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Research Article

Financial Sustainability Challenges and Opportunities for SMEs in Andhra Pradesh: An Empirical Analysis

K Ravi Kiran Yasaswi[1*], Dr. MC Balagurubaran[2], V.S. Prasad Kandi[3]

[1]*Research Scholar, Annamalai University, Chidambaram, Tamil Nadu. ravikiran.yasaswi36@gmail.com*

[2]*Research Supervisor and Assistant Professor, Department of Business Administration, Annamalai University, Chidambaram, Tamil Nadu. cmanochakra2007@gmail.com*

[3]*Research Co-Supervisor and Assistant Professor, Department of MBA, Koneru Lakshmaiah Education Foundation, Vaddeswaram Campus, Vijayawada, Andhra Pradesh. kandi.vsp@gmail.com*

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ABSTRACT

Small and Medium Enterprises (SMEs) play a vital role in Andhra Pradesh's economy, yet they face persistent challenges in achieving financial sustainability. This study uniquely explores the relationship between Environmental, Social, and Governance (ESG) practices and financial performance, addressing a critical gap in the existing research. By analyzing a dataset of 200 SMEs using descriptive statistics and correlation analysis, this study uncovered significant variability in financial performance and ESG compliance. The findings reveal that effective ESG integration positively affects financial outcomes, highlighting its importance for long-term growth. Additionally, the study identifies barriers, such as limited access to affordable credit and insufficient awareness of ESG benefits. Policy recommendations include creating tailored financial products, offering training programs on ESG adoption, and incentivizing sustainable practices through tax benefits and grants. These strategies aim to enhance SME resilience, enabling them to balance financial growth with sustainability goals, while contributing to regional economic stability and development.

Keywords: Financial Sustainability, SMEs (Small and Medium Enterprises), ESG Practices, Financing Challenges, Andhra Pradesh Economy.

INTRODUCTION

Small and Medium Enterprises (SMEs) play a pivotal role in the economy of Andhra Pradesh, serving as engines of growth, innovation, and job creation [1]. Nationally, SMEs contribute to approximately 37.5% of India's GDP and account for nearly 40% of exports, employing over 110 million people [2]. Andhra Pradesh, with its thriving SME ecosystem, significantly contributes to this national output. Sectors such as pharmaceuticals, textiles, agriculture, and information technology benefit from SMEs, driving both domestic growth and global competitiveness [3]. Notably, Andhra Pradesh's SMEs account for approximately 15% of the state's GDP and nearly 40% of its export revenues, emphasizing their critical role in economic stability and industrial diversification. The employment opportunities generated by SMEs are particularly vital in rural and semi-urban areas, where large-scale industries often have a minimal presence. SMEs bridge regional disparities, foster inclusive growth by creating jobs, and encourage entrepreneurial activity in underdeveloped areas. They also contribute to economic resilience and operate across diverse sectors to mitigate the risks from market fluctuations.

However, the COVID-19 pandemic has severely impacted the SME sector, exposing its vulnerabilities [4]. Prolonged lockdowns disrupted supply chains, halted production, and led to a liquidity crisis as sales plummeted, whereas fixed costs such as rent, salaries, and loan repayments persisted. Limited access to credit compounded these challenges, and many SMEs were unable to secure affordable funding to sustain their operations. The pandemic also accelerated the shift toward digital transactions and online markets, leaving SMEs without adequate technological infrastructure at a disadvantage [5]. This study explores the financial sustainability of SMEs in Andhra Pradesh by focusing on financial performance, ESG practices, and financing challenges. By identifying barriers and proposing actionable solutions, this study aims to strengthen SMEs' resilience of SMEs, enabling them to contribute to regional economic development and stability.

1.1 Challenges Faced During COVID-19

The COVID-19 pandemic posed unprecedented challenges for small and medium-sized enterprises (SMEs) worldwide, and Andhra Pradesh's SMEs were no exception [6]. These businesses, which form the backbone of the state economy, faced severe disruptions in their operations, financial health, and market access. The pandemic underscored the vulnerabilities inherent in SME operations, particularly for businesses heavily reliant on consistent supply chains, workforce stability, and cash flow [7]. One major challenge is the disruption of supply chains. Strict lockdown measures and movement restrictions have delayed the delivery of raw materials and finished goods. For instance, SMEs in Andhra Pradesh's pharmaceutical and textile sectors have experienced prolonged delays in sourcing critical inputs, impacting their production timelines. When transportation networks are disrupted, goods cannot reach markets on time, leading to significant revenue loss. Businesses that relied on just-in-time inventory practices were particularly hard hit as the unavailability of raw materials brought production to a standstill [8].

Workforce availability is a critical challenge [9]. Migrant workers, a substantial portion of the workforce in Andhra Pradesh's SMEs, returned to their hometowns because of pandemic-related uncertainties and health concerns. This labor shortage caused delays in restarting production even after the restrictions were eased. For example, agro-processing SMEs, which depend on seasonal labor, struggle to maintain operations, resulting in lower output and missed market opportunities. The shift toward digital markets during the pandemic has added another layer of complexity. Consumer behavior has shifted rapidly with a growing preference for online shopping and contactless transactions. SMEs without a digital presence find it difficult to retain customers, losing market share to larger businesses with established online platforms [10]. For example, many small retail SMEs in urban areas, such as Vijayawada and Visakhapatnam, have struggled to transition to digital sales channels, highlighting a critical gap in technological readiness.

Government initiatives such as the Atmanirbhar Bharat package offered some relief but revealed mixed results [11]. This package, which included emergency working capital loans, moratoriums for loan repayments, and subsidies, aimed to support struggling SMEs. While many larger SMEs with established banking relationships could access these benefits, smaller enterprises, particularly those in rural areas, faced hurdles in navigating application processes [12]. For instance, some SMEs reported delays in receiving funds under the Emergency Credit Line Guarantee Scheme (ECLGS), limiting their ability to address immediate liquidity needs. Despite these challenges, the pandemic has highlighted opportunities for resilience and adaptation. A few forward-thinking SMEs in Andhra Pradesh have embraced innovation to survive. For example, textile manufacturers are pivoted to produce personal protective equipment (PPE) to meet the surge in demand and sustain their operations [13]. Similarly, agro-processing businesses began leveraging local supply chains, reducing their dependence on external inputs, and improving their flexibility.

To ensure long-term sustainability, SMEs in Andhra Pradesh require better access to financial resources, technological support, and workforce development programs. Government initiatives should focus on simplifying the application processes of financial aid and expanding digital literacy programs to empower SMEs to adapt to changing market conditions. Strengthening local supply chains and incentivizing businesses to adopt digital technologies also enhances resilience, ensuring that SMEs are better prepared to face future disruptions. The challenges faced during COVID-19 serve as reminders of the importance of building robust and adaptable business models for SMEs. These efforts will enable Andhra Pradesh's SMEs to emerge more strongly, thereby contributing to the state's economic recovery and long-term growth.

LITERATURE REVIEW

2.1 Sustainability Frameworks for SMEs

Sustainability frameworks for SMEs have gained significant attention as businesses strive to balance economic growth with environmental and social responsibilities. A widely referenced model is the Triple Bottom Line (TBL), which emphasizes three key pillars: People, Planet, and Profit. This framework encourages SMEs to incorporate social equity, environmental protection and financial viability. Studies highlight that adopting sustainability practices enhances a company's reputation and improves its long-term financial performance by reducing resource inefficiencies and operational costs. Integrating Environmental, Social, and Governance (ESG) criteria has become increasingly relevant, offering a structured approach for evaluating sustainability efforts. ESG practices help SMEs align with global standards, attract investment, and mitigate risk. Research also underscores challenges, such as limited resources and knowledge gaps, which hinder sustainability adoption among SMEs. Tailored frameworks that address the unique constraints of smaller businesses are critical for driving their widespread implementation.

2.2 Financial Performance Indicators and ESG Practices

Financial performance indicators and Environmental, Social, and Governance (ESG) practices play crucial roles in assessing and ensuring the sustainability of SMEs [14]. Key financial indicators, such as turnover, profitability, borrowing levels, and debt-to-equity ratios, provide insights into businesses' financial health and operational efficiency. These metrics highlight the ability to manage resources effectively and sustain their growth. Simultaneously, ESG practices are gaining prominence as essential components of long-term viability. Environmental measures such as energy efficiency and waste management help reduce operational costs and comply with regulations and social initiatives, including fair labor policies and community engagement, and foster goodwill among stakeholders. Strong governance practices, such as transparency and ethical decision-making, enhance trust and reduce risks. Financial indicators and ESG practices create a holistic framework to evaluate and drive sustainable SME growth.

2.3 Existing research works

Banerjee [15] highlighted the growing need for menstrual leave policies in organizations, especially with increasing female workforce participation. Despite their significance, many organizations hesitate to integrate them into their HR policies. This study explores employees' perceptions of menstrual leave policies and their impact on job performance and mental health using a sample of 200 employees from IT and academia. The results show that mental health significantly influences job performance (68.6%), while employee perception of menstrual leave contributes 18.6%. Mental health effectively mediated the relationship between perceptions and job performance. Nkwinika and Akinola [16] emphasize the vital role of financial management in the growth and sustainability of SMEs. Their research highlights the need for SME owners to understand financial concepts, prioritize planning, and adopt informed decision making to ensure operational success. Real-world case studies demonstrate effective financial practices, while government policies such as tax incentives and financial advisory support are shown to empower SMEs. The study also explores emerging technologies, such as AI and blockchain, emphasizing their potential in financial forecasting and predictive analytics. Challenges and opportunities to adapt to regulatory changes are discussed with a focus on fostering financial literacy and embracing technological advancements. Overall, this research underscores that robust financial management is critical for SMEs to achieve long-term stability and thrive in dynamic business environments. Rohayati et al. [17] developed a financial management model tailored for micro and small businesses, focusing on simple financial practices like recording income, expenses, purchases, and sales to enhance profitability. Using a design-based research method, this study followed a structured four-stage development process, integrating action research techniques for testing. The study involved 20 business actors in Surabaya and produced customized financial management assistance modules based on individual needs. These modules offer practical tools for better financial organization and decision-making and promote business sustainability.

Oshora et al. [18] investigated the factors influencing financial inclusion among SMEs in Ethiopia, using a mixed-methods approach and multiple linear regression analysis. The study identifies supply side factors, demand-side factors, market opportunities, and collateral requirements as positive contributors to SME access to finance, while institutional frameworks and high borrowing costs hinder access. This study emphasizes the importance of a robust financial market system to provide affordable and sustainable financial services. Policymakers are urged to develop strategies to promote inclusive growth and support the financial needs of SMEs. Kumar et al. [19] highlight the critical role of MSMEs in driving economic growth, contributing 45% to industrial output, 40% to manufacturing value, and significantly boosting exports and employment in India. Despite their importance, access to institutional financing remains a significant hurdle for MSMEs, limiting their ability to expand and scale their operations. Although government initiatives aim to support MSME growth, funding challenges persist. This study underscores the need for enhanced financial integration programs to address these barriers and ensure sustainable development in the sector.

Roy and Ramachandran [20] explore the impact of microfinance schemes, specifically the Pradhan Mantri Mudra Yojana, on socio-economic development through an empirical lens. This study introduces the Microfinance Scheme Effectiveness Index using fuzzy logic to evaluate implementation across states. It highlights critical indicators classified into push and pull factors that influence customer engagement. The research emphasizes tailored, state-specific strategies to address gaps in scheme efficacy, advocating for policy interventions focused on women's education, equitable pay, startup support, and customer awareness campaigns to ensure sustainable socioeconomic progress.

2.4 Literature gap

Despite extensive research on SME financial performance and sustainability, significant gaps remain. Most studies focus on large corporations, leaving smaller enterprises underrepresented, particularly in regional contexts like Andhra Pradesh. Limited attention has been paid to how financial performance interacts with ESG practices in SMEs. Additionally, the unique challenges SMEs face in adopting sustainability frameworks, such as resource constraints and access to financing, have not been well explored. This study addresses these gaps and provides targeted insights into the sustainability of SMEs.

RESEARCH METHODOLOGY

3.1 Dataset

The research methodology employed in this study is designed to provide a comprehensive understanding of the financial sustainability of SMEs in Andhra Pradesh. The dataset consists of data representing 200 SMEs, offering a well-rounded sample to explore the key variables that influence financial performance and long-term viability. This dataset was structured to capture the diverse attributes of SMEs, ensuring that the findings are robust and insightful.

3.1.1 Dataset Composition

The dataset included three primary categories of variables that formed the foundation of this analysis. The dataset used in this study captures the critical aspects of the 200 SMEs operating across Andhra Pradesh. It provides a well-rounded view of their financial and operational profiles, focusing on the key variables that influence sustainability and performance.

i. Financial Metrics: Data on annual turnover and borrowing levels form the backbone of the dataset. These figures highlight the revenue generation capacity of SMEs and their reliance on external funding sources such as bank loans and self-funding. The range in turnover values reflects diversity in scale and financial health across different businesses.

ii. ESG Scores: The dataset also includes each SME's (ESG) score. These scores measure the extent to which businesses integrate sustainability into their operations. The variability in ESG scores indicates that while some SMEs are proactive in adopting sustainable practices, others may require additional support to align themselves with modern standards.

iii. Financing Sources and Challenges: Detailed data on financing options, such as loans, grants, and retained earnings, are recorded alongside the challenges SMEs face, including access to credit and high interest rates. This section offers insights into the financial strategies employed by SMEs and barriers that impact their growth.

By integrating these diverse variables, the dataset provides a comprehensive foundation for analyzing the interplay between financial performance, sustainability, and operational challenges within SMEs, helping to generate actionable insights for policy and strategy development.

3.2 Sampling Techniques and Statistical Methods

Stratified sampling was performed to ensure a representative and diverse sample. This approach was chosen to include a balanced mix of small and medium enterprises (SMEs) across urban and rural regions in Andhra Pradesh. Stratified sampling allowed for a better representation of varied business types, ensuring that the results captured the unique challenges and opportunities faced by different SME categories. Biases were minimized by dividing the population into strata based on size and geographic location, and the dataset reflected the diverse characteristics of the SME ecosystem in the region.

3.2.1 Statistical Methods for Analysis

Several statistical methods have been applied to derive meaningful insights from datasets. Descriptive statistics were used to analyze demographic variables such as turnover, borrowing, and ESG scores. These statistics provide foundational insights into the central tendencies and variability within the data, highlighting the patterns and key differences among SMEs. Correlation analysis was used to examine the relationship between financial performance and ESG practices. This method identifies significant associations, such as whether SMEs with higher ESG scores demonstrate better financial stability and long-term growth potential. These results shed light on how sustainable practices influence financial outcomes. Additionally, demographic insights were explored to compare SMEs by geographic location (urban versus rural) and size (small versus medium). These comparisons highlight disparities and areas of strength within the SME landscape. This combination of stratified sampling and rigorous statistical methods ensured that the study's findings were accurate and actionable, thereby providing valuable guidance for SMEs and policymakers.

RESULTS AND DISCUSSION

4.1 Descriptive analysis of financial performance

Descriptive analysis was conducted using SPSS software, and the results are presented in Table 1. The financial performance of SMEs in terms of turnover and borrowing reveals significant variations, reflecting the diverse financial capabilities of businesses.

4.1.1 Turnover (₹ Cr)

The average annual turnover of ₹24.83 Cr indicates that SMEs in the sample are moderately sized, with several businesses achieving substantial revenue. The median turnover of ₹24.79 Cr, closely aligned with the mean, indicated a relatively balanced distribution of turnover figures within the dataset. However, the standard deviation of ₹13.94 Cr highlights considerable variability among SMEs, reflecting the range of financial performance. While some businesses excel with high revenue generation, others may struggle to maintain competitive turnover. The mode of ₹19.86 Cr, representing the most frequently observed turnover value, suggests that many SMEs operate within this revenue bracket. Interestingly, multiple modes indicate the clustering of turnover data at various levels, reflecting the diverse nature of SME financial performance. This variability underlines the need for tailored financial strategies to support underperforming SMEs, while leveraging the strengths of those achieving higher revenues.

Table 1: Descriptive results of SMEs

Statistics

		Turnover_Cr	Borrowing_Cr	ESG_Score
N	Valid	200	200	200
	Missing	1	1	1
Mean		24.8265	5.1667	73.9952
Median		24.7950	5.2800	74.3300
Mode		19.86[a]	8.73	71.23[a]
Std. Deviation		13.94039	3.01357	14.86256

a. Multiple modes exist. The smallest value is shown

4.1.2 Borrowing (₹ Cr)

The mean borrowing of ₹5.17 Cr indicates moderate dependence on external funding among SMEs, a pattern consistent with the post-pandemic recovery phase. The median borrowing of ₹5.28 Cr, closely aligned with the mean, suggests that the borrowing levels are symmetrically distributed across the sample. However, a standard deviation of ₹3.01 Cr highlights variability in borrowing habits, likely driven by differing financial strategies. While some SMEs rely heavily on external sources such as bank loans or government grants, others prioritize self-funding or reinvesting retained earnings. The mode of ₹8.73 Cr, the most frequently observed borrowing level, implies that many SMEs opt for higher borrowing amounts, potentially to fund expansion projects or recover from pandemic-related setbacks. This variability underscores the diverse financial approaches, reflecting their unique needs and capacities. This highlights the importance of targeted financial solutions to address the varying reliance on external funding across this critical sector.

4.2 Analysis of ESG Scores

The Environmental, Social, and Governance (ESG) scores provide insights into the sustainability practices of SMEs:

4.2.1 ESG Scores

An average ESG score of 74 demonstrates that SMEs in the sample generally exhibit moderate to high adherence to sustainability principles. This indicates growing awareness and effort among these enterprises to integrate

Environmental, Social, and Governance (ESG) practices into their operations. The median score of 74.33, closely aligned with the mean, suggests a consistent level of ESG compliance across most SMEs in the dataset. However, a standard deviation of 14.86 points highlights significant variability, indicating that while some SMEs excel in implementing robust ESG practices, others lag. This disparity could be attributed to variations in available resources, the understanding of sustainability frameworks, or differing priorities among SMEs. The mode of 71.23, one of several recurring values, suggests that a cluster of SMEs achieves similar ESG scores. However, this also hints at potential groupings within the sample, such as those focusing more on environmental practices than on social or governance initiatives. These findings underline the importance of targeted support and education to bridge the gaps in ESG adoption, enabling more SMEs to benefit from sustainable practices.

4.3 Implications for Financial Sustainability

4.3.1 Turnover and Borrowing

SMEs with higher borrowing levels often display more significant variability in financial performance. This variability may stem from the differences in the ability to manage debt and effectively generate adequate returns. While some SMEs successfully leverage borrowed funds for growth, others struggle with repayment pressures, highlighting the need for customized financial strategies that consider the scale and borrowing capacity of each SME. A significant proportion of SMEs' reliance on external funding emphasizes the critical need for accessible and affordable financing solutions. Ensuring that SMEs can access credit options tailored to their operational needs is the key to fostering sustainable growth. Financial institutions and policymakers must prioritize such support to enhance stability and resilience within the SME sector.

4.3.2 ESG Practices

The moderate average ESG score indicates that, while many SMEs recognize the importance of sustainability practices, there remains significant room for improvement, particularly for those scoring below the mean. This suggests that some SMEs may lack the resources, knowledge, or capacity to integrate Environmental, Social, and Governance (ESG) practices into their operations. The high variability in ESG scores further highlights disparities, with some SMEs excelling, while others lag. This variability presents an opportunity to identify and address the barriers that hinder adoption. Providing targeted training programs, financial incentives, or industry-specific support could help bridge this gap, enabling SMEs to enhance their ESG compliance. Strengthening these efforts can drive sustainability across sectors and improve the overall performance.

4.4 Discussion on Results

The analysis highlights a clear connection between financial performance and sustainability practices. Enhancing financial sustainability.

4.4.1 Financial Performance

SMEs can benefit significantly from leveraging financial planning tools to optimize their borrowing levels. Proper planning not only helps businesses manage debt more effectively but also reduces variability in turnover, ensuring more consistent financial performance. For this to succeed, policymakers and financial institutions must play a supportive role by offering credit options that are both accessible and affordable. Simplifying loan processes, reducing interest rates, and providing tailored financial products can empower SMEs to make informed borrowing decisions. Combined with improved financial management, these efforts can strengthen resilience and foster sustainable growth across sectors.

4.4.2 ESG Integration

Government-led initiatives are crucial to support SMEs in adopting sustainable practices. Subsidies for implementing ESG measures and workshops focused on compliance can help businesses integrate sustainability into their operations effectively. Additionally, SMEs with strong ESG scores should be encouraged to share their success stories and best practices, foster collaboration, and inspire others to follow suit. By balancing financial growth with sustainability, SMEs can enhance their long-term viability and contribute to broader economic resilience and social impacts. These efforts create a ripple effect, benefiting the business ecosystem and promoting sustainable development on a large scale.

4.4.3 The Relationship Between Borrowing and Financial Performance

Borrowing is a vital financial tool for SMEs that enables them to access the funds required for growth, innovation, and operational improvements. When utilized effectively, borrowed capital can increase turnover by supporting expansion, adopting new technologies, and addressing market demand. However, the relationship between borrowing and financial performance is not always straightforward. SMEs that borrow beyond their capacity may face challenges such as high interest costs and repayment pressures, which can erode profitability. The variability in borrowing patterns among SMEs suggests that some manage debt efficiently, translating it into financial success, whereas others struggle to balance debt with revenue generation. Effective debt management and strategic borrowing are critical for SMEs to ensure sustainable growth and avoid financial distress.

4.4.4 The Role of ESG Practices in Ensuring Long-Term Viability

Environmental, Social, and Governance (ESG) practices have become key drivers of long-term business sustainability. Adopting ESG principles strengthens their reputation and enhances operational efficiency and stakeholder trust. Environmentally responsible actions such as energy conservation and waste management can reduce costs and comply with regulations. Social practices, including fair labor policies and community engagement, foster employee loyalty and customer goodwill. Strong governance frameworks improve transparency and decision-making and minimize risks. SMEs with robust ESG strategies are better positioned to adapt to changing market expectations and attract investment, thus ensuring resilience in competitive markets. By embedding ESG practices into their operations, businesses can secure sustainable growth while contributing positively to societal and environmental goals.

CONCLUSION

This study provides critical insights into the financial sustainability of SMEs in Andhra Pradesh, focusing on turnover, borrowing patterns, and ESG practices. The findings reveal significant variability, with some SMEs leveraging borrowed funds effectively for growth and others struggling to manage debt, leading to financial instability. ESG practices, while moderately adopted, show promises for improving long-term viability, although many SMEs lag in fully integrating these principles. Addressing these gaps requires a multipronged approach. Policymakers must prioritize creating accessible and affordable financing options, such as low-interest loans and flexible repayment schemes tailored to SME needs. Training programs that focus on financial planning and debt management can empower SMEs to make informed decisions and reduce their reliance on inefficient borrowing. Furthermore, incentivizing ESG adoption through tax benefits, grants, or partnerships with local organizations can help bridge the sustainability gap. Looking ahead, SMEs in Andhra Pradesh have the potential to emerge as leaders in sustainability with the appropriate support systems. By fostering collaboration with government bodies, financial institutions, and non-governmental organizations, SMEs can access the resources and expertise needed to scale ESG initiatives. Strengthening these efforts will not only enhance their resilience, but also position them as pivotal contributors to sustainable regional economic development.

LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

Although insightful, this study had certain limitations. Although comprehensive, the dataset relies on proxy data, which may not fully capture the real-world complexities. The regional focus on Andhra Pradesh limits the generalizability of the findings to other states or countries with different SME ecosystems. Additionally, some qualitative factors such as leadership styles and local policies have not been deeply explored. Future research should include larger, more diverse datasets and longitudinal studies to track trends. Exploring industry-specific challenges and incorporating qualitative interviews can provide deeper insights into SME sustainability.

REFERENCES

[1] U. B. Zehr, "Challenges and opportunities in India," *Resour. Eng. Technol. Sustain. World*, vol. 18, no. 1, p. 24, 2011.

[2] D. Chowdhury, "Small and Medium Manufacturing Enterprises (SMEs) and Knowledge-Base: South Asian Experience.," *J. Entrep. Manag.*, vol. 9, no. 2, pp. 29–42, 2020, [Online]. Available: http://ezproxy.umgc.edu/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=edb&AN=146960197&site=eds-live&scope=site

[3] R. S. S. Disparities, "Facets of Rural Economy and Development of SMEs A Paradigm Shift is Imperative," in *Rural India - Achieving Millennium Development Goals And Grassroots Development*, 2020, pp. 126–176.

[4] A. Zutshi, J. Mendy, G. D. Sharma, A. Thomas, and T. Sarker, "From challenges to creativity: Enhancing smes' resilience in the context of covid-19," *Sustain.*, vol. 13, no. 12, pp. 1–16, 2021, doi: 10.3390/su13126542.

[5] R. J. S. Dheer and A. Salamzadeh, "Pandemic threats: how SMEs can respond to the challenges from global crises," *Int. J. Glob. Small Bus.*, vol. 13, no. 1, pp. 1–17, Jan. 2022, doi: 10.1504/IJGSB.2022.123346.

[6] M. Belitski, C. Guenther, A. S. Kritikos, and R. Thurik, "Economic effects of the COVID-19 pandemic on entrepreneurship and small businesses," *Small Bus. Econ.*, vol. 58, no. 2, pp. 593–609, 2022, doi: 10.1007/s11187-021-00544-y.

[7] C. I. Fernandes, J. J. M. Ferreira, P. M. Veiga, Q. Hu, and M. Hughes, "Dynamic capabilities as a moderator: enhancing the international performance of SMEs with international entrepreneurial orientation," *Rev. Manag. Sci.*, 2024, doi: 10.1007/s11846-024-00784-8.

[8] W. Renson, W. Procurement, and S. C. Management, "Covid-19 and Hawking Practices on Informal Sector & Smes : Solutions for Kisumu County , Kenya," vol. 6, no. 1, pp. 123–129, 2022.

[9] I. Elouardighi and K. Oubejja, "COVID-19 and the fate of Moroccan female-led firms: Regional level evidence," *Reg. Sci. Policy Pract.*, vol. 15, no. 8, pp. 1740–1767, Oct. 2023, doi: https://doi.org/10.1111/rsp3.12703.

[10] T. Poh Ling, N. Hassim, and N. N. B. Mohammad Bashir, "SME Preparedness in Surviving the Health Pandemic in Malaysia," *Sage Open*, vol. 14, no. 2, p. 21582440241251730, Apr. 2024, doi: 10.1177/21582440241251727.

[11] A. S. Kori, R. E. Asagi, and L. Niduvani, "Atmanirbhar Bharat : Success stories , opportunities and challenges in India," vol. 12, no. 2, pp. 28–33, 2023.

[12] K. Mukhopadhyay, K. Jain, and P. P. Ghosh, "Liquidity Infusion: An Assessment of Atmanirbhar Package Using E3-India Model BT - Economy-Wide Assessment of Regional Policies in India: Applications of E3-India Model," K. Mukhopadhyay, Ed. Cham: Springer International Publishing, 2021, pp. 323–378. doi: 10.1007/978-3-030-75668-0_10.

[13] V. Jain and S. Gill, "Atmanirbhar Bharat: India's Quest for Self-reliance in Post-Covid-19 World," *J. Polity Soc.*, vol. 14, no. 2, pp. 109–123, 2022.

[14] S. Bajpai, *Innovative Trends in Business , Trade and Commerce Challenges and Opportunities*, no. December 2022. 2021.

[15] S. Banerjee, "Business, Management and Economics Engineering," *SSRN Electron. J.*, vol. 22, no. 02, pp. 557–567, 2024, doi: 10.2139/ssrn.4940597.

[16] E. Nkwinika and S. Akinola, "The importance of financial management in small and medium-sized enterprises (SMEs): an analysis of challenges and best practices," *Technol. Audit Prod. Reserv.*, vol. 5, no. 4(73), pp. 12–20, 2023, doi: 10.15587/2706-5448.2023.285749.

[17] S. Rohayati, B. E. Soetjipto, A. Haryono, H. Wahyono, A. F. Prakoso, and M. A. Rafsanjani, "Financial Management Model for Micro and Small Enterprises Owner in Surabaya," *J. High. Educ. Theory Pract.*, vol. 23, no. 17, pp. 213–235, 2023, doi: 10.33423/jhetp.v23i17.6544.

[18] B. Oshora, G. Desalegn, E. Gorgenyi-Hegyes, M. Fekete-Farkas, and Z. Zeman, "Determinants of Financial Inclusion in Small Medium Enterprises: Evidence from Ethiopia," *J. Risk Financ. Manag.*, vol. 14, no. 7, 2021, doi: 10.3390/jrfm14070286.

[19] G. KUMAR, A. Murty, and D. R. Ratna, "Expansion and Crediting of MSMEs: A Case study of Andhra Pradesh and Telangana," *SSRN Electron. J.*, no. January, 2024, doi: 10.2139/ssrn.4876336.

[20] N. C. Roy and N. Ramachandran, "Enhancing microfinance efficacy for socio-economic development: A fuzzy logic approach to Pradhan Mantri Mudra Yojana," *Int. J. Financ. Eng.*, vol. 11, no. 03, p. 2443003, Sep. 2024, doi: 10.1142/S2424786324430035.