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Factors Shaping Small and Medium Enterprise Competitiveness in Yemen

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Executive Summary

Small and Medium Enterprises (SMEs) form the backbone of Yemen's private sector and are critical to local production, employment generation, and economic resilience. Yet, they are operating in one of the world's most challenging business environments—one defined by protracted conflict, institutional fragility, market fragmentation, and infrastructure collapse. This study, rooted in mixed-method analysis and field-level survey data, provides a comprehensive assessment of the competitiveness landscape facing SMEs in Yemen, aligning with global competitiveness frameworks.

Key Findings:

- **Firm-Level Capabilities:** Yemeni SMEs exhibit foundational strengths in financial management and product/service innovation. However, core operational gaps persist—especially in HR formalization, staff training, and customer relationship systems. Capability scores rise sharply with firm size, underscoring a structural “formality gap” among micro and small enterprises. Sectorally, production-heavy sectors (construction, textiles, metals) lag behind service sectors (health, retail, education) in planning, CRM, and digital adoption.
- **Business Ecosystem:** SMEs demonstrate strong upstream relationships with suppliers and customers, but downstream linkages—distribution channels, partnerships, and clustering—remain weak. Micro and small firms, in particular, lack access to structured B2B networks, e-commerce infrastructure, and brokerage mechanisms, inhibiting market reach.
- **National Environment:** The macro-operating environment is severely constrained. Electricity access, financial inclusion, and regulatory predictability rank among the lowest enablers. While telecom coverage and raw material access are relatively better, systemic barriers—such as fragmented institutions, high bureaucracy, and power unreliability—stifle investment and planning.
- **Globalization Readiness:** While many SMEs adhere to basic quality standards and sustainability practices, few have taken concrete steps toward export-readiness or international certification. Export capacity and market development remain limited to larger and service-sector firms.
- **Top Challenges:** Political instability, access to finance, supply chain disruptions, and the absence of targeted support programs dominate the national constraint profile. Sector-specific bottlenecks vary: agriculture suffers from skills shortages, construction and tourism face infrastructure breakdowns, while IT and education sectors are limited by policy and connectivity gaps.

Factors Influencing SME Competitiveness (Global, Regional, and Conflict Contexts)

SMEs (small and medium-sized enterprises) are widely recognized as engines of economic growth and job creation, yet they face distinct challenges in remaining competitive. Globally, SMEs represent about 90–95% of all businesses and account for a significant share of employment (60–70%) [1]. Despite this importance, SMEs are often the “missing link” between growth and inclusiveness – they have high potential to drive development but encounter many hurdles in competing in domestic and international markets blogs.worldbank.org. This report review identifies the key global and regional factors that influence SME competitiveness, and then examines additional factors relevant to conflict-affected environments (with a focus on Yemen). It also highlights major competitiveness indices and frameworks (e.g. Global Competitiveness Index, SME Policy Index, Ease of Doing Business) that shed light on these factors.

Global and Regional Factors Affecting SME Competitiveness

Business Environment and Institutions: A conducive business environment – including sound regulations, efficient bureaucracy, and low corruption – is fundamental for SME competitiveness. Business-friendly procedures, high-quality regulation, and strong legal institutions promote competition and efficient resource allocation [2]. Conversely, burdensome red tape and weak rule of law raise costs for SMEs and hinder their growth. The World Bank’s former Ease of Doing Business indicators illustrate how factors like easy business registration, contract enforcement, access to credit information, and straightforward tax compliance reduce barriers for SMEs. In fact, countries with simpler and clearer regulations see more SMEs start up and expand. According to the World Bank, a high Ease of Doing Business ranking signifies that “the regulatory environment is more conducive to the starting and operation of a local firm” [3]. Policies that address “across-the-board” obstacles – such as lengthy licensing processes or onerous permit requirements – tend to disproportionately benefit SMEs, since large firms can better absorb such costs [1]. Overall, strong governance, stable institutions, and a predictable policy environment reduce uncertainty for entrepreneurs and encourage SME competitiveness. In contrast, Yemen presents one of the most challenging environments globally for small and medium enterprises (SMEs). According to the World Bank’s Ease of Doing Business indicators, Yemen ranked 187 out of 190 economies, reflecting severe institutional and regulatory deficiencies. Key areas essential for business operations—such as dealing with construction permits (ranked 186), getting electricity (187), and accessing credit (186)—are marked by extreme inefficiency and bureaucracy. Starting a business remains cumbersome (ranked 156), while weak

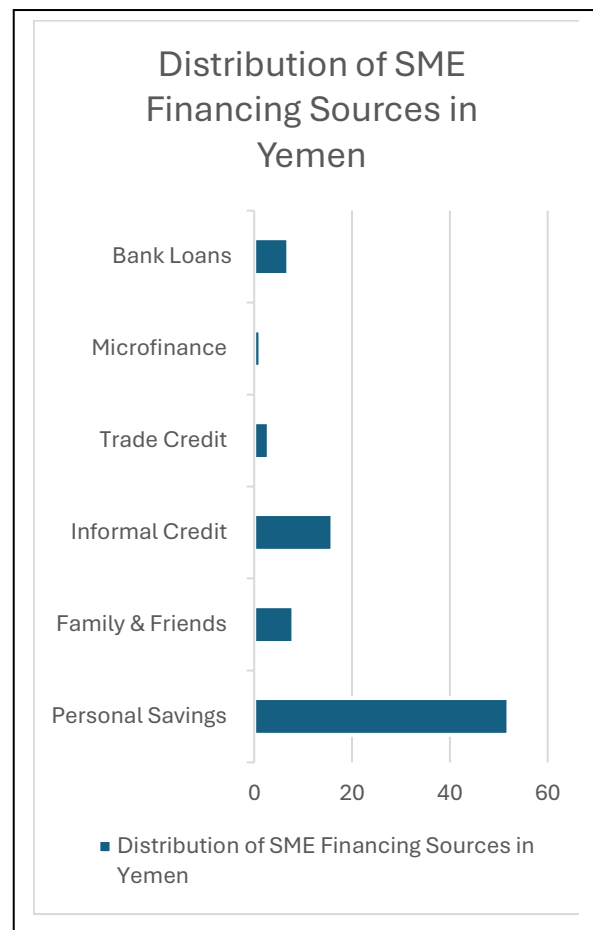


mechanisms for enforcing contracts (143) and protecting minority investors (162) further erode investor confidence. Although property registration fares relatively better (ranked 86), this is overshadowed by systemic fragility, poor infrastructure, and a volatile legal and financial environment. These obstacles significantly hinder entrepreneurship, limit SME growth, and deter both domestic and foreign investment. In conflict-affected contexts like Yemen, the absence of institutional stability and efficient regulatory systems translates into high transaction costs and heightened risks, leaving SMEs without the enabling environment needed to thrive [3].

Access to Finance: Access to credit and financial services is consistently cited as a top constraint for SMEs worldwide. SMEs often lack collateral or credit histories and are seen as higher-risk by lenders, leading to credit rationing. Globally, the financing gap for MSMEs (micro, small and medium enterprises) is estimated at roughly \$5.7 trillion – unmet demand that underscores how many viable small businesses cannot obtain the funds needed to grow [4]. This gap has grown in recent years (up from about \$4.4 trillion), reflecting that traditional banking systems still underserved SMEs [5]. In developing regions, on average only a small fraction of total bank lending goes to SMEs. International institutions emphasize a holistic approach to ease SME finance constraints – for example, developing credit bureaus and collateral registries, encouraging fintech and microfinance, and deploying credit guarantees. The IMF notes that an enabling environment for SMEs must ensure adequate financing options alongside other inputs [2]. Without affordable credit, SMEs struggle to invest in new technology, expand operations, or even manage cash flow, putting them at a competitive disadvantage.

In Yemen, the financing landscape for small and medium-sized enterprises (SMEs) is dominated by personal and informal sources, with formal credit playing only a marginal role. According to baseline surveys, 89% of SME owners rely entirely on personal savings to fund their businesses, while more recent conflict-era data shows that approximately 52% of SME financing still comes from internal or self-financed sources. Family and friends account for 8% of SME funding, highlighting the strong dependence on social networks. Additionally, 16% of unregistered small firms report using informal money lenders, a figure that underscores the rising role of curb-market credit in the absence of bank financing.

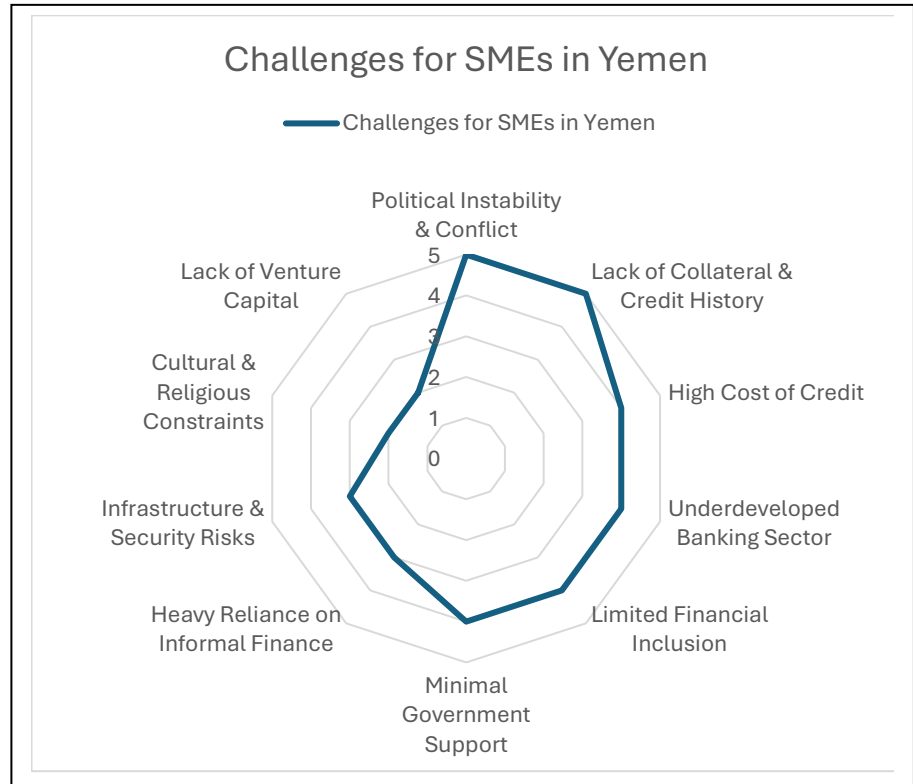
Trade credit, primarily in the form of delayed payments from suppliers, represents only 3% of SME funding, as supplier trust and risk have diminished significantly during the conflict. On the formal side, microfinance institutions reach only 1.3% of entrepreneurs, indicating limited penetration



despite increased activity. Similarly, bank loans make up just around 7% of total SME financing, reflecting widespread exclusion from formal banking due to high collateral requirements and financial sector fragility. These figures reveal the acute structural barriers SMEs face in accessing sustainable financing in Yemen's conflict-affected economy [6-12].

SMEs in Yemen face severe financing challenges due to a combination of conflict-related

disruption, institutional weaknesses, and structural financial barriers. The most critical obstacle is political instability and ongoing conflict (5/5), which has devastated economic activity, fragmented the banking system, and caused lenders to withdraw. Equally severe is the lack of collateral and credit history (5/5), as most SMEs lack formal financial records or assets required for loans. The high cost of credit (4/5), with interest rates often exceeding 12–22% and short repayment terms,

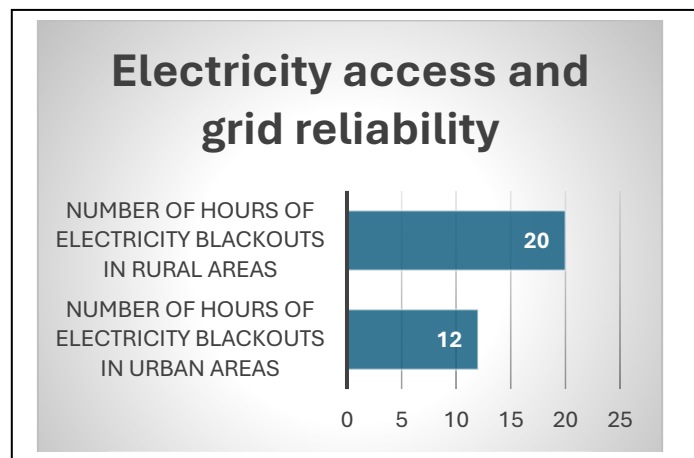


makes borrowing unaffordable for many. The underdeveloped banking sector (4/5) is risk-averse and offers minimal SME lending, while financial inclusion remains extremely limited (4/5), with over 90% of adults unbanked and most SMEs operating informally. Minimal government support (4/5) further compounds the problem, as there are no public credit programs or subsidies. SMEs heavily rely on informal financing (3/5) from family, friends, and money lenders, which is unstable and inadequate for long-term growth. Infrastructure deficiencies and security risks (3/5) increase operational costs and lender hesitancy. Cultural and religious factors (2/5) also reduce demand for conventional loans, despite the availability of Islamic financing. Finally, the absence of venture capital and equity investment (2/5) leaves innovative startups without access to growth capital. Collectively, these factors form a high-risk, underfinanced environment for Yemeni SMEs [7, 9, 10, 12].

Infrastructure and Technology: The quality of a country's infrastructure – from roads and ports to electricity and telecommunications – directly impacts SME productivity and competitiveness. Reliable power supply, transportation networks, and internet connectivity enable SMEs to produce efficiently and reach markets. In many developing regions, infrastructure gaps (e.g. frequent power outages or poor logistics) raise operating costs for SMEs and limit their growth. Similarly, technological readiness and adoption (such as access to broadband, digital tools,

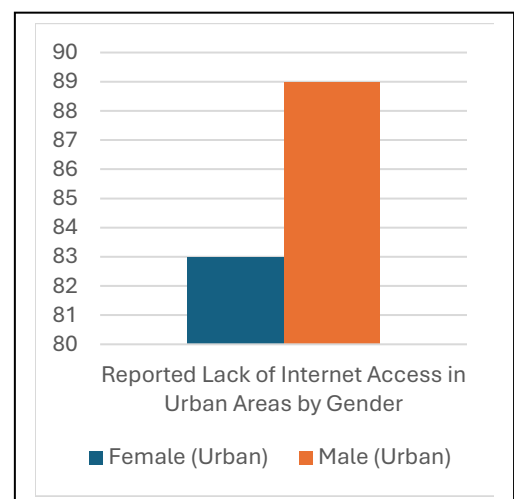
and modern production technology) influence SME competitiveness. Firms that leverage new technologies can improve efficiency and product quality, better connect with customers, and compete with larger or foreign competitors. The World Economic Forum's Global Competitiveness Index (GCI) includes infrastructure and technology adoption as key pillars of national competitiveness. In fact, the GCI framework (which historically encompassed 12 pillars) highlights that economies are more competitive when they have appropriate infrastructure, widespread ICT adoption, and the ability for firms to harness technology and innovate. Thus, at a regional level, countries with better infrastructure and higher technological diffusion provide a more fertile ground for SME success [13].

Residents in rural Yemen traverse a steep mountain path after conflict-related damage to main roads forced detours. The war in Yemen has devastated critical infrastructure – from electricity grids to transport networks – severely impeding SME productivity. The World Bank estimates that over 50% of Yemen's power generation and transmission assets have been damaged or destroyed during the conflict [14]. Public electricity is now barely functional in many areas, leaving



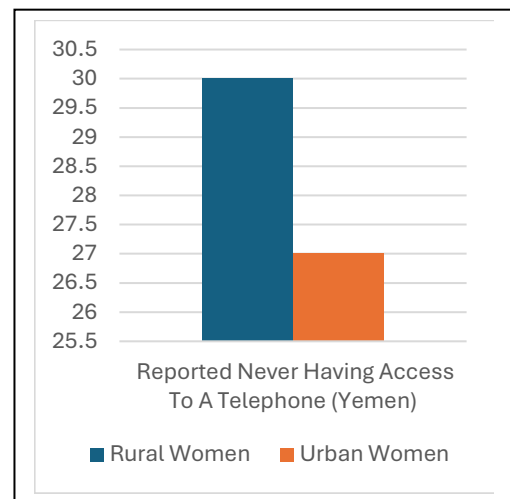
businesses and households dependent on costly private generators or off-grid solutions. As of the early 2020s, only about 40% of Yemenis have any access to electricity (national grid or otherwise), while roughly 35% have no access at all, and even connected areas endure power blackouts averaging 12–23 hours per day [15]. Basic transport infrastructure has likewise disintegrated: at least 100 bridges and one-third of paved roads (5,000–6,000 km) have been destroyed in the fighting. Many main highways are closed or unsafe, forcing traffic onto unpaved mountain tracks and massively increasing logistics costs [16]. These infrastructure failures raise operating expenses for Yemeni SMEs and often make it impossible to reliably move goods or reach customers.

Technological connectivity has also deteriorated amid the conflict. Internet and telecommunications access in Yemen is among the weakest in the world. By 2023, only 26–27% of the population (around 8–9 million people) was online [15] – one of the lowest penetration rates globally and far below the Middle East average of 65%. Those who are connected face extremely slow speeds (average download speed ~0.7 Mbps, ranking Yemen 223rd worldwide) and prohibitive costs (1 GB of mobile data costs about \$16, the highest in MENA, consuming over 25% of an average monthly income) [15]. Telecom infrastructure suffers from fuel shortages and damage; roughly 25% of network assets have been wrecked by the war [14], and large swathes of rural Yemen have no reliable signal. This digital divide and poor ICT adoption limit SMEs' ability to utilize modern



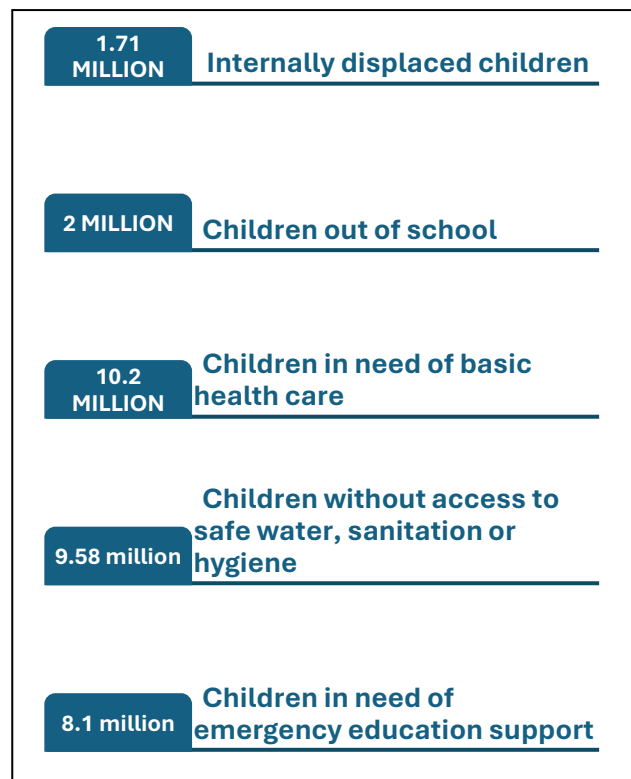
technologies. This digital divide and poor ICT adoption limit SMEs' ability to utilize modern

tools, e-commerce, or efficient communications. Yet amid these challenges, a notable grassroots technological adaptation has occurred – a surge in solar power use. With the national grid largely collapsed, affordable solar panels have flooded the market. By 2019, more than half of Yemeni households were using solar energy as their main source of lighting. Businesses too have turned to solar installations to keep the lights on. This improvised solar boom illustrates Yemeni SMEs’ resilience and ingenuity in the face of infrastructure collapse, but reliable large-scale power and modern telecommunications will be essential for any broad-based improvement in SME competitiveness after the conflict [15, 17].



Human Capital and Skills: The availability of skilled human capital is another critical factor. SMEs depend on entrepreneurs’ and workers’ skills in management, finance, marketing, and technical areas to be competitive. A well-educated workforce and access to training improve SMEs’ productivity and capacity to innovate. Conversely, skill gaps and low education levels constrain SMEs’ ability to move up the value chain or adopt new technologies. The Global Competitiveness Index also stresses education and training (e.g. quality of primary education, enrollment in higher education) as foundational pillars for competitiveness [13]. Regions that invest in education and vocational training tend to have more competitive SMEs. Additionally, building entrepreneurial capabilities and management skills is important – many SMEs fail not only due to external constraints but also due to internal limitations in business planning, financial management, or product development. Literature suggests that fostering SMEs’ capacity to innovate and adapt is crucial for sustained competitiveness [2]. This includes continuous learning, staff upskilling, and exposure to best practices. In sum, human capital development at the national and firm level enhances SME competitiveness by enabling higher productivity and innovation.

Years of war have severely eroded Yemen’s human capital base, depriving SMEs of the skilled workers and educated consumers needed for competitiveness. The country was already struggling with education and workforce development before 2015, and the conflict has caused a freefall in learning and skills. Millions of children have had their schooling interrupted or ended. As of 2021,

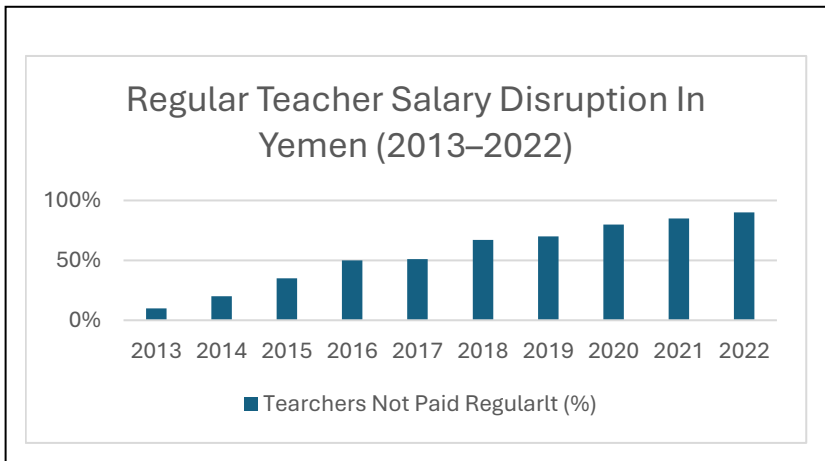


over 2 million school-age girls and boys in Yemen were out of school – more than double the pre-war number [18]. At least one in four schools has been destroyed, damaged, or repurposed during the fighting; an estimated 2,500+ schools can no longer be used for education because they were bombed, used as shelters for displaced families, or occupied by armed groups [18]. Higher education and vocational training programs have similarly been disrupted or closed in many areas. The prolonged conflict has also precipitated an exodus of professionals (teachers, doctors, engineers), a loss of talent that will be hard to replace.

Even where schools remain intact, the quality of education has plummeted. Teachers have gone unpaid for years in large parts of the country, leading many to quit or seek other income.

Approximately 171,000

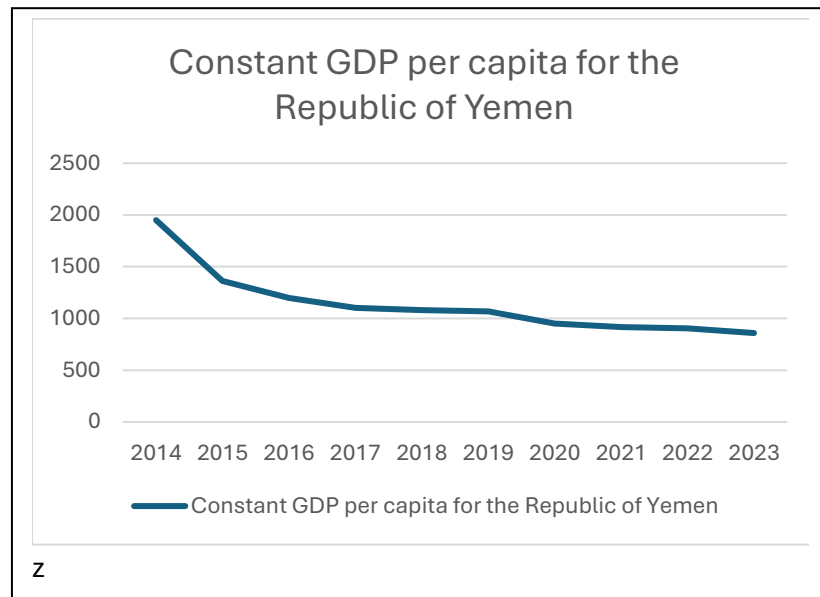
teachers – about two-thirds of Yemen’s teaching workforce – had not received regular salaries for four years as of 2020, putting millions of additional children at risk of missing an education as instructors abandon the profession [18]. The result is a generation of youth with huge gaps in basic skills, which directly constrains the pool of



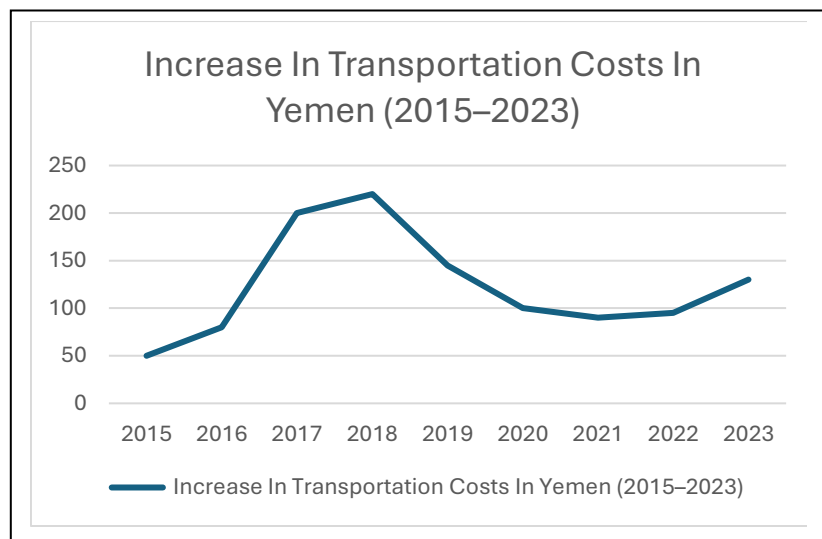
capable employees and entrepreneurs available to SMEs. Firms report difficulties in finding workers with even fundamental technical, managerial, or language skills. Yemen’s Human Development Index has fallen to one of the lowest in the world, reflecting the war’s blow to education and health: the country ranked 183rd of 191 nations in the 2021/22 UNDP HDI, the lowest in the Arab region [18]. Furthermore, widespread malnutrition and poor health – over 3.5 million Yemeni children under five are acutely malnourished in the ongoing crisis – impair cognitive development and productivity [19]. In sum, the conflict has decimated Yemen’s human capital, leaving its workforce less skilled, less healthy, and less prepared to drive SME competitiveness. Rebuilding schools, paying educators, and providing training will be a cornerstone of any post-conflict recovery to enhance the skills and productivity of Yemen’s labor force [20-22].

Market Access and Value Chains: SMEs’ ability to access markets – domestic and international – heavily influences their competitiveness. Market size and integration are noted drivers of competitiveness (indeed, “market size” is one pillar of GCI [13]. SMEs that can reach larger markets or export have more opportunities to scale up and improve efficiency. However, SMEs often face challenges in connecting to global value chains, finding buyers abroad, or meeting international standards. Studies by the International Trade Centre (ITC) indicate that access to market information and export opportunities is a major bottleneck for SME growth [1]. For instance, many SMEs lack information on foreign demand or struggle with complex customs

procedures, which limits their export potential [1]. Strengthening trade-related infrastructure and policies (e.g. trade facilitation, lowering export costs) can boost SME competitiveness [23]. Likewise, linking SMEs with networks and clusters (industry associations, partnerships with larger firms or MNCs) helps them acquire market knowledge and meet quality requirements. In many regions, SME competitiveness has been enhanced by integrating into supply chains of larger companies, which provides access to technology, mentoring, and stable demand. Thus, connecting SMEs to markets – through better information, trade facilitation, and networking – is a key factor for their competitiveness on a global/regional scale.

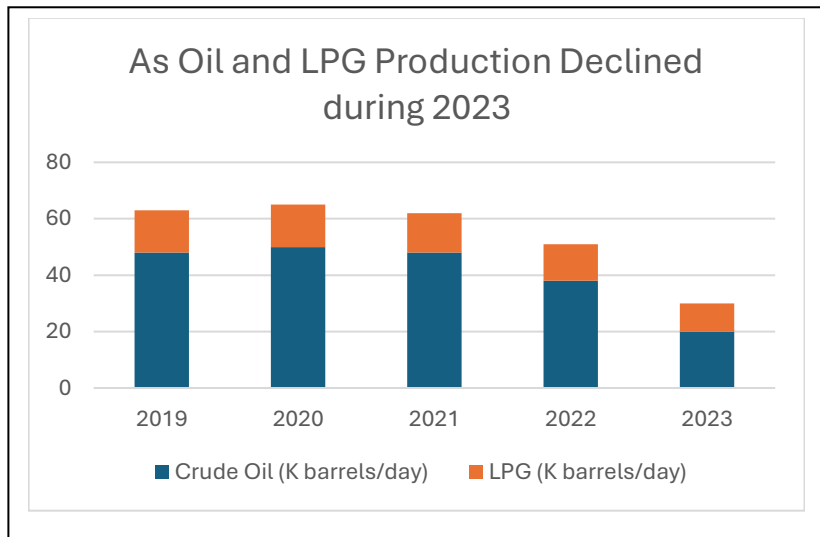


Yemen's conflict has shattered domestic markets and isolated the country from global trade, severely limiting SMEs' market access. The economy has contracted dramatically, shrinking the overall market size and demand that businesses can serve. Between 2015 and 2023, Yemen's real GDP per capita fell by 54% [24-26]. In practical terms, this collapse – coupled with currency depreciation and inflation – has left the majority of Yemenis in poverty and greatly reduced consumers' purchasing power. Over 80% of the population now lives below the poverty line, and more than 17 million people face food insecurity [19, 25, 26]. Such widespread impoverishment means domestic SMEs have a far smaller base of viable customers, hindering their growth. The war has also fragmented Yemen's once-unified national market into divided zones. Frontlines and checkpoints impede the movement of goods between governorates, while the country's de facto split has led to divergent regulations, duplicate institutions, and even separate currencies in circulation [14, 24, 27-29]. This fracturing raises transaction costs and uncertainties for SMEs trying to operate across Yemen, as they face multiple sets of authorities and rules. Trade logistics have become especially daunting. Transportation costs have surged due to fuel scarcity and the need to take long detours around conflict [14, 16, 27-29]. Businesses



moving goods must contend with numerous checkpoints demanding unofficial fees or even confiscating shipments, further discouraging internal trade.

International market access is even more curtailed. Yemen has effectively been cut off from many global value chains since the war escalated. Critical export industries – notably oil, which used to account for the bulk of Yemen’s export earnings – have been crippled. Oil production and export terminals were repeatedly attacked or blockaded up [24, 29]. Non-oil exports from Yemen (such as coffee, honey, or seafood) remain minimal, hampered by conflict-related logistics breakdowns and an inability to meet international standards amid the chaos. At the same time, imports of essential goods have been restricted. Even before the conflict, Yemen relied on imports for about 90% of its staple food and fuel [14, 29]. During the war, air and naval blockades and damage to ports have periodically choked off supplies, at times cutting import



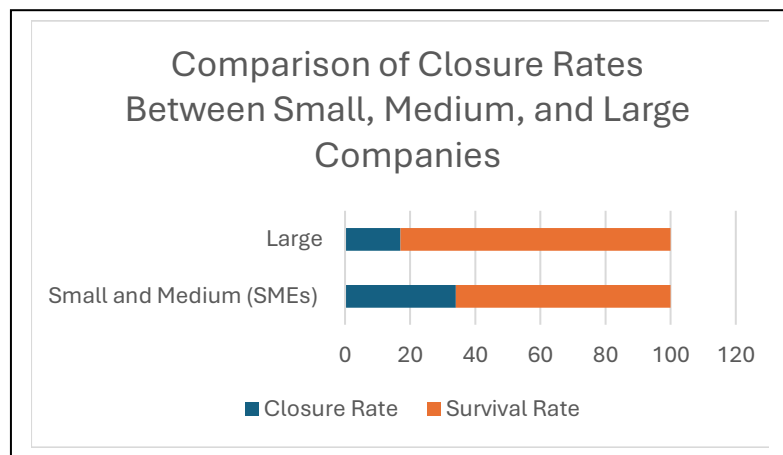
volumes of food and fuel to half of the needed levels [14, 29]. The result is chronic shortages and high prices for inputs that local businesses need, from raw materials to spare parts.

Legal and Regulatory Frameworks: Predictable and fair legal frameworks (property rights, contract enforcement, investor protection) give SMEs the confidence to invest and expand. For example, efficient courts and enforcement of contracts reduce the risk of doing business for SMEs. Similarly, regulations around starting a business, insolvency, taxation, and licensing need to be proportionate to firms’ capacity. If the costs or time required to comply with basic regulations are too high, SMEs remain informal or uncompetitive. The Ease of Doing Business indicators historically measured these aspects – such as the number of steps to start a business, ease of registering property, getting electricity, obtaining construction permits, getting credit, paying taxes, trading across borders, and resolving insolvency [30]. Consistently, economies that scored better on these indicators tended to have more dynamic SME sectors. It’s important to note that while Doing Business didn’t capture everything (e.g. it didn’t measure macro stability or corruption directly) [30], it provided a useful proxy for the regulatory burden on SMEs. In summary, streamlined regulations, strong legal protections, and good governance form a backbone for SME competitiveness by lowering entry barriers and operating costs.

Internal Capabilities and Innovation: In addition to external factors, SMEs’ internal resources and strategies affect their competitiveness. This includes their capacity to innovate, adopt new technologies, maintain quality, and adjust to market changes. A framework from ITC’s SME Competitiveness Outlook divides SME competitiveness into three pillars – capacity to compete (efficient operations, cost/quality control), capacity to connect (accessing information and

networks), and capacity to change (innovation and adaptability) [23]. Many of the external factors discussed (infrastructure, finance, institutions) impact these capacities. For instance, a firm's ability to compete depends on having access to quality infrastructure and a supportive business environment, while the ability to change/innovate depends on skills and finance for investing in new ideas [2, 23]. SMEs that continuously improve their products or processes (through R&D, adopting best practices, learning from market feedback) tend to build a competitive edge. Meanwhile, networking and social capital – connections with other firms, participation in clusters or value chains – can compensate for small size by giving SMEs collective efficiency benefits (e.g. shared knowledge, aggregation to achieve scale). Overall, literature highlights that a comprehensive approach is needed: improving the external environment and building SMEs' internal capabilities go hand-in-hand in enhancing competitiveness [2].

Under the extreme pressures of war, Yemeni SMEs' internal capacities have been overwhelmingly directed toward survival rather than growth or innovation. The conflict has decimated firm-level resources – financial, human, and material – that businesses need to maintain efficient operations and adapt to changing markets. A UNDP rapid assessment in the early years of the war found that SMEs were the most affected sector, with about 34% of medium-sized enterprises forced to close down, a closure rate double that of large firms [8]. Those that survived often had to downsize sharply. Many skilled employees have fled



or been laid off, and management capacity is consumed by day-to-day crisis response. This leaves little room for long-term strategy or innovation. Firms are struggling to simply keep the lights on (often literally, given power outages). Access to finance has nearly collapsed: over 70% of businesses reported having no access to external financing since the war began, and only 14% managed to secure any loans [8]. Banks are paralyzed by economic turmoil and credit risk, so entrepreneurs cannot easily invest in new equipment, technology upgrades, or product development. Instead, any available funds are used to cover operating expenses or improvised solutions to wartime scarcities.

Supply chain disruptions further sap firms' capabilities. According to the same survey, 75% of businesses struggled to source their normal inputs and stock during the conflict, due largely to import blockades and internal transport disruptions [8]. For example, retailers could not obtain vital goods (the survey notes even essentials like medicine and flour became hard to procure [8]. Manufacturers lacked raw materials and spare parts. In this environment, maintaining production quality or consistency is extremely difficult, let alone pursuing innovation. Many SMEs have had to switch to whichever inputs are available or change product lines entirely to cope with shortages. While this reflects a form of adaptive capacity, it is born of necessity rather than proactive innovation. Business owners have also been operating without a stable regulatory and security backdrop, which means plans for expansion or new ventures carry tremendous risk. It is telling that

in a one-year outlook during the war, nearly half of business owners feared they might have to shut down within 12 months [8], highlighting pervasive uncertainty. Security concerns were cited as the top constraint across almost all regions [8], underscoring that without peace, businesses can barely plan ahead. Despite these hardships, there are anecdotes of resilience and creative adaptation among Yemeni entrepreneurs. A significant number of firms have managed to identify niche opportunities arising from the crisis. For instance, some local manufacturers began producing face masks, sanitizer, or other necessities when imports were cut off. Others shifted into food processing or solar energy solutions, given the high demand for these during the war. In fact, roughly 50% of businesses surveyed saw new market opportunities created by the conflict (especially in essential goods and solar power) and tried to capitalize on them [8]. The rapid spread of small-scale solar installations is one example, where traders and technicians innovated to meet the population's need for electricity [17]. Likewise, the growth of mobile money services in some areas is a response to the cash and banking disruptions. These instances show that Yemeni SMEs, when pressed, can be agile and resourceful. However, such coping innovations often remain small-scale. Without a stable environment and external support, it is hard for these initiatives to translate into broad-based competitiveness. In summary, Yemen's conflict has critically weakened the internal capacities of its SME sector – most firms are focused on survival, operating below capacity, and unable to invest in innovation. Supporting SMEs with finance, training, and stability in a post-conflict setting will be vital to unlock their ability to truly innovate and drive economic recovery [8].

Key Challenges Facing Small and Medium Enterprises (SMEs)

Key Challenge	Description
Lack of Financing	Difficulty obtaining loans or investments due to banking paralysis and high risk.
Supply Chain Disruptions	Difficulty accessing raw materials and products due to blockades and movement restrictions.
Loss of Human Resources	Emigration of skilled workers and layoffs of qualified staff.
Infrastructure Destruction	Power outages, damaged roads, and lack of essential services.
Security and Political Instability	Difficulty in future planning and increased operational risks.
Market Contraction	Decline in purchasing power and customer base.

Analyzing SME Competitiveness in Yemen Under Local Factors

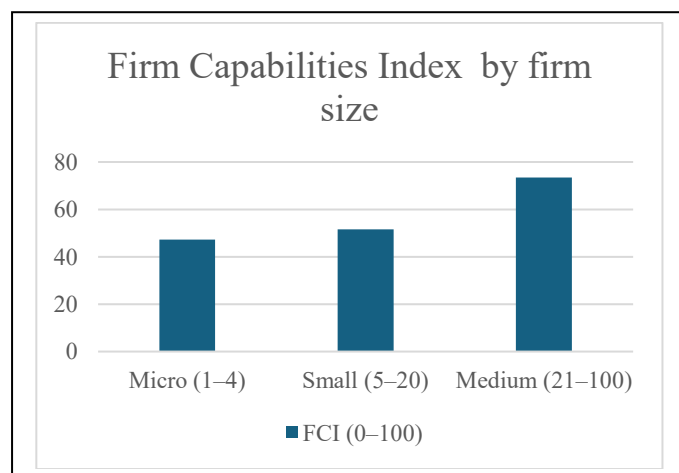
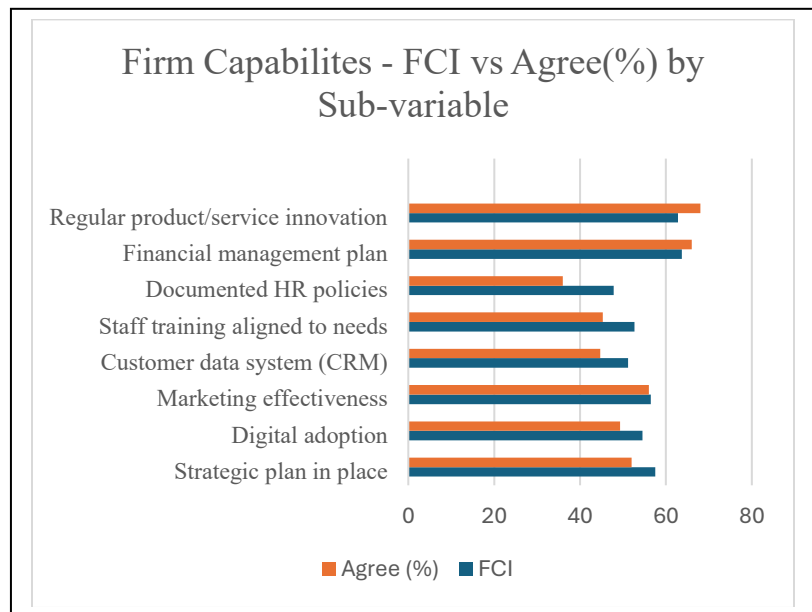
The competitiveness of SMEs is influenced by a broad spectrum of factors that can be categorized into three primary levels: firm capabilities, the business ecosystem, and the national environment. Beyond these foundational elements, globalization introduces specific dynamics that continually reshape the competitive landscape.

Firm Capabilities: The Internal Strengths of SMEs

Yemen's SMEs sit at an "emerging" capability level: the composite Firm Capabilities Index (FCI) is 55.8/100. Strengths are visible in financial management (63.7/100; 66% agree) and product/service innovation (62.8/100; 68% agree). Mid-tier capabilities include strategic planning (57.5/100), marketing effectiveness (56.5/100), and digital adoption (54.5/100). The weakest foundations are documented HR policies—job descriptions, fair hiring, basic procedures—(47.8/100; 36% agree), customer data/CRM systems (51.2/100; 44.7% agree), and regular staff training (52.7/100; 45.3% agree). Capability rises sharply with firm size (Micro 47.2; Small 51.6; Medium 73.5; Large 71.0),

signaling a structural "formality gap" in smaller firms (people systems, data, and training are the missing basics). Sector contrasts are stark: service and commerce outperform heavy production on two pivotal foundations. For strategic planning, leaders are Health 88.2, Wholesale & Retail 80.5, Education & Training 79.2, while Tourism & Hospitality 32.8, Metals & Engineering 29.8, and Construction Materials 27.0 lag far behind. For customer data/CRM, leaders are Health 85.5, Wholesale & Retail 74.2, Education & Training 69.0 versus Metals & Engineering 25.2, Construction Materials 31.5, Textiles & Garments 31.8, and Tourism 32.8. Bottom line: most firms can plan finances and generate new offerings, but many—especially micro/small and production-heavy sectors—still lack the people systems and customer data

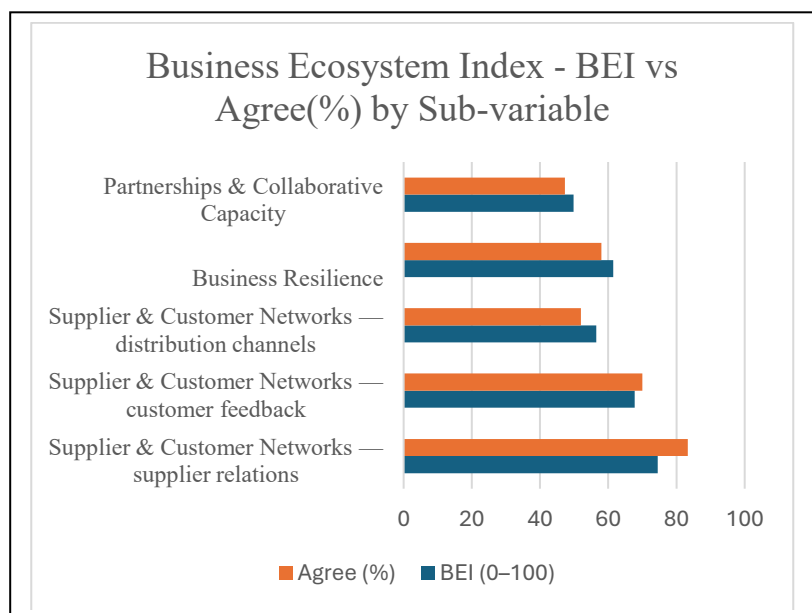
infrastructure needed to convert effort into durable demand. Policy should therefore prioritise low-cost formalization for micro/small (templated HR, basic SOPs, light CRM), sector-targeted upgrading for construction/metals/tourism, and "digital-to-market" programs that couple POS/CRM adoption with focused outreach.



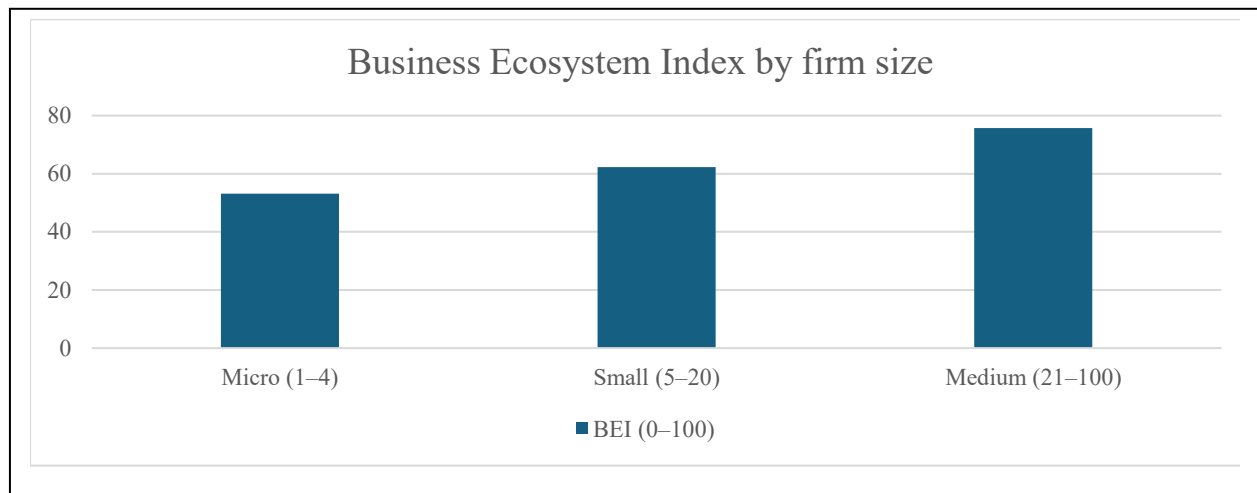


Business Ecosystem: External Linkages and Support

Evidence from the survey indicates an ecosystem that is robust upstream yet underdeveloped downstream—in practical terms: firms know how to secure inputs, manage suppliers, and listen to customers, but many—especially smaller ones—fail to translate this into stable sales because they lack channels (distributors/wholesalers/digital platforms) and formal partnerships that facilitate market access. The composite Business Ecosystem Index (BEI) equals 62.0/100. Disaggregation



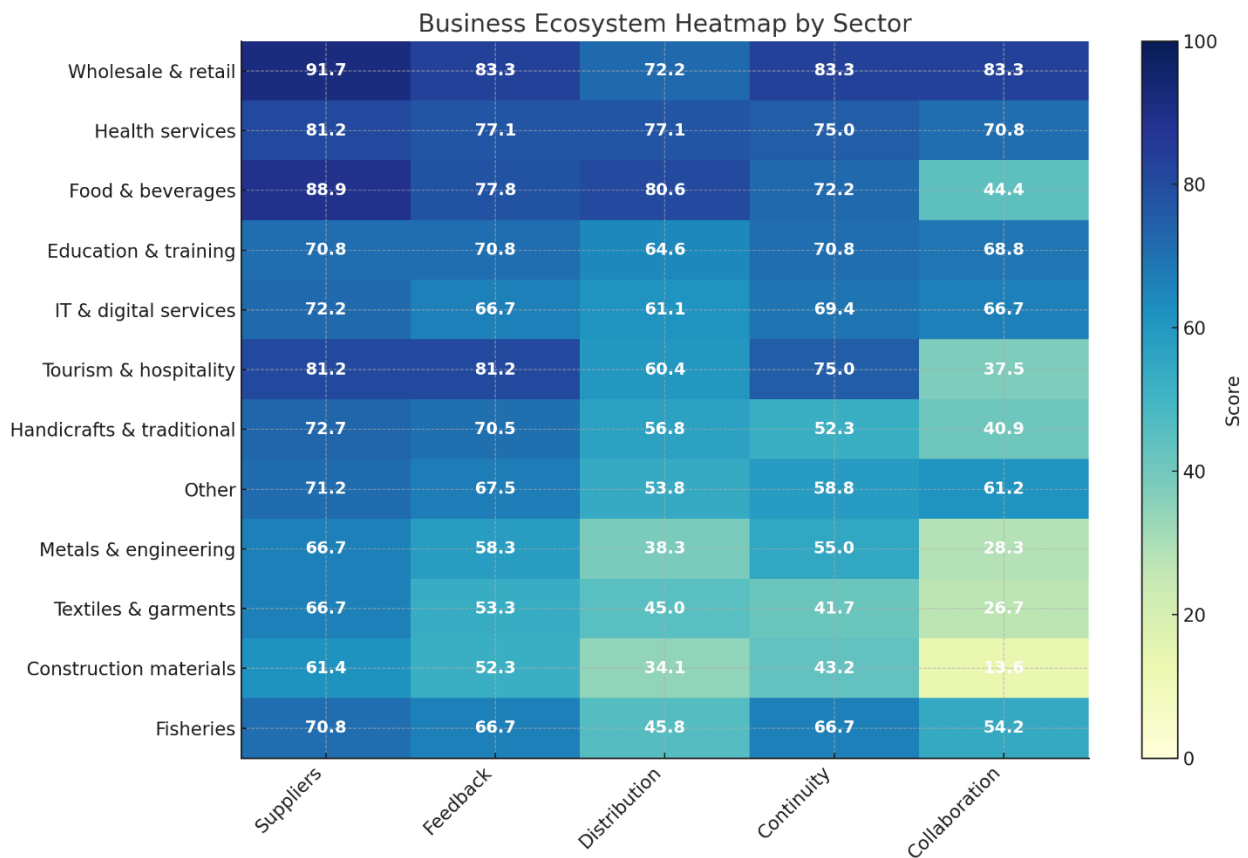
by sub-dimension (index; % agree) shows comparatively strong performance in Supplier & customer networks—supplier relations 74.5 (83.3%) and customer feedback 67.7 (69.3%). Business resilience sits mid-tier at 61.5 (57.3%). The weakest pillars are distribution channels 56.5 (52.0%) and, most notably, partnerships & collaborative capacity 49.8 (47.3%). In substantive terms, firms are able to secure inputs and collect client feedback, but many—particularly micro and small enterprises—are unable to convert these advantages into reliable routes to market and formalized partnerships due to limited distribution channels and the absence of institutionalized collaboration.



The BEI by firm size confirms a pronounced scale gradient—Micro 53.1, Small 62.3, Medium 75.7, Large 71.8—with a decisive step-change from micro to medium enterprises. The largest differentials occur exactly where smaller firms require organizational structure: distribution (46.4 in micro vs 74.1 in medium), collaboration (34.3 vs 70.7), and, to a lesser extent, resilience (49.6 vs 72.4).

Sectoral heterogeneity is substantial when restricting to categories with $n \geq 6$ respondents. Wholesale & retail leads consistently (Suppliers 91.7, Feedback 83.3, Distribution 72.2, Resilience 83.3, Collaboration 83.3). Health services also perform strongly ($\approx 77-81$ across sub-dimensions). Food & beverages combines robust distribution 80.6 with weaker collaboration 44.4. Education & training and IT & digital services occupy the mid-high range ($\approx 61-71$) with balanced profiles. In contrast, production-intensive sectors exhibit pronounced downstream frictions: Construction materials (Distribution 34.1; Collaboration 13.6), Metals & engineering (38.3; 28.3), and Textiles & garments (45.0; 26.7). These shortfalls in market channels and institutionalized partnerships explain why effective sourcing and learning mechanisms do not consistently translate into sales growth.

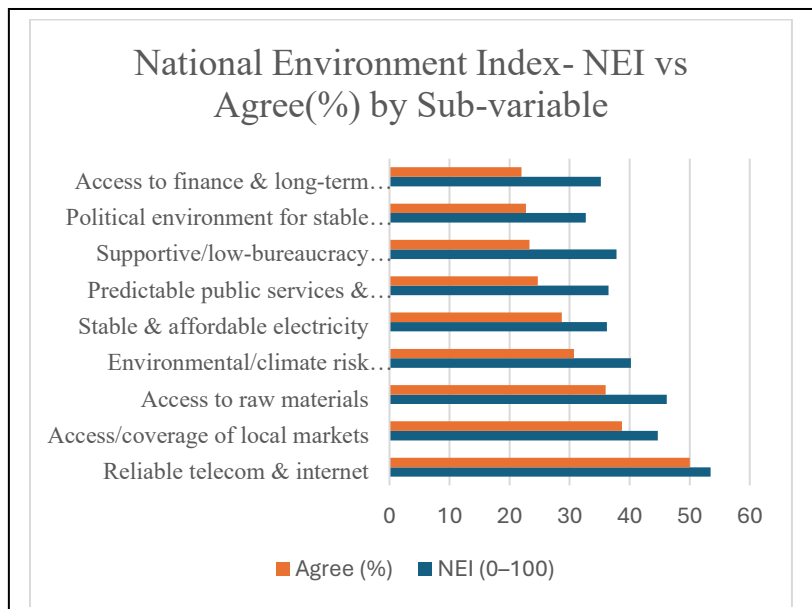
Implication. The binding constraints in the SME ecosystem are market access and collaborative architecture. Effective responses include brokerage of distributor/wholesaler linkages and e-commerce/POS-linked programs, coupled with pragmatic, low-cost continuity planning and B2B/cluster platforms that make partnership formation feasible for smaller firms.



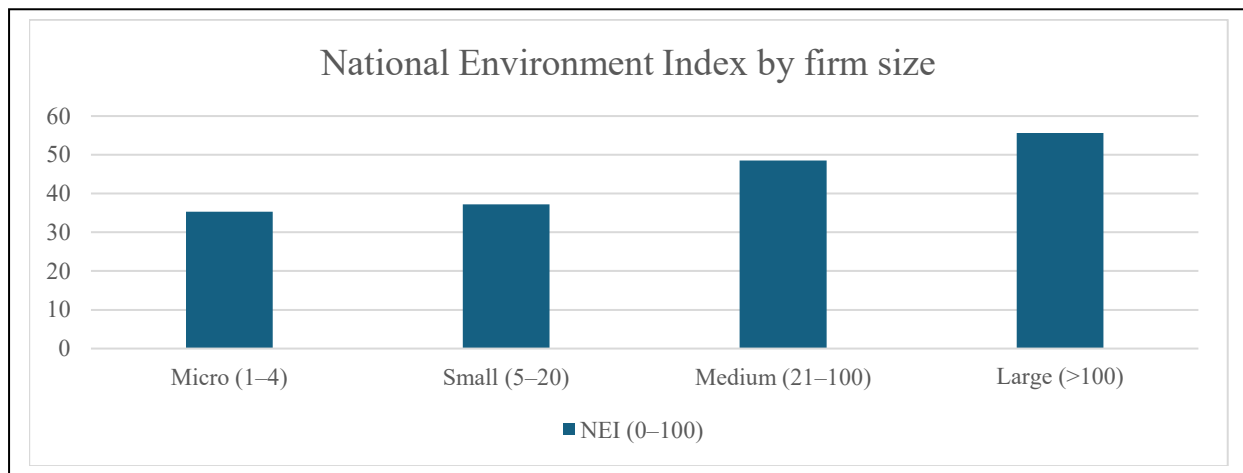
National Environment: Macro-Level Influences

Survey evidence indicates a constrained national operating environment for Yemeni SMEs. The composite National Environment Index (NEI) is approximately 50/100, with marked dispersion across nine sub-variables. Firm-proximate enablers tend to score relatively higher, whereas system-level infrastructure and policy clarity depress the composite.

NEI rises with scale, indicating a structural “scale dividend.” Micro firms post the weakest composite (driven by finance access, electricity, and policy uncertainty), Small improve marginally, Medium record a decisive step-up, and Large sustain mid-high scores but still face electricity/finance headwinds. The steepest size



gaps appear in electricity reliability, regulatory/administrative friction, and market coverage—areas where fixed costs and formal processes benefit larger firms disproportionately.

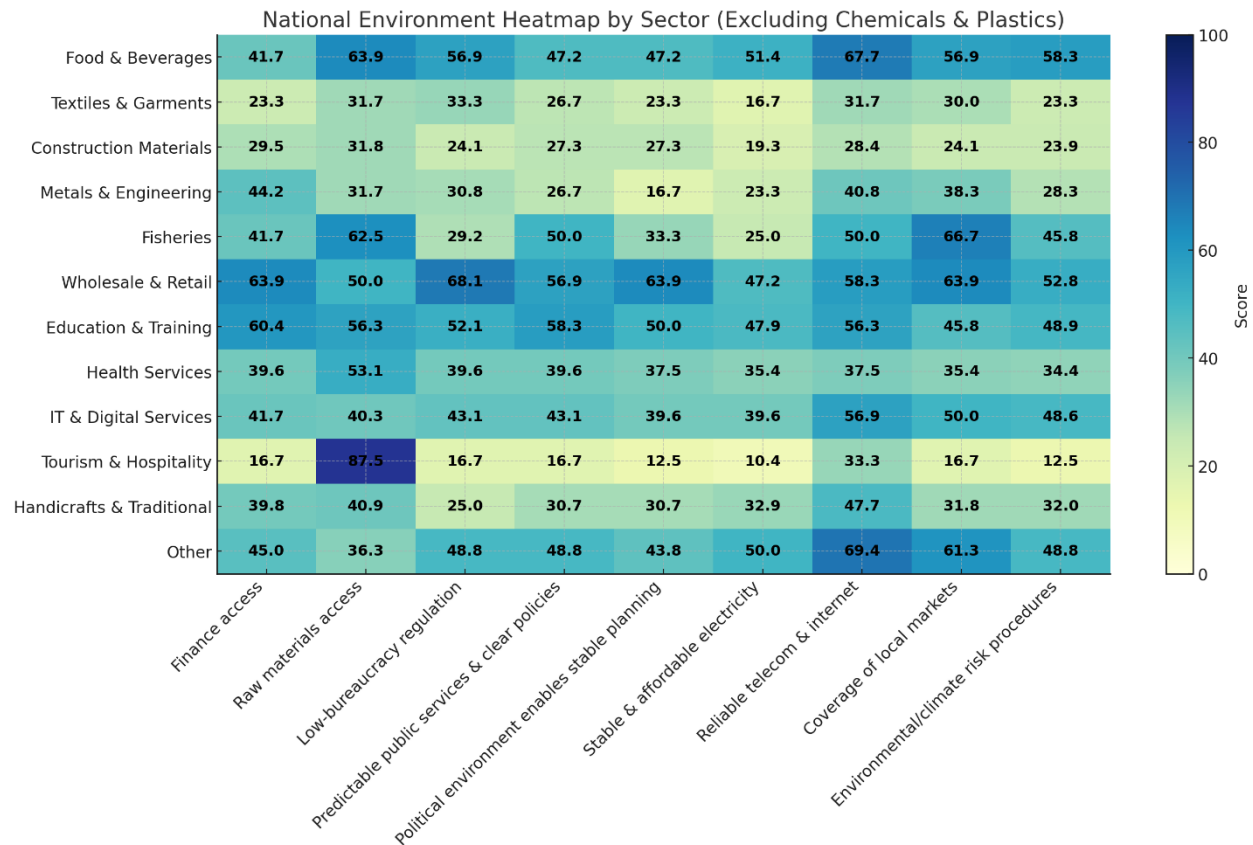


By sub-dimension, the strongest pillar is reliable telecom & internet (NEI≈64; ~51% agree), followed by predictable public services & clear policies (≈56; ~34% agree) and raw-materials access (≈55; ~44% agree). Mid-low performance appears in reach/coverage of local markets (≈53; ~35% agree) and environmental/climate risk procedures (≈49; ~26% agree). The weakest foundations are stable & affordable electricity (≈46; ~33% agree), supportive/low-bureaucracy regulation (≈45; ~32% agree), political environment for stable planning (≈42; ~21% agree), and—bottom of the distribution—access to finance & long-term financial relations (≈39; ~22% agree).

In practical terms: firms can often get online, sometimes procure inputs, and occasionally find public-service predictability; however, financing frictions, power unreliability, and regulatory/political uncertainty collectively impede consistent execution and growth.

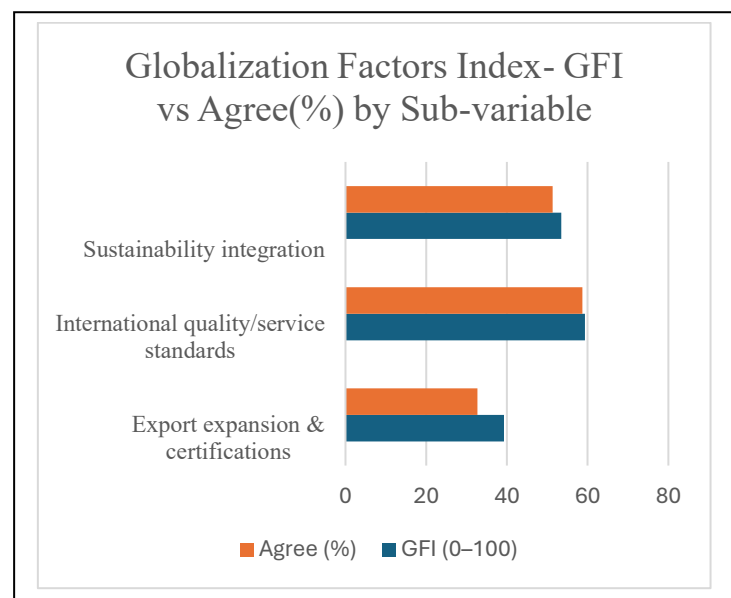
Sectoral heterogeneity is marked. Wholesale & retail and Education & training form the upper tier with consistently better scores on market coverage, telecom, and service predictability. Food & beverages benefits from relatively good input access and market reach, yet is pulled down by electricity and finance. Health services shows balanced mid-high performance but remains exposed to electricity and policy volatility. IT & digital services predictably leads on telecom and sits mid on the rest. At the lower end, production-heavy sectors—Construction materials, Metals & engineering, and Textiles & garments—are constrained by electricity, finance access, and regulatory bottlenecks; Tourism & hospitality also underperforms, reflecting exposure to policy and power risks. These patterns underline a dual constraint: infrastructure reliability (power) and institutional clarity (finance/regulation), both of which depress investment horizons and expansion capacity.

Policy signal. The binding constraints are affordable, reliable electricity, practical access to finance, and administrative predictability. Fast-acting responses include: (i) de-risked working-capital lines for SMEs (via partial guarantees and invoice-based lending), (ii) targeted electricity reliability programs for production clusters (hybrid/pooled energy solutions), and (iii) simplified, time-bounded procedures with one-stop windows for permits/clearances. Pairing these with digital-service bundling (telecom + e-payments/POS) can amplify gains in market coverage.

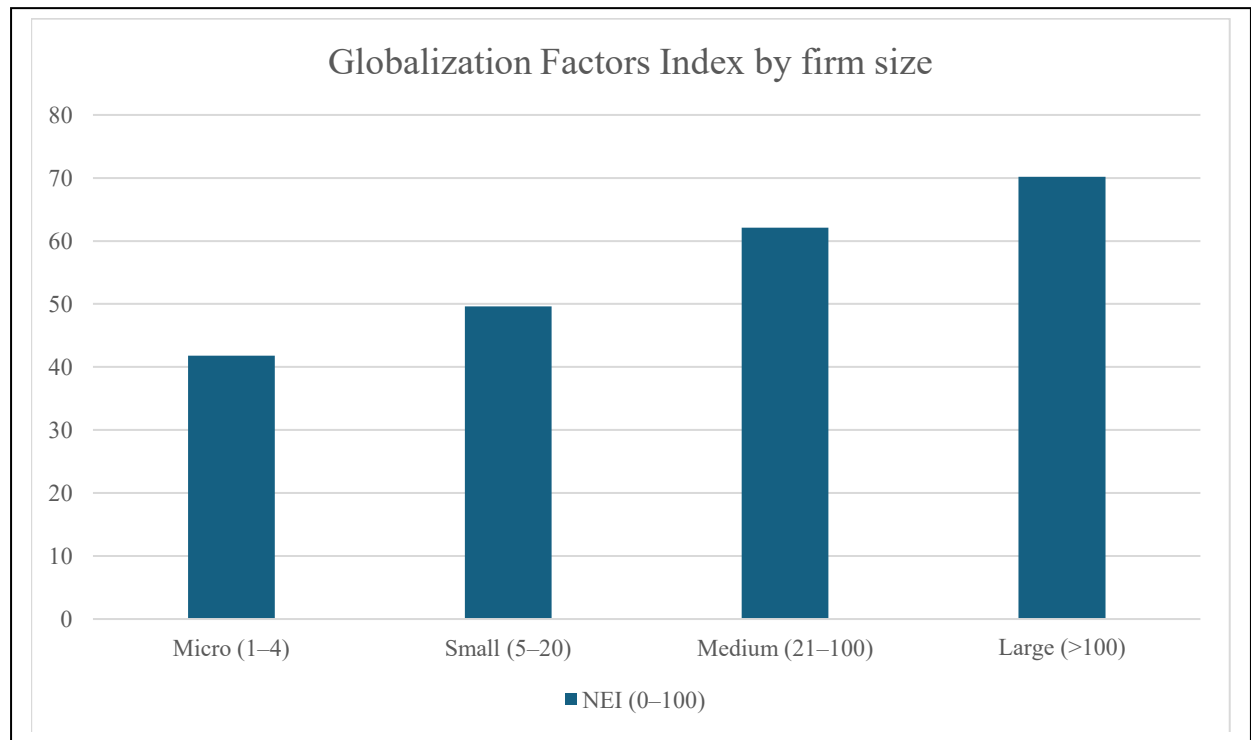


Globalization-Specific Factors

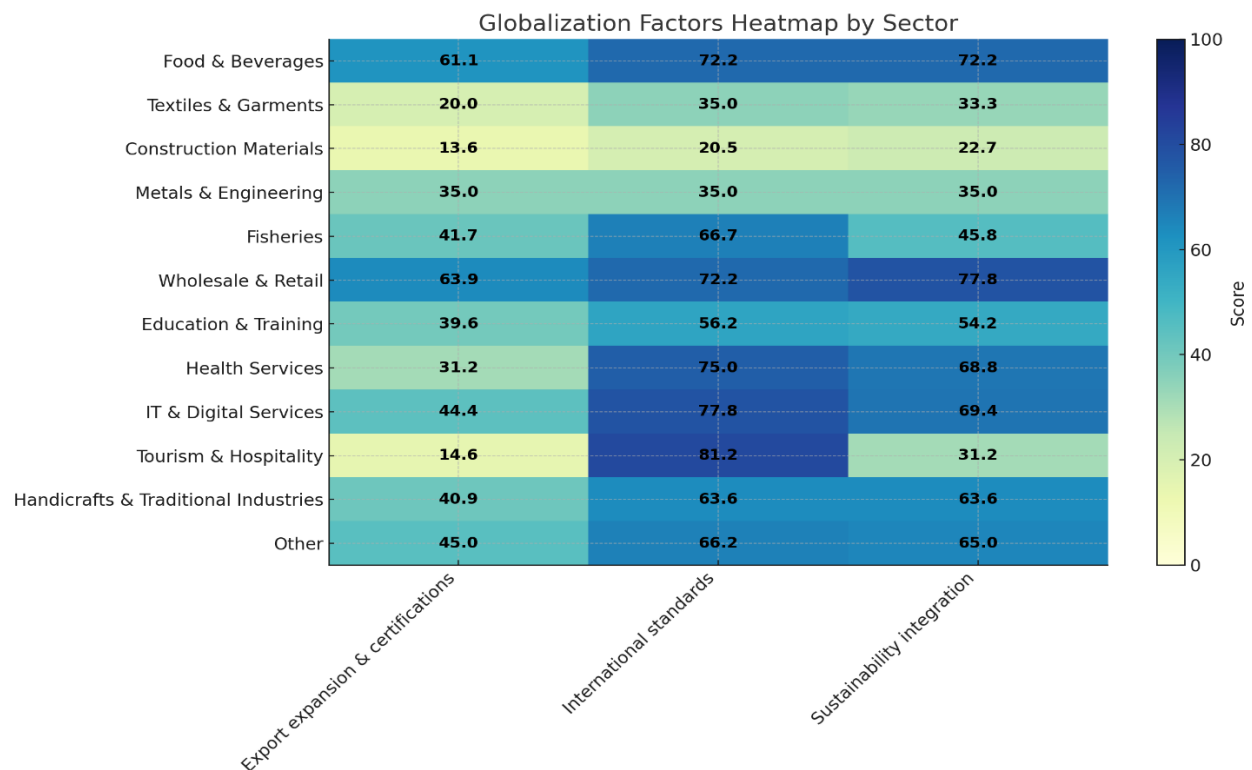
Survey evidence indicates only moderate globalization readiness among Yemeni SMEs. The composite Globalization Factors Index (GFI) equals 50.7/100, with marked dispersion across the three sub-dimensions. The most developed capability is adherence to international quality/service standards (≈ 59.3 ; 58.7% agree), followed by integration of sustainability practices (≈ 53.5 ; 51.3% agree). The weakest pillar is active pursuit of international market expansion and export-readiness certifications (≈ 39.3 ; 32.7% agree). Substantively, many firms report aligning with standards and, to a lesser degree, embedding sustainability, yet far fewer are investing in export-oriented market development and certification—signaling a “readiness-to-market” gap.



The GFI rises sharply with scale—Micro 41.8, Small 49.6, Medium 62.1, Large 70.2—indicating a pronounced scale dividend. The steepest gradients are observed in standards ($\approx 48.4 \rightarrow 75.0$ from micro to medium) and sustainability ($\approx 44.0 \rightarrow 67.2$), while export-expansion/certification climbs more modestly to medium ($\approx 33.1 \rightarrow 44.0$) but jumps among large firms (≈ 66.1). These patterns suggest that fixed costs and organizational formality disproportionately benefit larger enterprises in meeting external requirements and institutionalizing practices.

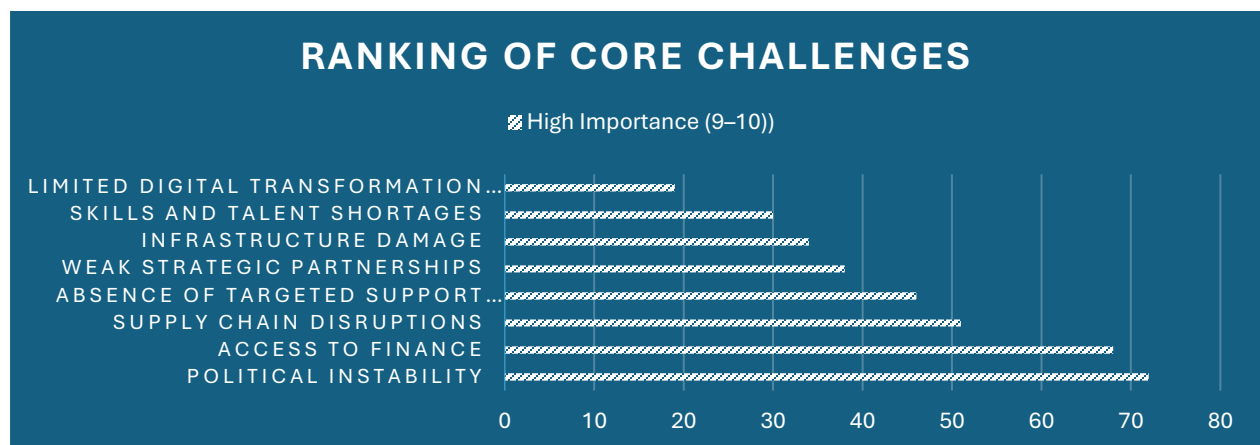


Cross-sector heterogeneity is substantial. Wholesale & retail and Food & beverages record consistently high scores on standards (≈ 72) and sustainability ($\approx 72-78$), and IT & digital services leads on standards (≈ 78) while sustaining strong sustainability (≈ 69). Health services pairs high standards (≈ 75) with mid-high sustainability (≈ 69). By contrast, construction materials and textiles & garments sit at the lower end across all three sub-variables, and tourism & hospitality exhibits a striking split—very high standards (≈ 81) but very low export-orientation (≈ 15) and sustainability (≈ 31). Overall, sectoral gaps reinforce a dual constraint: limited export-market development and uneven institutionalization of practices outside service-heavy activities.



Assessment of Key Challenges: Overall Ranking and Sectoral Patterns

Based on the share of high-importance (9–10) ratings, the overall ranking of challenges indicates that Political Instability and Limited Access to Finance as the most critical, followed by Supply-Chain Disruptions and the Absence of Targeted Support Initiatives. The mid-pack includes Weak Strategic Partnerships (25.3%), Infrastructure Damage (22.7%), and Skills and Talent Shortages (20.0%), while Limited Digital Transformation Programs are the least acute overall (12.7%). By weighted averages, Access to Finance (6.77) and the Absence of Targeted Support (6.70) rank highest, closely followed by Political Instability (6.50) and Supply-Chain Disruptions (6.49)—reinforcing that macro risks and financing constraints dominate, with organizational capabilities shaping resilience and growth.



The sectoral breakdown shows clear, data-driven distinctions. Tourism & Hospitality is acutely exposed to supply-chain disruptions (9.25), political instability (9.00), and infrastructure (8.42), with finance also high (8.67). Construction Materials and Metals & Engineering are led by financing constraints (9.36; 8.67) and supply bottlenecks (8.55; 7.87), while infrastructure is only moderate/low (5.64; 2.53). In Food & Beverages, the top pressures are absence of targeted support (8.67) and weak partnerships (7.11) alongside finance (7.00)—not supply chain (5.56). Education & Training and Health & Medical face broad-based strain—political (7.92; 7.50), infrastructure (7.33; 6.58), finance (7.25; 7.00), and capabilities (digitization 7.17; 6.75; skills 6.00; 6.67). IT & Digital Services is most constrained by finance (6.78) and the enabling environment (targeted support 6.67; infrastructure 6.33) rather than core supply risks (4.89). Handicrafts/Traditional Industries hinge on targeted support gaps (6.09). Agriculture & Livestock is primarily a skills (9.00) and infrastructure (8.50) challenge, not finance (1.50). Fisheries show low macro pressures (political 1.50; infrastructure 2.67; finance 2.00) but high constraints in digitization (7.33), support (6.67), and partnerships (6.00). Transport & Logistics is most exposed to political instability (7.33) with mid-level supply/infra frictions (both 5.33) and low finance (3.67). Wholesale & Retail is led by supply availability (7.11) and benefits from predictable, targeted support (5.89). Taken together, the evidence supports a two-track response: stabilization levers tailored to the sectors with high systemic frictions (e.g., bridge finance for construction/metals/tourism; power/connectivity and continuity planning for tourism/education/health) alongside capability levers that raise firm adaptability (targeted upskilling for agriculture/education/health/ICT; ecosystem partnerships for F&B/textiles/tourism; and practical digitization for fisheries/education/health).

Assessment of Key Challenges: Overall Ranking and Sectoral Patterns

Insight (from your study)	Track	Recommendation	Target segment	Who (lead/partners)
Access to finance is the top weighted constraint; Construction & Metals show extreme finance scores (9.36; 8.67).	Stabilization	<ul style="list-style-type: none"> • Stand up a Working-Capital Bridge (PO/invoice finance, 60–80% advance). • Add partial credit guarantees (30–50% first-loss) to crowd in lenders. • Fast-track project finance for input-heavy firms with simplified appraisal. • 10-day SLA decisions; digital KYC; repeat-borrower fast lane. 	Construction Materials; Metals & Engineering; large orders in F&B	Central bank/DFIs, commercial banks, MFIs, credit-guarantee facility
Electricity & finance/regulation are the weakest national enablers (electricity~46; finance~39; regulation~45).	Stabilization	<ul style="list-style-type: none"> • Power-reliability bundles: cluster solar/mini-grid PPAs for industrial estates/markets. • Capex vouchers/rebates for productive users (mills, workshops, cold-chain). • Priority O&M SLAs + prepaid/TOU tariffs; blended finance for capex. 	Production sectors; cold-chain health & food; tourism sites	Energy authorities, local DISCOs, solar EPCs, donors
Distribution channels and partnerships are ecosystem bottlenecks (Distribution 56.5; Partnerships 49.8), most acute in production sectors.	Capability	<ul style="list-style-type: none"> • Curated distributor & buyer fairs + B2B brokerage quarterly. • Supplier registry & matching (digitized), cluster MoUs for pooled transport/warehousing. • E-commerce onboarding with POS integration and catalog setup. 	Construction, Metals, Textiles, rural producers	Chambers/BSOs, procurement platforms, wholesalers, marketplaces
Food & Beverages reports the highest pain from absence of targeted support (8.67) and weak partnerships (7.11).	Stabilization	<ul style="list-style-type: none"> • Compliance mini-grants (HACCP, packaging/labeling). • Tax payment plans aligned to cash cycles for working capital relief. 	Food & Beverages MSMEs	MoEcon/MoTrade, tax authority, BSOs, donors

Insight (from your study)	Track	Recommendation	Target segment	Who (lead/partners)
		<ul style="list-style-type: none"> • Cold-chain cluster support (shared cold rooms, last-mile refrigerated transport). 		
Firm capability gaps: HR policies (47.8), regular training (52.7), customer data/CRM (51.2) lag; capability rises with size.	Capability	<ul style="list-style-type: none"> • “Formality First” kit: HR policy & JD templates, basic SOPs. • Light CRM starter (contacts, pipeline, invoicing). • 90-day coaching sprint + peer clinics; completion badging. 	Micro/Small across sectors	BSOs, accelerators, HR/CRM vendors
Tourism & Hospitality is highly exposed to supply chain (9.25), political risk (9.0), and infrastructure (8.42).	Stabilization	<ul style="list-style-type: none"> • Continuity playbooks: pooled procurement for essentials. • Safety/contingency protocols + staff drills and incident reporting. • Backup power/connectivity kits (gensets/UPS, dual-SIM routers). 	Tourism & Hospitality	Tourism authority, hotel/restaurant associations, energy ISPs
Agriculture & Livestock: Skills (9.0) and infrastructure (8.5) dominate—not finance (1.5).	Capability	<ul style="list-style-type: none"> • Field-skills sprints (husbandry, post-harvest, quality basics). • Link training to off-take contracts and cold-chain nodes. • Input vouchers (seed/feed/packaging) bundled with training. 	Smallholder-linked SMEs, aggregators	Ag ministries, TVET, off-takers, NGOs
IT & Digital Services constrained more by finance/enabling environment than core supply risks.	Capability	<ul style="list-style-type: none"> • Digital-to-Market: lightweight ERP/POS + e-invoicing rollout. • Outbound marketing playbooks (funnels, ads, email). • Tie to small working-capital lines via fintech scoring. 	Micro/Small services & retail	Fintechs, banks, BSOs, SaaS vendors
Policy clarity & bureaucracy frictions depress execution; NEI shows low scores on supportive regulation.	Stabilization	<ul style="list-style-type: none"> • One-Stop Rapid Track for licenses, customs, inspections (single window). 	All SMEs; priority to tradables	Econ/Trade, Customs, Investment authority

Insight (from your study)	Track	Recommendation	Target segment	Who (lead/partners)
		<ul style="list-style-type: none"> • Publish service charters & SLAs; risk-based inspections/green channels. • Grievance redress portal with case tracking and timelines. 		
Handicrafts/Traditional industries hinge on gaps in targeted support and market access.	Capability	<ul style="list-style-type: none"> • Collective trademarks/GIs and brand guidelines. • Design labs & product sprints with designers. • Aggregator storefronts (physical/online) + micro-grants for packaging/photography. 	Handicrafts MSMEs (women & youth focus)	Culture/Tourism, BSOs, marketplaces, design schools

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