

SME CHARACTERISTICS-IMPACT DUALITY FRAMEWORK: A LITERATURE REVIEW

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Abstract: Small and medium-sized Enterprises (SMEs) represent a significant portion of firms in the global construction industry. SMEs have distinct characteristics based on their organisational nature, which can both enable or hinder their impact on the construction industry. This paper aims to review the impact of SMEs towards the construction industry. The methodology adopted for this study was a narrative literature review with a qualitative content analysis to categorise, summarise and structure the collected data. The study is based on scholarly publications on SME characteristics, exploring how these characteristics enable or hinder their impact on the construction industry in various aspects, including employment generation, innovation, productivity, social development, and economic growth. Findings revealed that while SMEs possess positive characteristics, such as local employment, innovation, and a flexible organisational structure, they also exhibit negative characteristics, including limited resources, skill shortages, and reduced efficiency. By mapping negative and positive attributes with their impact, a conceptual framework is developed to presents the dual role of SMEs' impact on the construction industry. This paper concludes by facilitating SMEs in finding solutions that reduce their negative impact and enhance their positive impact on the construction industry, thereby strengthening SMEs' role and easing the broader industry's constraints.

Keywords: *Construction SMEs; SME Characteristics; SME Traits and SME Impact on Construction.*

1. Introduction

The construction industry is a significant economic driver in any country, offering numerous career opportunities and contributing to the country's economic growth while enhancing the backgrounds of other businesses (Oke et al., 2023). The industry's role is expected to become even more crucial, as the United Nations World Urbanisation Report projects that around 70% of the world population will live in urban areas in the year 2050 (Oke et al., 2024). In the construction industry, there are a variety of firms ranging from large-scale enterprises to Small and Medium-sized Enterprises (SMEs) (Chen et al., 2025). Of these firms, SMEs represent the majority, over 90% of companies, encompassing more than 50% of employment opportunities on a global scale (Arroyabe et al., 2024). Consequently, SMEs contribute to economic growth and assist the large enterprises (Silva et al., 2025). SMEs are known as the backbone of the construction industry and are vital players in both developed and developing countries' economies (Saka et al., 2022). These SMEs make their contribution to the broader construction industry by operating as main contractors in small construction projects and as subcontractors in larger projects, supporting design services, procurement, on-site, and off-site works (Okudan et al., 2022).

Though SME are a significant portion of the construction industry, there is no universal definition established for them. However, categorisations are available globally based on employee count and annual revenue thresholds, applicable across all sectors, including the construction industry (Melo et al., 2023). According to the European Union (EU), SMEs are defined as organisations with fewer than 200 employees and an annual turnover of less than United States Dollars (USD) 55 million (Mehdian et al., 2019). Conversely the World Bank uses a different categorisation for SMEs, with an employee count of fewer than 300 and an annual turnover of less than USD 15 million. Moreover, the United Nations (UN) and the Organisation for Economic Cooperation and Development (OECD) categorise SMES as those with fewer than 250 employees, with no annual turnover threshold defined (Madani, 2018). Furthermore, there are categorisations established in various countries, such as the United Kingdom and Brunei, that categorise SMEs as those with fewer than 200 employees, without defining an annual turnover threshold (Jetin, 2025). In contrast, India defines SMEs by turnover and investment as organisations with investment in plant and machinery or equipment not exceeding USD six million, and turnover not exceeding USD 30 million (Bertanzetti et al., 2024). Nonetheless, there is a variety of SME definitions; the variance is specifically due to the annual turnover, which is often driven by political objectives, with governments tailoring the criteria to suit their national context priorities (Rawindaran et al., 2023). However, OECD emphasise that though the annual turnover threshold is considered for SME categorisations, the employee count is the most consistent and comparable measure for cross-country SME classification (Tingbani et al., 2021). Therefore, this study defines construction SMEs based solely on staff headcount, identifying them as enterprises with fewer than 200 employees, aligning with the average employee count identified for SME categorisation from organisations and countries worldwide. Defining SMEs solely by employee count, without considering the annual turnover threshold, ensures the study remains applicable across diverse contexts.

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In a previous study by Rosalina et al. (2021), SME characteristics are defined based on size (employees, turnover), resource constraints, flexibility, ability, as well as their community and economic contribution. Accordingly, construction SMEs have unique characteristics, including weaker human capital and skills, lower annual turnover, informal organisational structures, and the capacity to foster entrepreneurship and employment, which consist of both positive and negative aspects (Kamal & Flanagan, 2014). The positive characteristics impact the construction industry through job creation, enhancing social value, increasing innovation, breaking monopolies, improving economies and Gross Domestic Product (GDP) (Mabasa et al., 2023). However, SMEs' negative characteristics create adverse impacts on the construction industry, such as skill shortages leading to low-quality outputs, financial fragility, non-compliance with legal and governance procedures, and failure to meet sustainability requirements (Manzano et al., 2021). Although SMEs have both negative (hindering) and positive (enabling) impacts on the construction industry, they exert a distinct impact compared to large organisations, shaped by their inherent characteristics (Gilmore et al., 2001). The negative and positive characteristics create both challenges and opportunities for SMEs, including skills, knowledge, and technological factors, which impact the construction industry both positively and negatively (Yilmaz et al., 2023). Therefore, identifying SME characteristics carefully is imperative to assess their impact, as these can underpin their survival and growth within the industry (Mabasa et al., 2023; Kamal & Fanagan, 2014). Thus, understanding unique characteristics allows for the development of targeted strategies tailored for SMEs, business strategy, marketing research, and development integration. Additionally, it helps improve business and team culture, ultimately strengthening the overall construction industry (Pullen et al., 2009).

Previous research studies have disclosed key characteristics of construction SMEs in construction, focusing on qualities related to workforce dynamics and responses to political factors (Kamal & Flanagan, 2014). Moreover, a study by Gelinas and Bigras (2004) highlights both negative and positive SME characteristics, though the scope is limited to logistics integration centred on transaction management. Further research has identified factors related to innovative growth, such as introducing new technologies to the market, highlighting positive characteristics (Heimonen, 2013). Besides, Heriyanto et al. (2017) conducted a previous study on SMEs, demonstrating how to gain a competitive advantage through human factors, knowledge management, information and communication technologies, and highlighting the enhancement of positive characteristics while monitoring negative ones. Although past studies have identified both negative and positive characteristics of SMEs, they have been limited to a few selected characteristics. Moreover, they are specific to a region, rather than being globally identified. Furthermore, they appear to overlook the specific positive and negative characteristics of construction SMEs. Regarding impact, a previous study by Michna et al. (2020) looks at the effect of SMEs on the construction industry, with a focus on Polish SMEs. The study's financial performance measures show that construction SMEs make an impact on the industry by acting as subcontractors, cutting costs, and driving innovation. Furthermore, Sriskandarajah and Hadiwattage (2017) discussed the negative impacts of SMEs on the construction industry, including limited financial resources, a lack of workforce, unstable government policies, and political unrest, as well as how these negative impacts can be mitigated. Nevertheless, the impacts of SMEs on the construction industry have been presented in previous studies; they are limited to a regional context and do not map dual characteristics to show the variation in impact on the industry, thereby justifying the existing literature gap. Construction SMEs require training in innovation, waste management, administration, and financial reporting to achieve a positive overall impact (Sri et al., 2019). Aldaba (2014) has noted that, although SME development frameworks are currently available, their effectiveness is limited. Further, SMEs make a poor contribution to economies in practical applications, as they are not tailored to the unique nature of construction SMEs. Therefore, the author advocates for stronger policy implementation to boost SMEs' contribution to the economy. However, there is a significant gap in strengthening SMEs and their impact on the construction industry through the use of a developed framework tailored for construction SMEs, explicitly focusing on their positive and negative characteristics towards impact on the construction industry practice.

Considering both the theoretical gap and practical significance, this study aims to review the impact of SMEs towards the construction industry. The objectives are to investigate the positive and negative characteristics of construction SMEs, to identify the impact of SMEs towards the construction industry and to assess the relationship between the characteristics of SMEs and the impact of construction SMEs. The remainder of this paper presents the methodology, findings, analysis, and conclusions, along with recommendations, illustrating opportunities for strengthening the role of SMEs in the construction industry while mitigating hindrances to achieve a positive overall impact on the industry from construction SMEs.

2. Research Methodology

A literature review is an overview of scholarly research specific to a field and conducted either as a conceptual, empirical, or independent study (Lim et al., 2022). Literature reviews are a critical part of scientific research, enhancing the understanding of prior studies, enabling the identification of gaps and potential avenues for future research (Kraus et al., 2022). A narrative literature review analyses a broad range of topics by using studies of various complexities and structures (Usman, 2023). This study adopts a narrative literature review approach to investigate the impact of SMEs on the construction industry based on their negative and positive characteristics.

The literature search was conducted across three academic databases: (i) Google Scholar, (ii) Web of Science, and (iii) Scopus for the most credible and relevant insights. The search derivation is made with search string ("Construction SMEs")

AND (“Impact on Construction Industry”), OR (“SME Traits”) OR (“Characteristics of SMEs”). When choosing sources, searches conducted over the last twenty years, however, primarily focused on journal articles, conference papers and books published in the previous twenty years to ensure current relevance. The papers were selected through a manual search using the search string. The exclusion was done systematically for publications which were non-English articles, not related to the construction industry, published twenty years before and reports or other publications which are not journal articles, conference proceedings or book chapters. Figure 1 illustrates the overall research process used in this study. The study began with an initial review of the background to establish the SME definition through globally recognised categorisations. Qualitative content analysis was adopted for this research, categorising the collected information, summarising, explicating and structuring with a scale of relevance (Bazen et al., 2021). Afterwards, impacts were mapped with the positive and negative characteristics to gain a broad view of their effects on the industry.

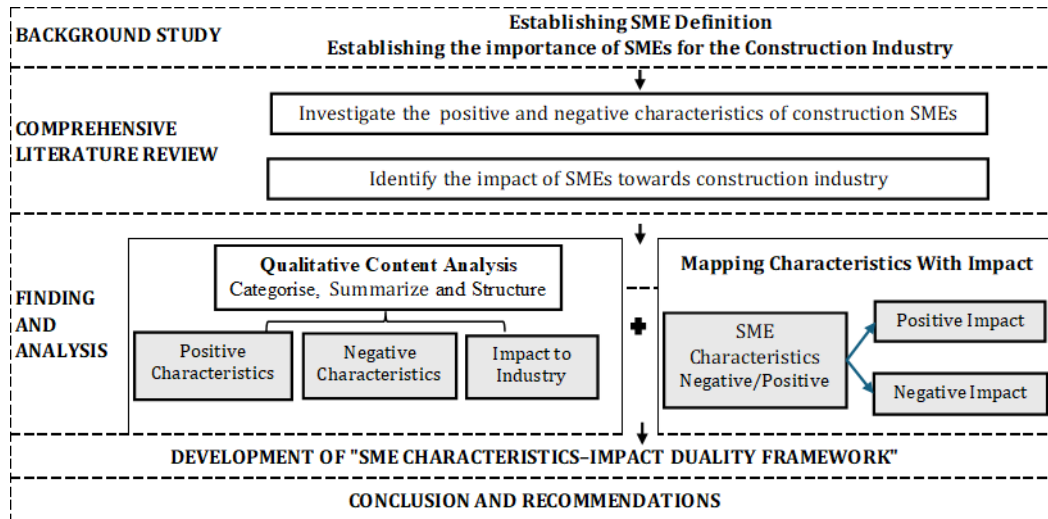


Figure 1, Research Process

The literature mapping highlights the patterns and then reports results more transparently (Christou et al., 2024; Soaita et al., 2020). Using the mapping results, a “SME characteristics-impact duality framework” was presented. The framework demonstrates the main ideas of the study, how these ideas are interconnected, filling gaps, and guiding the study design (Luft et al., 2022). This paper concludes by highlighting opportunities for strengthening SMEs' role in the construction industry while mitigating hindrances to present an overall positive impact on the construction industry.

3. Finding and Analysis

This section presents the findings for the negative and positive characteristics of construction SMEs, their impact on the global construction industry and the Construction SME characteristics-impact duality framework.

3.1. POSITIVE AND NEGATIVE CHARACTERISTICS OF CONSTRUCTION SMES

Construction SMEs possess inherent distinctive characteristics, stemming from their scale, resource limitations, and embeddedness in the local context. The characteristics of construction SMEs are detailed in Table 1, which are categorised as negative (hindering) and positive (enabling) with a characteristics analysis.

Table 1, Positive and Negative Characteristics of Construction SMEs

Characteristics of Construction SMEs		Reference	Characteristics Analysis
Human Capital and Skills			
C1	Lack of technical staff	[1] [2] [3] [4] [5] [7] [8] [9] [13] [15]	Negative/ Hindering Human capital gaps with SMEs, including a lack of technical staff, limited skills, and poor management expertise, are categorised as negative/hindering characteristics.
C2	Lack of human resources	[1] [2] [4] [5] [7] [8] [9] [13] [15]	
C3	Limited awareness of technology	[1] [2] [4] [7] [15]	
C4	Lesser educationally qualified staff	[2] [3] [8] [13] [15]	
C5	Lack of management expertise	[1] [2]	
Financial and Market-Driven Characteristics			
C6	Lack of financial resources	[1] [3] [9] [10] [12] [13] [14]	Negative/ Hindering Financial constraints within SMEs due to a lack of resources, capital, credit, and low turnover
C7	Less annual turnover	[7] [9] [10] [12][14]	
C8	Lack of access to capital	[9] [10] [12]	
C9	Lack of lengthy credit histories	[10] [12] [14]	

Characteristics of Construction SMEs		Reference	Characteristics Analysis	
C10	Driven by market conditions/demand	[10] [12]	Positive / Enabling	The growth is unstable due to market competition and market conditions.
C11	Difficulties facing business competition	[4] [14]		
C12	Enhance market competition by breaking monopolies.	[12]		
Organisational Culture and Structure				
C13	Comparatively small structure	[5] [6] [7] [8] [11]	Positive / Enabling	Small structure and flexibility lead to rapid adaptivity to change
C14	Flexibility for changes	[5] [6] [11]		
C15	Informal organisational structure	[8] [11]		
C16	Foster entrepreneurship	[12] [14]		
C17	Oral intra-organisational communication	[6] [11]		
C18	Informal leadership	[6] [11]		
C19	Supply chain members of large firms	[13]		
C20	Largest employment opportunity creator	[12]		
C21	Mainly specialised in one area only	[7]		
C22	Limited partnership companies	[8] [11]		
C23	Dependent on a narrower customer base	[9]	Negative / Hindering	High vulnerability with SMEs due to a narrower customer base, which affects the organisation's growth
Political & Legal Impact				
C24	Some SMEs are not legalised/or permitted	[3] [11]	Negative / Hindering	Negative legal and political influences lead to compliance issues and instability.
C25	Affected mainly by political scenarios	[1]		
Sources: [1] (Kamal & Flanagan, 2014); [2] (Sastararuji et al., 2022); [3] (Reswita et al., 2021); [4] (Coffie et al., 2021); [5] (Fabian et al., 2024); [6] (Březinová, 2021); [7] (Bigliardi, 2010); [8] (Iyelolu et al., 2024); [9] (Miklian & Hoelscher, 2022); [10] (Soremekun et al., 2024); [11] (Andrew et al., 2023); [12] (Soremekun et al., 2024); [13] (Nadeem et al., 2023); [14] (Belás et al., 2018); [15] (Ferrigno et al., 2024).				

According to Table 1, the characteristics of construction SMEs are categorised under structure, human capital, skills, market demands, and political/legal factors. Among these, human resource challenges are a significant factor, as most construction SMEs rely on a workforce with a lower level of formal education and limited managerial skills, which hinders their long-term competitiveness (Zhou et al., 2022). A study in Laos on SMEs found that SME owners and employees lack knowledge and skills specific to their business line, which creates difficulties in achieving success, highlighting the significance of human skills for SME growth (Plessis et al., 2015). Market orientation, competitive intensity and technological dynamics can be enhanced within SMEs to overcome specific skill barriers. These factors help SMEs gain knowledge, develop new strategies, and improve their ability to deliver a superior output to end-users and customers (Amadasun & Mutezo, 2022). According to Alara et al. (2021), the characteristics of SMEs significantly influenced their adherence to policy procedures and safety rules. Accordingly, SME characteristics primarily took on a negative or positive form based on factors such as turnover, workforce capabilities, and assets, which tended to drive the ongoing operations of SMEs, highlighting the key role of these characteristics in their day-to-day activities. Construction SMEs typically exhibit close social embeddedness, relying heavily on interpersonal networks and trust-based relationships to secure projects and maintain business continuity (Su et al., 2022). According to Bui et al. (2021), labour regulations influenced by policy shape the characteristics of SMEs related to employment growth. Compared to large organisations, SMEs are more affected by policies and legal changes due to their size restrictions, as legal obstacles disproportionately impact SMEs. However, determining organisational culture and structure can help promote innovation based on employees' shared values, beliefs, and standards. Therefore, the study suggests that having a clan culture within SME organisations promotes positive characteristics through employee participation, adopting market culture using competitive strategies (Oluwa & Ibrahim, 2021). Beltramo (2019) noted that characteristics such as system, human knowledge, and culture directly impact the innovation and performance of SMEs. Therefore, the author emphasised the government support required for SMEs to strengthen their intellectual capital, which ultimately enhances the nation's competitiveness. Accordingly, SMEs are shaped by dual realities, exhibiting both positive and negative characteristics. On the positive side, they demonstrate flexibility, entrepreneurial spirit, and employment creation; however, fragile human capital, limited financial depth, political and legal constraints, and market uncertainties contribute to their negative characteristics. These negative and positive characteristics must be recognised and leveraged to create an overall positive impact on the construction industry, reducing

negative impacts and enhancing positives to strengthen SMEs and ultimately the whole construction industry (Okanga, 2017).

3.2. IMPACT OF SMES TOWARDS THE CONSTRUCTION INDUSTRY

SMEs' impact on the construction industry is vital due to their ability to dominate the industry's supply chain and influence product quality, delivery, and reliability (Dalrymple & Bryar, 2006). Moreover, SMEs' integral role in the supply chain directly influences the performance and stability of the entire industry (Wedawatta et al., 2010). Therefore, construction SMEs have a significant impact on the industry as detailed in Table 2.

Table 2, SME Impact on the Construction Industry

	Impact on Construction Industry	Source Reference		Impact on Construction Industry	Source Reference
	Economics and GDP			Innovation and Competitiveness	
1	Grow the national GDP	[1][15][16][24][25][26]	1	Triggers innovation within SMEs	[1][13][14][17]
2	Contribution to the expansion of the economy	[1][8][11][12][17][23]	2	Innovation for wider business opportunities	[1][2][15][16][17][21][26]
3	Strengthening the economy	[1][8][11][23]	3	Dominates the supply chain	[9][10][12][26]
4	Improve domestic market efficiency	[1][18][20]	4	Improves the linkage between diverse sectors	[1][23][24]
5	Positively influences industrial outputs	[9][10][12]	5	Increase private ownership	[1][8]
6	Local material source within the region	[1][18][20]	6	Enhance the construction procedure	[1][12]
7	Enhance domestic growth in construction-related industries	[1][9][10]	7	Improvements to the construction industry	[1][9][10][11]
8	Enlarge the construction industry	[1][6][17]	Employment and Social		
9	Boost productivity	[1][15][16][17]	1	Enhance employment creation	[1][2][15][16][23][25][26]
	Sustainability and Governance		2	Social Networking	[1][5][16][25]
1	Contribution to Sustainable Development	[25][26]	3	Develop skills	[1][4][5][12][21]
2	Urbanization	[1][7][21]	4	Wealth Generation	[6][15][24]
3	Enhance high-quality infrastructure	[1][3][7]	5	Reduce income disparity	[1][21][24]
4	Social Procurement Policy Development	[7][20][21]	6	reduces rural-urban migration	[1][21]
5	Financial and Taxation Compliance	[7][20][21]	7	Reduces poverty	[1][7][15][21][24][25][26]
References : [1]Mabasa et al. (2023); [2]Manzano et al. (2021); [3] Mourougane, (2012); [4] Truong and Dong (2023); [5] Viswanathan and Telukadarie (2023); [6] Costa et al. (2021); [7]Jauhari and Periansya (2020) [8]Reswita et al. (2021); [9]Dalrymple and Bryar (2006); [10] Dauda et al. (2024); [11]Waqar et al. (2022); [12] Omer et al.(2022); [13]Ekaterina et al. (2021); [14]Salvalai et al. (2024); [15]Adebowale and Agumba (2025); [16] Adebowale and Agumba (2023); [17] Surya et al. (2021); [18]Ogbu and Olatunde (2021); [19]O'Keefe et al. (2016); [20]Bomani et al. (2016); [21] Lea et al (2017); [22]Jalil et al. (2022); [23]Beckmann et al. (2023); [24]Khoifin et al. (2023); [25] Ali and Faki (2021); [26] Adebola et al. (2019)					

According to Table 2, as most SMEs are locally based, a competitive advantage exists in contributing to the community, positively impacting the construction industry (Wentzel et al., 2022). This involves creating employment and specialising human skills to strengthen the economy and enhance the supply chain. The financial decisions made by SMEs are strongly influenced by the attitudes of their owners, social pressure, and perceived controls. These financing choices directly impact SMEs' ability to invest in projects, adopt new technology, and scale their operations (Kijkasiwat, 2021). Compared to SMEs with large firms in both developed and developing countries, the impact on the construction industry is hindered by financial barriers, knowledge gaps, and technical problems they face, which are governing factors shaping the industry's impact (Saka & Chan, 2023). Although SMEs are smaller in size, this gives them a flexibility advantage, enabling them to adapt by reconfiguring resources and seizing opportunities in a changing environment (Rodhiah et al., 2021). Moreover, SMEs serve as innovation drivers as they enter new markets (Michna et al., 2020). Further, SMEs support capital formation and employment through the growth of individual national and regional businesses (Chen et al., 2020). The decisions by SMEs are influenced, prompting countries to develop structured programmes and encourage local innovations. This aims to enhance their impact on the construction industry, yielding long-term benefits for firms (Chen et al., 2020; Dick & Payne, 2005). However, political stability significantly affects the competitiveness, survival, and growth of SMEs (Zonouzi et al., 2021). Hall et al. (2022) identified culture and knowledge-related barriers as the most significant hindrances to a positive impact on the construction industry. According to Oladinrin et al. (2023), collaboration within SME organisations is necessary to connect ethics, innovation, workers, society, and culture with technology.

3.3. THE RELATIONSHIP BETWEEN POSITIVE AND NEGATIVE CHARACTERISTICS OF SMES AND THE IMPACT OF CONSTRUCTION SMES

SME characteristics directly influence their impact on construction project outcomes and significantly affect the time, cost, and quality of construction projects (Ogbu & Olatunde, 2019). Kamal and Flanagan (2014) mentioned that construction SMEs should improve their productivity by addressing the specific characteristics of SMEs, which establish the direct link between SME characteristics and their contribution to the construction industry. Figure 2 presents the SME Characteristics-Impact Duality Framework.

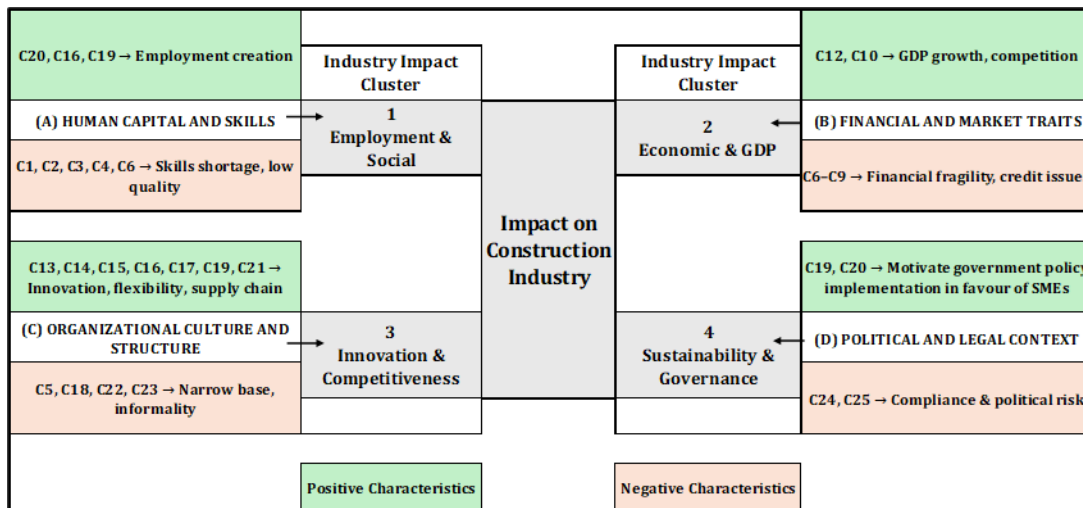


Figure 2, SME Characteristics-Impact Duality Framework for the Construction Industry

The characteristics within SMEs act as catalysts for entrepreneurship and enhance employment opportunities, contributing to stable economic growth. Particularly for SMEs, the geographical distribution has a positive impact, reducing rural-urban migration and optimising resource utilisation (Inegbedion et al., 2024). However, negative characteristics within SMEs, are inevitable and lead to negative impacts on the construction industry. As key drivers in the global economy, SME characteristics can be leveraged positively to enhance the potential of SMEs, particularly in emerging economies, enabling the formulation of targeted strategies, such as those in the construction industry (Omowole et al., 2024). The framework presents the SME characteristics in four main domains from A to D, and the framework illustrates how these domains are categorised into positive and negative characteristics. The impacts of construction SMEs are simplified and grouped into four industry impact clusters: i) Employment and Social, ii) Economic and GDP, iii) Innovation and Competitiveness, and iv) Sustainability and Governance. The framework illustrates how each characteristic affects the industry, considering various identified aspects of industry impact, which range from one to four.

The framework illustrates the dual role of SMEs: on one hand, driving economies, creating employment, fostering entrepreneurship, and influencing policy alignments. On the other hand, structural weaknesses obstruct quality, financial stability, and regulatory compliance. SMES contribute to job creation, reducing unemployment, boosting GDP growth, fostering innovation, and increasing flexibility while supporting government policies that highlight their positive contributions. However, skill gaps and shortages hinder productivity, and financial fragility alongside organisational and governance risks are being linked to their impacts. The framework illustrates these connections and interdependencies, showing how skill shortages directly affect employment outcomes and innovation capacity. Furthermore, financial fragility undermines SMEs' ability to innovate, thereby restricting their contribution to GDP. Organisational culture influences the potential for adopting and implementing new technologies, while political and legal challenges affect SMEs' sustainability and their capacity to grow. Therefore, the mapped results of characteristics with an impact provide a comprehensive understanding of how SMEs shape the construction industry and opportunities for strengthening SMEs' role in the industry while mitigating hindrances to present an overall positive impact.

4. Contribution of this study to the industry, academia and society

The findings have a significant impact on the construction industry practices, academic research, and society. For the industry, this framework can serve as a diagnostic tool to evaluate the dual role of SMEs and promote the knowledge, skills, quality, and innovation of construction SMEs, ultimately having a positive impact on the construction industry. For academia, the study serves as a body of knowledge that integrates SME characteristics with construction impacts for practical applications in the construction industry, particularly in region-specific or industry-specific studies to enhance positive impact by enabling positive characteristics. For society, the contribution of SMEs can be positively enhanced to reduce poverty, promote equality, improve employment opportunities, decrease hunger, and ultimately support the Sustainable Development Goals targeted by the United Nations by 2030.

5. Conclusions and Recommendations and Future Research

SMEs are often treated as a homogeneous group, overlooking their distinct characteristics, such as size, structure, objectives, and capabilities. To address these issues, this study identifies the characteristics of SMEs and their impact on the construction industry. By mapping the negative and positive characteristics of the construction industry, it becomes clear how SMEs' dual role in shaping the industry benefits employment creation, entrepreneurship, enhances the supply chain, GDP growth, and policy alignment. Future research could expand on applying this framework specifically to regional

contexts and industry-specific dynamics. This study is limited to a literature review and relies on the availability of data from already published databases. The framework is conceptually developed and has not been empirically validated. Its impact may vary depending on regional context, cultural factors, and other variables, such as the application of a different industry than construction or empirical observations and validation of the framework.

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