philip *et al.*, 2017; Prieger, 2013) ^[76, 78].

The urban–rural digital marketing divide is particularly consequential because it compounds pre-existing economic inequalities. Rural SMEs frequently operate in markets characterized by geographic isolation, lower population density, limited access to skilled labor, and weaker institutional support structures (Galloway *et al.*, 2011; Warren, 2007) ^[36, 102]. These structural disadvantages are amplified when coupled with inadequate broadband infrastructure, lower levels of digital literacy among owner-managers, and limited exposure to digital marketing best practices (Townsend *et al.*, 2015; Ashmore *et al.*, 2017) ^[7, 94]. At the regional level, disparities between developed and developing economies, between core metropolitan areas and

peripheral regions, and between different national and sub-national contexts further complicate the landscape (Barzotto *et al.*, 2019; Loo, 2019) ^[12, 61]. Despite the growing recognition of these geographic inequalities, the existing literature remains fragmented. Studies are scattered across diverse disciplinary domains—including information systems, marketing, regional science, rural studies, entrepreneurship, and public policy—employing different theoretical frameworks, methodological approaches, and geographic foci. While several systematic reviews have examined SME technology adoption (Ghobakhloo *et al.*, 2012; Moeuf *et al.*, 2018) ^[37, 64], digital marketing practices among SMEs (Taiminen & Karjaluoto, 2015) ^[89], and the rural digital divide (Salemink *et al.*, 2017; Philip *et al.*, 2017) ^[76, 83], no review has specifically synthesized research at the intersection of digital marketing adoption, SME contexts, and geographic inequality.

This systematic literature review addresses this gap by pursuing the following research questions:

Q1: What are the key determinants of digital marketing adoption among SMEs that vary across urban, rural, and regional contexts?

Q2: How do urban–rural and regional inequalities manifest in the patterns and outcomes of digital marketing adoption by SMEs?

Q3: What theoretical frameworks have been applied to understand the geographic dimensions of SME digital marketing adoption, and what are their strengths and limitations?

Q4: What policy interventions and support mechanisms have been proposed or implemented to bridge the geographic digital marketing divide among SMEs?

The remainder of this article is structured as follows. Section 2 presents the theoretical background, covering key frameworks for technology adoption and the conceptualization of digital divides. Section 3 details the systematic review methodology, including search strategy, inclusion and exclusion criteria, and the analytical approach. Section 4 presents the descriptive results of the review. Section 5 provides a thematic synthesis of the findings organized around five major themes. Section 6 discusses the results in relation to the theoretical framework and proposes an integrated spatial–digital marketing adoption model. Section 7 outlines a future research agenda and policy implications. Section 8 concludes the review.

Theoretical Background

1. Technology Adoption Frameworks

Research on digital marketing adoption among SMEs has drawn upon several well-established theoretical frameworks. The Technology Acceptance Model (TAM) (Davis, 1989) ^[25], one of the most widely cited models in information systems research, posits that perceived usefulness and perceived ease of use are primary determinants of technology adoption intentions. While parsimonious and empirically robust, TAM has been criticized for its individual-level focus and limited consideration of organizational and environmental factors (Venkatesh & Davis, 2000) ^[98].

The Diffusion of Innovations (DOI) theory (Rogers, 2003) ^[82] provides a complementary lens by examining how innovations spread through social systems over time. Rogers' framework identifies five attributes of innovations

that influence adoption rates—relative advantage, compatibility, complexity, trialability, and observability—and classifies adopters into categories (innovators, early adopters, early majority, late majority, and laggards). The spatial diffusion of digital technologies has been shown to follow geographic patterns, with urban areas typically serving as early adoption hubs from which innovations diffuse outward to peripheral regions (Hägerstrand, 1967; Brown, 1981) ^[19]. The Technology–Organization–Environment (TOE) framework (Tornatzky & Fleischer, 1990) ^[92] has emerged as particularly valuable for studying SME technology adoption because it explicitly incorporates organizational and environmental factors alongside technological characteristics. The TOE framework identifies three contextual dimensions that influence adoption: (1) the technological context (availability, characteristics, and relative advantage of the technology); (2) the organizational context (firm size, resources, management support, and absorptive capacity); and (3) the environmental context (competitive pressures, industry characteristics, regulatory environment, and government support). Importantly, the environmental dimension provides a natural entry point for incorporating geographic and spatial variables (Oliveira & Martins, 2011; Baker, 2012) ^[9, 72]. The Unified Theory of Acceptance and Use of Technology (UTAUT) and its extension UTAUT2 (Venkatesh *et al.*, 2003, 2012) ^[99, 100] integrate elements from multiple adoption theories and introduce moderating factors such as age, gender, experience, and voluntariness of use. While primarily designed for individual-level analysis, UTAUT has been adapted for organizational contexts in several SME studies (Williams *et al.*, 2015) ^[106]. The Resource-Based View (RBV) of the firm (Barney, 1991) ^[11] offers an alternative theoretical lens by focusing on the internal resources and capabilities that enable competitive advantage. From an RBV perspective, digital marketing adoption is contingent upon SMEs possessing or acquiring the necessary technological, human, and financial resources—resources that are often geographically distributed in uneven patterns (Bharadwaj, 2000; Grant, 1996) ^[15, 38].

2. The Digital Divide: Conceptual Evolution

The concept of the digital divide has undergone significant conceptual evolution since its initial formulation in the 1990s ^[92]. First-generation scholarship focused primarily on the access divide—the binary distinction between those with and without access to ICTs (NTIA, 1999). Subsequent research introduced multi-dimensional conceptualizations that moved beyond mere access to encompass usage divides (differences in how technologies are used) and outcome divides (differences in the benefits derived from technology use) (Van Dijk, 2005; DiMaggio *et al.*, 2004) ^[27, 96]. For SMEs, the digital divide operates at multiple levels. The first-level divide concerns access to digital infrastructure, particularly broadband connectivity, which remains geographically stratified (Prieger, 2013 ^[78]; Whitacre *et al.*, 2014a). The second-level divide relates to the skills, competencies, and organizational capabilities needed to effectively utilize digital marketing tools (Hargittai & Hinnant, 2008; Van Deursen & Van Dijk, 2014) ^[43, 95]. The third-level divide concerns the tangible economic outcomes—revenue growth, market expansion, customer engagement—that firms derive from digital marketing adoption (Wei *et al.*, 2011; Ragnedda, 2018) ^[79, 103].

3. Spatial Perspectives on Technology Adoption

The geography of technology adoption has been studied through various spatial lenses. The core-periphery model (Friedmann, 1966) ^[35] suggests that innovations tend to concentrate in core urban regions before diffusing to peripheral areas. The new economic geography literature (Krugman, 1991) ^[56] emphasizes agglomeration effects and their role in creating regional innovation disparities. More recently, the smart specialization framework (Foray *et al.*, 2012) ^[33] has been applied to understand how different regions can leverage their unique assets for digital transformation. Within the specific context of rural areas, researchers have identified a constellation of factors that create what Salemin *et al.* (2017) ^[83], p. 369 term "the rural digital divide": geographic remoteness, lower population density reducing the commercial viability of infrastructure investment, out-migration of skilled workers, limited access to training and support services, and cultural factors including technophobia and attachment to traditional business practices. These factors interact with one another in complex, often reinforcing ways that create persistent geographic inequalities in digital adoption (Roberts *et al.*, 2017) ^[81].

Methodology

1. Review Protocol and Guidelines

This systematic literature review follows the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines (Page *et al.*, 2021) to ensure transparency, rigor, and replicability. The review protocol

was developed a priori and is documented in full in the supplementary materials.

2. Search Strategy

A systematic search was conducted across three major academic databases: Scopus, Web of Science (Core Collection), and Google Scholar (used as a supplementary source). The search was performed in July–September 2025 and covered publications from January 2010 to September 2025 to capture the most relevant contemporary literature while including foundational works from the early 2010s ^[53]. The search string was developed iteratively through a combination of preliminary scoping searches, consultation with domain experts, and reference checking. The final search string employed Boolean operators and was structured as follows:

Search concepts: Geography (rural, urban, geographic*, regional, spatial, location) AND SMEs (SME*, small and medium, small business*) AND digital marketing (e-marketing, internet marketing, e-commerce, digital advertising).

The search was applied to titles, abstracts, and keywords. Database-specific syntax adjustments were made where necessary.

3. Inclusion and Exclusion Criteria

Articles were included if they met all of the following criteria:

Table 1: Eligibility criteria used for screening

Criterion	Inclusion	Exclusion
Language	English	Non-English
Publication type	Peer-reviewed journal articles, conference papers in indexed proceedings	Book chapters, editorials, commentaries, working papers, dissertations
Time period	January 2010–September 2025	Before 2010
Subject focus	Digital marketing adoption/use by SMEs with explicit geographic/spatial dimension	Large enterprises only; no geographic dimension; purely technical studies
Context	Any country or region	None
Methodology	Empirical (quantitative, qualitative, mixed-methods) or conceptual/theoretical	Non-academic or practitioner reports

4. Screening and Selection Process

The search and selection process followed the PRISMA flow diagram depicted in Table 2. The initial database search yielded 2,847 records (Scopus: 1,243; Web of Science: 1,089; Google Scholar: 515). After removing 687 duplicates, 2,160 records remained for title and abstract screening. Two reviewers independently screened all records, with disagreements resolved through discussion and, where necessary, consultation with a third reviewer.

Title and abstract screening resulted in 189 potentially relevant articles, which were retrieved for full-text assessment. During full-text screening, 111 articles were excluded for the following reasons: no explicit geographic dimension (n = 47), focus on large enterprises (n = 23), not empirical or conceptual (n = 18), digital marketing not the primary focus (n = 14), and full text unavailable (n = 9). The final sample comprised 78 articles for analysis.

Table 2: PRISMA identification and screening summary (reported in the source review)

PRISMA stage	Number / reason
Records identified	2,847 (Scopus 1,243; Web of Science 1,089; Google Scholar 515)
Duplicates removed	687
Titles and abstracts screened	2,160
Records excluded at screening	1,971
Full texts assessed	189
Full texts excluded	111 (47 no geographic dimension; 23 large enterprises; 18 not empirical/conceptual; 14 no digital marketing focus; 9 unavailable)
Studies included	78

5. Data Extraction and Analysis

Data were extracted from each included article using a standardized coding sheet that captured: bibliographic information (authors, year, journal, country of study), research design and methodology, theoretical framework, type of digital marketing examined, geographic focus (urban, rural, regional, national, cross-national), key findings, barriers and enablers identified, and policy implications. Thematic analysis was conducted following Braun and Clarke's (2006) ^[18] six-phase approach, with themes generated inductively from the data and subsequently mapped onto the TOE framework enriched with spatial and institutional dimensions.

6. Quality Assessment

The quality of included studies was assessed using the Mixed Methods Appraisal Tool (MMAT) version 2018 (Hong *et al.*, 2018) ^[48]. Each article was evaluated against the relevant criteria for its study design (quantitative, qualitative, or mixed methods). No articles were excluded solely on the basis of quality scores; however, quality ratings were used to moderate the weight given to individual findings during synthesis.

Descriptive Results

1. Temporal Distribution

The temporal distribution of the 78 included articles reveals a clear upward trend in scholarly interest. Only 5 articles (6.4%) were published between 2010 and 2014, reflecting the nascent state of this research area. The period 2015–2019 ^[14, 34] saw a significant increase to 24 articles (30.8%), driven by growing academic attention to the digital divide and SME digitalization. The largest concentration of publications occurred during 2020 ^[39]–2025 (49 articles, 62.8%), with a notable spike in 2021–2023 linked to the COVID-19 pandemic's acceleration of digital transformation research.

2. Geographic Distribution

The geographic coverage of the reviewed literature is diverse but uneven. European studies constitute the largest share (34 articles, 43.6%), with significant contributions from the United Kingdom ($n = 11$), Germany ($n = 5$), Italy ($n = 4$), Spain ($n = 4$), the Nordic countries ($n = 4$), and Eastern European nations ($n = 6$). Studies from the Asia-Pacific region account for 22 articles (28.2%), including contributions from China ($n = 5$), India ($n = 5$), Indonesia ($n = 4$), Malaysia ($n = 3$), and Australia ($n = 3$). African studies represent 10 articles (12.8%), with research concentrated in Nigeria ($n = 3$), South Africa ($n = 3$), Kenya ($n = 2$), and Ghana ($n = 2$). Latin American studies account for 6 articles (7.7%), while cross-national comparative studies contribute 6 articles (7.7%). The relative underrepresentation of research from the Middle East, Central Asia, and small island developing states (SIDS) represents a notable gap.

3. Methodological Approaches

Quantitative approaches dominate the reviewed literature (42 articles, 53.8%), predominantly employing survey-based research designs with structural equation modeling (SEM), logistic regression, or descriptive statistics. Qualitative studies account for 22 articles (28.2%), utilizing semi-structured interviews, case studies, and focus groups. Mixed-methods designs feature in 11 articles (14.1%), while

conceptual and theoretical papers contribute 3 articles (3.9%).

4. Theoretical Frameworks

The TOE framework is the most frequently employed theoretical lens (used in 26 articles, 33.3%), followed by TAM/TAM2 (18 articles, 23.1%), DOI theory (15 articles, 19.2%), UTAUT/UTAUT2 (9 articles, 11.5%), and the Resource-Based View (7 articles, 9.0%). Several studies combine multiple frameworks (14 articles, 17.9%), and a growing number incorporate spatial or institutional theories alongside traditional adoption models (8 articles, 10.3%).

5. Types of Digital Marketing Examined

Social media marketing is the most frequently studied digital marketing activity (examined in 52 articles, 66.7%), followed by e-commerce and online sales platforms (41 articles, 52.6%), website and online presence (38 articles, 48.7%), email marketing (19 articles, 24.4%), SEO (15 articles, 19.2%), content marketing (12 articles, 15.4%), and mobile marketing (10 articles, 12.8%). Many studies examine multiple digital marketing activities simultaneously.

Thematic Findings

The thematic analysis identified five major themes that collectively explain the geographic dimensions of digital marketing adoption among SMEs: (1) infrastructure and connectivity gaps; (2) human capital and digital skills; (3) institutional and policy enablers; (4) market structure and competitive dynamics; and (5) pandemic-induced digital acceleration.

1. Theme 1: Infrastructure and Connectivity Gaps

The most consistently cited geographic barrier to digital marketing adoption among SMEs is the uneven distribution of digital infrastructure, particularly broadband connectivity (Salemink *et al.*, 2017; Prieger, 2013 ^[78, 83]; Whitacre *et al.*, 2014a, 2014b). The relationship between broadband availability and SME digital marketing adoption has been documented across diverse geographic contexts.

In the European context, studies demonstrate that rural SMEs face significantly lower broadband speeds and reliability compared to their urban counterparts (Townsend *et al.*, 2013, 2015; Galloway *et al.*, 2011) ^[36, 93, 94]. Research in the United Kingdom reveals that despite government initiatives to extend broadband coverage, rural areas continue to experience speeds that are insufficient for data-intensive digital marketing activities such as video content creation, live streaming, and real-time analytics (Ashmore *et al.*, 2017; Philip *et al.*, 2017) ^[7, 76]. A study of Scottish rural SMEs by Galloway *et al.* (2011) ^[36] found that inadequate broadband was the single most frequently cited barrier to online marketing adoption, with 67% of rural respondents identifying connectivity issues compared to only 12% of urban respondents.

In developing economies, the infrastructure gap is even more pronounced. Studies from sub-Saharan Africa document that many rural SMEs lack basic internet access entirely, let alone the high-speed connectivity required for sophisticated digital marketing (Amoah & Amoah, 2023; Duncombe & Boateng, 2009) ^[6, 30]. Research in India reveals a stark urban–rural divide in both fixed and mobile broadband penetration, with rural areas often relying on intermittent mobile data connections that constrain digital

marketing capabilities (Kalia *et al.*, 2021; Agarwal *et al.*, 2022) ^[2, 51].

However, the infrastructure narrative is not uniformly pessimistic. Mobile broadband expansion, particularly in Africa and Southeast Asia, has created new pathways for rural SME digital marketing adoption that partially bypass fixed-line infrastructure constraints (Aker & Mbiti, 2010; Chew *et al.*, 2015) ^[4, 23]. Studies from Kenya, Nigeria, and Indonesia document how mobile-first digital marketing strategies—leveraging platforms such as WhatsApp Business, Facebook, and Instagram—have enabled rural SMEs to reach customers beyond their immediate geographic areas (Mwangi *et al.*, 2022; Olanrewaju *et al.*, 2020; Hapsari *et al.*, 2021) ^[41, 66, 71].

Key Finding 1: Broadband infrastructure remains a necessary but not sufficient condition for digital marketing adoption. The shift from fixed to mobile connectivity is partially mitigating first-level access divides in developing regions, but persistent quality-of-service gaps continue to constrain the types and sophistication of digital marketing activities available to rural SMEs.

2. Theme 2: Human Capital and Digital Skills

A recurring theme across the reviewed literature is that digital marketing adoption among rural SMEs is constrained not only by infrastructural deficits but also by human capital limitations (Taiminen & Karjaluo, 2015; Bordonaba-Juste *et al.*, 2012; Jones *et al.*, 2015) ^[16, 50, 89]. This theme encompasses digital literacy of owner-managers, availability of skilled employees, and access to training and education. Research consistently shows that SME owner-managers in rural and peripheral regions exhibit lower levels of digital marketing literacy compared to their urban counterparts (Pergelova *et al.*, 2019; Matikiti *et al.*, 2018) ^[63, 75]. A mixed-methods study by Taiminen and Karjaluo (2015) ^[89] found that many SME owners perceive digital marketing tools as complex and intimidating, with this perception being significantly more prevalent among rurally located firms. Qualitative research in Wales by Burgess *et al.* (2017) ^[21] revealed that rural SME owners often lack awareness of available digital marketing tools and their potential benefits, resulting in a "don't know what they don't know" information asymmetry.

The availability of digitally skilled employees is another critical factor. Urban areas benefit from proximity to universities, technology hubs, and creative industries that generate pools of digitally literate workers (Florida, 2002; Storper & Scott, 2009) ^[31, 88]. Rural SMEs, by contrast, face a "brain drain" effect, with young, tech-savvy workers migrating to urban centers in search of better career opportunities (Stockdale, 2006; Thissen *et al.*, 2019) ^[87, 91]. Several studies document the resulting recruitment challenges that rural SMEs face when seeking digital marketing expertise (Roberts *et al.*, 2017; Townsend *et al.*, 2015) ^[81, 94].

Training and education access also varies geographically. Urban SMEs benefit from proximity to business support organizations, digital marketing agencies, industry events, and peer networks that facilitate knowledge transfer and capability building (Foley & Fahey, 2020) ^[32]. Rural SMEs typically have more limited access to such resources, and the cost and time required to access urban-based training can be prohibitive (Galloway *et al.*, 2011) ^[36]. However, the

shift to online training and virtual events, accelerated by the pandemic, has partially reduced this geographic disadvantage (Li *et al.*, 2022; Sharma *et al.*, 2022) ^[86].

Key Finding 2: Human capital constraints—including owner-manager digital literacy, employee skills, and access to training—represent a second-level digital divide that persists even when first-level access barriers are addressed. Geographic concentration of digital skills in urban areas creates a self-reinforcing cycle that disadvantages rural SMEs.

3. Theme 3: Institutional and Policy Enablers

The institutional environment—encompassing government policies, support programs, regulatory frameworks, and intermediary organizations—plays a significant role in shaping geographic patterns of SME digital marketing adoption (Neirotti *et al.*, 2018; North *et al.*, 2020; Hervé *et al.*, 2020) ^[47, 67, 69].

Several studies examine the effectiveness of government-led digital SME programs across different geographic contexts. Research from the EU documents how programs such as the Digital Europe Programme, the European Regional Development Fund (ERDF), and national digitalization initiatives have sought to bridge the digital divide among SMEs (Barzotto *et al.*, 2019; Bertschek *et al.*, 2015) ^[12, 14]. However, evaluations suggest that these programs often disproportionately benefit urban SMEs due to higher awareness, better access to application processes, and greater organizational capacity to absorb support (North *et al.*, 2020; Colombo *et al.*, 2013) ^[24, 69].

In the developing world, government digital transformation initiatives have shown mixed results. Studies from Malaysia (Alam *et al.*, 2011; Ahmad *et al.*, 2015) ^[3, 5], South Africa (Dlodlo & Dhurup, 2013) ^[28], and Nigeria (Olanrewaju *et al.*, 2020) ^[71] document that while national digitalization strategies exist, implementation in rural areas is often hampered by bureaucratic inefficiencies, inadequate funding, and a disconnect between policy design (typically urban-centric) and rural realities. Research from India suggests that programs like Digital India have had positive but geographically uneven effects, with peri-urban and semi-urban areas benefiting more than deep rural areas (Kalia *et al.*, 2021) ^[51].

The role of intermediary organizations—including chambers of commerce, business development centers, digital hubs, and cooperative networks—has received growing attention. Studies document how these intermediaries can help bridge the digital marketing knowledge gap by providing localized support, mentoring, and peer-learning opportunities (Mole *et al.*, 2017; North *et al.*, 2020) ^[65, 69]. However, the geographic distribution of these intermediaries tends to mirror the urban–rural divide, with rural areas being relatively underserved (Huggins & Thompson, 2015) ^[49].

Financial support mechanisms, including grants, subsidized loans, and tax incentives for digital investment, also display geographic variation. Several studies note that rural SMEs face greater difficulty accessing finance for digital marketing investments due to risk-averse lending practices in areas with lower economic density (Lee & Drever, 2014; Brown & Lee, 2019) ^[20, 58]. Furthermore, the cost-effectiveness of digital marketing investments may be perceived differently in rural contexts, where lower customer density can reduce the expected return on investment (Townsend *et al.*, 2015) ^[94].

Key Finding 3: Institutional environments shape digital marketing adoption in geographically differentiated ways. Policy interventions designed without explicit attention to spatial inequalities risk reinforcing rather than reducing the urban–rural digital marketing divide. Effective interventions require place-based approaches that account for local contexts and leverage intermediary organizations.

4. Theme 4: Market Structure and Competitive Dynamics

The structure of local markets and competitive environments significantly influences the motivation and capacity of SMEs to adopt digital marketing, and these factors vary substantially across geographic contexts (Porter, 2001; Bala & Verma, 2018; Sánchez-Torres *et al.*, 2021) ^[10, 77, 84].

Urban SMEs typically operate in larger, more competitive, and more diverse markets where digital marketing offers significant advantages in terms of customer reach, differentiation, and competitive positioning (Karjalainen & Huhtamäki, 2010) ^[53]. The concentration of competitors, many of whom are themselves digitally active, creates normative and competitive pressures that drive adoption (DiMaggio & Powell, 1983; Zhu *et al.*, 2006) ^[26, 110]. Studies from Germany (Bertschek *et al.*, 2015), the UK (Jones *et al.*, 2015), and China (Xie & Wu, 2023) ^[14, 50, 109] confirm that competitive intensity is a strong predictor of digital marketing adoption, and that this pressure is more acutely felt in urban markets.

Rural SMEs, conversely, often serve smaller, more localized markets where personal relationships, word-of-mouth, and face-to-face interactions remain the dominant marketing channels (Galloway *et al.*, 2011; Bosworth & Atterton, 2012) ^[17, 36]. Several qualitative studies reveal that rural SME owners may perceive digital marketing as less relevant or less effective in contexts where their customer base is geographically proximate and primarily reached through traditional means (Matikiti *et al.*, 2018; Roberts *et al.*, 2017) ^[63, 81]. This perception—whether accurate or not—reduces adoption motivation.

However, research also documents an important counternarrative: digital marketing can be disproportionately beneficial for rural SMEs precisely because it offers the ability to transcend geographic limitations and access distant markets (Townsend *et al.*, 2013; Freshwater *et al.*, 2019) ^[34, 93]. Studies of rural tourism enterprises (Hays *et al.*, 2013; Mariani *et al.*, 2016) ^[45, 62], agricultural SMEs (Mwangi *et al.*, 2022) ^[66], and artisanal producers (Testa *et al.*, 2020) ^[90] demonstrate that effective digital marketing can connect rural businesses with urban and even international consumers, creating new revenue streams and reducing dependence on thin local markets.

The platform economy introduces additional geographic dynamics. Research on platforms such as Airbnb, Etsy, and various food delivery services shows how digital platforms can either reduce or amplify spatial inequalities depending on their design, business models, and geographic reach (Koomson & Danquah, 2021; Lehdonvirta *et al.*, 2019) ^[55, 59]. While some platforms have extended their reach into rural areas, others remain concentrated in urban markets, reinforcing existing geographic biases (Hardy *et al.*, 2023) ^[42].

Key Finding 4: Market structure and competitive dynamics create geographically differentiated incentives and motivations for digital marketing adoption. While competitive pressure drives adoption in urban markets, digital marketing holds transformative potential for rural SMEs seeking to overcome market access constraints—but this potential is often unrealized due to the interaction of other barriers.

5. Theme 5: Pandemic-Induced Digital Acceleration

The COVID-19 pandemic represents a watershed event in the digital marketing adoption landscape, and its geographic dimensions have attracted significant scholarly attention (Donthu & Gustafsson, 2020; He & Harris, 2020; Guo *et al.*, 2020) ^[29, 39, 46]. Lockdowns, social distancing measures, and the collapse of physical market channels forced SMEs across all geographic contexts to rapidly adopt or intensify digital marketing and sales channels (Papadopoulos *et al.*, 2020; Seetharaman, 2020) ^[74, 85].

Several studies document that the pandemic compressed years of expected digital adoption into months, with rural SMEs—historically the slowest adopters—experiencing some of the most dramatic shifts (Li *et al.*, 2022; Adam & Alarifi, 2021) ^[1, 86]. Research from India (Sharma *et al.*, 2022), Brazil (Reis *et al.*, 2021), and the UK (Guo *et al.*, 2020) ^[39, 80, 86] shows that rural SMEs which had previously been reluctant to engage in digital marketing were compelled to establish online presences, adopt social media marketing, and implement e-commerce capabilities in response to pandemic disruptions.

However, the pandemic's equalizing effect has been uneven and potentially temporary. Studies note that while many rural SMEs initiated digital marketing activities during the pandemic, the quality, sophistication, and sustainability of these efforts varied considerably (Winarsih *et al.*, 2021; Bai *et al.*, 2021) ^[8, 107]. Urban SMEs, with better pre-existing digital infrastructure and skills, were generally able to pivot more effectively and sustain their digital marketing activities post-pandemic (Klein & Todesco, 2021) ^[54].

Critically, the pandemic exposed and in some cases widened the infrastructure divide. Research documents that SMEs in areas with poor broadband connectivity were unable to fully participate in the digital acceleration, even when motivated to do so (Beaunoyer *et al.*, 2020; Lai & Widmar, 2021) ^[13, 57]. This created a "double disadvantage" for rural SMEs in underserved areas: they lost physical market access due to lockdowns while simultaneously lacking the digital infrastructure to compensate through online channels.

Key Finding 5: The COVID-19 pandemic served as a forced accelerator of digital marketing adoption across geographic contexts, partially narrowing the urban–rural gap. However, pre-existing infrastructural and skills inequalities moderated the depth and durability of this acceleration, suggesting that pandemic-driven gains may not be sustained without complementary investments in infrastructure, skills, and institutional support.

Discussion

1. Toward a Spatially Enriched TOE Framework

The synthesis of findings across the five thematic areas suggests that existing technology adoption frameworks, while valuable, are insufficient to fully capture the geographic dimensions of digital marketing adoption among

SMEs. The standard TOE framework (Tornatzky & Fleischer, 1990) ^[92], which has been the most frequently employed theoretical lens in the reviewed literature, provides a useful organizing structure but lacks explicit spatial and institutional components. Based on the reviewed evidence, we propose an Extended Spatial

TOE (S-TOE) Framework for understanding the geography of digital marketing adoption among SMEs. This framework retains the three core dimensions of the TOE model while enriching each with spatial considerations and adding a fourth dimension—the spatial-institutional context—that captures the geographic specificities of adoption environments.

Table 3: Extended Spatial TOE (S-TOE) Framework

Dimension	Standard TOE Elements	Spatial Enrichment
Technological Context	Technology availability, relative advantage, compatibility, complexity	Broadband quality and reliability by location; mobile vs. fixed connectivity options; platform accessibility in rural areas; technology-infrastructure fit
Organizational Context	Firm size, resources, management support, IT capability, absorptive capacity	Owner-manager digital literacy (rural vs. urban profiles); employee skill availability by location; financial resources for digital investment; firm-level spatial strategies (local vs. translocal market orientation)
Environmental Context	Competitive pressure, industry characteristics, customer expectations, trading partner readiness	Local market density and structure; customer digital readiness by region; competitive dynamics (urban intensity vs. rural relationship-based); sector-spatial interactions (e.g., rural tourism, agriculture)
Spatial-Institutional Context (new)	—	Government digital support programs (geographic targeting and reach); intermediary organizations (geographic distribution); broadband policy and regulation; place-based innovation policies; regional innovation systems; agglomeration economies and knowledge spillovers

This extended framework acknowledges that adoption decisions are embedded in spatially differentiated contexts and that geographic location is not merely a control variable but a constitutive factor shaping the entire adoption process.

2. Patterns and Paradoxes

The review reveals several notable patterns and paradoxes in the geography of SME digital marketing adoption:

The Access–Usage Paradox: Even when first-level access barriers (broadband availability) are addressed, rural SMEs do not automatically converge with urban adoption levels. Second- and third-level divides—skills, knowledge, motivation, and outcomes—persist independently of infrastructure improvements (Van Dijk, 2006; Hargittai, 2002) ^[44, 97]. This suggests that infrastructure investment, while necessary, is insufficient without complementary human capital and institutional interventions.

The Relevance Paradox: Digital marketing is simultaneously perceived as less relevant by many rural SMEs (due to local market orientation and traditional customer relationships) and potentially more valuable for rural SMEs (due to the ability to overcome geographic isolation and access distant markets). Resolving this paradox requires targeted awareness-raising and demonstration of rural-specific use cases and benefits.

The Policy Paradox: Government support programs designed to promote SME digitalization often inadvertently reinforce geographic inequalities because they are more accessible to—and more frequently utilized by—urban SMEs with greater organizational capacity, awareness, and proximity to support infrastructure (North *et al.*, 2020; Colombo *et al.*, 2013) ^[24, 69].

The Pandemic Paradox: COVID-19 simultaneously accelerated digital adoption across all contexts and exposed the most severe constraints facing rural SMEs, creating both

convergence (in adoption intentions) and divergence (in adoption quality and sustainability).

3. Cross-Regional Comparisons

The reviewed literature reveals important differences across macro-regions in the patterns and dynamics of the urban–rural digital marketing divide:

Europe presents the most extensively studied context, with well-documented urban–rural divides moderated by relatively strong institutional support structures and progressive broadband policies (EU Digital Single Market, broadband universal service obligations). The divide is most pronounced in peripheral and Eastern European regions and least pronounced in the Nordic countries, where both infrastructure coverage and digital literacy levels are comparatively high.

Asia-Pacific exhibits enormous heterogeneity, with countries like South Korea, Singapore, and Japan showing near-universal digital adoption alongside persistent rural–urban gaps in large developing economies like India, Indonesia, and the Philippines. Mobile-first adoption patterns are particularly prominent in this region.

Sub-Saharan Africa faces the most severe first-level access divides but has also shown remarkable innovation in mobile-based digital marketing solutions. The "leapfrogging" of fixed-line infrastructure through mobile platforms has created unique adoption pathways that do not neatly fit models developed in advanced economies.

Latin America displays urban–rural digital marketing divides that are compounded by broader socioeconomic inequalities, with studies highlighting the intersection of geographic, ethnic, and economic dimensions of digital exclusion.

Future Research Agenda and Policy Implications

1. Future Research Directions

Based on the gaps and limitations identified in this review, we propose the following research agenda:

Longitudinal and panel studies. The vast majority of reviewed studies employ cross-sectional designs, limiting our understanding of how geographic patterns of digital marketing adoption evolve over time. Longitudinal studies tracking cohorts of urban and rural SMEs would illuminate the dynamics of convergence, divergence, and the persistence of spatial inequalities.

Outcomes and performance measurement. While adoption determinants are well-studied, research on the actual economic outcomes of digital marketing adoption by rural vs. urban SMEs remains scarce. Studies linking digital marketing adoption to firm performance indicators (revenue growth, market expansion, profitability) across geographic contexts would provide stronger evidence for policy interventions.

Intra-urban and peri-urban dynamics. The urban–rural dichotomy, while useful, oversimplifies a more complex spatial continuum. Future research should examine intra-urban digital divides (e.g., between affluent and deprived neighborhoods), peri-urban dynamics, and small-town contexts that do not fit neatly into either urban or rural categories.

Intersectional analysis. Geographic location intersects with other dimensions of inequality—including gender, ethnicity, age, sector, and firm age—in shaping digital marketing adoption. Intersectional research designs that examine how multiple axes of inequality interact in producing geographic digital marketing divides would enrich both theory and policy.

Platform-mediated adoption. The growing role of digital platforms (social media platforms, e-commerce marketplaces, super-apps) in mediating SME digital marketing warrants dedicated geographic analysis. How do platform algorithms, market structures, and business models shape the geographic distribution of SME participation and outcomes?

Emerging technologies. The application of artificial intelligence (AI), machine learning, augmented reality, and voice search in digital marketing represents the next frontier of the digital divide. Research should examine whether these advanced technologies amplify or reduce existing geographic inequalities among SMEs.

Post-pandemic sustainability. Research is needed to assess whether pandemic-driven digital marketing adoption gains among rural SMEs are sustained, reversed, or transformed in the post-pandemic period.

Underrepresented regions. The review identifies significant geographic gaps in the literature. Future research should prioritize understudied contexts, including the Middle East, Central Asia, Pacific Island States, and Central America, to develop a more globally comprehensive understanding.

2. Policy Implications

The review's findings point to several actionable policy recommendations:

Infrastructure investment with geographic targeting. While broadband infrastructure investment remains essential, policies should move beyond universal coverage targets to address quality-of-service disparities. Programs should prioritize achieving minimum speed thresholds sufficient for digital marketing activities (e.g., video content creation, e-commerce, analytics) in underserved areas.

Place-based digital skills programs. Digital skills training programs should be designed with geographic specificity, delivered through locally embedded institutions, and tailored to the particular industries, markets, and opportunities relevant to rural and peripheral SMEs. Online delivery modes should be complemented by in-person support to accommodate varying levels of digital readiness.

Intermediary strengthening. Policies should invest in building the capacity of locally embedded intermediary organizations—chambers of commerce, business support centers, cooperative networks, local digital hubs—to provide ongoing, contextualized digital marketing support to SMEs in underserved areas.

Demonstration and peer-learning. Government programs should fund rural-specific digital marketing success stories, case studies, and peer-learning networks that demonstrate the relevance and benefits of digital marketing in non-urban contexts, addressing the "relevance paradox" identified in the review.

Integrated policy approaches. The most effective interventions address multiple dimensions of the digital divide simultaneously—combining infrastructure development, skills training, financial support, and institutional capacity-building in coordinated, place-based packages rather than siloed programs.

Conclusions

This systematic literature review has synthesized research on the geographic dimensions of digital marketing adoption among SMEs, revealing a complex and multi-layered landscape of urban–rural and regional inequalities. The review of 78 peer-reviewed articles published between 2010^[53] and 2025 demonstrates that the digital marketing divide among SMEs is not merely a function of infrastructure access—though this remains a critical factor, particularly in developing regions—but is constituted through interacting technological, organizational, environmental, and spatial-institutional dimensions.

The proposed Extended Spatial TOE (S-TOE) framework provides a theoretically grounded model for understanding how geographic location shapes the entire adoption process, from awareness and motivation through implementation to sustained use and outcomes. The framework challenges both technological determinism (the assumption that infrastructure provision alone will resolve geographic inequalities) and geographic determinism (the assumption that rural location inevitably precludes effective digital marketing).

The COVID-19 pandemic has partially disrupted established geographic patterns, accelerating digital marketing adoption among some rural SMEs while simultaneously exposing the limitations of adoption without adequate infrastructure and skills. The sustainability of pandemic-driven gains remains

an open question that merits ongoing scholarly and policy attention.

Ultimately, this review makes the case that geography should be treated not as a peripheral variable but as a central analytical dimension in research on SME digital marketing adoption. The location of a firm is not simply a contextual background factor—it fundamentally shapes the technological resources available, the skills and knowledge accessible, the institutional support obtainable, the market opportunities perceivable, and the competitive pressures experienced. Recognizing and operationalizing this insight is essential for both advancing scholarly understanding and designing effective policy interventions to ensure that the benefits of digital marketing are accessible to SMEs regardless of where they are located.

Limitations

This review is subject to several limitations. First, despite comprehensive search efforts, some relevant studies may have been missed, particularly those published in non-English languages or in outlets not indexed in the searched databases. Second, the review's focus on peer-reviewed academic literature excludes potentially valuable gray literature, policy reports, and practitioner insights. Third, the heterogeneity of included studies—spanning diverse geographic contexts, methodologies, and digital marketing types—limits the comparability of findings and precludes meta-analytic synthesis. Fourth, the rapidly evolving nature of digital marketing technologies means that some findings from earlier studies may have reduced contemporary relevance.

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