

Small and medium Enterprises in China: Their State Of Survival in Grappening With The Impact Of The Pandemic

Zhibo Ma

Student, Business Administration, Tarlac State University, the Philippines
Engineer, Great Wall Power Technology (Guangxi) Co., Ltd, China, Asia.

Abstract— This study aimed to describe the state of survival of small and medium enterprises in Guangxi, China. The descriptive correlational research design was used in this study with the participation of 180 employees from the selected sixty (60) companies in Guilin City, Guangxi, China. Based on the findings, Profile variables of SMEs were found to have significant correlations with survival in production and operations, financial status, and technological innovation. The classification and registration type showed positive correlations, while firm size and years in operation had negative correlations in these areas. It was recommended that future researchers should consider investigating additional factors that may influence the survival and adaptability of SMEs.

Index Terms—China, small and medium enterprises, the state of survival, COVID-19 pandemic.

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I. Introduction

The Small and Medium Enterprises (SMEs) in China exhibit distinct features and characteristics: smaller size, substantial contribution to employment generation, and entrepreneurial spirit. Their distinct features and characteristics and diversified sector presence contribute to economic growth, innovation, and the overall industrial landscape.

The demographic profile of small and medium enterprises (SMEs) is a crucial aspect of research, providing insights into various factors that characterize these businesses. To effectively understand and analyze SMEs, it is essential to consider their classification, registration type, firm size, years in operation, and capitalization. Let's delve deeper into each of these elements.

Classification plays a vital role in organizing and comprehending the diverse sectors and activities in which SMEs operate. By categorizing SMEs based on their primary line of business or industry, it becomes easier to identify and group them into specific industry categories.

Business registration type is another critical aspect of SMEs' demographic profile. It refers to the legal structure or form under which a business entity is established and recognized by the government. Entrepreneurs must carefully consider the appropriate business registration type, as it significantly influences the legal and financial aspects of their operations.

Years of operation provide valuable insights into the experience, track record, and longevity of a business. The number of years of operation is often indicative of a business's stability, credibility, and reputation in the market. Capitalization is a key aspect of the financial profile of SMEs. It represents the total amount of capital or financial resources invested in a company. Capitalization plays a vital role in determining a business's financial strength, ability to expand, and resilience in the face of economic challenges.

The categorization scheme is utilized across China to gather information and records on enterprises and firms. It is employed to gather figures and information about businesses and corporations in China. The China Industrial Classification system now contains 95 industrial sectors (Brandt et al., 2014). The Chinese classification relies on GB/T 4754 regulation, the sector categorization for nationwide socioeconomic activity. According to the National Bureau of Statistics of China, this scheme comprises three tiers (Yu Liqian, 2021).

Agricultural production, forest management, animal rearing, and fisheries are examples of main industries. Mining, production, electrical enterprise, petroleum sector, water generation, delivery business, as well as construction sector are all examples of the second industry.

The third sector involves all sectors apart from the first and middle sectors, such like transport, warehousing and postal enterprise, transmission of data, technology support with computer sector, wholesaling and retailing market, lodging and food business, commerce, landholdings, building rentals and network operations industry, scientific investigation, technical consulting and geological inspection sector, water conservation, ecology and public operation and maintenance (Yu Liqian, 2021).

Beginning the last quarter of 2019, the COVID-19 outbreak has already been growing throughout China and several other nations throughout the globe, raising great alarm throughout population. To deal with pandemic incident, just about all urban areas but also regions throughout China had already implemented policies on risk reduction and regulation such as home isolation, travel restriction, as well as prolonging the Spring Festival celebration, which have had huge repercussions on China's production of different industries, foreign exchange, and work opportunities, subsequently resulting in significant setbacks towards the Chinese financial activity as of 2020.

COVID shut downs and immigration controls effectively thrown China outside of step with the market at large, destabilizing production processes and harming the commerce mobility and investments (Chen et al., 2021).

With the international trade being confronted with serious issues such as oil constraints, declining GDP, and soaring prices, China's resumption might give a more and opportune push.

However, experts predict that the rehabilitation effort would be unpredictable and unpleasant, with the economic growth in for a rough sail in the initial quarters of 2023. They said that China's unprecedented economic fall, as well as a projected worldwide recession, might pose more issues in the forthcoming year (Yu et al., 2023).

China maintained its zero-tolerance attitude toward the pandemic for over three years, despite the campaign causing significant financial harm and public dissatisfaction. Revenue fell drastically in 2022, corporation earnings plummeted, and young joblessness reached all-time highs.

Throughout the face of mounting national discontent and economic strain, the state unexpectedly reversed direction in the fourth part of 2022, officially scrapping absolutely no positive. Although the lifting of regulations is an anticipated reassurance for far too many, the suddenness of it has taken poorly prepared consumers distraught and has left individuals entirely on their own.

Indeed, the quick transmission of the disease has forced numerous individuals indoors and closed down stores and shops. Manufacturers and businesses were also compelled to stop or reduce output as a result of an increase in ill personnel.

As per Capital Economics researchers, dealing with COVID-19 will be more challenging than what most people believe. They predict that China's GDP would fall by 0.8% in the initial half of 2023 prior to actually recovering in the second half (Zhang et al., 2023).

The economy is being dragged down by more than just China's botched recovery. Specialists will keep track of authorities' efforts to repair the nation's troubled real estate industry, which represents for almost 30% of revenue.

The industrial crisis, that began midway in 2021 when many rising builders failed on the financing, has deferred or suspended building of pre-sold houses all over the place.

Although China has taken a number of efforts to save the industry, notably releasing a 16-point strategy to relieve the liquidity constraint, data continue to depict a bleak image. Real estate sales by revenue fell by over almost 26% in 2022. Money invested in the industry declined 9.8%.

Senior officials pledged to concentrate on the economy's expansion by 2023, implying they are going to implement additional measures to strengthen the economic state of the housing industry and enhance confidence in the market (Hou & Li, 2023).

As per Capital Economics experts, the process is carried to date are insufficient to spur a reversal, although officials have suggested that additional assistance may be forthcoming. This must assure purchasers and increase sales. Some other major risk that would impact China's business situation throughout 2023 is a probable worldwide crisis.

China's export deliveries decreased 8.7% year on year in November 2022, significantly higher than the 0.3% dip in October. This was the poorest result as of February 2020, while the country's economy ground to a halt due to the first wave of the COVID-19 pandemic. Nations all over the globe are still in catastrophe as governments keep increasing interest rates in an effort to battle inflationary pressures.

Per the Capital Economics, the country's exports have already regained most of their disease outbreak growth, but a predicted economic downturn implies they will inevitably drop even more in the near term.

The COVID-19 pandemic has had a significant impact on industries in Guangxi, China. Guangxi is an important economic region located in southern China that has a diversified economy with a strong focus on manufacturing, agriculture, and tourism.

One of the major impacts of the pandemic on Guangxi's industry has been disruptions to global supply chains, which has led to decreased demand for exports and lower production levels in some sectors. The automotive and electronics industries, which are major industries in Guangxi, have been particularly affected by supply chain disruptions.

Furthermore, travel restrictions and lockdowns have significantly impacted the tourism industry, which is a major contributor to the local economy. Many hotels, restaurants, and other tourist-related businesses have closed temporarily or permanently, leading to job losses and decreased revenue.

The pandemic is hitting households, linkages, and corporations all across the globe; the phase of something like the COVID-19 pandemic is described to by the term "black swan event". It already has affected not just people's quality of life throughout the globe, and moreover governments' budgetary holdings. Containing the virus has prompted enormous lockdowns and traveling prohibitions, that have altered human activity and impeded modern activities, offering problems and flaws to the international development and global social systems. As a result, the purpose of this research is to look at the many industries in the country and their current condition of surviving in light of such pandemic's effects (Weber, 2021).

This study aims to focus on how the industry sectors are affected by the pandemic and how they responded during this crisis.

II. Statement of the Problem

This study identified and described the state of survival in grappling with the impact of the pandemic on the industry sectors in Guilin City, China.

Specifically, it sought to answer the following questions:

1. How is the profile of the small and medium enterprises be described in terms of:
 - 1.1 Classification
 - 1.2 registration type
 - 1.3 firm size
 - 1.4 years in operation
 - 1.5 capitalization?
2. How is the state of survival of small and medium enterprises described in terms of the following:
 - 2.1 production and operations
 - 2.2 financial status
 - 2.3 technological innovation?
3. How do small and medium enterprises compare in the above areas of survival?
4. Are the profile variables of small and medium enterprises predictors of their survival?

III. Methodology

Methods

This study used a research methodology that is descriptive correlational research design. The purpose of descriptive and correlational research is to get a deeper knowledge of a study problem rather than to provide a solution.

The study was conducted at the selected sixty (60) enterprises, both small and medium enterprises in Guilin City, Guangxi, China. The study involved a total of 180 respondents, consisting of participants from the selected sixty (60) enterprises.

IV. Results

1. Profile of the small and medium enterprises

1.1 Classification

The study examines the classification profile of the respondents, specifically focusing on their involvement in various industries. Presented in table 1 is the result of the enterprises classification profile of the respondents.

Table 1
Classification Profile of the Respondents

Category	Frequency	Percentage
Agriculture, forestry, livestock, farming, fishery	6	3
Heavy industry	33	18
Architecture	9	5
Wholesale trade	6	3
Retail industry	6	3

Transportation industry	6	3
Warehousing industry	6	3
Postal industry	6	3
Accommodation industry	6	3
Restaurant and catering industry	6	3
Information transmission industry	6	3
Software and IT service	6	3
Real estate development industry	6	3
Property management industry	6	3
Tenancy and business services industry	6	3
Other unlisted industries	60	33
Total	180	100.00

The data showed that the other unlisted industries category had the highest percentage, comprising 33.33% (n = 60) of the respondents. This suggests a diverse range of industries that were not specifically listed in the survey options but were still represented in the sample.

These findings provide valuable insights into the distribution of respondents across various industries. The dominance of the heavy industry sector may indicate its significance in the local economy or the specific target population of the survey. The substantial presence of other unlisted industries further highlights the need for a comprehensive classification framework to capture the full spectrum of industries within the region.

Among the industries mentioned by the respondents, there were a few additional unlisted sectors worth noting, such as accounting companies, consulting agencies, and so on, their expertise and guidance play a vital role in helping organizations navigate complex challenges and make informed decisions.

Literature supports the importance of understanding the industry composition within a given population. For instance, studies have shown that industry profiles can influence economic growth (Ghosh & Sengupta, 2018), job opportunities (Adams & Beason, 2016), and policy formulation (Kokkinou, 2019). Therefore, a thorough understanding of the classification profile of respondents is crucial for accurate data analysis and informed decision-making.

The study presented a classification profile of the respondents based on their industry affiliations. The heavy industry sector was the most represented, followed by the architecture sector. The presence of other unlisted industries highlighted the need for a comprehensive industry classification framework. These findings contribute to the existing literature on industry profiles and emphasize the importance of understanding the composition of industries within a given population.

1.2 Registration type

In order to gain a comprehensive understanding of the diversity in ownership and organizational structures among SMEs, the researcher examined the registration type profile of small and medium enterprises (SMEs), focusing on the different types of registrations they have.

Table 2
Registration Type of the Respondents

Category	Frequency	Percentage
Wholly Foreign-Owned Enterprise	3	1.67
State Owned Enterprise	21	11.67
Private Enterprise	153	85.00
Individually Owned	3	1.67
Total	180	100.00

Table 2 displays the distribution of respondents' registration types in terms of frequency and percentage.

The findings indicate that the majority of the respondents, accounting for 85.00% (n = 153) of the sample, were affiliated with private enterprises. State-owned enterprises constituted 11.67% (n = 21) of the respondents, while wholly foreign-owned enterprises and individually owned businesses each represented

1.67% (n = 3) of the respondents. No respondents identified themselves as being part of a joint venture or a representative office.

Understanding the registration types of respondents is valuable for various purposes, including policy-making, business development, and market analysis. Literature supports the importance of studying different types of business registrations and their impact on economic growth, foreign investment, and market competition (Duanmu & Guney, 2019; Liu & Peng, 2019).

The study provided insights into the registration types of the respondents. Private enterprises were the most prevalent, while state-owned enterprises, wholly foreign-owned enterprises, and individually owned businesses also had representation. The absence of joint ventures and representative offices indicates their relatively lower presence within the surveyed population. These findings contribute to the existing literature on business registrations and underscore the significance of understanding the composition of registration types within a given population.

1.3 Firm size

The firm size profile of small and medium enterprises (SMEs) focuses on the categorization based on the number of employees. By exploring this aspect, we aim to gain insights into the composition and characteristics of SMEs operating at different scales.

Table 3
Firm Size of the Respondents

Category	Frequency	Percentage
Less than 100	90	50.00
100 and more	90	50.00
Total	180	100.00

Table 3 presents the distribution of respondents' firm sizes in terms of frequency and percentage.

The findings reveal that there was an equal distribution of respondents in terms of firm size. Both categories, "Less than 100" and "100 and more," each accounted for 50.00% (n = 90) of the total sample. This indicates a balanced representation of small and large firms within the surveyed population.

The equal distribution of firm sizes suggests a diverse range of companies participating in the study. It reflects the presence of both small and large businesses in the region, highlighting the importance of considering the perspectives of various firm sizes in the research.

Understanding the firm sizes of respondents is crucial for analyzing the impact of company size on different variables, such as innovation, competitiveness, and resource allocation (Acs & Audretsch, 2010; Storey, 1994). It also helps policymakers and researchers gain insights into the dynamics of different-sized firms within the local economy.

The sample demonstrated an equal distribution between firms with less than 100 employees and firms with 100 or more employees. This suggests the presence of a balanced representation of small and large companies within the surveyed population. These findings contribute to the existing literature on firm size and emphasize the importance of considering the perspectives of various-sized firms in research and policy formulation.

1.4 Years in operation

The years in operation profile of small and medium enterprises (SMEs) focuses on the duration of their existence. Understanding the distribution of SMEs across time intervals provides insights into their longevity and experience in the business landscape. By exploring this aspect, we aim to gain a comprehensive understanding of the challenges and opportunities faced by SMEs at different stages of their operational journey.

Table 4
Years in Operation of the Respondents

Category	Frequency	Percentage
1 - 5 years	48	26.67
6 - 10 years	54	30.00
11 - 15 years	18	10.00
16 - 20 years	18	10.00

21 - 25 years	24	13.33
26 - 30 years	9	5.00
30 years and above	9	5.00
Total	180	100.00

Table 4 displays the distribution of respondents' years in operation in terms of frequency and percentage.

The findings reveal a varied distribution of years in operation among the respondents. The largest proportion of respondents, accounting for 30.00% (n = 54) of the sample, reported being in operation for 6 to 10 years. This was closely followed by businesses operating for 1 to 5 years, representing 26.67% (n = 48) of the respondents.

Furthermore, 10.00% (n = 18) of the respondents reported being in operation for each of the following time periods: 11 to 15 years and 16 to 20 years. The next category, 21 to 25 years, constituted 13.33% (n = 24) of the respondents. Additionally, 5.00% (n = 9) of the respondents reported operating for each of the following time frames: 26 to 30 years and 30 years and above.

These findings indicate a diverse range of business ages within the surveyed population. The higher representation of businesses in the 6 to 10 years category suggests a relatively recent wave of entrepreneurial activity or a period of growth within the region. The presence of businesses operating for 30 years and above also highlights the existence of well-established enterprises with long-standing operations.

Understanding the years in operation of respondents' businesses is valuable for various analyses, such as assessing business longevity, exploring the challenges faced by businesses at different stages, and investigating factors that contribute to the survival and success of businesses (Dahlstrand & Wiklund, 2019; Wiklund, 1998).

The findings indicate a diverse distribution of business ages, with the highest representation in the 6 to 10 years category. The presence of businesses with various years in operation emphasizes the importance of considering the different stages of business development and their implications. These findings contribute to the existing literature on business age and underscore the significance of understanding the composition of years in operation within a given population.

1.5 Capitalization

The capitalization profile of small and medium enterprises (SMEs) pertains on the financial resources invested in their operations. Understanding the distribution of SMEs based on capitalization provides insights into their financial strength and investment capacity. By exploring this aspect, we aim to gain a comprehensive understanding of the financial landscape of SMEs and its implications for their growth and survival.

Table 5
Capitalization of the Respondents

Category	Frequency	Percentage
Less than 10M	123	68.33
11M to 25M	24	13.33
26M to 50M	18	10.00
51M to 100M	9	5.00
101M or More	6	3.33
Total	180	100.00

Table 5 presents the distribution of respondents' capitalization in terms of frequency and percentage.

The findings indicate a varied distribution of capitalization among the respondents. The majority of the businesses, accounting for 68.33% (n = 123) of the sample, reported having a capitalization of less than 10 million. This suggests that a significant proportion of the surveyed businesses have relatively lower levels of capital investment.

Furthermore, 13.33% (n = 24) of the respondents reported a capitalization ranging from 11 million to 25 million. Additionally, 10.00% (n = 18) of the respondents reported capitalization in the range of 26 million to 50 million. The next category, 51 million to 100 million, constituted 5.00% (n = 9) of the respondents. The highest category, 101 million or more, represented 3.33% (n = 6) of the respondents.

These findings highlight the diverse range of capitalization levels within the surveyed population. The higher representation of businesses with capitalization below 10 million suggests the prevalence of smaller and

medium-sized enterprises in the sample. The presence of businesses with higher capitalization levels signifies the existence of larger and potentially more established enterprises with greater financial resources.

Understanding the capitalization of respondents' businesses is valuable for analyzing financial health, investment capacity, and growth potential (Gropp et al., 2017; Schertler, 2010). It provides insights into the financial structures of businesses and can inform decision-making processes related to financing, resource allocation, and risk management.

The findings demonstrate a varied distribution of capitalization levels, with the majority of businesses reporting a capitalization of less than 10 million. The presence of businesses with different capitalization ranges emphasizes the importance of considering the financial diversity within a given population. These findings contribute to the existing literature on business capitalization and underscore the significance of understanding the composition of capitalization levels within a specific context.

2. State Of Survival of Small And Medium Enterprises

This study investigates the state of survival of small and medium enterprises (SMEs), with a particular focus on their ability to navigate the challenges and impacts of the pandemic.

2.1 Production and operations

The survival of small and medium enterprises (SMEs) in today's dynamic business environment heavily depends on their ability to effectively manage production and operations. This study aims to explore the current state of survival for SMEs in relation to their production and operations strategies.

Table 6
State of Survival of Small and Medium Enterprises along Production and Operations

Statement	Mean	Verbal Description
Enable businesses to proactively address and mitigate potential disruptions, ensure alternative sourcing options, maintain operational continuity, and minimize the impact of unforeseen events on the supply chain.	3.12	Neutral
The enterprise mitigates supply chain risks and increase flexibility by diversifying suppliers and exploring alternative sourcing options, reducing dependency on a single source. This approach helps businesses adapt to market fluctuations, ensure uninterrupted production, and minimize operational disruptions.	3.00	Neutral
The enterprise effectively conduct inventory management to ensure timely order fulfillment, minimize stock-outs, avoid excess carrying costs, and enable businesses to meet customer demands efficiently, contributing to their overall competitiveness and long-term viability.	3.00	Neutral
The enterprise depends on local suppliers to achieve cost savings in transportation, foster community collaboration, and enhance the overall economic ecosystem, thereby ensuring sustainability and competitiveness in the long run.	2.68	Neutral
The enterprise hinges on effectively managing operational costs in their production and operations, as controlling expenses, optimizing resource allocation, and finding cost-saving measures are critical factors for the business to maintain profitability, sustain their operations, and navigate the challenges of a competitive business environment.	2.50	Neutral
The long-term success and viability of the enterprise depend on maintaining a dedicated and skilled workforce, as the business relies on the expertise, commitment, and productivity of its employees to meet customer demands, foster innovation, and adapt to market changes, ensuring continued growth and competitiveness.	2.42	Easy
The enterprise consistently delivers high-quality services and/or products to customers which fosters customer loyalty, builds a strong reputation, generates repeat business, and ultimately contributes to the long-term success and sustainability of these businesses in a competitive marketplace.	2.20	Easy
The enterprise maintains efficient production and operations throughout their operating hours, as it is crucial for the business to maximize productivity, manage costs effectively, and meet customer demands in order to sustain their operations and remain competitive in the market.	2.03	Easy
The enterprise's goods and services reach consumers using the means and methods readily available in the workplace environment.	1.35	Very Easy
Overall Mean	2.48	Easy

Table 6 presents the respondents' ratings on various statements related to ensuring business continuity, supply chain management, inventory management, cost control, workforce management, customer satisfaction, production efficiency, and accessibility of goods and services.

The findings indicate that the respondents, on average, rated most of the statements as "Neutral" in terms of their perceived importance for the survival of SMEs. The statement with the highest mean rating of 3.12 was related to enabling businesses to proactively address and mitigate potential disruptions, ensure alternative sourcing options, maintain operational continuity, and minimize the impact of unforeseen events on the supply chain. Similarly, the statements on mitigating supply chain risks through diversification and inventory management for timely order fulfillment received mean ratings of 3.00, indicating a neutral stance.

The statements regarding depending on local suppliers for cost savings and fostering community collaboration (mean = 2.68), managing operational costs (mean = 2.50), and relying on a skilled workforce for long-term success (mean = 2.42) were also rated as "Neutral" in terms of their perceived significance. The respondents considered consistently delivering high-quality services/products (mean = 2.20) and maintaining efficient production and operations (mean = 2.03) as relatively easier aspects of SME survival.

However, the statement about goods and services reaching consumers using readily available means and methods in the workplace environment received the lowest mean rating of 1.35, indicating that the respondents found this aspect to be very easy in terms of ensuring SME survival.

The overall mean rating across all statements was 2.48, suggesting that the respondents, on average, perceived the survival aspects along production and operations for SMEs as relatively easy to manage.

The findings contribute to the understanding of the perceived importance and ease of various factors that influence the survival of SMEs. It highlights the need for SMEs to focus on addressing potential disruptions, supply chain management, inventory management, cost control, workforce management, and customer satisfaction to ensure long-term viability and competitiveness. Moreover, it emphasizes the relatively easier aspects of consistently delivering high-quality services/products, maintaining efficient production and operations, and utilizing available means and methods for reaching consumers.

Understanding these factors can guide policymakers, business owners, and managers in formulating strategies and allocating resources to support SME survival and growth. Additionally, the findings align with previous research that emphasizes the significance of effective supply chain management, cost control, and workforce management in SME success and sustainability (Chavez et al., 2020; Qureshi et al., 2019).

The findings indicate that the perceived importance and ease of different survival factors varied among the respondents. The study contributes to the existing literature on SME survival and highlights the need to address key aspects such as supply chain management, cost control, and workforce management to ensure long-term viability and competitiveness.

2.2 Financial status

The state of survival of small and medium enterprises (SMEs) in relation to their financial status is a critical aspect of economic analysis. Understanding the current landscape of SME survival in relation to their financial health is essential for policymakers, economists, and business owners alike.

Table 7

State of Survival of Small and Medium Enterprises along Financial Status

Statement	Mean	Verbal Description
The enterprise proactively explores alternative funding sources such as crowdfunding or venture capital, leveraging these opportunities to secure additional financial support, drive innovation, and ensure its survival by diversifying funding channels and accessing the necessary resources to fuel growth and navigate the competitive business landscape.	3.40	Neutral
The enterprise actively seeks and applies for financial assistance or grants, leveraging these opportunities to secure additional funding, support growth initiatives, and strengthen its financial position, thereby ensuring its survival in terms of access to necessary resources and sustainable financial stability.	3.30	Neutral
The enterprise actively engages in negotiations with landlords, seeking rent reductions or payment deferrals to alleviate financial strain, and improve cash flow.	3.18	Neutral
The enterprise proactively seeks access to loans or credit programs, strategically leveraging these opportunities to secure necessary capital, fuel business operations, and invest in growth initiatives.	3.05	Neutral
The enterprise implements strategic marketing initiatives, engages in proactive sales efforts, and continually seeks opportunities to diversify its product offerings and expand its customer base, ensuring its survival in terms of sales and revenue by consistently driving business growth and maximizing revenue generation potential.	2.98	Neutral
The enterprise diligently explores tax relief options and applies for tax extensions, leveraging these measures to alleviate financial burdens, enhance cash flow, and ensure its survival by optimizing its tax position and maintaining a favorable financial environment.	2.82	Neutral
The enterprise diligently assesses and implements cost-cutting measures, streamlining operations, optimizing resource allocation, and identifying areas for efficiency improvement, ensuring its survival by effectively managing operational costs and expenses while maintaining the quality of products or services offered.	2.70	Neutral
The enterprise diligently manages its financial resources to ensure the survival by prioritizing the covering of staff salaries and other fixed business costs, such as rent or utilities, recognizing the importance of sustaining the workforce and maintaining essential operations to drive revenue generation and overall business stability.	2.45	Easy
The enterprise adheres to industry-specific support and guidelines, leveraging these resources to stay informed, adapt to industry changes, and meet compliance	2.18	Easy

requirements		
Overall Mean	2.90	Neutral

Table 7 presents the respondents' ratings on various statements related to securing financial support, accessing funding sources, engaging in negotiations, implementing cost-cutting measures, and adhering to industry guidelines.

The findings indicate that the respondents, on average, rated most of the statements as "Neutral" in terms of their perceived importance for the survival of SMEs. The statement with the highest mean rating of 3.40 was related to proactively exploring alternative funding sources, such as crowdfunding or venture capital, to secure additional financial support and drive innovation. Similarly, the statement on actively seeking financial assistance or grants to support growth initiatives received a mean rating of 3.30, indicating a neutral stance.

The statements regarding engaging in negotiations with landlords for rent reductions or payment deferrals (mean = 3.18) and seeking access to loans or credit programs (mean = 3.05) were also rated as "Neutral" in terms of their perceived significance. The respondents considered implementing strategic marketing initiatives and diversifying product offerings to drive business growth (mean = 2.98) as relatively neutral aspects of SME survival.

However, the statements about diligently exploring tax relief options and applying for tax extensions (mean = 2.82), implementing cost-cutting measures (mean = 2.70), and managing financial resources to cover staff salaries and fixed business costs (mean = 2.45) were rated as relatively easier in terms of ensuring SME survival.

The statement about adhering to industry-specific support and guidelines received the lowest mean rating of 2.18, indicating that the respondents found this aspect to be relatively easy in terms of ensuring SME survival.

The overall mean rating across all statements was 2.90, suggesting that the respondents, on average, perceived the financial aspects of SME survival as relatively neutral in terms of their perceived importance and ease.

The findings contribute to the understanding of the perceived importance and ease of different financial factors that influence the survival of SMEs. It highlights the need for SMEs to proactively explore alternative funding sources, seek financial assistance, engage in negotiations, and implement cost-cutting measures to ensure financial stability and access necessary resources. Moreover, it emphasizes the relatively easier aspects of diligently managing financial resources and adhering to industry guidelines.

Understanding these factors can guide policymakers, business owners, and managers in formulating strategies and allocating resources to support SME survival and financial stability. Additionally, the findings align with previous research that emphasizes the significance of financial management, access to funding, and cost-cutting measures in SME success and sustainability (Abubakar et al., 2020; Majeed et al., 2019).

The findings indicate that the perceived importance and ease of different financial factors varied among the respondents. The study contributes to the existing literature on SME survival and highlights the need to address key financial aspects to ensure long-term viability and stability.

2.3 Technological innovation

Understanding the current state of SMEs' survival in relation to technological innovation is crucial for policymakers, entrepreneurs, and industry observers. This analysis aims to assess the impact of technology on SME resilience, explore the barriers to adoption, and identify the potential opportunities that emerging technologies can offer for their growth and long-term sustainability.

Table 8
State of Survival of Small and Medium Enterprises along Technological Innovation

Statement	Mean	Verbal Description
The enterprise has implemented remote work or flexible work arrangements, ensuring its survival by adapting to evolving work trends, fostering employee productivity, and maintaining business continuity in the face of challenges, while also prioritizing the health and well-being of its workforce.	3.87	Difficult
The enterprise has proactively developed new products or services, aligning with changing customer needs and preferences, ensuring its survival by staying innovative, responsive to market demands, and continuously providing value to its customers in dynamic and evolving business landscapes.	3.77	Difficult
The enterprise has engaged in collaborative partnerships with other businesses, fostering joint marketing initiatives or shared operations, ensuring its survival by leveraging collective strengths, expanding market	3.50	Difficult

reach, and driving mutual growth through synergistic collaborations in the competitive business environment.		
The enterprise has actively explored new sales channels such as e-commerce platforms and delivery services, ensuring its survival by diversifying its sales strategy, reaching broader customer segments, and capitalizing on evolving consumer preferences for convenient and accessible purchasing options.	3.38	Neutral
The enterprise has adapted to changing circumstances by shifting its operations online or initiating the provision of online services, ensuring its survival by embracing digital transformation, expanding its customer reach, and capitalizing on the opportunities presented by the online marketplace.	3.35	Neutral
Overall Mean	3.57	Difficult

Table 8 presents the respondents' ratings on various statements related to implementing remote work, developing new products or services, engaging in collaborative partnerships, exploring new sales channels, and adapting operations online.

The findings reveal that the respondents, on average, rated the statements as "Difficult" or "Neutral" in terms of their perceived difficulty and importance for the survival of SMEs. The statement with the highest mean rating of 3.87 was related to implementing remote work or flexible work arrangements. This indicates that the respondents considered adapting to evolving work trends, fostering employee productivity, and maintaining business continuity as challenging aspects of technological innovation.

Similarly, the statement on proactively developing new products or services received a mean rating of 3.77, suggesting that the respondents perceived innovation and staying responsive to market demands as difficult aspects of ensuring SME survival.

The statement regarding engaging in collaborative partnerships with other businesses received a mean rating of 3.50, indicating a difficult stance. This suggests that the respondents considered fostering joint marketing initiatives or shared operations and leveraging collective strengths as challenging but beneficial strategies for SME survival.

On the other hand, the statements about exploring new sales channels such as e-commerce platforms and delivery services (mean = 3.38) and adapting operations online (mean = 3.35) were rated as relatively neutral in terms of their perceived difficulty and importance.

The overall mean rating across all statements was 3.57, indicating that, on average, the respondents perceived technological innovation as a difficult aspect of SME survival.

The findings shed light on the challenges and opportunities related to technological innovation for SMEs. They suggest that SMEs need to embrace remote work, develop new products or services, and engage in collaborative partnerships to stay competitive and ensure long-term survival. Additionally, exploring new sales channels and adapting operations online are recognized as potential strategies for SMEs to expand their customer reach and adapt to changing market dynamics.

These findings align with previous research highlighting the significance of technological innovation for SME success and survival (Cassia et al., 2020; Pansera et al., 2019).

The findings indicate that SMEs perceive technological innovation as both difficult and important for their survival. The study contributes to the existing literature on SME innovation and highlights the need to address key technological aspects to ensure long-term viability and competitiveness.

3.Comparing the Survival of Small and Medium Enterprises

SMEs, as a vital component of the economy, contribute significantly to job creation, innovation, and overall economic growth. This analysis seeks to compare the survival rates of SMEs across various parameters, shedding light on the similarities, differences, and underlying factors that shape their ability to weather challenges and thrive in the face of adversity.

Table 9

Summary of Statistics along Areas of Survival

Areas		N	Mean	Std. Deviation	Std. Error Mean
Production and Operations	Small	90	23.9333	3.97124	.41861
	Medium	90	20.6667	3.66582	.38641
Financial Status	Small	90	27.2333	3.27074	.34477
	Medium	90	24.9000	4.24542	.44751

Technological Innovation	Small	90	20.6667	3.06484	.32306
	Medium	90	15.0667	3.53092	.37219

Table 9 provides a summary of statistics along areas of survival, namely Production and Operations, Financial Status, and Technological Innovation. The table presents the number of respondents (N), the mean, standard deviation, and standard error mean for each area, categorized by Small and Medium enterprises.

In the Production and Operations area, Small enterprises (N = 90) had a mean score of 23.9333, with a standard deviation of 3.97124 and a standard error mean of 0.41861. On the other hand, Medium enterprises (N = 90) had a slightly lower mean score of 20.6667, with a standard deviation of 3.66582 and a standard error mean of 0.38641. These statistics suggest that Small enterprises, on average, rated the statements related to Production and Operations slightly higher than Medium enterprises.

Regarding the Financial Status area, Small enterprises (N = 90) had a mean score of 27.2333, with a standard deviation of 3.27074 and a standard error mean of 0.34477. Medium enterprises (N = 90) had a slightly lower mean score of 24.9000, with a higher standard deviation of 4.24542 and a standard error mean of 0.44751. These statistics indicate that Small enterprises, on average, rated the statements related to Financial Status higher than Medium enterprises.

In the Technological Innovation area, Small enterprises (N = 90) had a mean score of 20.6667, with a standard deviation of 3.06484 and a standard error mean of 0.32306. Medium enterprises (N = 90) had a lower mean score of 15.0667, with a higher standard deviation of 3.53092 and a standard error mean of 0.37219. These statistics suggest that Small enterprises, on average, rated the statements related to Technological Innovation higher than Medium enterprises.

The summary of statistics provides a comparative overview of the respondents' ratings across the three areas of survival. It indicates that Small enterprises generally rated the statements higher than Medium enterprises in the Production and Operations and Financial Status areas. However, in the Technological Innovation area, both Small and Medium enterprises had lower ratings, with Small enterprises still rating higher on average compared to Medium enterprises.

These statistics offer insights into the perceptions of Small and Medium enterprises regarding their survival in different areas. It highlights potential areas of strength and areas where improvement or focus may be needed to enhance survival strategies.

Table 10

Difference between Small and Medium Enterprises along Areas of Survival

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Production and Operations	Equal variances assumed	.537	.465	5.734	178	.000	3.26667	.56969	2.14246	4.39088
	Equal variances not assumed			5.734	176.872	.000	3.26667	.56969	2.14241	4.39093
Financial Status	Equal variances assumed	3.553	.061	4.130	178	.000	2.33333	.56491	1.21855	3.44812
	Equal variances not assumed			4.130	167.127	.000	2.33333	.56491	1.21805	3.44862
Technological Innovation	Equal variances assumed	2.434	.121	11.363	178	.000	5.60000	.49285	4.62743	6.57257

Equal variances not assumed			11.363	174.548	.000	5.60000	.49285	4.62730	6.57270
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Table 10 presents the results of statistical tests examining the difference between Small and Medium enterprises along the areas of survival, including Production and Operations, Financial Status, and Technological Innovation. The table includes Levene's test for equality of variances and t-tests for equality of means.

For Production and Operations, the Levene's test for equality of variances yielded a nonsignificant result ($F = 0.537$, $p = 0.465$), indicating that the assumption of equal variances was met. The t-test for equality of means showed a significant difference between Small and Medium enterprises ($t = 5.734$, $df = 178$, $p < 0.001$), with Small enterprises ($M = 23.9333$) scoring higher than Medium enterprises ($M = 20.6667$) on average. The mean difference was 3.26667, and the 95% confidence interval of the difference ranged from 2.14246 to 4.39088.

In terms of Financial Status, the Levene's test for equality of variances indicated a significant result ($F = 3.553$, $p = 0.061$), suggesting unequal variances. Therefore, the t-test for equality of means with equal variances not assumed was used. The test revealed a significant difference between Small and Medium enterprises ($t = 4.130$, $df = 167.127$, $p < 0.001$), with Small enterprises ($M = 27.2333$) having higher ratings than Medium enterprises ($M = 24.9000$) on average. The mean difference was 2.33333, and the 95% confidence interval of the difference ranged from 1.21855 to 3.44812.

Regarding Technological Innovation, the Levene's test for equality of variances yielded a nonsignificant result ($F = 2.434$, $p = 0.121$), indicating equal variances. The t-test for equality of means showed a significant difference between Small and Medium enterprises ($t = 11.363$, $df = 178$, $p < 0.001$), with Small enterprises ($M = 20.6667$) rating higher than Medium enterprises ($M = 15.0667$) on average. The mean difference was 5.60000, and the 95% confidence interval of the difference ranged from 4.62743 to 6.57257.

These statistical tests provide evidence of significant differences between Small and Medium enterprises in all three areas of survival. Small enterprises generally scored higher than Medium enterprises in Production and Operations, Financial Status, and Technological Innovation.

5. The Predictive Role of Profile Variables in the Survival of Small and Medium Enterprises

Profile variables encompass a range of characteristics associated with SMEs, such as industry sector, company size, age, ownership structure, managerial experience, and financial indicators. Analyzing these variables and their predictive power can provide valuable insights into the likelihood of SME survival and inform decision-making processes for policymakers, investors, and business owners.

Table 11

Correlation between Profile and Area of Survival along Production and Operations

Profile	Pearson r	p-value	Decision	Result
Classification	0.296	0.000	Reject Ho	Positive Correlation
Registration Type	0.178	0.017	Reject Ho	Positive Correlation
Firm Size	-0.395	0.000	Reject Ho	Negative Correlation
Years in Operation	-0.152	0.042	Reject Ho	Negative Correlation
Capitalization	-0.080	0.287	Accept Ho	No Correlation

Table 11 presents the correlation between Profile (Classification, Registration Type, Firm Size, Years in Operation, and Capitalization) and the Area of Survival along Production and Operations. The table includes the Pearson correlation coefficient (r), p-value, decision (whether to reject or accept the null hypothesis), and the result of the correlation.

For Classification, there is a significant positive correlation with Production and Operations ($r = 0.296$, $p < 0.001$). Thus, the null hypothesis (H_0) of no correlation is rejected, indicating a positive relationship between the classification profile of the respondents and their performance in Production and Operations.

Similarly, Registration Type shows a significant positive correlation with Production and Operations ($r = 0.178$, $p = 0.017$), rejecting the null hypothesis. This suggests that the type of registration is positively associated with the performance of enterprises in Production and Operations.

In contrast, Firm Size demonstrates a significant negative correlation with Production and Operations ($r = -0.395$, $p < 0.001$), leading to the rejection of the null hypothesis. The correlation indicates that larger enterprises tend to have lower performance in Production and Operations.

Years in Operation also exhibits a significant negative correlation with Production and Operations ($r = -0.152$, $p = 0.042$), rejecting the null hypothesis. This implies that enterprises with a longer duration of operation tend to have lower performance in Production and Operations.

However, Capitalization does not show a significant correlation with Production and Operations ($r = -0.080$, $p = 0.287$), leading to the acceptance of the null hypothesis. This suggests that there is no substantial relationship between the capitalization of enterprises and their performance in Production and Operations.

Overall, the correlation analysis indicates that the classification profile, registration type, firm size, and years in operation of the respondents have significant associations with their performance in Production and Operations, except for capitalization.

Table 12

Correlation between Profile and Area of Survival along Financial Status

Profile	Pearson r	p-value	Decision	Result
Classification	0.160	0.031	Reject Ho	Positive Correlation
Registration Type	-0.231	0.002	Reject Ho	Negative Correlation
Firm Size	-0.296	0.000	Reject Ho	Negative Correlation
Years in Operation	-0.062	0.406	Accept Ho	No Correlation
Capitalization	-0.156	0.036	Reject Ho	Negative Correlation

Table 12 presents the correlation between profile variables and the area of survival along financial status for small and medium enterprises (SMEs). The correlation coefficient (Pearson's r) measures the strength and direction of the relationship, while the p -value determines the statistical significance of the correlation. The decision column indicates whether the null hypothesis (H_0) is rejected or accepted based on the p -value. Finally, the result column summarizes the type of correlation observed.

Based on the table, it can be observed that there is a positive correlation (Pearson $r = 0.160$, p -value = 0.031) between the classification of SMEs and their area of survival along financial status. This suggests that the classification of SMEs, such as their industry sector or business type, has a modest positive relationship with their financial survival.

In terms of registration type, there is a negative correlation (Pearson $r = -0.231$, p -value = 0.002) with the area of survival along financial status. This implies that the type of registration, such as whether the SME is registered as a sole proprietorship, partnership, or corporation, is associated with a lower likelihood of financial survival.

Similarly, firm size shows a negative correlation (Pearson $r = -0.296$, p -value = 0.000) with the area of survival along financial status. This indicates that larger SMEs tend to have a lower probability of financial survival compared to smaller ones.

On the other hand, years in operation (Pearson $r = -0.062$, p -value = 0.406) and capitalization (Pearson $r = -0.156$, p -value = 0.036) do not exhibit a statistically significant correlation with the area of survival along financial status. This suggests that the number of years an SME has been in operation and its capitalization level may not strongly influence its financial survival.

In summary, the findings of this correlation analysis reveal that the classification, registration type, and firm size of SMEs have significant associations with their financial survival. However, the number of years in operation and capitalization do not exhibit strong correlations. These insights can be valuable for policymakers, researchers, and business owners in formulating strategies and support mechanisms to enhance the financial sustainability of SMEs.

Table 13

Correlation between Profile and Area of Survival along Technological Innovation

Profile	Pearson r	p-value	Decision	Result
Classification	0.210	0.005	Reject Ho	Positive Correlation
Registration Type	0.276	0.000	Reject Ho	Positive Correlation
Firm Size	-0.648	0.000	Reject Ho	Negative Correlation
Years in Operation	-0.337	0.000	Reject Ho	Negative Correlation
Capitalization	-0.435	0.000	Reject Ho	Negative Correlation

Table 13 illustrates the correlation between profile variables and the area of survival along technological innovation for small and medium enterprises (SMEs). The table presents Pearson correlation coefficients (Pearson's r) along with corresponding p-values to determine the strength and statistical significance of the correlations. The decision column indicates whether the null hypothesis (Ho) is rejected or accepted based on the p-value, and the result column summarizes the type of correlation observed.

According to the table, there is a positive correlation (Pearson r = 0.210, p-value = 0.005) between the classification of SMEs and their area of survival along technological innovation. This suggests that the classification, such as the industry sector or business type of SMEs, is moderately positively associated with their ability to survive in terms of technological innovation.

Similarly, registration type shows a positive correlation (Pearson r = 0.276, p-value = 0.000) with the area of survival along technological innovation. This indicates that the type of registration, such as sole proprietorship, partnership, or corporation, is significantly related to a higher likelihood of survival in terms of technological innovation.

In contrast, firm size exhibits a strong negative correlation (Pearson r = -0.648, p-value = 0.000) with the area of survival along technological innovation. This suggests that larger SMEs tend to have a lower probability of survival in terms of technological innovation compared to smaller ones.

Furthermore, years in operation (Pearson r = -0.337, p-value = 0.000) and capitalization (Pearson r = -0.435, p-value = 0.000) demonstrate negative correlations with the area of survival along technological innovation. This implies that SMEs with longer years in operation and higher capitalization levels are more likely to face challenges in surviving and adapting to technological advancements.

In summary, the correlation analysis reveals that the classification and registration type of SMEs have positive associations with their survival in terms of technological innovation. However, firm size, years in operation, and capitalization exhibit negative correlations, indicating potential challenges for larger, established SMEs in adapting to technological advancements. These findings provide valuable insights for policymakers, researchers, and business owners to develop strategies and support mechanisms that foster technological innovation and enhance the survival of SMEs in today's rapidly evolving business environment.

Conclusion

From the findings of the study, the following conclusions were drawn:

1. The dominant sectors of heavy industry and architecture can guide targeted interventions. The prevalence of private enterprises indicates the need for tailored support, while different ownership structures require specific strategies. The equal distribution of small and large SMEs calls for customized approaches. The varied years in operation highlight the importance of nurturing both new and established SMEs. The majority having a capitalization below 10 million emphasizes the need for accessible financing options.
2. The state of survival of small and medium enterprises (SMEs) is examined in terms of production and operations, financial status, and technological innovation. The findings suggest that SMEs need to focus on supply chain management, cost control, workforce management, and customer satisfaction to ensure long-term viability. Regarding the financial status, SMEs should explore alternative funding sources, seek financial assistance, engage in negotiations, and implement cost-cutting measures to ensure stability.
3. The comparative analysis reveals that small enterprises have a more positive perception of their survival in Production and Operations, Financial Status, and Technological Innovation compared to medium enterprises. Small enterprises scored higher in all three areas, indicating better capabilities. However, both small and medium enterprises need improvement in Technological Innovation.
4. Profile variables of small and medium enterprises (SMEs) were found to have significant correlations with survival in production and operations, financial status, and technological innovation. The classification and

registration type showed positive correlations, while firm size and years in operation had negative correlations in these areas.

These findings offer insights for policymakers, researchers, and business owners to develop strategies that enhance SMEs' survival and adaptability.

Recommendations

Based on the findings of the study, the researcher recommends the following:

1. Based on the dominant sectors of heavy industry and architecture, the Chinese government should design tailored support measures to assist SMEs operating in these sectors.
2. Recognizing the equal distribution of small and large SMEs, the government should create a conducive business environment that encourages entrepreneurship and supports the growth of both new and established SMEs.
3. Given the challenges faced by SMEs in technological innovation, the government should invest in initiatives that promote digital transformation and adoption of new technologies.
4. SMEs should prioritize efficient production and operations, cost control, workforce management, and customer satisfaction.
5. SMEs should actively seek alternative funding sources and financial assistance programs to enhance their financial stability.
6. Embrace innovation and digitalization: SMEs need to prioritize technological innovation to remain competitive in the market.
7. Consumers should prioritize purchasing products and services from local SMEs, as this can contribute to their survival and growth.
8. Consumers should actively engage with SMEs by providing feedback on their products and services.
9. Industry workers should focus on enhancing their skills to align with the evolving needs of SMEs.
10. Industry managers should foster a culture of innovation within SMEs by encouraging employees to generate and implement new ideas.
11. Future researchers should consider investigating additional factors that may influence the survival and adaptability of SMEs.

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