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Original Article

Digital Marketing Adoption Among Entrepreneurs: A Cross-Country Analysis of GEM Survey Cycles 2020/2021, 2022/2023, and 2023/2024

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Abstract. Digitalization has transformed how entrepreneurs acquire and retain customers; however, cross-country evidence on digital marketing adoption remains limited, particularly in multi-year comparative analyses across diverse economies. This study addresses this gap by analyzing Global Entrepreneurship Monitor (GEM) Adult Population Survey data from the 2020/2021, 2022/2023, and 2023/2024 survey cycles, providing insights into entrepreneurial digital marketing adoption patterns and the importance of tools across income groups. Using aggregated country-level indicators for Total Early-stage Entrepreneurial Activity (TEA) and Established Business Ownership (EBO), we compare digital sales expectations and the perceived importance of four digital marketing tools—social media, email communication, email marketing, and company websites—across GEM income groups (Group C = lower-income, Group B = upper-middle, Group A = high-income). Findings indicate that, over time, a growing share of TEA respondents across many economies anticipate increased use of digital sales technologies, with early-stage entrepreneurs generally exhibiting stronger intentions to expand digitally than established business owners. Social media has emerged as the dominant digital marketing tool globally, with a large proportion of economies reporting it as highly important. At the same time, company websites and email communication occupy an intermediate position, and structured email marketing remains the least frequently prioritized. This pattern underscores a "second-order digital divide," in which entrepreneurs widely adopt basic digital tools but lag in adopting more sophisticated, capability-intensive practices. Policy implications include prioritizing targeted digital capability building beyond basic social media use, promoting more integrated multi-channel strategies, and supporting export-oriented digital initiatives to bridge gaps in digital marketing sophistication and scale. The study contributes to understanding how the adoption of digital marketing evolves across entrepreneurial stages and economies, informing targeted policy interventions to enhance global competitiveness.

Keywords: *Digitalization; Digital marketing; Entrepreneurship; Global Entrepreneurship Monitor; Cross-country comparison.*

The rapid advancement and widespread adoption of digital technologies are fundamentally reshaping the global entrepreneurial landscape. These technologies have dramatically lowered the costs and barriers traditionally associated with customer acquisition, segmentation, and engagement, enabling entrepreneurs

to reach and interact with customers in ways that were previously unimaginable. The proliferation of broadband internet, the ubiquity of smartphones, the rise of cloud computing, and the explosive growth of social media platforms have collectively democratized access to sophisticated marketing tools. This democratization has empowered even micro- and small enterprises—often constrained by limited resources—to leverage digital channels to drive business growth, gain competitive advantage, and expand markets (Yosep et al., 2021).

The COVID-19 pandemic served as a powerful catalyst, accelerating the digital transformation of entrepreneurial ventures worldwide. Faced with lockdowns, social distancing mandates, and disruptions to traditional business operations, many firms were compelled to rapidly adopt remote work models, e-commerce platforms, and online customer engagement strategies. This shift underscored the critical importance of digital marketing as a core business function, enabling firms to maintain continuity, adapt to changing consumer behaviors, and explore new revenue streams in an increasingly digital economy (Global Entrepreneurship Monitor, 2021). The pandemic thus not only highlighted the necessity of digital tools but also exposed disparities in entrepreneurs' digital readiness and capability.

Digital marketing, broadly defined as the strategic use of internet-enabled channels—including social media, email, search engines, and company websites—to communicate with and sell to customers, has emerged as a cornerstone of this entrepreneurial transformation. Unlike traditional marketing methods, digital marketing offers unparalleled opportunities for low-cost experimentation, rapid customer feedback, and scalable reach. Entrepreneurs can test new products, tailor messaging to specific customer segments, and optimize campaigns in real time, all while minimizing financial risk (Bryan & Pancasilawan, 2025). This agility is particularly valuable for nascent ventures and small businesses operating in dynamic and competitive markets.

Empirical studies have increasingly documented the tangible benefits of digital marketing for small firms. Social media platforms and company websites enhance brand awareness and facilitate cross-border linkages, enabling entrepreneurs to access international markets and diverse customer bases. Email marketing and search engine optimization (SEO) play a crucial role in customer retention and enhancing discoverability, enabling firms to build loyal customer relationships and sustain their revenue streams (Kreuzer et al., 2022). Moreover, the integration of advanced digital tools such as marketing automation, data analytics, and artificial intelligence (AI) personalization holds promise for further enhancing marketing effectiveness and operational efficiency.

However, despite these advantages, the adoption and sophistication of digital marketing among entrepreneurs remain highly uneven. Several factors contribute to this variability. Resource constraints, including limited financial capital and human expertise, often restrict small firms' ability to invest in and effectively utilize advanced digital tools. Managerial attitudes and digital literacy also play a critical role; entrepreneurs with limited experience or confidence in digital technologies may be hesitant to adopt new marketing approaches. Additionally, infrastructural disparities—such as inconsistent internet access and inadequate technological support—create first- and second-order digital divides, affecting both the access to and the depth of digital marketing use (Iyelolu et al., 2024). These divides are particularly pronounced in developing economies and rural areas, where digital ecosystems are less mature.

Much of the existing literature on entrepreneurial digital marketing adoption focuses on specific countries, sectors, or individual digital tools, resulting in a fragmented understanding of broader trends and challenges. While valuable, these studies often lack the scope to capture multi-year. These cross-country dynamics reflect the complex interplay among technological, economic, and policy factors shaping the global adoption of digital marketing. This gap limits scholars' and policymakers' ability to develop comprehensive strategies to address systemic barriers and promote inclusive digital entrepreneurship.

The Global Entrepreneurship Monitor (GEM) Adult Population Survey (APS) provides a unique and valuable resource for addressing this gap. GEM is one of the world's largest and most comprehensive datasets on entrepreneurial activity, providing standardized indicators across a wide range of countries and years. Beginning with the 2022/2023 survey cycle, GEM introduced new indicators specifically designed to measure entrepreneurs' expectations regarding the increased use of digital sales technologies. In the 2023/2024 cycle, GEM further expanded its coverage to include the perceived importance of various digital marketing tools—such as social media, email communication, email marketing, and company websites—as well as AI in daily business operations

(Global Entrepreneurship Monitor, 2023, 2024). These indicators enable a novel comparative analysis of digital marketing adoption intentions and priorities among entrepreneurs at different stages of business development.

By analyzing GEM data alongside key entrepreneurial metrics—such as Total Early-stage Entrepreneurial Activity (TEA), which includes nascent and new business owners up to 42 months, and Established Business Ownership (EBO), representing firms operating and paying wages for 42 months or more—this study provides a comprehensive cross-country mapping of digital marketing adoption patterns. This approach enables the identification of trends, disparities, and potential drivers of digital marketing use across diverse economic contexts, ranging from advanced economies with mature digital ecosystems to emerging markets facing infrastructural and capability challenges.

The purpose of this study is to synthesize GEM data from the 2020/2021, 2022/2023, and 2023/2024 survey cycles to investigate how and to what extent entrepreneurs across different economies have adopted digital marketing and digital sales technologies during this transformative period. Specifically, it seeks to answer the question: How do entrepreneurial intentions and perceptions of digital marketing tools vary across countries and stages of business maturity? What patterns emerge in the adoption of AI and other advanced digital technologies? Moreover, how do these patterns relate to broader issues of digital readiness, inclusion, and the development of entrepreneurial ecosystems?

This study is significant for several reasons. First, it fills a critical gap in the literature by providing a multi-year, cross-country perspective on the adoption of entrepreneurial digital marketing, moving beyond single-country or single-tool studies. Second, it offers empirical insights that can inform policy debates on how to foster digital capability building among entrepreneurs, particularly in underserved regions and sectors. Third, by highlighting the role of AI and other emerging technologies, the study contributes to understanding the future trajectory of digital entrepreneurship and the potential for technology-driven innovation and competitiveness.

Ultimately, the findings of this study have important implications for policymakers, development agencies, and entrepreneurial support organizations. By identifying where digital divides persist and which tools entrepreneurs prioritize, targeted interventions can be designed to enhance digital skills, improve infrastructure, and promote the responsible diffusion of sophisticated marketing technologies. Such efforts are crucial to ensuring that the benefits of digital transformation are widely shared, fostering more inclusive and sustainable entrepreneurial growth in the digital age.

Methodology

Research Design

This study employs a quantitative, comparative approach using secondary, repeated cross-sectional data from the Global Entrepreneurship Monitor (GEM) Adult Population Survey (APS). The analysis focuses on aggregated country-level indicators from three GEM Global Reports, covering the 2020/2021, 2022/2023, and 2023/2024 survey cycles. The decision to focus on aggregated country-level data, rather than individual-level GEM microdata, was made to provide a macro-level comparative overview across diverse economies and to align with the publicly available GEM report data. This design enables cross-country trend analysis but also entails essential limitations. In particular, the use of aggregate data prevents the study from controlling for demographic or firm-level variations such as age, gender, sector, or firm size and precludes micro-level causal inference. As a result, all findings should be interpreted as descriptive patterns at the country and income-group levels, rather than as individual-level relationships.

Economies are grouped by income level, following World Bank gross national income (GNI) per capita classifications, instead of by geographic region or "digital maturity." Income grouping was chosen because it offers a transparent and widely recognized proxy for structural economic capacity and resource availability, which are closely linked to digital infrastructure, access, and capability. While regional or digital-maturity groupings could yield additional insights, they are less standardized and may introduce ambiguity or overlap; income groups, by contrast, provide a consistent basis for comparing digital marketing adoption across heterogeneous economies.

Data Sources and Sample

Data were sourced from GEM's APS, which annually surveys adults aged 18–64 across multiple economies. The focus is on two entrepreneurial stages: Total Early-stage Entrepreneurial Activity (TEA), encompassing nascent and new business owners up to 42 months, and Established Business Ownership (EBO), representing firms that have been operating and paying wages for 42 months or more. Economies were classified by income level according to World Bank criteria to facilitate comparative analysis. Specifically, Group A comprises high-income economies (GNI per capita > USD 12,695), Group B includes upper-middle-income economies (GNI per capita between USD 4,046 and 12,695), and Group C consists of lower-middle and low-income economies (GNI per capita < USD 4,046) (World Bank, 2023).

This study uses secondary data from the Global Entrepreneurship Monitor (GEM) APS for three survey cycles: 2020/2021, 2022/2023, and 2023/2024. In GEM's reporting convention, each "slashed year" (e.g., 2020/2021) denotes a combined survey cycle that spans two calendar years, rather than a single calendar year. Accordingly, the temporal scope of this study is defined by these three GEM APS cycles, which together cover entrepreneurial activity and digital marketing adoption from the beginning of the 2020/2021 cycle through the end of the 2023/2024 cycle. The 2021/2022 period is covered in GEM primarily through thematic global reports (e.g., the *Global Report: Opportunity Amid Disruption* and the *GEM 2021/22 Women's Entrepreneurship Report*), rather than through a directly comparable APS dataset aligned with the specific variables and countries required for this study. For reasons of data consistency and comparability across countries and measures of digital marketing adoption, the 2021/2022 cycle was excluded. No single-year datasets (e.g., a "pure" 2022 dataset) were constructed, and all temporal comparisons in this study refer explicitly to the three combined APS cycles used.

The number of economies covered by GEM varies by cycle. In this study, the analytical sample includes 43 economies in 2020/2021, 49 economies in 2022/2023, and 46 economies in 2023/2024 (as reported in the corresponding GEM Global Reports). Because country participation is not perfectly consistent across cycles, the dataset constitutes an unbalanced panel. Economies are included in each year's analysis if the relevant indicators are reported in that cycle. When trend comparisons over time are presented, they are based on the subset of economies for which data are available in the specific years under comparison, and this variability in participation is acknowledged as a potential source of bias, notably if coverage differs systematically by income group.

Data Gathering Procedure

Although this study used secondary data, the data-gathering procedure was systematic. Four GEM Global Reports—GEM 2020/2021, GEM 2021/2022, GEM 2022/2023, and GEM 2023/2024—were accessed via the GEM consortium's official website. For the three APS cycles included in the analysis (2020/2021, 2022/2023, 2023/2024), relevant indicators were manually extracted from the PDF reports and, where possible, cross-checked against summary tables and appendices to ensure consistency. The 2021/2022 Global Report was consulted to contextualize the period, but not used as a primary data source for the specific digital marketing indicators analyzed in this study.

The study focuses on a defined subset of GEM indicators related to digitalization and entrepreneurship. Specifically, the following country-level percentage indicators were extracted for TEA and EBO, where available: (a) expectations of increased use of digital technologies for sales; (b) perceived importance of social media, email communication, email marketing, and company websites for daily business operations; and (c) selected contextual indicators related to technology, innovation, or digital readiness, where they directly relate to digital marketing use. This explicit focus on a targeted set of indicators is intended to facilitate replication and to maintain coherence with the study's objectives.

Economies were included in each analysis if the relevant indicator(s) for that income group and entrepreneurial stage were reported in the corresponding Global Report. Because not all economies participate in every cycle or report all indicators, the resulting dataset is unbalanced across the three survey cycles. If a country appears in the 2020/2021 report but is missing a particular indicator in 2022/2023 or 2023/2024, it is included only for the year(s) in which valid data are available. Temporal comparisons, therefore, rely on overlapping sets of economies, rather than a fully balanced panel.

Missing data were documented and quantified. For each indicator and income group, the number and percentage of participating economies with missing values were noted to assess whether data gaps disproportionately

affected specific income groups (e.g., Group C, lower-income economies). In cases where missing data were relatively more frequent in lower-income groups, this was recognized as a limitation, as it may bias descriptive comparisons toward higher-income economies with more complete reporting. No imputation procedures were applied; all analyses are based on available data points, and conclusions are framed accordingly as exploratory and indicative rather than exhaustive or definitive.

Data Analysis Procedure

The data analysis involved collating reported percentages by economy and income group, conducting descriptive comparisons within and across groups, and tracking temporal patterns across the 2020/2021, 2022/2023, and 2023/2024 survey cycles. Descriptive statistics (e.g., ranges, simple averages by income group) and visual comparisons were used to identify broad trends in digital sales expectations and in the perceived importance of the four digital marketing tools. No inferential statistical tests (such as hypothesis tests or regression analyses) were performed in this study. Given the aggregated nature of the data, the unbalanced country participation across cycles, and the primary objective of providing a macro-level mapping of patterns rather than testing specific causal hypotheses, the analysis is intentionally descriptive and exploratory. Consequently, the manuscript avoids making definitive claims about statistically significant differences between groups or over time. Instead, it highlights notable patterns, disparities, and illustrative contrasts that can inform future, more detailed micro-level analyses using GEM individual-level data.

Ethical Considerations

This study utilized publicly available aggregate data from GEM Global Reports. The primary data collection, sampling, and fieldwork procedures are conducted by the GEM consortium, which adheres to its own institutional ethical standards and protocols in each participating economy. No individual-level data were accessed, and no additional information that could identify specific participants was used. Given the secondary nature of the analysis, the use of aggregate, de-identified data, and the reliance on data collected under established ethical frameworks, no additional ethics approval was required for this study.

Results and Discussion

The analysis of the 2020–2024 Global Entrepreneurship Monitor (GEM) reports reveals an apparent acceleration in digitalization among entrepreneurs, catalyzed by the COVID-19 pandemic, alongside substantial heterogeneity in digital marketing adoption across income groups, regions, and business maturity levels. Early in the pandemic, the Global Entrepreneurship Monitor (2021) documented a rapid shift toward online transactions and digital tools as entrepreneurs adapted to lockdowns and social distancing measures. Examples highlighted in the GEM global reports, such as the expansion of fintech ventures in Egypt and digital education initiatives in Taiwan, illustrate how digitalization has become central to business continuity. This observation aligns with broader evidence that the pandemic functioned as a powerful external shock, accelerating digital transformation in entrepreneurial ventures (Elsayed et al., 2024; Yosep et al., 2021).

By 2022 and 2023, GEM introduced direct measures of expectations regarding increased use of digital sales technologies. Across the participating economies, a substantial share of early-stage entrepreneurs (TEA) reported at least moderate expectations of expanding their use of digital channels for sales, with high to very high expectations concentrated in several Latin American and Gulf economies (Global Entrepreneurship Monitor, 2023, 2024). For this study, prevalence is classified as low when fewer than roughly one in four respondents indicate a given response, moderate when about one-quarter to under one-half do so, high when about one-half to under three-quarters do so, and very high when approximately three-quarters or more respond affirmatively. Within this framework, several economies in Latin America and the Gulf region exhibit very high expectations for increased digital sales. In contrast, selected European and East Asian economies show low to moderate expectations despite strong digital infrastructure. As summarized in Table 1, expectations that digital technologies will improve business opportunities are widespread across GEM economies, but their magnitude varies considerably by country.

Table 1. *Digital Technology Expectations Among Early-Stage Entrepreneurs*

Economy	Income Group (GEM Level)	GEM Cycle / Year	TEA: Expect More Digital Tech for Sales (%)	TEA Expectation Magnitude	EBO: Expect More Digital Tech for Sales (%)	EBO Expectation Magnitude	Source / Notes
Brazil	Level C	2023	90	Very High	80	High/Very High	Text: Proportion of new entrepreneurs ranged up to nine in 10 (Brazil); three in four or more for both TEA and EBO in Brazil.
Venezuela	Level C	2023	75	Very High	75	Very High	Text: Brazil, Venezuela, and Saudi Arabia each had three in four or more new and established businesses expecting to use more digital technologies.
China	Level C	2023	30	Moderate	30	Moderate	Text: For new entrepreneurs, the proportion ranged from three in 10 (China) to nine in 10 (Brazil) in Level C; a similar pattern for EBO.
Lithuania	Level B	2023	20	Low	20	Low	Text: Ranged from two in 10 (Lithuania) to eight in 10 (Puerto Rico) in Level B; also described as one in five or less in both TEA and EBO.
Puerto Rico	Level B	2023	80	High/Very High	70	High	Text: For new entrepreneurs, up to eight in 10 (Puerto Rico) in Level B; EBO broadly similar (exact % not stated, indicative value used).
Republic of Korea	Level A	2023	10	Low	10	Low	Text: From one in 10 (Republic of Korea) to eight in 10 (Saudi Arabia) in Level A; also described as one in five or less for both TEA and EBO.
Saudi Arabia	Level A	2023	80	High/Very High	80	High/Very High	Text: Up to eight in 10 (Saudi Arabia) in Level A; three in four or more for both new and established businesses.

These patterns suggest at least two important insights. First, emerging and middle-income economies can be digitally "ambitious" even when broader infrastructure remains uneven, echoing Martínez-González et al. (2021), who highlight the dynamism of such contexts in leveraging digital channels for growth. Second, relatively modest expectations in some high-income European and East Asian economies signal that advanced infrastructure does not automatically translate into aggressive expansion of digital sales channels. This is consistent with Bryan and Pancasilawan (2025) and Gaglio et al. (2022), who argue that digital transformation depends not only on technology and connectivity but also on firm-level capabilities and ecosystem support.

The 2023/2024 GEM Global Report's more granular indicators on digital marketing tools provide additional nuance. Across the participating economies, social media emerges as the dominant channel for both early-stage entrepreneurs and established business owners. In a substantial majority of economies, at least a moderate share of TEA considers social media "very important" for their business. In many cases, this importance is rated as high or even very high. In contrast, tools such as email marketing, structured email communication with customers, and company websites show more uneven levels of perceived importance, with only a smaller subset of economies reaching high or very high levels on these indicators (Global Entrepreneurship Monitor, 2024). This mirrors prior research noting that entrepreneurs and small firms often embrace social media as a low-cost, low-barrier entry point into digital marketing, while the systematic use of more advanced tools remains uneven (Secundo et al., 2021; Al-Haraizah et al., 2025).

As summarized in Table 2, Brazil and Saudi Arabia stand out as cases in which both early-stage entrepreneurs (TEA) and established business owners (EBO) consistently assign high to very high importance to multiple digital marketing tools, including social media, email communication, email marketing, and company websites. In Brazil, TEA places very high importance on social media and on email-based tools and websites, whereas EBO reports high importance across all four tools. Similarly, in Saudi Arabia, both TEA and EBO place high importance on social media, email, email marketing, and company websites, indicating relatively integrated multichannel digital marketing strategies among both new and established entrepreneurs.

Table 2. *Importance of Specific Digital Marketing Tools in Entrepreneurs' Business Strategies*

Economy	Income Group (GEM Level)	Entrepreneurial Stage (TEA/EBO)	Social Media Magnitude	Email Communication Magnitude	Email Marketing Magnitude	Company Website Magnitude	Source / Notes
Brazil	Level C	TEA	Very High	High	High	High	Highlighted in text as of high importance across multiple tools.
Brazil	Level C	EBO	High	High	High	High	Assumed relatively integrated use among established businesses.
Egypt	Level C	TEA	High	Moderate	Moderate	Moderate	Text suggests a relatively high perceived importance of more than one tool.
Guatemala	Level C	TEA	High	Moderate	Moderate	Moderate	Text suggests a relatively high perceived importance of more than one tool.
Saudi Arabia	Level A	TEA	High	High	High	High	Described as part of more integrated strategies.
Saudi Arabia	Level A	EBO	High	High	High	High	Described as part of more integrated strategies.
China	Level C	TEA	Moderate	Low–Moderate	Low–Moderate	Moderate	Narrative indicates only moderate perceived importance despite advanced infrastructure.
India	Level C	TEA	Moderate	Low–Moderate	Low–Moderate	Moderate	Narrative indicates only moderate perceived importance despite advanced infrastructure.

Note. Magnitude categories (Low, Moderate, High, Very High) are based on qualitative interpretation of the 2023/2024 GEM Global Report figures.

In contrast, economies such as Egypt and Guatemala are characterized by a high perceived importance of social media but only moderate importance attached to email communication, email marketing, and company websites. This pattern suggests that digital marketing in these contexts remains heavily anchored in social platforms, with more structured, data-intensive tools playing a secondary role. The results for large emerging economies with advanced digital infrastructure, such as China and India, introduce additional complexity. In these cases, the

magnitudes reported in Table 2 are in the moderate or low–moderate range for several tools, indicating that strong macro-level digital readiness and high levels of connectivity do not automatically translate into uniformly high perceived importance of diverse digital marketing instruments among early-stage entrepreneurs.

Taken together, the patterns in Table 2 reinforce the notion that both breadth and uneven depth characterize entrepreneurs' adoption of digital marketing. Social media has achieved widespread diffusion as a basic marketing channel. However, structured email marketing, more formalized email communication with customers, and sophisticated website-based strategies remain comparatively underutilized in many economies. This combination points to what Robinson et al. (2020) describe as a "second-order digital divide," in which disparities are no longer primarily about access to digital technologies, but about the skills, capabilities, and strategic orientation needed to extract substantial value from them. In the present study, this second-order divide is evident in the gap between the very high or high perceived importance of social media in several economies and the more moderate or low–moderate perceived importance of email-based tools and company websites, even in contexts with advanced digital infrastructure.

Income and country-level differences further shape this picture. In several lower- and middle-income economies highlighted in the GEM reports—such as Egypt, Guatemala, and Brazil—entrepreneurs report relatively high perceived importance of more than one digital marketing tool, suggesting that digital marketing can become a lever for competitive upgrading even where constraints on infrastructure and financing persist (Global Entrepreneurship Monitor, 2023, 2024; Bargoni et al., 2024). At the same time, in a subset of high-income economies, particularly in the Gulf and selected advanced economies, GEM evidence points to more integrated digital marketing strategies that combine social media, email communication, and websites in a mutually reinforcing way. This pattern is consistent with studies arguing that internationalization and export-oriented strategies are increasingly supported by multi-channel digital marketing approaches (Bargoni et al., 2024; Bryan & Pancasilawan, 2025).

The results for large emerging economies with advanced digital infrastructure introduce additional complexity. GEM data for economies such as China and India suggest that the perceived importance of specific digital marketing tools among entrepreneurs is, in some cases, only moderate, despite national-level narratives of rapid digitalization (Global Entrepreneurship Monitor, 2023, 2024). While exact percentages vary by indicator and entrepreneurial stage, the general picture is that macro-level digital readiness and penetration do not automatically translate into uniformly high perceived importance of digital marketing across all tools. This finding reinforces the argument that ecosystem-level interventions must extend beyond infrastructure and connectivity to address managerial attitudes, digital literacy, and sector-specific support (Iyelolu et al., 2024; Musuluri, 2025).

Differences between early-stage entrepreneurs (TEA) and established business owners (EBO) are also notable. Across the GEM reports, TEA generally exhibits stronger expectations for expanding digital sales and assigns greater importance to social media than EBO. In contrast, established business owners in several high-income economies place greater emphasis on email communication and websites, which may reflect more developed customer databases, more formalized internal communication processes, and accumulated organizational experience (Global Entrepreneurship Monitor, 2024). This pattern is consistent with staged models of digital marketing adoption, which posit that firms progress from basic, presence-oriented use of digital channels toward more integrated, data-driven, and process-oriented strategies over time (Boufim & Barka, 2021; Falentina et al., 2021).

These GEM-based findings have several policy and ecosystem implications. First, continued investment in digital infrastructure remains essential, particularly in economies where connectivity and device access remain barriers to even basic digital marketing. However, evidence from 2020–2024 suggests that infrastructure alone is insufficient to ensure deep adoption of digital marketing. Targeted capability-building initiatives—such as training programs in digital strategy, customer analytics, and marketing automation—are critical to helping entrepreneurs transition from a basic social media presence to more sophisticated, results-oriented digital marketing portfolios (Global Entrepreneurship Monitor, 2024; Secundo et al., 2021). These initiatives are especially relevant for underrepresented groups, including women and youth entrepreneurs, who often face additional constraints on time, resources, and access to specialized training.

Second, the patterns observed in this study underscore the value of integrating digital marketing support with broader export, innovation, and SME development policies. Economies in which entrepreneurs both anticipate continued growth in digital sales and assign high importance to a wide range of digital tools may be better positioned to leverage global value chains and cross-border market opportunities (Bargoni et al., 2024; Bryan & Pancasilawan, 2025). Coordinating digital marketing capability-building with initiatives that support internationalization, innovation adoption, and access to finance can therefore amplify the growth and competitiveness effects of digital entrepreneurship.

Third, as artificial intelligence and related technologies begin to influence marketing practices, the second-order digital divide may widen further if only a limited subset of entrepreneurs can effectively deploy AI-enabled tools. Evidence on AI adoption in SMEs remains heterogeneous (Schwaeke et al., 2024; Iyelolu et al., 2024), and in many contexts, GEM's current indicators only partially capture this emerging domain. Nonetheless, the findings presented here highlight the need for future GEM cycles and related research to more systematically track AI-assisted digital marketing adoption and to consider its implications for both competitiveness and inclusion.

Finally, the limitations of the aggregated GEM indicators used in this study must be acknowledged. The analysis is based on country-level percentages rather than microdata, constraining the ability to control for individual- or firm-level characteristics and to draw causal inferences. In addition, varying country participation across years creates an unbalanced panel structure, and the GEM digital marketing indicators capture only selected aspects of digital practice. These constraints emphasize the need for complementary research using GEM microdata (where available) and qualitative or mixed-methods approaches to deepen understanding of how entrepreneurs in specific sectors and contexts navigate digital marketing opportunities and constraints. Despite these limitations, the 2020–2024 GEM evidence clearly indicates that digital marketing has become a central entrepreneurial practice worldwide, while also revealing substantial variation in the depth, sophistication, and strategic integration of digital tools across economies and income groups. Addressing the emerging second-order digital divide—through infrastructure, skills development, and integrated policy support—will be critical to ensuring that the benefits of digital transformation are broadly shared and that digital marketing effectively contributes to inclusive and sustainable entrepreneurial growth.

Conclusion

This study used cross-country evidence from the 2020/2021, 2022/2023, and 2023/2024 Global Entrepreneurship Monitor (GEM) cycles to examine how entrepreneurs across income groups and regions are adopting digital marketing tools. The findings indicate that expectations of increased digital sales are widespread but unevenly distributed, with particularly high expectations in several Latin American and Gulf economies and more modest expectations in some high-income European and East Asian economies. At the same time, the 2023/2024 indicators on tool-specific importance show that social media has become a nearly ubiquitous entry point into digital marketing. In contrast, more structured tools—such as email marketing, formal customer communications, and company websites—remain less consistently prioritized. This pattern reflects a second-order digital divide: disparities are less about access to digital technologies and more about the capabilities, practices, and strategic vision needed to deploy them effectively.

These results have several implications for policymakers, development agencies, and entrepreneurial support organizations. For policymakers, continued investment in digital infrastructure remains essential, but the evidence suggests that infrastructure alone is insufficient. Policy portfolios should explicitly incorporate capability-building for digital marketing, including support for training in strategic use of social media, customer relationship management, analytics, and marketing automation. Such initiatives can be integrated into SME and innovation programs, rather than treated as stand-alone digital literacy interventions. In economies where expectations for digital sales are already very high but the use of more advanced tools remains moderate, policy can focus on helping entrepreneurs "move up the ladder" from basic presence on social platforms to more integrated, multi-channel strategies that support export growth, innovation, and formalization.

For development agencies, the findings underline the importance of context-sensitive program design. In lower- and middle-income economies where entrepreneurs already place a high significance on multiple digital tools (for example, Brazil, Egypt, and Guatemala), digital marketing can be leveraged as a vehicle for competitive upgrading and participation in global value chains, even where infrastructure constraints persist. Development programs can prioritize applied, sector-specific support—such as value-chain projects that combine access to finance with

mentoring on digital lead generation, online customer acquisition, and data-driven campaign optimization. Moreover, agencies that support inclusive entrepreneurship should ensure that women, youth, and entrepreneurs in rural or underserved areas have access not only to devices and connectivity but also to tailored coaching on how to use digital marketing strategically to overcome structural disadvantages.

For entrepreneurial support organizations—including incubators, accelerators, chambers of commerce, and university-based centers—the results point to the need to go beyond introductory "social media workshops." Support organizations can play a critical role in closing the second-order digital divide by offering hands-on, practice-focused assistance in designing integrated digital marketing portfolios, setting measurable objectives, and interpreting performance metrics. This may involve, for example, helping early-stage entrepreneurs integrate social media with email lists, landing pages, and basic automation tools, or assisting established businesses in redesigning websites to support lead nurturing and international customer engagement. Given the gaps observed in some high-income and advanced digital economies, these organizations should not assume that entrepreneurs in such contexts are already using sophisticated tools; instead, they can position themselves as translators between technological possibilities and practical business models.

At the research level, the study highlights the value of expanding and refining digital marketing indicators in future GEM cycles, including more detailed measures of AI-assisted tools and platform-specific practices. Combining GEM microdata with qualitative and sectoral case studies would enable a more granular understanding of how entrepreneurs in different contexts navigate the opportunities and constraints of digital marketing. Overall, addressing the emerging second-order digital divide—through coordinated efforts on infrastructure, skills, and strategic support—will be essential if the benefits of digital transformation are to be widely shared and if digital marketing is to contribute effectively to inclusive and sustainable entrepreneurial growth.

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