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Digital Maturity, Sustainability, and Challenges of CMSMEs in Bangladesh: A Literature Review Validated by Pilot Survey Evidence

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Abstract

The CMSME sector serves as the economic spine of Bangladesh, yet a significant "capability gap" persists between high-level policy literature and the practical realities faced by entrepreneurs. This study addresses this disconnect by contrasting a systematic literature review with primary empirical evidence from a structured pilot survey of CMSME owners. Utilizing a descriptive research design, the study investigates the convergence and divergence between theoretical frameworks and actual behaviour regarding digital maturity, sustainability, and operational challenges. The findings reveal that while internet accessibility is high (98%), "digital adoption" in this sector is driven primarily by informal rather than by formal website usage or data processing, as often assumed in policy discussions. The study identifies a market-oriented approach to sustainability, in which business owners prioritize selling "eco-friendly products". Financial management needs and export support challenges are cited as primary barriers. The findings also reveal a significant institutional void, as entrepreneurs primarily rely on self-learning and mentorship rather than on formal government support or training programs to address skill gaps. The paper recommends shifting from infrastructure expansion to competence development, specifically advocating targeted business digital literacy training and direct financial incentives to support the transition to green business practices.

Keywords: CMSMEs, Digital Maturity, Green Business Practices, Financial Constraints, Capability Gap.

1 Introduction

Micro, small, and medium enterprises (MSMEs) account for more than 90% of all businesses worldwide and provide 60–70% of all jobs (United Nations; WFO, 2025). These enterprises account for almost 50% of the world's GDP and between 33% and 54% in different countries (United Nations, 2025). Their economic importance varies significantly across countries, depending on their level of development (McKinsey Global Institute, 2024; Bpeace.org, 2025).

Thus, for Bangladesh, the Cottage, Micro, Small and Medium Enterprises (CMSMEs) sector is considered the spine of its economy, accounting for 99.84% of all enterprises and employing about 87% (Freiheit.org, 2024). Peculiarity of CMSMEs in Bangladesh: from a specific perspective, Cottage, Micro, Small, and Medium Enterprises (CMSMEs) are the most vital and are considered the "engine of economic growth" (Thakur & Alam, 2022). CMSMEs are a leading sector of Bangladesh's economy, making an enormous contribution to GDP and employment generation while fostering inclusive development. They represent 99.84% of all enterprises and exert pressure on labour-intensive sectors (Freiheit.org, 2024). CMSMEs account for about a quarter of GDP; 4.22% are cottage industries; and the proportion of small and micro enterprises is 7.80% in FY22 (Bangladesh Bank, 2024). These enterprises provide jobs for 87% of the workforce, more than 13 million in cottage sectors only (UN, 2023). They provide about 80% of industrial jobs, and the share is expected to continue increasing, with 13.9 per cent job growth recorded in 2021 and a 14.44 per cent increase in women's employment contributing to poverty reduction in both rural and urban areas. (Bangladesh Bank, 2024a).

In addition to GDP and employment, CMSMEs help Bangladesh diversify exports, innovate, and reduce poverty. Their 45% share of manufacturing value added and 6% annual growth support the policy goal of a 32% share of GDP (Freiheit.org, 2024). Many CMSMEs have 7.8 million business establishments and employ 47.3% of young apprentices (Patwary et al., 2024). In addition to their economic impact, CMSMEs help disadvantaged groups, notably women entrepreneurs, survive. CMSMEs run by women employ other women, thereby providing more rural Bangladeshi women with income security (Logicbd.org, 2025). In 2021, the sector recorded 13.9% employment growth and 14.44% female employment during COVID-19 (Bangladesh Bank, 2024), demonstrating its potential for inclusive economic recovery. Globally, SME research is essential to economic progress. The Cottage, Micro, Small, and Medium Enterprises (CMSMEs) sector is very vital to Bangladesh. The Bangladesh Bank reports that this industry contributes 25% to the country's GDP and employs a considerable

portion of the industrial workforce (Abtahi et al., 2023). Due to the importance of digital literacy and sustainability, CMSMEs' resilience has attracted attention in modern business. Digital technologies, especially ICT, are crucial for improving supply chains and entering new markets (Abtahi, 2023). Since COVID-19, this transition has accelerated, forcing enterprises online to survive (Bhuiyan, 2023). Being green has gone from good to necessary. Epstein and Buhovac (2014) describe sustainable financial management as incorporating sustainability into financial decisions to help organizations thrive without harming the environment (Mazumder, 2025).

The problems of this sector are identified here; digital adoption and sustainability are often treated separately (Murillo, 2019). Besides, Abtahi et al. (2023) investigate e-commerce and supply chain efficiency, identifying a gap in the literature on e-commerce adoption and sustainability/social responsibility. Digital literacy and green management capacity in Bangladesh are not directly linked, even though green finance growth is (Mazumder, 2025). A lack of information in Bangladesh on micro-level enterprise and national factors in innovation research (Hvolkova et al., 2019; Banu, 2020). Moreover, there is limited research on the "capability gap" in Bangladeshi cottage and microenterprises, which entrepreneurs with limited technical capabilities often face when implementing policymakers' digital and green plans. Sustainability and digital literacy are not integrated enough to meet the sustainable needs of CMSMEs. Due to a lack of awareness and funds, few Bangladeshi SMEs have formalised green policies (Mohiuddin & Al-Amin, 2022). Lack of technical skills and infrastructure limits the use of digital tools (Islam & Hossain, 2018; Hossain et al., 2023).

Given these gaps, a survey-based approach is essential to obtain real-time, on-the-ground insights into CMSME owners. Unlike macroeconomic analysis, this paper uses distinctive firm-level survey data to clarify how entrepreneurs confront business challenges, digital adoption, and sustainability challenges. By aligning theoretical literature with empirical survey results, this study aims to illuminate the specific support currently required in this sector. The primary purpose of this study is to provide an overview of the CMSME sectors in Bangladesh.

The specific objectives are:

- *To examine the literature on the current state of sustainability, digital literacy, and operational challenges in the CMSME sector.*
- *To recognize and classify the significant financial, technological, and infrastructural constraints in CMSMEs' development.*

In line with the literature, we now contextualize these findings using our primary survey data, focusing on how digital adaptation is unfolding and on the extent to which CMSMEs are willing and able to adopt sustainable business practices.

2 Methodology

This study uses a descriptive, survey-based research design to examine the contextual issues faced by CMSMEs in Bangladesh. While grounded in a review of existing theoretical frameworks, this research distinguishes itself by providing empirical validation of business owners' behaviours and beliefs through primary data. The objective of the design is to identify the "capability gap" and compare the high-level policy literature with entrepreneurs' limited, actual, and practical experiences of digital adoption sustainability and the challenges they encounter.

To do so, a structured questionnaire was developed to collect data and administered via Microsoft Forms. The instrument was developed to connect the literature by measuring digital literacy, business challenges, and sustainability practices in a single survey. The questionnaire included 16 questions that addressed the following key domains: Digital Maturity, Sustainability and Eco-friendly Performance, Personal Growth and Learning, Support Needs, etc. The data were examined using descriptive statistics to identify patterns and frequencies. The analytical focus centred on areas where the principal data converged or diverged from the existing literature.

On the other hand, a comprehensive review of secondary data was conducted to understand the economic background and highlight academic research challenges. Google Scholar and ResearchGate were used to find most academic material. Only peer-reviewed studies published after 2020 were used to reflect post-COVID pandemic economic realities. Collected economic data, regulatory standards, and sector-specific information from Bangladesh Bank and SME Foundation reports. The original survey data were compared to the "theoretical benchmark" for financial access, digital infrastructure, and sustainable practices from these secondary sources.

3 Thematic literature review

The literature on Bangladesh's small and medium enterprises addresses a range of development issues. However, it is unevenly distributed across four main areas: digital adoption, structural and market constraints, sustainability practices, and skills and innovation for growth. Studies agree that small and medium firms are vital to the economy, but finance and capability shortages limit their productivity, competitiveness, and long-term resilience (Chowdhury,

2015). Cottage, micro, small, and medium enterprises (CMSMEs) have different resource constraints and support needs than larger SMEs, yet few studies specifically examine them (Aktar & Kabir, 2024). This section thematically synthesizes the findings, compares the research objectives and methodology, and identifies gaps warranting an investigation of Bangladeshi CMSMEs.

3.1 Digital literacy and digital adoption among CMSMEs

A prominent stream focuses on technology-related factors shaping digital adoption, especially e-commerce. One study explicitly investigates how strategic innovation, research and development activity, productivity growth, internet connectivity, and business data management relate to e-commerce adoption in Bangladeshi SMEs (Hossain et al., 2025). Methodologically, this work uses a self-administered questionnaire and principal component analysis to identify key components. Its findings support a consistent pattern in the literature: innovation-oriented capabilities are positively associated with adoption, suggesting that digital uptake is not only an infrastructure issue but also a strategic capability issue. However, a notable tension emerges in the same study: internet connectivity is reported to have a non-significant negative relationship with e-commerce adoption, contradicting the common assumption that connectivity straightforwardly increases adoption. (Hossain et al., 2025). This contradiction implies either measurement limitations or contextual dynamics where connectivity alone is insufficient without complementary skills, secure access, or managerial readiness.

A second strand investigates the impact of e-commerce adoption on supply chain efficiency, rather than adoption factors. Using semi-structured interviews with owners and managers, purposive sampling, and qualitative analysis, one study links adoption to increased efficiency, cost savings, and improved customer experience, while also identifying resistance to change, a lack of technical skills, and security concerns as significant barriers (Abtahi et al., 2023). Importantly for the present research focus, this study explicitly notes a lack of research on the impact of e-commerce adoption on sustainability and social responsibility within supply chain operations (Abtahi et al., 2023). That gap signals a primary fragmentation in the literature: digitalization is often examined for efficiency or competitiveness rather than being integrated with sustainability practices. The post-COVID context also appears to be an enabling and constraining condition for the digital transition. A study using purposive sampling, questionnaire-based data, and spreadsheet-based statistical analysis reports substantial disruption alongside a shift toward online business activities, while emphasizing ongoing

budget constraints and bureaucratic barriers to remote working (Bhuiyan, 2023). However, this research is framed broadly at the level of SMEs, providing no insight into how owner-level digital literacy or practical digital routines differ across cottage and micro firms.

The present study's survey data contextualizes these literary findings by highlighting the specific nature of digital usage among CMSMEs. While internet connectivity is high (98% of respondents), the "adoption" described in the literature is, for these owners, primarily defined operationally as marketing (86%) and e-commerce sales (51%), rather than complex internal data processing. Furthermore, the survey reveals a platform-specific dependency: 98% of businesses rely on Facebook, while 73% maintain a dedicated website. As the other social platforms are underused, this shows an overwhelming domination of Facebook in the Bangladeshi business field.

3.2 Financial, technological, and market-related challenges

Across the literature, financial constraints emerge as the most consistently documented barrier. Interview-based evidence with bankers and entrepreneurs highlights reliance on bank loans among many entrepreneurs. It simultaneously emphasizes limited access to institutional finance, conservative bank behaviour, and marketing skill deficits as constraints on SME sustainability (Chowdhury, 2015). A complementary descriptive survey study of entrepreneurs in Rajshahi district quantifies the financing problem through a reported financing gap, high interest rates, and the inability of many firms to achieve full capacity utilization due to financing issues, reinforcing converging evidence that credit access is not only limited but also costly (Ali & Islam, 2018).

There is a marked disparity between declared financial policies and actual access to finance. For instance, while the government has declared interest rates for SME loans to be as low as 4%, entrepreneurs report an inability to access funds at these rates, often facing actual rates of 13% to 14% or being forced to rely on informal borrowing due to stringent collateral and guarantor requirements (Thakur & Alam, 2022). Furthermore, despite the existence of the SME Foundation and various support schemes, business owners report inadequate support, citing bureaucratic complexities and a lack of leadership capacity to navigate these administrative systems (Thakur & Alam, 2022).

Beyond finance, infrastructure and capability constraints remain central. A cross-sectional survey conducted in Narsingdi Municipality using cluster sampling, face-to-face interviews,

and principal component analysis identifies poor infrastructure and electricity supply as significant constraints, alongside limited access to credit, lack of business knowledge and planning, domestic market competition, and shortages of skilled workforce and technology (Islam & Hossain, 2018). These findings align with broader claims in the literature that the enterprise environment is shaped by multiple interacting constraints rather than a single bottleneck.

At the same time, there are meaningful differences in how competition and external pressure are interpreted. A study using partial least squares structural equation modelling reports that competition with large industries is positively associated with SME growth, suggesting competition can stimulate adaptation and growth rather than only crowding out smaller firms. (Khalil & Haque, 2022). A Footwear industry study uses fuzzy Delphi and fuzzy analytical hierarchy process to rank challenges, placing cash flow, market competition, access to finance, and loan policy barriers at the top, while also revealing methodological fragility due to reliance on an expert panel of only four members. (A. K. M. Hedaitul Islam et al., 2020).

While the literature extensively documents the supply-side constraints on credit access, this study's survey evidence illuminates demand-side capability gaps that exacerbate these constraints. When asked about support needs, respondents prioritized "Financial management" (47%) and "Export support" (43%) over other technical areas, while "Training/Capacity building" (22%) or "Social media marketing" (24%) were also cited as formidable challenges. This empirical finding validates the literature's suggestion that the barrier is not solely the availability of funds, but the internal managerial capacity to handle finances and navigate competitive international markets.

3.3 Sustainability and green business practices

Sustainability-oriented research exists but remains comparatively less integrated with digital adoption and day-to-day managerial practices. One observational study examines how owners and owner-managers execute green management and identifies obstacles to implementation, reporting that none of the SMEs studied formally use green human resource management and that green initiatives are often sporadic and driven by cost reduction rather than environmental commitment (Mohiuddin & Al-Amin, 2022). Other studies operationalize sustainability through organizational capabilities and performance models. A survey of employees in SMEs in Bangladesh and India uses purposive sampling and regression analysis to show positive

associations among internal and external dynamic capabilities, green human resource practices, and sustainable performance (M.A. Rahaman et al., 2024). This technique encourages theory-driven assessment, but its reliance on employee respondents rather than owners may limit its ability to effectively detect practical adoption restrictions in smaller CMSMEs, where the owner-manager consolidates decision-making authority. One study uses a large sample and partial least squares structural equation modelling to find that eco innovation initiatives improve environmental and societal performance but not economic performance, challenging the policy assumption that sustainability investments quickly yield financial gains (Hasan, 2023). This contradiction is crucial: financially limited CMSMEs may rationally underinvest in green practices until incentives, market access, or buyer pressure modify the reward structure. However, the same study covers only manufacturing SMEs in Bangladesh and acknowledges limited transferability to other sectors, a significant challenge for CMSMEs that engage in informal and semi-formal activities (Hasan, 2023). Direct CMSME sustainability research is scarce. A survey of CMSMEs models sustainable entrepreneurship using criteria like funding and loans, product sales, government backing, and entrepreneur background (Aktar & Kabir, 2024). Sustainability studies often regard sustainability as depending on enabling conditions rather than operational practices. Its focus on money and market opportunity is typical. Related comparative research on sustainable financial practices views sustainability as a legislative framework and a global supply chain pressure-driven financial management approach, with locally focused and rural SMEs lagging (Egc, 2025). These studies reveal that sustainability is increasingly recognized, but often in limited forms, such as finance or eco-innovation, rather than as a comprehensive set of corporate practices tied to digital competence.

Our survey results provide empirical support for the literature's observation of a disconnect between intent and practice. Although a combined 96% of respondents indicated they are either "interested in" or have "already adopted" green practices, the implementation is heavily skewed toward tangible outputs like "eco-friendly products" (63%) rather than systemic process improvements like waste reduction (37%) or energy saving (6%). Furthermore, the respondents explicitly validated the resource-based view of sustainability barriers by citing obstacles such as "Low demand" and "High cost." At the same time, the prioritization of "Financial management" support (47%) confirms that the main barrier to green adoption is economic rather than motivational.

3.4 Skills development, innovation, and growth opportunities

Innovation and skills are commonly presented as pathways to competitiveness, yet empirical work is frequently based on small qualitative samples. A case study-based analysis of four SMEs identifies financial and human resource barriers to innovation. It highlights environmental barriers as additional constraints, arguing that the topic is underexplored in developing country contexts (Banu, 2020). The methodological contribution here is depth, achieved through interviews and analysis of company materials. However, the limited number of cases restricts broader inference about how common these innovation barriers are across CMSMEs. Besides, working capital and managerial knowledge also emerge as skills adjacent to constraints. A qualitative case study based on interviews with ten respondents highlights difficulties in managing working capital, obtaining loans, and deficiencies in business and financial management knowledge among some owners, while also documenting participation barriers where some respondents were unwilling due to limited understanding of academic research (Thakur, O. A., & Alam, M. K., 2022). This supports the idea that gaps in capability are not just technical but also managerial and informational, and that they affect both readiness for creativity and financial resources. In growth-focused quantitative modelling, institutional and capability factors are emphasized, but explanatory mechanisms remain thin when designs lack qualitative follow-up. The earlier structured equation modelling study reports moderate effects of government support and highlights technical skill deficits and raw material costs as growth challenges. Nevertheless, it acknowledges limitations, including the absence of owner interviews and case studies that would help interpret causal pathways (Khalil & Haque, 2022). Addressing the literature's concern about capability deficits, our survey data reveal that CMSME owners are attempting to bridge the skills gap outside formal institutions. The majority of respondents rely on "self-learning" (63%) and "mentorship" (49%) rather than formal workshops or online courses. Despite the noted constraints, the survey indicates a strong optimistic bias regarding growth opportunities, with owners projecting "opening outlets" and physical expansion over the next five years, suggesting that resilience and informal adaptive learning are currently substituting for the formal innovation structures described in broader economic studies.

3.5 Research gaps and how the present survey-based CMSME study is distinct

The synthesis above reveals a clear need for an integrated, owner-centred account of CMSME needs that jointly captures digital literacy, business challenges, requested supports, and sustainability practices in a developing country context. Although individual studies document

financing gaps and infrastructure constraints (Ali & Islam, 2018; Islam & Hossain, 2018), and others examine digital adoption drivers (Hossain et al., 2025) or sustainability and green management barriers (Mohiuddin & Al-Amin, 2022), few studies bring these dimensions together in a single instrument that reflects practical owner decisions.

Our current survey of 51 CMSME owners directly responds to this fragmentation by jointly measuring: internet access and business use of the internet, website ownership and functions, social media platform use and engagement frequency, approaches to learning and skill development, perceived growth opportunities and expectations, interest in green practices and the specific green practices implemented, perceived barriers to adopting green practices, and areas where support is needed. The descriptive patterns visible in our dataset underscore why this integrated design matters.

4 Discussion: Bridges and Divergences

This section integrates our primary data from interviews with 51 CMSME owners with the broader academic literature to address the study's "So What?" question. To guide readers, we first review how our findings align with prior research, then analyse unique insights or points of divergence. How do local realities align with established theory, and where do they differ, to provide a more detailed view of the operational terrain of Bangladeshi CMSMEs?

4.1 Converging Narratives

The findings support the structural and resource constraints, consistent with the existing literature, and confirm that the key hurdles to SME growth, as shown in recent Bangladesh studies, remain significant.

4.2 The Financial Constraint

The literature identifies access to finance as the primary bottleneck. Ali and Islam (2018) refer to a "financing gap" in which demand overreaches supply, whilst Islam and Hossain (2018) refer to dependency as a top constraint. This anecdote aligns well with the survey results, which found "Financial management" as the leading type of support (chosen by 47% of respondents). In addition, persistent market challenges, such as "Low demand", were cited as impediments to new practice adoption, aligning with the literature depicting resource scarcity as an obstacle to capacity utilization (Ali & Islam, 2018; Thakur & Alam, 2022).

4.3 Skill Deficits

The studies identify a shortage of skilled technical personnel and weak management skills as major obstacles for SMEs (Islam & Hossain, 2018; Banu, 2020). Survey data bear out this shortfall, but that same data also provides a more complex picture of how entrepreneurs are managing. Although acknowledging the need for help, 63% of respondents were learning "Self-learning" rather than receiving formal training. This confirms the "capability gap" described by Hasan and Rahman (2023), in which the lack of formal expertise forces owners to rely on ad hoc learning methods.

4.4 Diverging Insights

The literature offers a macro perspective on these barriers. However, the survey provides granular insights and behavioural perspectives on SME challenges that the existing literature often overlooks or misrepresents.

4.5 The Reality of 'Digital Adoption' (F-Commerce VS E-Commerce)

Many studies examining 'e-commerce adoption' focus on formal website usage, complex supply chain integration, and security concerns (Abtahi et al., 2023; Hossain et al., 2023). However, the survey shows a difference in how digitisation is occurring. Although 98% of participants have access to the internet, Facebook (98% of respondents) is far and away the most popular way it is utilised, while website ownership stands at 73%; the operational reliance suggests a different reality. This would seem to imply that the literature is overstating the formal utility of digital adoption. For Bangladeshi CMSMEs, digital literacy does not translate into handling sophisticated data systems, as recommended by Hossain et al. (2023); rather, it is about becoming adept at "social commerce" and casual chat platforms.

4.6 Green Product or Green Process

The literature notes that SMEs often face criticism for failing to practice formal green management due to a lack of knowledge (Mohiuddin & Al-Amin, 2022). However, the survey finds that the divide is not so much about awareness or interest (69% say they are interested) as about the form of adoption. Related literature generally focuses on process innovations, such as waste minimisation and improved energy utilization (Hasan & Rahman, 2023). Green practices, on the other hand, were overwhelmingly associated with selling "eco-friendly

products" (63%) rather than with changes to the organization's internal processes, such as energy saving (6%). This suggests a market-oriented incentive for sustainability (selling green products) rather than the regulatory-compliance focus found in much academic literature.

4.7 Optimism in Uncertainty

Although the literature is heavily laden with reports of challenges, political uncertainty, and market failures (Jaim, 2022; Islam & Hossain, 2018), survey findings also demonstrate some optimism. Despite the challenges, respondents qualitatively indicated that business is expected to grow and expand physically over the next five years. The psychological resilience of the entrepreneur is frequently underestimated in structural accounts of the economy.

5 Implications & Recommendations

This study found a critical "capability gap" or mismatch between theories and ground-level reality for CMSMEs. The following recommendations offer strategies for researchers and policymakers.

5.1 For Policymakers: From Access to Capability

Current policy frameworks often emphasize complex infrastructure (e.g., electricity, internet coverage) and financial liquidity. However, our survey reveals that while 98% of respondents have internet access, their usage is limited to informal social platforms (primarily Facebook) rather than strategic business operations. 98% of the participants indicated they use Facebook, surpassing the 73% who utilize official websites. Therefore, policy must shift focus from access to developing competence.

5.2 Targeted Digital Literacy Training

Policymakers should move beyond general ICT promotion and focus on specific training, shifting from "social media literacy" to "business digital literacy." Since respondents identified "Financial management" as a top support need, indicating 47% of the respondents, training should integrate digital tools with financial record management. This aligns with what Abtahi et al. (2023) found: that improving technology skills is needed to overcome people's resistance to change and security concerns when adopting e-commerce.

5.3 Incentivizing the "Missing Middle."

Our survey confirms that micro-investors (BDT 1-5 lakh) struggle most with financial management. To address the "Missing Middle" financing gap identified by Ali and Islam

(2018), regulators should establish different levels of compliance so that informal "F-commerce" business owners can access official credit without having to provide the heavy collateral that banks currently require (Thakur & Alam, 2022).

5.4 Green Subsidy Reform

Almost every participant in our survey (96%) stated that they were environmentally active. However, it was also noted that a significant problem they face in adopting sustainable practices is the high cost and low demand. Since eco-innovation does not significantly improve economic performance in the short run (Hasan & Rahman, 2023), CMSME owners are unlikely to adopt green practices voluntarily due to "high initial costs". Instead of relying on awareness campaigns or on people choosing to follow the rules on their own, policymakers should offer direct financial incentives, such as zero-interest loans for installing green technology. Mohiuddin and Al-Amin (2022) found that these methods were useless primarily without financial support.

5.5 Behavioural VS Technological Green Steps

While respondents cited "limited access to green technology" as a barrier, they can adopt process-oriented changes that require zero capital. Simple measures such as waste segregation, reducing energy consumption during non-peak hours, and minimizing paper use can improve environmental performance (EnP) without the financial burden associated with acquiring new machinery (Mohiuddin & Al-Amin, 2022).

5.6 Institutional Voids and the Need for Peer Learning

The survey results show that the current support system has a significant problem: 63% of people rely on "self-learning" and 49% on "mentorship" to improve their skills, but only 8% or 10% take "online courses" or "workshops." Entrepreneurs in this country rely heavily on informal knowledge transfer, suggesting that the government's institutional support structures are mostly "backdated" and not aligned with what entrepreneurs need right now.

5.7 Overcoming systemic issues

The study shows that the formal structure is more of a hindrance than a help for CMSME owners. Thakur and Alam (2022) say that the government does not care much about this industry, and the complicated bureaucracy makes it hard for real businesses to get help. So, business owners must figure out how to fill these gaps in the system on their own.

5.8 Formalizing Organic Networks

Workers must learn by doing because the official education system does not give them the skills they need (Banu, 2020). This means that business owners need to make their own support systems. Practitioners should set up "Knowledge Circles" based on clusters, where experienced owners help new owners.

5.9 Building Dynamic Capabilities

This peer-to-peer method is not just a quick fix; it is a way to get stronger. By sharing localized approaches to addressing political upheaval and supply chain problems, these networks help people build the "internal dynamic capabilities" that Rahaman et al. (2024) argue are necessary for long-term success in places where external resources are hard to obtain.

6 Conclusion

This research, integrating literature with data from 51 CMSME proprietors, determines that although the sector is robust, it encounters a substantial "capability gap" overlooked by macro-policies. The findings reveal three significant differences. First, "digital adoption" is mostly informal. For example, 98% of businesses use Facebook, and the industry thrives on "social commerce" instead of the complicated IT systems that policymakers often focus on. Second, sustainability is driven by the market, not by the business itself. Owners are more interested in selling "eco-friendly products" (63%) than in taking "energy-saving" measures (6%). This shows that going green is more about branding than about saving money and meeting demand. Third, because there is insufficient institutional support, entrepreneurs have to rely on "self-learning" (63%) rather than formal training, even though they really need "Financial management" (47%) and "Export support" (43%). In the end, policy needs to shift from building infrastructure to building people's skills to move from digital adopters to innovators.

For Future Research

This pilot study has revealed granular behavioural insights that challenge macro-level assumptions, particularly regarding the definition of "digital adoption" and the motivation for "green practices." Future research should expand on these nuances.

- **Large-Scale Quantitative Validation:** To determine whether the "F-commerce" reliance discovered here applies to all sectors, a large-scale, stratified random sample of rural and urban CMSMEs is required. In contrast to official website usage, future quantitative research should

especially examine the relationship between financial revenue growth and informal digital usage (like Facebook).

- Analysis of Longitudinal Impact: A significant portion of the literature currently under publication is cross-sectional (Islam & Hossain, 2018). Future studies should use longitudinal designs to monitor whether CMSMEs that implement green practices ultimately abandon them because they do not receive an immediate financial return, or whether they do experience the long-term societal and environmental performance gains that Hasan and Rahman (2023) predicted.
- Examining the "Cottage" Specifics: Studies frequently combine "SMEs" into a single entity. Future research should disaggregate data to isolate the "Cottage" and "Micro" categories, as their digital literacy and collateral issues differ from those of "Medium" businesses (Thakur & Alam, 2022).

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