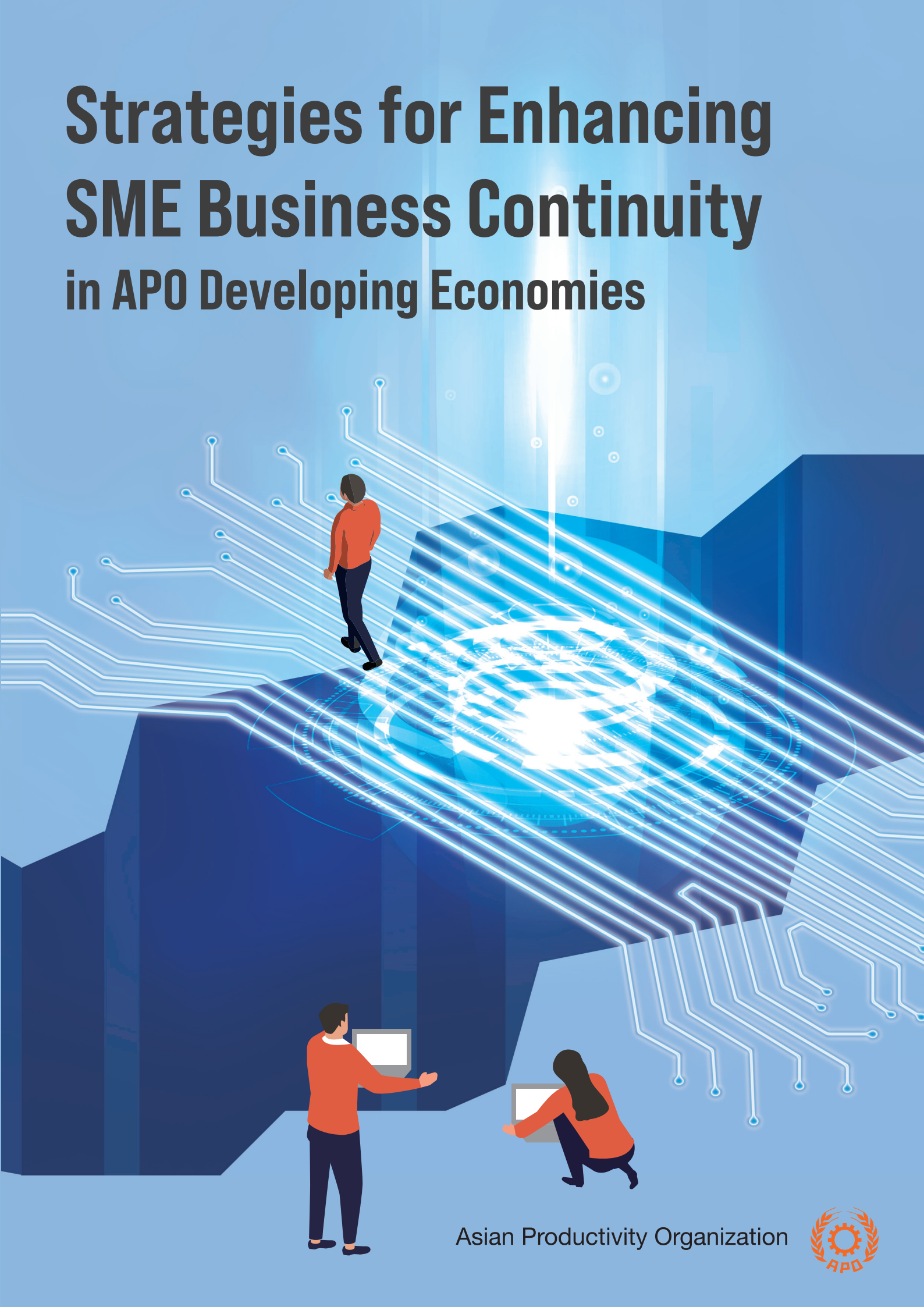
Strategies for Enhancing SME Business Continuity

in APO Developing Economies



Asian Productivity Organization

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Bangladesh, Cambodia, Republic of China, Fiji, Hong Kong, India, Indonesia, Islamic Republic of Iran, Japan, Republic of Korea, Lao PDR, Malaysia, Mongolia, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Thailand, Turkiye, and Vietnam.

STRATEGIES FOR ENHANCING SME BUSINESS CONTINUITY IN APO DEVELOPING ECONOMIES

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Strategies for Enhancing SME Business Continuity in APO Developing Economies

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FOREWORD

The global business landscape has undergone significant transformation due to the COVID-19 pandemic, highlighting the critical need to understand and enhance economic productivity amid ongoing challenges. The pandemic illuminated the resilience and productivity issues faced by private enterprises, especially SMEs, which are vital to the economies of most countries but encountered unique vulnerabilities during this period.

In response to these challenges, a comprehensive study was conducted in six APO developing economies, Bangladesh, Cambodia, Fiji, Mongolia, Pakistan, and Sri Lanka. The research aimed to provide critical insights into business resilience, innovation, and strategies to improve productivity during and after the pandemic. By focusing on the practical realities faced by these economies, this study provides a valuable blueprint for promoting sustainable growth and recovery.

The research also highlights the strategic responses adopted by SMEs to navigate the economic disruptions caused by the pandemic. It explores the varied approaches taken by SMEs in the six developing APO members, including the adoption of digital technologies to ensure continuity, reconfiguring supply chains to mitigate disruptions, and innovating products and services to meet changing market demands. The findings illustrate how SMEs leveraged local resources, adapted to new market conditions, and collaborated with stakeholders to enhance resilience. This underscores the importance of agility, innovation, and context-specific strategies in overcoming the challenges posed by such global crises.

The APO extends gratitude to all the experts who contributed to the writing of this report, led by Chief Expert Sopheara Ek, Managing Partner, BDtruS, Cambodia, along with the national experts from Bangladesh, Cambodia, Fiji, Mongolia, Pakistan, and Sri Lanka. We hope that *Strategies for Enhancing SME Business Continuity in APO Developing Economies* will not only inform but also inspire policymakers, business leaders, and stakeholders to implement effective strategies that will drive their economies toward sustainable productivity and resilience in the postpandemic world.

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EXECUTIVE SUMMARY

This research assesses the needs of productivity enhancement in six APO member economies, namely, Bangladesh, Cambodia, Fiji, Mongolia, Pakistan, and Sri Lanka. It aims to understand the difficulties, driving forces for business success, and needs for the productivity enhancement of private enterprises during and post COVID-19 pandemic. By adopting International Labour Organization (ILO)'s research framework, the research examines the relationship between business resilience and productivity by analyzing operational and business continuity and adaptation, financial stability, employment continuity and adoption for business resilience, and technology and non-technology adoption for innovation.

Private enterprises, mainly small and medium enterprises (SMEs), are the backbone of economy for the six participating economies. SMEs alone contribute between 35% and 58% to the economies' gross domestic products (GDP), except for Fiji and Mongolia, where the contributions were around 18% each.

The productivity of these economies was low, especially during COVID-19, but rebounded after the pandemic. Businesses in these economies were negatively impacted by the pandemic, as production capacities, supply chains, and demand for products and services were disrupted due to the lockdown. The pandemic also led to low productivity of the enterprises, given employees' health issues and travel restrictions. Moreover, low digital adoption, limited human and capital resources, limited access to and investment in research and development (R&D), limited available technology infrastructure, and lack of innovation culture were the constraints for enterprises' productivity growth. To address the constraints, some enterprises introduced both digital and non-digital technological innovations during and after COVID-19. Digital technologies have been adopted in sales, operations, and/or communication while non-digital technology adoption included flexible working hours, new product development, diversification of markets and sources of raw materials, cost reduction, agile decision making, investment in employees' health and safety, and investment in R&D. Another factor contributing to business resilience and productivity growth was government support, which included grants or loans at low interest rates, tax and duty exemption or reduction, skills development, and discounts on utility bills.

High productivity is the key driving force for business resilience. Enterprises with high productivity are likely to have more efficient processes and respond better to economic or external shocks. On the other hand, business resilience leads to productivity growth because enterprises are more resilient and persistent in the wake of a disruption and are able to grow in the long term.

Some strategies should be considered to enhance enterprises' productivity. To begin with, they should invest in digital technologies to enhance operational efficiency and market responsiveness. Investing in scalable digital solutions, such as cloud computing, artificial intelligence (AI), and other technologies is necessary for business growth and productivity enhancement. Furthermore, enterprises should invest in innovation and R&D. Provision for skills development of employees is the key for the productivity enhancement. Cooperation with academic and research institutions

and/or other enterprises can leverage external expertise and resources. In addition, enterprises should build a culture of innovation, promote collaboration among employees, and bring about positive changes in internal management and systems. Changing employees' behaviors and engagement by incentivizing them based on performance and improved productivity can further enhance business resilience and productivity.

INTRODUCTION

Enterprises in developing economies were negatively affected by the COVID-19 pandemic. "Notable sector-level impacts include supply and demand-based shocks to infrastructure and private healthcare; disruptions to imports, exports, and global and local value chains; and declining agribusiness activity that threatens food insecurity, all leading to financial sector instability" [9]. In developing economies, the pandemic affects a range of sectors, including tourism, agribusiness, manufacturing and infrastructure. The COVID-19 pandemic led to both supply and demand shocks. Enterprises could not operate fully due to the travel restrictions and lockdowns. At the same time, there was a decrease in the market demand and rise in uncertainties leading to the income decline. Low demand and financial difficulties contributed to the decline of enterprises' productivity [17].

In order to understand how enterprises cope with the COVID-19 pandemic, the research was conducted in six APO member economies, namely Bangladesh, Cambodia, Fiji, Mongolia, Pakistan, and Sri Lanka. The research, conducted by the national experts in each country, aimed to understand the difficulties, driving forces for business success, and needs for the productivity enhancement of private enterprises during COVID-19 (2020–22) and after COVID-19 (2023) pandemic. The specific objectives of the research were to (1) identify the emerging needs for productivity enhancement by analyzing enterprises' success during and after the pandemic; (2) examine the relationship between successful business practices and the productivity; and (3) provide the guidelines or recommendations on successful best practices. The results of the research will be used as a showcase of best practices for other businesses, especially for productivity enhancement.

Research Framework and Research Methodology

While many businesses were negatively impacted during the pandemic, previous studies found that innovation was the key driving force for business growth or resilience and productivity enhancement. In order to examine enterprises' success and the linkage between business growth and productivity, this research analyzes the enterprises' ability to adapt or thrive during the pandemic and realize productive transformation by focusing on business resilience and innovation. Figure 1 provides the research framework adapted from an ILO study [11].

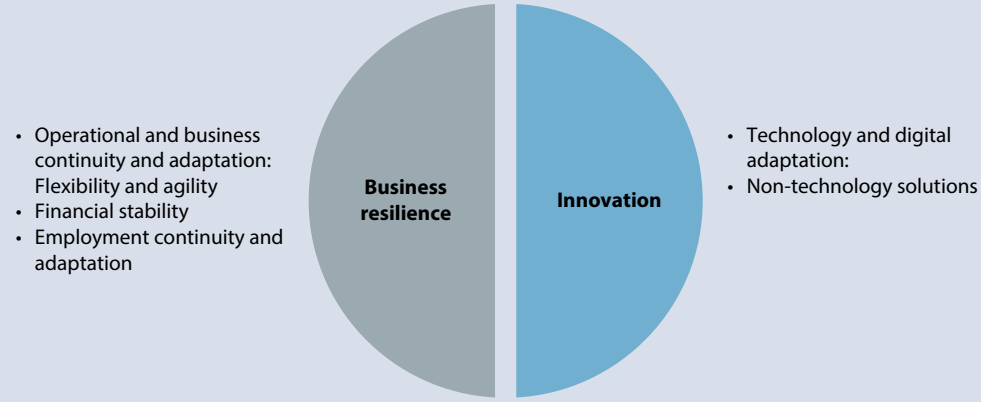
This research collected data from both primary and secondary sources. In each country, the primary data was collected through interviews with 15 enterprises and in-depth interviews with five of those enterprises to obtain further insights for developing two case studies. Given the small sample size, the findings cannot be generalized for the six participating economies and other developing economies. Enterprises in the priority sectors of the participating economies were selected for the interviews.

Definition of Productivity

Productivity refers to "the ability of a firm, industry or economy to produce more output by better combining labor, capital and other inputs, owing to new ideas, technological innovations, more efficient processes, and new business models" [6]. Productivity is also measured by labor

FIGURE 1

RESEARCH FRAMEWORK.



productivity and multi-factor productivity. Labor productivity refers to the share of total output to the number of workers or the number of hours worked. Multi-factor productivity refers to the efficient use of key inputs such as labor and capital [6]. According to the APO, productivity refers to the relation between the output, including goods and services produced, and resources or inputs (labor, materials, machinery, and energy) used to produce them. "If a product is made at the lowest possible cost with high quality and can be sold competitively on the market at a good price, then its productivity level is considered high."[1] The research in each participating country adopted these definitions.

Business Performance and Productivity Level

Business Performance

Private enterprises are the backbone of an economy. They are the engines of growth and innovation. In developing economies, the private enterprises are mainly dominated by small and medium enterprises (SMEs). SMEs account for more than 96% of the Asian businesses and employ more than half of the workforce in the region [23]. SMEs are at different stages of development and have different roles and contributions in their respective economies. In emerging economies, formal SMEs contribute up to 40% of the GDP and the proportion is significancy higher if informal SMEs are included. Therefore, "SMEs are vital actors for enhancing innovation, competitiveness, entrepreneurship and the establishment of an effective innovation system for developing countries" [12]. However, SMEs face a number of challenges, including limited access to markets, limited access to finance, low productivity, and low levels of digital adoption.

Similarly, the private sector, especially SMEs, plays a significant role in the six participating economies. SMEs are the center of the government's attention in these economies as they represent at least 75% of the private sector and contribute between 35% and 58% to the GDP, except for Fiji and Mongolia, where they contribute around 18% each (see Table 2).

[1] APO website on productivity.

TABLE 1

MICRO, SMALL, MEDIUM, AND LARGE ENTERPRISES BY COUNTRY.

Country	Micro		Small		Medium		Large	
	Annual turnover	Number of employees	Annual turnover	Number of employees	Annual turnover	Number of employees	Annual turnover	Number of employees
Bangladesh [13]	USD8,400 (BDT1M) – 63,600 (BDT7.5M)	1–25	USD63,600 (BDT7.5 M) – 1.27M (BDT150M)	26–120	USD1.27M (BDT150M) – USD4.2M (BDT500M)	121–300	More than USD4.2M (BDT500M)	More than 300
Cambodia [18]	Less than USD50,000	Less than 10	USD50,000–250,000	10–50	USD250,000–500,000	51–100	More than USD500,000	More than 100
Fiji [14]	Less than USD22,000 (FJD50,000)	Not defined	USD22,000 (FJD50,000) – USD134,000 (FJD 300,000)	Not defined	USD134,000 (FJD300,000) – USD559.5,000 (FJD1.25M)	Not defined	More than USD559,500 (FJD1.25M)	Not defined
Mongolia [21]	Less than USD88,000 (MNT300M)	Less than 10	USD88,000 (MNT300M) – USD294,000 (MNT1 billion)	10–50	USD294,000 (MNT1 billion) – USD7.6M (MNT25 billion)	50–200	More than USD7.6M (MNT25 billion)	More than 200
Pakistan [19]	N/A	N/A	Less than USD540,000 (PKR150M)	Not defined	USD540,000 (PKR150M) – USD2.87M (PKR800M)	Not defined	More than USD2.87M (PKR800M)	Not defined
Sri Lanka [15]	Less than USD50,000 (LKR15M)	Less than 10	USD53,000 (LKR16M) – USD822,000 (LKR250M)	11–50	USD825,000 (LKR251M) – 2.5M (LKR750M)	51–300	More than USD2.5M (LKR750M)	More than 300

Notes: (1) Bangladesh defines the size of enterprises based on the number of employees and fixed assets; except land and buildings. The definition above is only for the manufacturing sector, except for the garment industry, where large enterprises are defined to have more than 1,000 employees.
(2) Cambodia defines the size of enterprises based on the number of employees and total assets, excluding land.
(3) The National SME Policy 2007 of Pakistan defined SMEs based on the annual turnover and number of employees (less than 50 employees for small enterprises and less than 250 for medium enterprises). However, the SME Policy 2021 defines SMEs by their annual turnovers.
(4) The definition of enterprises in Sri Lanka is only for the manufacturing sector.

TABLE 2

NUMBER OF SMEs AND THEIR CONTRIBUTION TO GDP BY COUNTRY.

Country	Number of enterprises	Share of SMEs to all enterprises	Share of SMEs to GDP
Bangladesh [1]	7,818,565	97.0%	48%
Cambodia [16, 22]	753,670	99.5%	58%
Fiji[5] [1, 14]	11,150	82.4%	19%
Mongolia[8] [1]	90,310	77.0%	18%
Pakistan [1]	5,273,833	98.6%	35–40%
Sri Lanka[4] [1, 7, 20]	78.889	75.0%	52%

Note: For Fiji, the number of enterprises only covers the non-agriculture businesses and excludes the informal businesses. The number of enterprises reported was as of 2020.

Productivity

Labor productivity per worker, measured by the GDP at constant basic prices[2] per worker in Asia increased by 3.8% per year on average from 2015–21. Per worker labor productivity and per hour labor productivity for the six economies are low (less than 25%) due to low-skilled labor (see Table 3). In terms of the annual growth, there was a decline in labor productivity per worker during 2019–20 as a result of the impact of the COVID-19 pandemic. However, it recovered in 2020–21, except for Sri Lanka (see Table 4). The improvement in labor productivity was a result of labor quality improvement, information and communication technology (ICT) capital deepening, and non-ICT capital inputs [2].

Moreover, total factor productivity (TFP), the "GDP per unit of the combined input bundle" measuring the efficiency of all inputs, in Asia, declined in 2020 due to the impact of COVID-19, but recovered after the pandemic got over (see Table 5).

TABLE 3

LABOR PRODUCTIVITY PER WORKER AND PER HOUR IN 2021.

Country	Labor productivity per worker		Labor productivity per-hour	
	In USD	In percent	In USD	In percent
Bangladesh	15,200	15.2%	6,500	8.1%
Cambodia	8,800	5.0%	3,600	4.5%
Fiji	24,700	24.7%	13,100	16.2%
Mongolia	34,900	19.8%	18,300	22.7%
Pakistan	19,200	19.2%	8,900	11.1%
Sri Lanka	35,600	20.2%	18,500	22.9%

Source: APO [2, 3].

[2] GDP at basic prices is defined as having the nominal GDP minus the net direct tax on products.

TABLE 4

AVERAGE GROWTH RATE OF LABOR PRODUCTIVITY PER WORKER.

Country	2010–15	2015–21	2019 – 2020	2020–21
Bangladesh	5.8%	4.9%	2.0%	4.3%
Cambodia	2.3%	5.7%	4.7%	10.3%
Fiji	3.5%	–2.2%	–15.2%	–6.7%
Mongolia	7.7%	3.2%	–5.9%	4.9%
Pakistan	1.4%	2.3%	–2.6%	3.5%
Sri Lanka	6.9%	1.0%	–0.6%	–1.9%

Source: APO [2, 3].

TABLE 5

TOTAL FACTOR PRODUCTIVITY.

Country	2010–15	2015–21
Bangladesh	0.1%	–0.3%
Cambodia	–1.7%	2.9%
Fiji	2.2%	–3.7
Mongolia	1.3%	–0.5%
Pakistan	1.1%	1.1%
Sri Lanka	1.0%	–2.6%

Source: APO [2, 3].

Analysis of Productivity Enhancement and Its Relationship with Business Growth

Businesses in six participating economies were negatively affected by the COVID-19 pandemic. Lockdowns and cross border restrictions during COVID-19 disrupted the production capacity, supply chains, and demand. Many businesses were closed or operated at limited capacity due to the decrease in demand and shortage of raw material and labor. As a result, there was a decrease in income, which further resulted in a decrease in demand for the labor force. Small and less efficient businesses were badly affected by external shocks and economic downturns, as a result of which they exited the market. However, not only small and less efficient businesses but also large enterprises faced difficulties during the pandemic. The pandemic also led to slower productivity growth in developing economies. Results of the research in the six economies and data from APO Productivity Databook 2023 [3] show that the productivity of these economies and their enterprises is low. The low productivity resulted from the shortage of skilled labor due to the lockdown and the health issues; low digital-technology adoption due to limited funds, limited knowledge, limited human resources in technology, and the unwillingness to change; limited access to R&D; lack of an innovation culture; and limited technology infrastructure (see Table 8).

Although the pandemic affected the productivity growth, it also accelerated some positive changes, including digital adoption in business operations [10]. To enhance productivity and strive for business continuity and resilience during and post the COVID-19 pandemic, some enterprises adopted agility

as a core business strategy and modified their business models by relying on both technology solutions and non-technology strategies. They invested in technology, including transformation from the brick-and-mortar model to e-commerce and e-communication methods (e.g., Zoom, Team, etc.) and use of ICT systems for business operations during the pandemic. They continued to apply these strategies in the post-pandemic era. Although some enterprises adopted basic technology solutions, many enterprises adopted non-technology strategies to cope with external shocks and uncertainties. These measures have included cost minimization, investment in employees' health and safety, reskilling and upskilling training for employees, flexible working (work from home), and investment in R&D. Enterprises have also undertaken new product development or modification of their product/service mix in response to the available labor force; market diversification (new markets, including the domestic market); diversification of supply sources (increase in the number of suppliers and more local suppliers); and agile decision making (see Table 7). As working capital plays an important role in ensuring business continuity, maintaining financial stability was difficult during COVID-19, given that a decline in market demand led to lower earnings. Therefore, some enterprises used their own capital or took financial support from their families and relatives while those who had taken loans from financial institutions requested for restructuring their loans in order to maintain the momentum.

In addition to enterprises' efforts, support from the government was necessary for business continuity and productivity enhancement, especially during COVID-19. The government programs for business recovery included financial initiatives (grants and loans to enterprises); directives from central banks to financial institutions to ease the financial burden on enterprises (through loan restructuring, lower interest rates, and credit guarantees); tax and duty exemption or reduction for specific periods, training and skills development; discounts on water and electricity bills; etc.

TABLE 6

GOVERNMENT INITIATIVES FOR BUSINESS RECOVERY DURING COVID-19.

Initiatives	Country
Financial initiatives (grant or loan, credit guarantee, new direction from the central bank for loan restructuring, and lower interest rates)	Cambodia, Mongolia, Pakistan [8], Sri Lanka [5], Bangladesh [4]
Tax and duty exemption/reduction	Cambodia, Pakistan [8], Mongolia, Bangladesh
Training and skills development	Cambodia and Fiji
SMEs' digital and technology adoption	Cambodia
Discounts on water and electricity bills	Mongolia
Support for export-oriented industries on employees' salaries and allowances	Bangladesh

Sources: Chandrasiri[3], Chaudhry[4], Narayan[5], Pheng[6], Shaheen[7], and Tsagaan[8].

High productivity is one of the driving forces for business resilience because enterprises with high productivity are likely to have more efficient processes and better respond to economic or external shocks as they are flexible and agile. Moreover, they are able to adapt to the changes or position themselves better through investments in R&D, innovation, and/or technology. On the other hand,

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business resilience leads to productivity growth as enterprises are more responsive and persistent against the disruption and are therefore more likely to survive and grow over a long term [10]. Therefore, business resilience has a correlation with productivity. Increase in productivity is the key driving force for enterprise resilience [10, 23].

Innovation and digital adoption provide opportunities for enterprises to increase their productivity and help them develop more efficient business processes, diversify product lines, scale up, and internationalize their businesses [6]. It is important for enterprises in developing economies to strengthen innovation, competitiveness, and entrepreneurship [12]. Therefore, investing in technology innovation, including artificial intelligence (AI), and building innovation culture are the engines for increasing productivity and reducing costs. Increase in productivity also links with investments in R&D and skills development (for both business owners and employees); changes in business models, and business agility (see Table 8).

TABLE 7

ENTERPRISES' CHALLENGES, SUCCESSES, AND PRODUCTIVITY ENHANCEMENT DURING COVID-19.

Country	Business challenges	Strategies for business success and productivity enhancement
Bangladesh	Low demand for products and services in both local and international markets Supply chain disruptions Shortage of raw materials Limited access to finance	Digital technology adoption Skills development (reskilling and upskilling) Innovation and R&D Diversification of raw material sources Transformation from brick-and-mortar to e-commerce Flexible working practices Quick responsiveness to market trends Health and safety measure for employees during COVID-19 Government support (e.g., subsidy on the interest rate, credit guarantee, and others)
Cambodia	Difficulties in customs and tax clearance, and business registration Supply chain disruptions Shortage of skilled labor Financial constraints	Flexible working practices Improvement in the operational processes Cost reduction Technology and innovation adoption Government support (e.g., low interest rates; credit guarantees; skills development including pre-skilling, reskilling, and upskilling; grants; and tax incentives) Improvement in customer satisfaction
Fiji	Limited access to finance Shortage of skilled labor Low technology adoption High costs of standards certifications and audits, e.g., International Standard Organization (ISO) certification	Flexible working practices Decision agility Technology adoption Diversification of raw materials by sourcing from more suppliers and local suppliers Government support

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Country	Business challenges	Strategies for business success and productivity enhancement
Mongolia	Shortage of labor Supply chain disruptions High costs of raw materials Decrease in productivity Financial difficulties	Availability of technology and digital tools Flexible working practices Technology adoption Government support
Pakistan	Decline in production and operations Increase in expenses and decrease in revenues due to lower market demand for products/services Shortage of raw materials Transport and logistic disruptions Difficulty in access to finance, e.g., difficulty in obtaining the letter of credit (LC) Supply chain disruptions Customs clearing issues Employment challenges including health and lockdown issues	Changes in marketing and financial strategies New product development Technology adoption Employee retention during COVID-19 Having new shareholders Obtain loan Change in business models Flexible working practices Government support
Sri Lanka	Uncertainties of government regulations, including tax rates, customs, and trade policy High utility costs Supply chain disruptions High cost of capital and limited access to finance	New product development and /or change in product/service mix Cost reduction Business flexibility and agility Mutual understanding between owners and employees Use of ICT for business operations Diversification of raw materials by sourcing from new suppliers and local suppliers Flexible working practices Increase in on-the-job training during the crisis Inclusive employment (female workers located in the same areas, ease of conducting the training) Improvement in brand visibility and enterprises' reputation through retail marketing Government support

Sources: Chandrasiri[3], Chaudhry[4], Narayan[5], Pheng[6], Shaheen[7], and Tsagaan[8].

TABLE 8

CHALLENGES AND NEEDS FOR PRODUCTIVITY ENHANCEMENT.

Country	Challenges for productivity enhancement	Needs for productivity enhancement
Bangladesh	Limited skilled labor Limited skills development or training to employees Low adoption advanced technology and innovation Resistance to change Lack of capital Limited R&D and technology infrastructure	Ease of access to finance Skills development Infrastructure development and improvement Technology adoption Innovation and R&D Efficient management practices Digital market access or e-commerce application Supply chain diversification Market access and information
Cambodia	Lack of technology infrastructure Lack of skilled labor Employees' resistance to change in technology adoption High technology costs Lack of an innovation culture Lack of employees' training or skills development	Skills development Technology adoption Cost reduction Promote a culture of innovation Human and capital resources Government support on skills development, technology investment, and infrastructure development Business competitiveness Regulatory compliance
Fiji	Shortage of skilled labor Lack of funds Small market leading to hesitation in investing in innovative technologies Low technology adoption High costs of standards certifications and audits, e.g., ISO certifications	Skills training and development Local certification body promotion Productivity enhancement initiatives, e.g., sort, set in order, shine, standardize, and sustain (5S); recycle, reuse, reduce (3Rs); zero waste; business excellence; ISO certifications; and Hazard Analysis Critical Control Point (HACCP) Investment in R&D
Mongolia	Unpreparedness for digital technology adoption due to lack of resources (e.g., lack of ICT experts and capital to purchase and maintenance software, and unreadiness of employees) High manpower turnover High costs of raw materials Lack of R&D Enterprises' resistance to change and innovation	Identification of business opportunities and risks for digital transformation Analysis of existing business models and introduction of technologies for further improvement Modification of business strategy and development of digitalization strategy Investment in R&D Innovation culture building among employees

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Country	Challenges for productivity enhancement	Needs for productivity enhancement
Pakistan	Shortage of and difficulty in retaining skilled labor High costs Supply chain disruptions Operational barriers	Skilled labor retention and enhancement Skills development of employees Knowledge database and utilization of the AI Development or revision of procurement and marketing strategies Changes in business models Product diversification and innovation
Sri Lanka	Deterioration in investment climate Low digital application Low investment and limited access to R&D	Increase in technology adoption Changes in business models Increase in on-the-job training and skills development Reduction in cost of capital and improvement in access to finance Improvement in access to international markets

Sources: Chandrasiri[3], Chaudhry[4], Narayan[5], Pheng[6], Shaheen[7], and Tsagaan[8].

Conclusion and Recommendations

Businesses in the participating economies were negatively affected by the COVID-19 pandemic as a result of disruptions in production capacities and supply chains, demand for products and services, and labor shortage. The pandemic also contributed to low productivity of the enterprises, given employees' health issues, travel restrictions, and border closures. Other challenges for productivity enhancement included low digital adoption, limited human and capital resources in enterprises to adopt digital technology, limited access to and investment in R&D, limited technology infrastructure, lack of culture of innovation, and others. In spite of the challenges, some enterprises remained resilient by adopting business agility as a core strategy while some others modified their business models by adopting digital technology solutions as well as non-digital technology innovations during and post COVID-19. Digital technologies were adopted in sales, operations, and/or communication while non-digital technology innovations included flexible working hours, rebranding by developing new products, diversification of markets and supply sources, cost reduction, and agile decision making. In addition, some enterprises invested in employees' health and safety, skills development, and R&D to enhance productivity. Increase in productivity is the key driving force for business resilience as enterprises with high productivity are likely to have more efficient processes and respond better to economic or external shocks. Another contributing factor to business resilience was government support, which included financial initiative programs (grants or loans at low interest rates, loan restructuring, credit guarantee, etc.); tax and duty exemptions or reductions; skills development support; and discounts on the utility bills.

Recommendations

To address any persistent challenges and enhance productivity, the following strategies are recommended for enterprises:

- I**nvesting in digital and technology:** Investing in digital and technology enhances operational efficiency and market responsiveness as it helps businesses to achieve competitive edge, agility in decision making, and productivity growth. Therefore, prioritizing the adoption of scalable digital solutions, such as cloud computing, AI, and other technology solutions is vital for business resilience and growth.

- **Investing in innovation and R&D:** Innovation and R&D are positively linked with business resilience or growth as they help businesses develop competitive advantages and increase productivity, especially in the wake of external shocks or uncertainties. In order to promote innovation and R&D among enterprises, it is necessary for enterprises to have enough capital and human resources. Having enough capable human resources to absorb external knowledge plays a role in promoting innovation and R&D. Therefore, provisioning for skills development for employees is one of the solutions. However, as innovation and R&D require capital investment, some enterprises, especially SMEs, find it challenging due to their limited budgets or financial constraints. Therefore, by establishing partnerships with academic and research institutions and/or other enterprises, SMEs can leverage external expertise and resources.

- **Developing a culture of innovation:** Enterprises should build a culture of innovation through open communication, team collaboration, change in internal management and system, and change in employees' behaviors and engagement (new and innovative ideas). They should provide incentives for employee performance and improved productivity.

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BANGLADESH

Executive Summary

Over the past decade, Bangladesh has achieved significant economic growth, consistently surpassing the growth rate of 7% in the fiscal year 2015–16 and 8% in FY2018–19. The COVID-19 pandemic, however, caused a decline, reducing the growth rate to 3.45% in FY2019–20. Despite this, the economy rebounded with a 6.94% growth rate in FY2020–21 and further grew to 7.25% in FY2021–22. The gross domestic product (GDP) per capita also increased significantly, reflecting a robust economic recovery and growth trajectory. Medium-term forecasts predict continued growth, with rates projected at 7.5% in FY2022–23, 7.8% in FY2023–24, and 8.0% in FY2024–25.

Productivity plays a critical role in industries' competitiveness and improving individuals' livelihoods. Bangladesh has shown continuous labor productivity growth, though it experienced a downturn in 2020 due to the pandemic. Various sectors contribute to this productivity, including agriculture, manufacturing, and services, each facing unique challenges and opportunities. Bangladesh's economy has demonstrated resilience and growth despite facing challenges such as the COVID-19 pandemic. The country has achieved consistent economic growth, with GDP expanding annually at rates of 6–8%. However, the pandemic caused a temporary slowdown, necessitating a renewed focus on productivity enhancement to sustain economic progress.

Labor productivity in Bangladesh has shown improvement, driven primarily by sectors like the readymade garments industry. However, challenges persist across various sectors, including agriculture, manufacturing, and services. Factors such as outdated farming practices, supply chain disruptions, and regulatory complexities impact productivity. To address these challenges and capitalize on opportunities, a comprehensive approach to productivity enhancement is crucial. This involves investment in education and skills development, infrastructure development, and technology adoption. Regulatory reforms to streamline business processes, along with support for small and medium enterprises (SMEs), are essential for fostering a conducive business environment. Resilient businesses are better equipped to adapt to disruptions, maintain supply chain continuity, and prioritize employee wellbeing, all of which contribute to enhanced productivity. Investments in risk mitigation, technological readiness, and innovation further reinforce this relationship. Moving forward, collaborative efforts between the public and private sectors, along with international partnerships, are essential for driving productivity improvements in Bangladesh.

This study aims to understand the difficulties, driving forces for business success factors, and needs for productivity enhancement of private enterprises during and post-COVID-19 in Bangladesh. It also examines the relationship between business resilience and productivity by analyzing the operational and business continuity and adaptation, employment continuity and adoption for business resilience, and technology and non-technology adoption for innovation. We have interviewed 15 private organizations and enterprises and measured and analyzed their performances during and post-COVID-19. We have analyzed the data for challenges, problems, difficulties, solutions, and the need for productivity enhancement of private enterprises in this period (2020–22). Later, in-depth interviews were conducted with five of these enterprises and case studies for two of the enterprises were done to illustrate the best practices in the fields of challenges, driving forces for business success, and productivity enhancement.

The study shows that the pandemic disturbed production capacities, supply chains, and demand for products and services due to lockdowns. It shows that adopting innovation (both in technology and non-technology areas), ICT advancement, digital supply chain, blockchain management, cloud computing, AI, etc. were the main mechanisms that were used at the firm level in the post pandemic period for enhancing productivity.

Introduction

Bangladesh has a strong track record of growth and development, even in times of elevated global uncertainty. A robust demographic dividend, strong readymade garment (RMG) exports, resilient remittance inflows, and stable macroeconomic conditions have supported rapid economic growth over the past two decades. Bangladesh tells a remarkable story of poverty reduction and development. From being one of the poorest nations at birth in 1971, Bangladesh reached the lower-middle-income status in 2015. It is on track to graduate from the UN's Least Developed Countries (LDC) list in 2026. Poverty declined from 11.8% in 2010 to 5.0% in 2022, based on the international poverty line of USD2.15 a day, using 2017 Purchasing Power Parity (PPP) and a comparable welfare series. Similarly, moderate poverty declined from 49.6% in 2010 to 30.0% in 2022, based on the international poverty line of USD3.65 a day (using 2017 PPP). Moreover, human development outcomes improved along many dimensions, e.g., reduction in infant mortality and stunting and increase in literacy rates and access to electricity. Despite these gains, inequality has slightly narrowed in rural areas and widened in urban areas [1].

Like many other countries, SMEs in Bangladesh also suffered badly during the initial period of COVID-19. Many even had to close down their operations. In this regard, the government announced a recovery package for SMEs, which primarily constituted a subsidized loan facility. Empirical evidence (e.g., firm-level primary survey conducted by Sanem, a leading think tank in Bangladesh) suggests that it was the micro and small enterprises that suffered the most during the pandemic, followed by the medium ones, with the pace of recovery being much slower for these enterprises. In terms of utilization of government stimulus packages, the micro and small firms in particular were left behind, with a very small percentage of them being able to avail the low-cost loan facility. According to a survey of 500 firms conducted by Sanem, only 9% of micro and small firms and 30% of medium firms were reportedly able to avail it, while the percentage was found to be as high as 46% for large enterprises [2].

Productivity impacts the competitiveness of industries, the livelihoods of individuals, and the overall wellbeing of citizens. Enhancing productivity is about increasing output and improving the quality of life for the people of Bangladesh. Bangladesh has achieved a continued labor productivity growth rate over the years. According to APO data, labor productivity was 4.07% in 2017, 6.46% in 2018, 4.60% in 2019, 1.97% in 2020, and 4.30% in 2021. The labor productivity fell in 2020 drastically due to COVID-19 [3].

By conducting a thorough needs assessment and developing a strategic plan for productivity enhancement of firms, Bangladesh can not only optimize its existing resources but also embark on a path to inclusive, sustainable, and competitive growth that benefits all its citizens. This assessment is a vital step in the journey toward a more prosperous and productive Bangladesh.

Research Objectives

Given the negative impact of COVID-19 on private firms, the research aims to assess the driving forces, challenges, and needs of firms for productivity enhancement in Bangladesh. The specific objectives are to:

- identify the emerging needs for productivity enhancement of firms by analyzing their success points during and after the pandemic;
- examine how to connect successful business practices with productivity; and
- provide guidelines on successful best practices of private firms.

The case studies were developed by drawing attention to approaches and techniques for successful business operations. The results of the study will be integrated into the strategies and used as a showcase of best practices for other businesses, especially on productivity enhancement.

Research Methodology and Approach

In order to achieve the objectives of the study, both qualitative and quantitative methods were used to analyze data. The study has obtained data from both primary and secondary sources.

For secondary data, existing studies from different sources were reviewed, while for primary data, interviews (online or in-person) were conducted.

Sampling

- Based on the directory of business associations, the National Productivity Organization, network, and other sources, a list of 15 enterprises was developed.
- Out of these 15 companies, five were selected for in-depth interviews while two best-practice companies were selected for the case studies.
- The interviews were conducted with business owners or top management of the companies who could answer the questions.
- The study examined the companies regardless of the business size.

Research Framework

The study adopted the research framework from an ILO study (2021) for business resilience and innovation, which are the driving forces for productivity growth. Increase in productivity also links with technology adoption, skilled labor, and supply-chain sustainability and enhancement.

FIGURE 1

RESEARCH FRAMEWORK.

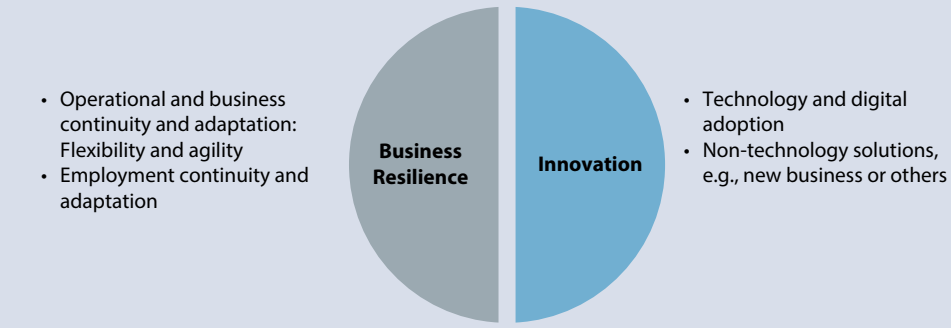
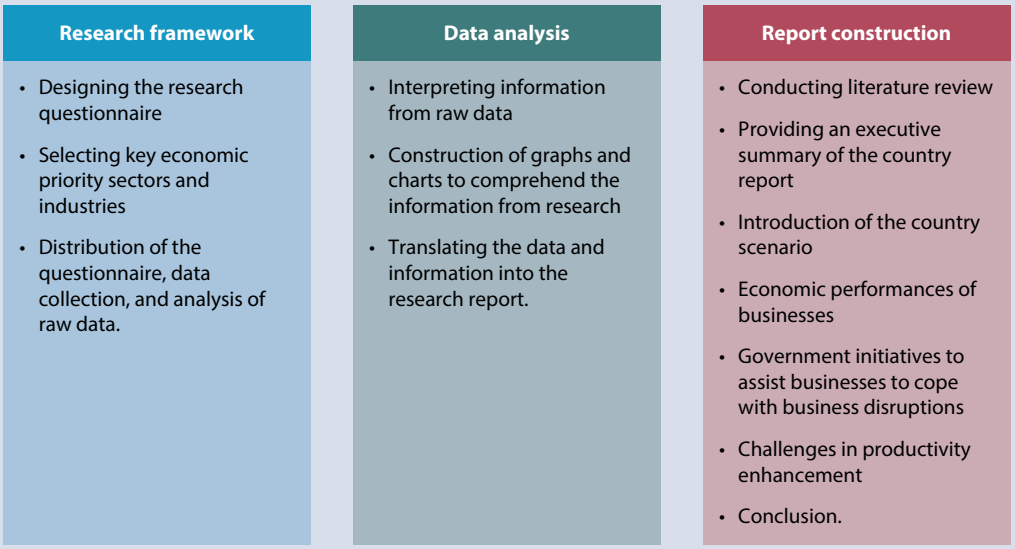


FIGURE 2

RESEARCH DESIGN.



Scope and Limitations

Assessing the need for productivity enhancement in Bangladesh is a critical undertaking with the potential to drive economic growth and improve the living standards of its citizens. However, like any research or assessment project, there are certain scopes and limitations that need to be considered. The research has analyzed various documents of different companies as well as relevant studies and policy papers for policy suggestions. The research has also studied successful business models and productivity performances of successful companies. The research was conducted with 15 companies. Due to time and financial constraints, it was not possible to interview the managements of the companies in large numbers. Some data, for instance, financial data, was not available, while in some cases, the management was unwilling to provide data due to business-secrecy issues.

Report Structure

The report is organized into six sections. The initial section outlines the objectives and methodology of the research, providing essential background on key concepts. The second section examines economic and business performance. The third section focuses on government policies, regulations, and initiatives aimed at fostering the private sector's growth. The fourth section addresses challenges, driving forces, and needs for enhancing productivity. The fifth section explores the link between productivity and business resilience, and the sixth section offers guidelines for businesses. The final session is the conclusion.

Economic and Business Performance

Economic Performance

Bangladesh's post-pandemic recovery faces continued headwinds. Real GDP growth slowed to 3.45% in FY2020, down from 7.88% in the previous year. Persistent inflation is expected to weigh on private consumption growth, and shortages of energy and imported inputs, combined with rising interest rates and financial-sector vulnerabilities are expected to dampen investor sentiments.

Growth is expected to increase gradually in the medium term as monetary, exchange-rate, and financial-sector policy adjustments are implemented. To achieve its vision of attaining upper-middle-income status by 2031, Bangladesh needs to create jobs through a competitive business environment, increase human capital, build a skilled labor force, build efficient infrastructure, and establish a policy environment that attracts private investment.

Development priorities include diversifying exports beyond the RMG sector; resolving financial sector vulnerabilities; making urbanization more sustainable; and strengthening public institutions, including fiscal reforms. to generate more domestic revenue for development. Addressing infrastructural gaps would accelerate growth. Addressing vulnerability to climate change and natural disasters will help Bangladesh to continue to build resilience against future shocks. Pivoting toward green growth would support the sustainability of development outcomes for the next generation.

TABLE 1

HISTORICAL DATA FOR GDP, PER CAPITA INCOME, AND GDP GROWTH RATE IN BANGLADESH.

Year	GDP in USD billion	Per capita in USD	Growth
2022	460.20	2,688	7.10%
2021	416.26	2,458	6.94%
2020	373.90	2,233	3.45%
2019	351.24	2,122	7.88%
2018	321.38	1,963	7.32%
2017	293.75	1,816	6.59%
2016	265.24	1,660	7.11%
2015	195.08	1,236	6.55%
2014	172.89	1,109	6.06%
2013	149.99	974	6.01%
2012	133.36	877	6.52%
2011	128.64	856	6.46%
2010	115.28	777	5.57%
2009	102.48	699	5.05%
2008	91.63	630	6.01%
2007	79.61	552	7.06%
2006	71.82	504	6.67%
2005	69.44	493	6.54%
2004	65.11	469	5.24%
2003	60.16	441	4.74%
2002	54.72	408	3.83%
2001	53.99	410	5.08%
2000	53.37	413	5.29%

Source: Macrotrends LLC [4].

Table 1 shows that GDP size, GDP per capita and GDP growth have increased over the years consistently, except that during the pandemic period, GDP growth decreased to 3.45% in FY2020. However, after COVID-19, the economy has tried to bounce back to its previous levels.

TABLE-2

CONTRIBUTION OF DIFFERENT SECTORS TO GDP.

Related	Last	Previous	Unit	Reference
Gross national product	33479.74	31520.93	BDT billion	Dec 2023
Gross fixed capital formation	13,874.50	12,598.82	BDT million	Dec 2023
GDP from utilities	377.10	360.70	BDT million	Jun 2023
GDP from transport	2,272.40	2,143.40	BDT million	Jun 2023
GDP from services	15,914.80	15,036.50	BDT million	Jun 2023
GDP from public administration	1,007.80	1,008.00	BDT million	Jun 2023
GDP from mining	543.00	513.50	BDT million	Jun 2023
GDP from manufacturing	7,749.00	7,094.30	BDT million	Jun 2023
GDP from construction	2,964.80	2,786.30	BDT million	Jun 2023
GDP from agriculture	3,479.70	3,391.30	BDT million	Jun 2023

Source: Trending Economics [5].

Table 2 shows that the services sector is the main contributor to the GDP of Bangladesh. After the services sector, manufacturing and agriculture are the second and third largest contributors to the GDP.

TABLE 3

CONTRIBUTION OF THE MANUFACTURING SECTOR TO GDP.

Year	Contribution of the manufacturing sector to GDP (%)
2014	16.61
2015	16.79
2016	20.35
2017	20.08
2018	20.80
2019	21.21
2020	20.60
2021	21.24
2022	21.76

Source: The World Bank (World Development Indicators) [6].

TABLE 4

CONTRIBUTION OF THE SERVICES SECTOR TO GDP.

Year	Contribution of the services sector to GDP (%)
2014–15	53.58
2016–17	53.40

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Year	Contribution of the services sector to GDP (%)
2017–18	53.01
2018–19	52.45
2019–20	52.54
2020–21	51.92
2021–22	51.48
2022–23	51.24

Source: Bangladesh Economic Review 2023 [7].

TABLE 5

CONTRIBUTION OF THE AGRICULTURE SECTOR TO GDP.

Year	Contribution of the agriculture sector to GDP (%)
2014–15	16.00
2016–17	13.62
2017–18	13.14
2018–19	12.56
2019–20	12.52
2020–21	12.07
2021–22	11.61
2022–23	11.20

Source: Bangladesh Economic Review 2023 [7].

Tables 3, 4, and 5 show that during the COVID-19 period, the share of manufacturing in the GDP fell while the share of services increased. However, after COVID-19, the share of the manufacturing sector bounced back to its previous level. The tables also show that in Bangladesh's economy, the contribution of agriculture has decreased over time while the contributions of services and manufacturing sectors to the GDP have increased over the same time.

TABLE 6

MAJOR SOCIOECONOMIC INDICATORS OF BANGLADESH.

Indicators	1990–91	1999–00	2015–16	2022–23
Merchandise exports (current USD million)	1,671.0	6,389.0	34,894.0	55,558.8
Merchandise imports (current USD million)	3,618.0	8,883.0	44,772.0	68,600.8
Merchandise exports (% of GDP)	5.3	12.0	13.2	12.2
Merchandise imports (% of GDP)	11.4	16.6	16.9	15.1
Services exports (BOP, current USD million)	391.6	815.8	3,540.6	–

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Indicators	1990–91	1999–00	2015–16	2022–23
Services exports (% of GDP)	1.2	1.5	1.3	–
Total trade (% of GDP)	19.0	29.3	31.3	31.2
Remittance (% of GDP)	2.5	3.7	5.1	4.8
Foreign reserve (including gold, million USD)	659.6	1,515.8	32,283.8	24,753.9
Exchange rate (BDT per USD, period average)	34.6	52.1	78.5	99.5
External debt stock (% of GNI)	38.1	28.3	15.0	21.3
FDI net inflows (% of GDP)	0.0	0.5	0.9	0.7
Net ODA received (% of GNI)	5.5	1.8	0.9	–
Inflation CPI (annual %)	6.1	2.2	5.5	9.0
Population (million)	107.1	129.2	159.8	170.8
Poverty headcount ratio at USD2.15 a day (% of population)	–	33.3	13.5	–
Poverty headcount at national poverty line (% of population)	56.6	48.9	24.3	–
Average life expectancy at birth (total years)	56.0	65.8	71.1	72.4
Gross secondary school enrolment (%)	20.5	48.7	66.9	76.1
Access to electricity (% of population)	–	32.0	75.9	99.2
Mobile cellular subscription (per 100 people)	0.0	0.2	85.1	–
Individuals using the Internet (% of population)	0.0	0.1	18.1	36.3

Source: Bangladesh Bureau of Statistics, BANBEIS, Economic Relation Division, Export Promotion Bureau, Ministry of Finance, and World Development Indicators.

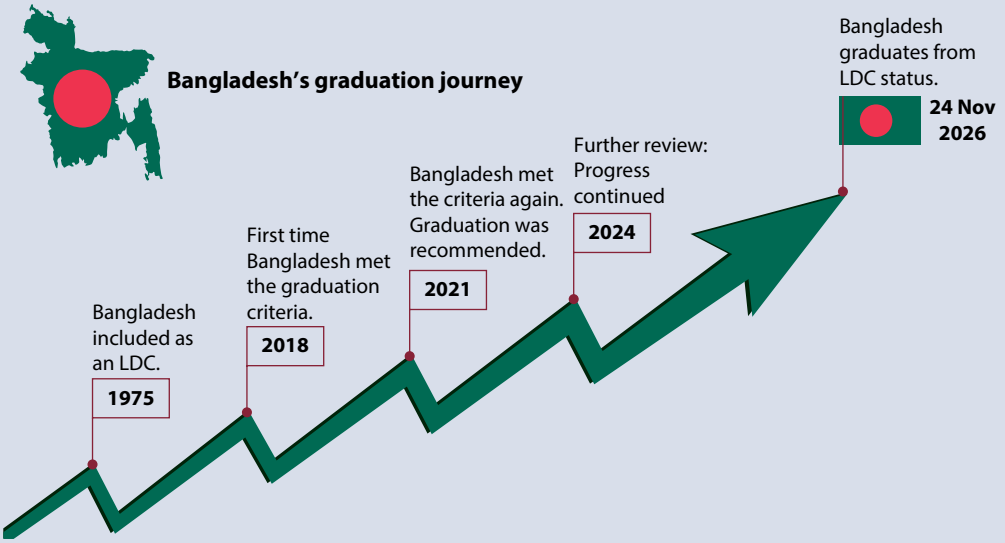
The message provided by the erstwhile Prime Minister Sheikh Hasina and included in the 8th Five-year Plan (8FYP) of Bangladesh, states:

> "Keeping all impediments of the COVID-19 pandemic in mind, we have prepared the Eighth Five-Year Plan. Following the objectives- recovery from COVID-19, preparing Bangladesh for LDC graduation, achieving SDGs, and setting a trajectory toward a prosperous country by 2041, special importance has been given while preparing this instrument."

Bangladesh is set to graduate from the LDC group on 24 November 2026, attaining a remarkable milestone in its development journey. Emerging from a fragile socioeconomic state at its independence, it has achieved sustained economic growth, averaging 5.6% over the past three decades, and has expanded its economy from USD30 billion in the early 1990s to around USD460 billion today. This has been complemented by significant reductions in poverty, advancements in health, education, and gender equality, and a notable increase in life expectancy. Over the period from 1990 to 2021, Bangladesh was recognized as one of the countries with the fastest Human Development Index (HDI) progress in the world in the post-COVID-19 period.

FIGURE 3

BANGLADESH'S SMOOTH TRANSITION STRATEGY.



Business Performance

According to the last Economic Census 2013, the total number of establishments in the industrial sector was 78,18,565, of which 78,13,315 or 99.9% were cottage, micro, small, and medium enterprises (CMSMEs). Of these, 87.5% were cottage industries, followed by micro (1.33%), small (10.99%), and medium (0.09%) enterprises. Due to their labor-intensive nature, more than 21 million people were employed by CMSME enterprises at comparatively low wages. The Bangladesh Bureau of Statistics (BBS) estimates that the industrial sector's share of the GDP was 33.85% in FY2018, which climbed to 35% in FY2019, but then declined to 34.94% in FY2020 because of the global pandemic crisis. The key driver of the industrial sector's growth is the manufacturing sector, which includes CMSMEs. The overall share of small and medium-sized enterprises (SMEs) in the industrial sector was 20.15% in FY2020 [8].

TABLE 7

VOLUME AND GROWTH RATE OF MANUFACTURING SECTOR (AT 2015–16 CONSTANT PRICES).

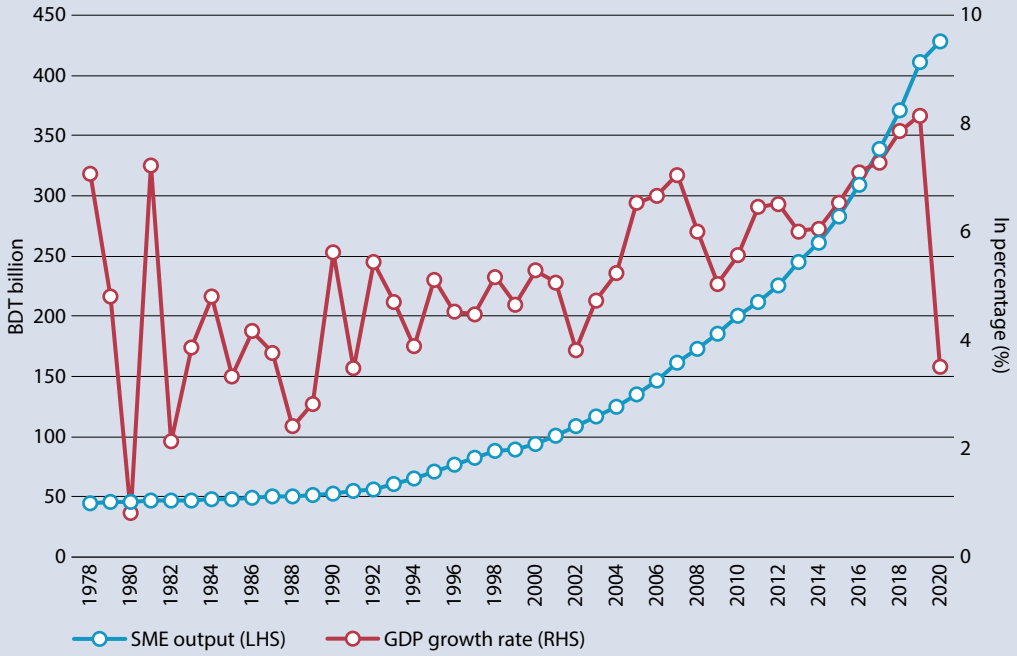
Type of industry	2015–16	2016–17	2017–18	2018–19	2019–20	2020–21	2021–22	2022–23
Cottage industry	72,127 (–)	78,829 (9.29%)	84,700 (7.45%)	96,704 (14.17%)	100,257 (3.67%)	110,557 (10.27%)	122,847 (11.12%)	135,985 (10.69%)
Small, medium and micro industry	129,108 (–)	142,102 (10.06%)	157,882 (11.10%)	174,632 (10.61%)	179,325 (2.69%)	204,241 (13.89%)	214,126 (4.84%)	234,970 (9.73%)
Large industry	221,152 (–)	231,388 (11.08%)	257,016 (12.79%)	289,885 (0.41%)	291,072 (10.61%)	321,967 (10.61%)	372,452 (15.68%)	403,948 (8.46%)
Total	422,387 (–)	45,2319 (7.09%)	499,598 (10.45%)	561,220 (12.33%)	570,654 (1.68%)	636,765 (11.59%)	709,425 (11.41%)	774,903 (9.23%)

Source: Bangladesh Economic Review 2023 [9].

The number of contributions made by CMSME enterprises has gradually increased over the years. The cottage industry's growth rate was 14.17% in FY2019, which decreased to 3.67% in FY2020, but increased to 10.27% in FY2021. In addition, the growth rate of the micro, small, and medium industry was 10.61% in FY2019. In the pandemic period, the growth rate decreased to 2.69% in FY2020 but again increased to 13.89% in FY2021.

FIGURE 4

TRENDS IN SME OUTPUT AND GDP GROWTH IN BANGLADESH.



Source: BBS, National Accounts Bangladesh (base year 2005–06)
Note: This figure presents the trends in SME output and GDP growth in Bangladesh from 1978 to 2020. As illustrated in the figure, GDP growth in Bangladesh increases over the years with some ups and downs along with rising SME output. In 2020, GDP growth falls due to worldwide pandemic situation of COVID-19. It is worth noting that SME output was at increasing trend in pandemic situation. The increasing trend of SME output represents the potentials of SME sector in Bangladesh.

TABLE 8

CLASSIFICATION OF ENTERPRISES.

	Manufacturing based institution	Readymade garments/labor intensive institution	Service-based institution
Large Industry	Excluding land and factory buildings, the value of fixed assets including replace-ment cost more than USD4,254,960 or Employed labor more than 300	More than 1000 manpower	Excluding land and factory buildings, the value of fixed assets including replace-ment cost more than USD 2,552,976 or Employed Labor more than 120

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	Manufacturing based institution	Readymade garments/labor intensive institution	Service-based institution
Medium Industry	Excluding land and factory buildings, the value of fixed assets including replacement cost up to USD1,276,488 to USD4,254,960 or Employed labor in the range of 121–300	Up to 1,000 manpower	Excluding land and factory buildings, the value of fixed assets including replacement cost more than USD170,198.40 to USD252,976 or Manpower in the range of 51–120
Small Industry	Excluding land and factory buildings, the value of fixed assets including replacement cost up to USD63,824.40 to USD1,276,488 or Employed labor in the range of 26–120	Not defined in the policy	Excluding land and factory buildings, the value of fixed assets including replacement cost up to USD8,509.92 to USD17,0198.40 or Employed labor in the range of 16–50
Micro Industry	Excluding land and factory buildings, the value of fixed assets including replacement cost less than USD8,509.92 or Employed labor less than 15		

Source: Bangladesh Industrial Policy 2022.

Government Policies and Initiatives During and after COVID-19

The pandemic disproportionately affected various sectors of the Bangladesh economy. Among the three broad sectors, the manufacturing sector was hit the hardest, followed by the services sector, while the agriculture sector remained relatively insulated from the shock waves of the pandemic. Particularly, the readymade garments, real estate, tourism, health, education, airlines, transport, and SME sectors were affected. The Government of Bangladesh took policy measures and ran support programs through Bangladesh Investment Development Authority (BIDA), Bangladesh Bank (The central bank of Bangladesh) and other financial-sector regulators by combining fiscal and monetary stimulus, regulatory and supervisory measures, and financial policy innovations to overcome the adverse impacts of the pandemic on the economy [10].

Financial Policy and Support Initiatives

The government and Bangladesh Bank took several steps to maintain the growth momentum of the economy amidst the pandemic. The government declared various stimulus packages, while Bangladesh Bank took initiatives to ease the monetary policy. The Government of Bangladesh, in collaboration with Bangladesh Bank, announced a series of stimulus packages and refinance schemes equivalent to BDT1,284.4 billion, or 4.59% of the country's GDP, to recover from the COVID-19 related economic losses [10].

The major steps taken by the government and the Bangladesh Bank are given below:

Stimulus Packages

For the external sector, a support of BDT 50 billion was provided for export-oriented industries to pay the salaries and allowances of workers and staff during and post COVID-19.

The Export Development Fund (EDF) was increased from USD3.5 billion to USD5.5 billion to tackle the slowdown in exports and the resurgence of COVID-19 affecting export productivity.

A support of BDT600 billion was provided as working capital loan facility for large industries and CMSMEs.

Refinance Schemes for Pre-shipment Credit, Subsidies and Incentives, and Agriculture

This included the following:

- initiation of BDT50 billion as pre-shipment credits refinance to export-oriented industries;
- support of BDT95 billion as subsidies and incentives; and
- BDT50 billion as a refinance scheme for the agriculture sector.

Humanitarian Aid and Social Safety Net Programs

These covered the following:

- distribution of 0.4 million metric tons of rice and 0.1 million metric tons of wheat for humanitarian food aid;
- initiation of social safety net programs like direct cash incentive of BDT12 billion, pay allowances for 0.7 million beneficiaries, and allocation of BDT21.30 billion for homeless people;
- distribution of BDT32 billion as low-interest credit among poor farmers, migrant workers, and trained and unemployed youth.

Bangladesh Bank's Key Initiatives

The monetary, exchange rate, and bank liquidity measures were as follows:

- CRR: The cash reserve ratio (CRR) requirement was reduced from 5.5% to 4%.
- Repo rate: The repo interest rate was cut gradually, from 6.0% to 4.75%.
- Reverse repo rate: The reverse repo rate was reduced from 4.75% to 4.0%.
- Bank rate: The bank rate was reduced from 5.0% to 4.0%.
- ADR: The advance deposit ratio (ADR) was extended from 85.0% to 87.0%.
- IDR: The investment deposit ratio (IDR) was extended from 90% to 92.0%.
- Term repo: Long-term repo facility (360 days) to banks and non-bank FIs from BB was made available.

Credit Guarantee Scheme (CGS) and foreign exchange policy were introduced as follows:

- CGS for CMS entrepreneurs: To provide credit guarantee facilities for cottage, micro, and small (CMS) entrepreneurs, BB started a CGS policy along with a fund of BDT20 billion.
- Extension of payment period: Banks permitted to extend LC issuance (payment) periods for the import of raw materials, agricultural implements and chemical fertilizers.
- Credit facilities for import of corona-related items: Banks could, without repayment guarantee, advance credit up to USD0.5 million for import of corona virus-related lifesaving drugs, medical kits/equipment, and other essential medical items.
- Permitting foreign entities to take short term loans: BB permitting foreign owned/controlled companies operating in Bangladesh to take short term working capital loans from their parent companies/shareholders for funding payments of three-month salaries.
- Enhanced the Loan limit from EDF fund: Now ADs may borrow a maximum of USD30 million, compared with USD25 million earlier.

Sustainable finance measures taken were as follows:

The amount of the refinancing scheme was enhanced to BDT4 billion from BDT2 billion earlier against term loan for green products, initiatives, and projects.

For Low-income professionals, farmers, and micro businesspersons, the following provisions were made:

- Refinance: Refinance scheme of BDT30 billion was formed by BB's fund.
- BB charged 1% interest to banks; banks charged 3.5% interest to micro credit
- Financing Institutions (MCFIs) and MCFIs charged 9% interest to customers.
- Customers would repay the loan within one to two years, including a grace period.

Also, interest charges on loans and investments by banks were suspended for two months (April and May 2020). The business community benefited enormously [10].

Other Policy and Support Initiatives

BIDA, the apex national Investment Promotion Agency (IPA) endeavored to respond to the immediate impacts of the COVID on the private sector by taking actions to ensure the continuation of investors' businesses and preserving the flow of critical supplies [11].

Easing Issues and bottlenecks Confronted by Existing Investors

Events (online) were organized for the purpose of facilitating diversification of suppliers/supplying countries, particularly for the sectors that confront difficulty in inputs sourcing, jointly with the concerned trade bodies and target countries for diversification.

To help industries in general (with particular attention to the non-export-oriented industries and SMEs) to ease or improve liquidity to some extent, the following were explored:

- relaxing tax obligations by temporally reducing the corporate income tax (CIT) rate;
- waving imposition of advance income tax (AIT) or expediting/simplifying refund process; or
- extending concessional finance facilities (stimulus package) with more tolerable tenure/repayment period, wider sector coverage) and ideally on collateral-free basis.

To expedite import cargo clearance even in the pandemic conditions, and to improve governance/service of customs, the following measures were considered:

- placement of a sufficient number of officers at the cargo handling facility and customs while putting hygienic regulations in place;
- extension of beneficiaries of the Authorized Economic Operator (AEO) system (which awards preferential treatments upon customs clearance to traders with a good track record);
- extended operation of priority lane system in customs clearance;
- adoption of customs valuation based on transaction value, or formulation of the roadmap toward the adoption; and
- early electronification/computerization of customs clearance, through extended development/operation of Automated System for Customs Data (ASYCUDA) system and single-window system.

To ease import settlement, telegraphic transfer (T/T) was to be allowed for at least on the following transactions, in view of trade facilitation of growing industries including the IT/digital services industry:

- import from the parent/affiliate companies by domestic market-oriented industries (producing for local market); and
- import up to a certain (small) value.

To further disseminate opportunities of e-commerce platform to those industries producing consumer goods locally, seminars were to be held to introduce locally accessible platformers or developers of platform systems.

Relaxation or simplification of existing regulations on long-term borrowing from an abroad commercial lender or parent/affiliate company was to be considered, through proposing either one of the following options in view of activating reinvestment by existing investors (those among the priority industries stated in the National Industrial Policy at minimum):

- shift from current prior approval of proposed foreign borrowing to post-fact reporting; or,
- reduction of required documents (at least in case of term-loan from parent/affiliate company), namely, those documents for proving the aspects that are to be appraised beforehand by lender's responsibility.

Promotion of New Investment in Business Opportunities with COVID-resilience or Affinity

Addition of the following businesses to the list of industrial undertakings or ICT businesses entitled for Corporate Income Tax (CIT) exemption was to be proposed, for promoting the emerging or growing business opportunities in the post-COVID era:

Processed foods: These include manufacturing of pre-cooked/readymade/frozen foods, health and supplement foods, confectionaries, packaging materials, food preservatives/additives/ingredients.

Digital technology services: These include any service categorized as financial technology (fintech), medical information technology (meditech), agriculture technology (agritech), or e-commerce platform.

Healthcare: This comprises hospitals/clinics, home medical care, elderly care centers/services, supply or manufacturing of medical devices (including PPEs and sanitary chemicals), and transportation service for medical care.

Education: Learning support services (home teaching, cram school), IT vocational training, etc. are included.

Electricals and electronics: This segment comprises manufacturing of products/devices for home productivity/entertainment (excluding LED TVs, mobile phones, and washing machines that are entitled for CIT exemption); products/devices for home cooking (excluding blenders, rice cookers, ovens, induction cookers, etc.); and products/devices enabling tele-/remote and internet services (excluding computer hardware and mobile phones).

Biotechnology/life science: R&D of biotechnology-based materials and products are included.

Others: Others include farming contributing to national food security; home entertainment services (including streaming subscription, video/online game); household goods (home textile, houseware, etc.); and cold-chain logistics service.

Promotional webinars (in addition to the country-focused ones) were to be considered for emerging or growing opportunities in the post-COVID era, such as:

(1) holding sector-specific promotion seminars, e.g., on pharmaceutical and healthcare sectors, information technology-enabled services (ITeS) and digital-tech sectors, and electrical and electronics sectors;

(2) allocating session(s) to highlight one or two sectors during the country-focused seminars, if the country is deemed a relevant investment source for emerging or growing opportunities; and

(3) organizing business seminars for emerging or growing opportunities among local industry players to identify the needs of potential (re)investors and resolving the bottlenecks faced for materializing investment [11].

Challenges, Driving Forces, and Needs for Productivity Enhancement

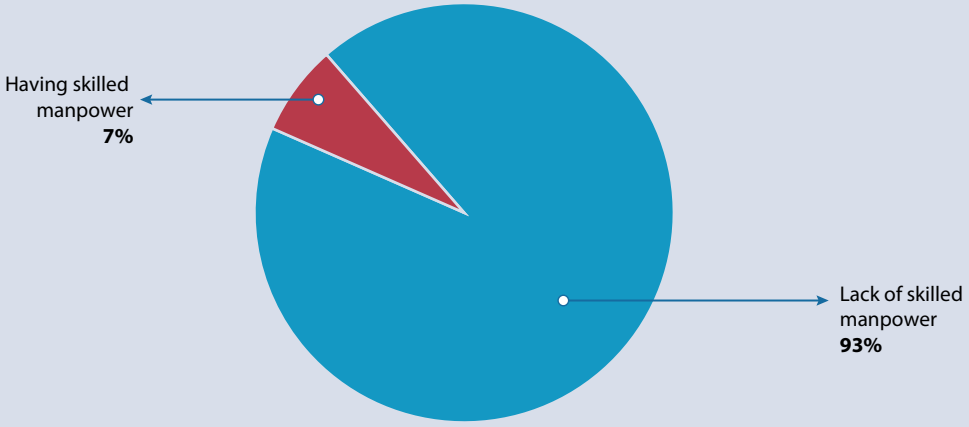
Challenges in Enhancing Firm Productivity

In this research, the sample size is 15 (firms). The common challenges that the firms have faced are following:

(1) **Lack of skilled manpower:** In the research, it was found that around 93% of the firms lacked in skilled manpower (see Figure 5). The education system in Bangladesh often does not align with the needs of the job market, leading to a mismatch between the skills taught and the skills required by employers. There is a lack of effective vocational training programs that focus on practical skills necessary for the SME sector.

FIGURE 5

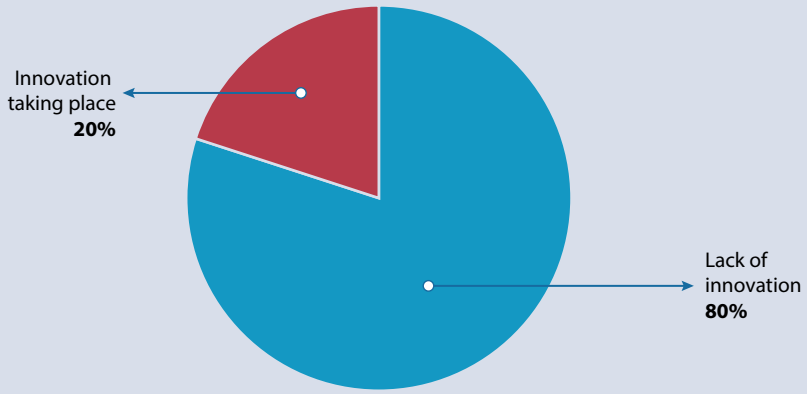
PERCENTAGE OF SKILLED MANPOWER.



(2) **Lack of innovation:** Around 80% of firms said they did not have enough innovation in their business (see Figure 6). SME owners and managers have a risk-averse mindset and are reluctant to experiment with new ideas. Traditional business practices and resistance to change hinder innovative thinking.

FIGURE 6

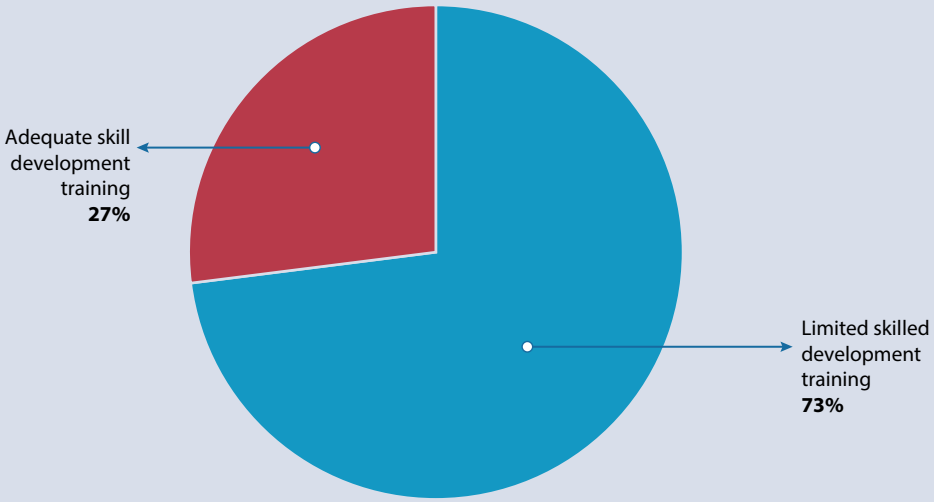
PERCENTAGE OF FIRMS LACKING INNOVATIONS.



(3) **Limited skilled development training:** The research depicts that about 73% of firms have limited skilled development training facilities (see Figure 7). There are insufficient training centers and facilities to provide ongoing professional development for the workforce. Existing training programs often lack up-to-date equipment and skilled trainers.

FIGURE 7

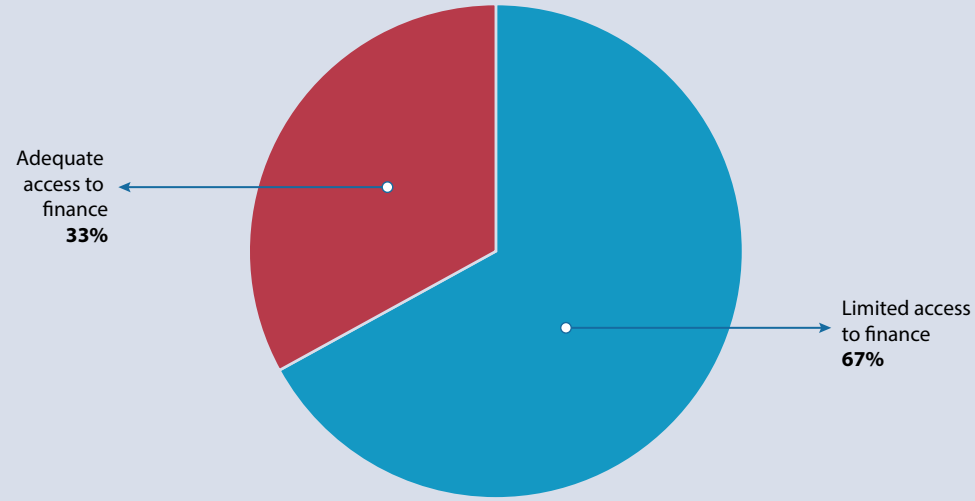
PERCENTAGE OF SKILLED DEVELOPMENT TRAINING.



(4) **Limited access to finance:** The research found that around 67% of the firms were facing problems in having access to finance (see Figure 8). SMEs often lack the financial resources to invest in training and development of their employees.

FIGURE 8

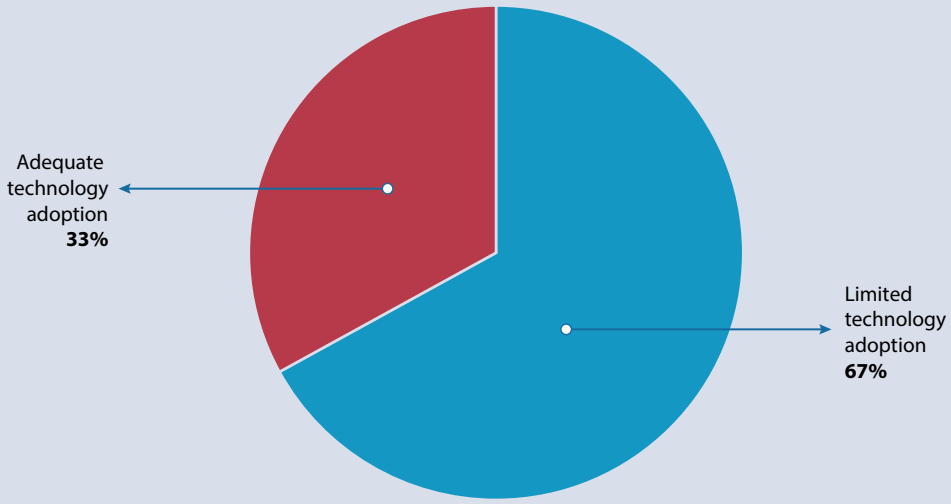
PERCENTAGE OF FIRMS HAVING LIMITED ACCESS TO FINANCE.



(5) **Limited technology adoption:** The research shows that about 67% of firms have limited technology adoption (see Figure 9). SME owners and managers lack awareness of the benefits that modern technologies can bring to their businesses. There is a general hesitation to adopt new technologies due to the fear of disruption and the perceived complexity. Also, the initial investment required for acquiring new technologies can be prohibitively high for many SMEs. Ongoing costs for maintenance, updates, and training add to the financial burden. Poor internet connectivity, especially in rural areas, limits the ability to implement and utilize digital technologies. Lack of access to reliable power supply can also hinder the adoption of technology. Moreover, there is a shortage of skilled workers who can operate and maintain new technologies.

FIGURE 9

PERCENTAGE OF TECHNOLOGY ADOPTION.



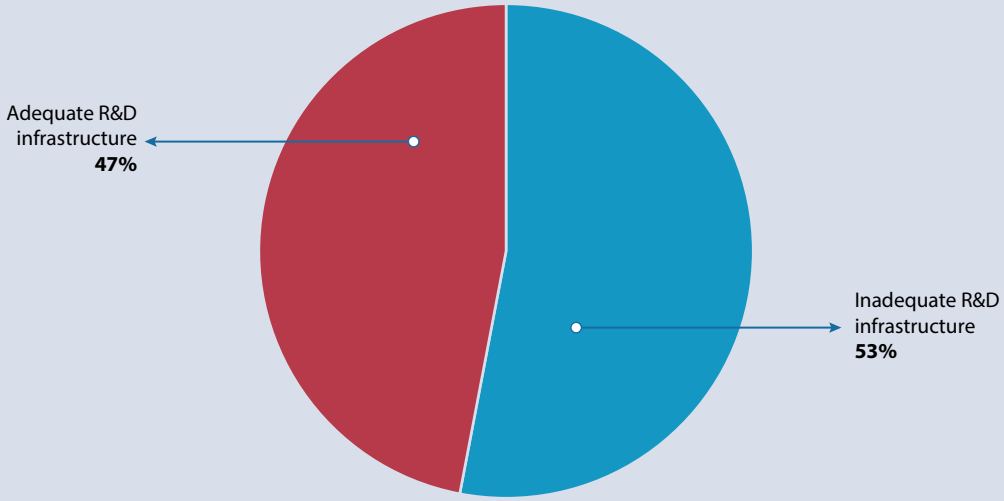
(6) **Inadequate R&D Infrastructure:** About 53% of the respondents said their firms had inadequate R&D infrastructure (see Figure 10). Further, there is a lack of dedicated research institutions and laboratories that SMEs can access for innovation. Limited collaboration between academia and industry also restricts the flow of new ideas and technologies.

(7) **Low demand for products:** This was the common scenario at the firms studied. The firms were facing the problem of low demand for their goods. The consequence was a sharp decline in sales revenue, as consumers reduced spending on non-essential items and businesses faced operational restrictions.

(8) **Supply chain disruption:** The firms faced supply-chain disruptions during the COVID-19 period. The pandemic caused significant disruptions to global and local supply chains, affecting businesses in multiple sectors, including those in Bangladesh. The consequences of these disruptions were far-reaching, impacting production, distribution, and overall business operations as firms faced challenges in terms of shortage of raw material.

FIGURE 10

PERCENTAGE OF R&D INFRASTRUCTURE.



Driving Forces

Adoption of E-commerce

Among the studied firms, most had pivoted to e-commerce platforms to continue reaching customers amidst lockdowns and social-distancing measures. The use of mobile financial services (MFS) and digital payment systems increased, facilitating online transactions and reducing the need for physical cash handling during COVID-19.

Remote Work and Digital Adoption

Most of the firms started to remote work by using digital communication and collaboration tools like Zoom and Google Meet. The adoption of virtual-meeting platforms helped them maintain business operations and client relationships.

Supply Chain Adaptation

The studied firms diversified their supplier base, including local suppliers; to mitigate the risks associated with international supply-chain disruptions during the pandemic period. Companies enhanced their supply-chain flexibility by maintaining buffer stocks and improving demand forecasting.

Government Support

Although not all firms but the firms that got stimulus packages from the government utilized stimulus packages and low-interest loans, to support businesses during the pandemic.

Health and Safety Measures

Most of the firms maintained hygiene and sanitation practices, including regular cleaning and use of hand sanitizers. The firms also ensured the availability of PPEs for employees, particularly in manufacturing and essential services sectors. They also took steps for regular health checkups and temperature screenings for employees. They also provided support, including paid sick leave and medical care, for employees affected by COVID-19.

Innovation and R&D

Among the studied firms, some businesses diversified their offerings to include products that were in high demand during the pandemic, such as PPEs, sanitizers, and home delivery services. Investment in R&D was done to innovate and adapt products and services to meet the changing needs of consumers during the pandemic. Again, some innovative strategies were taken by the firms in the COVID-19 period.

TABLE 9

TECHNOLOGICAL INNOVATION AND NON-TECHNOLOGICAL INNOVATION.

Technological innovation	Non-technological innovation
Social media sales	Employee support and t
E-commerce	Supply chain adaptation
Cloud computing	Enhanced hygiene protocols
Virtual collaboration tools	Productivity improvement tools and techniques
Mobile financial services	
QR code payments	

Impact of Business Resilience on Productivity

Resilient businesses have contingency plans for disruptions, while minimizing downtime and maintaining productivity. Effective disaster recovery systems allow businesses to return to full productivity faster after a disruption. Resilient businesses are adaptable and can quickly pivot to more efficient processes when faced with challenges. Resilient businesses manage their resources efficiently to ensure they can sustain operations during crises, which also enhances productivity during normal times. So, firms that have resilience can achieve high productivity and sustainability.

Needs for Firm-level Productivity Enhancement

(1) **Access to finance:** Firms need affordable financing options to invest in modern equipment, technology, and infrastructure through streamlined loan application processes and reduced collateral requirements. It is necessary to establish dedicated SME financing schemes with favorable terms. Also, provision of grants, subsidies, and tax incentives for productivity-enhancing investments is required.

(2) **Skill development:** Firms need training programs to enhance the technical and managerial skills of their workforces. Continuous professional development opportunities keep employees updated with industry trends.

(3) **Technology adoption:** Access to modern technology and digital tools can streamline operations and improve efficiency. There is a need to offer subsidies or low-cost loans for purchasing new technologies and equipment. Creating technology demonstration centers and workshops to showcase benefits and usage is also needed.

(4) **Efficient management practices:** Adoption of best management practices and modern business techniques is required for the SMEs in Bangladesh. Development of strategic planning, financial management, and operational efficiency is also necessary.

(5) **Market Access and Information:** It is inevitable to develop e-commerce platforms and digital marketing strategies to reach wider markets. Organizing trade fairs, exhibitions, and business matchmaking events to connect SMEs with buyers is also required for their productivity enhancement.

(6) **Infrastructure Improvements:** Reliable power supply, transportation, and communication infrastructure is necessary for the firms. Government has to invest in infrastructure projects that improve logistics, power, and communication networks. Establishing SME clusters and industrial parks with shared facilities and services is required.

(7) **Innovation and R&D:** Firms need encouragement of research and development activities to foster innovation. Collaboration with academic and research institutions can facilitate knowledge and technology transfer.

(8) **Supply Chain Diversification:** Firms need to diversify their raw materials. They can source their products locally and improve their inventory management systems.

Case Studies

Case Study 1: BSRM Steels Limited

BSRM is the leading steel manufacturing company and one of the prominent corporate houses in Bangladesh. Over the years, BSRM steel products have been chosen solely for building major national landmarks and infrastructures. To name a few, the Padma Bridge, Rooppur Nuclear Power Plant, Hatirjheel Project, Zillur Rahman Flyover, Mayor Hanif Flyover, and Shah Amanat Bridge were built with BSRM.

The reinforcing steelmaker company was facing productivity issues during the COVID-19 pandemic. The production of the company fell during that time. In the year 2018–19, its production was 758,405 MT. However, it fell to 643,917 MT in 2019–20 as the factory was completely closed for seven weeks during the pandemic. It again increased to 816,494 MT in 2020–21 due to the company's investment in technology.

Productivity Initiatives of the Company

Technology adoption: The factory adopted new technology for its production system. Before COVID-19, the factory was run by semiautomated machines. Then, BSRM used the fully automated technology in its plant. As a result, the production increased in 2020–21.

Supply chain diversification: The company has diversified sources of raw materials. It possesses one of the biggest supply chain networks within the steel industry of Bangladesh. To meet the growing demand of the market and for sustainable growth of the industry, BSRM's supply chain plays a vital role in synchronizing end-to-end connections. BSRM accepts supplies of different materials to fulfill its annual feeding demand and also to ensure sustainable supply of finished steel products in the domestic and international market. It does scrap sourcing, machinery and spare parts, raw materials and consumables, and logistics support and services. As a result, it did not face any issue of supply chain during the COVID-19 period.

Market expansion: BSRM strengthened its position in existing markets and explored new market opportunities, especially in the regions.

Workforce management: BSRM Steel's workforce management during the pandemic involved addressing health concerns and providing adequate support for remote working.

Skills development and training: The company emphasizes skills development and training programs to equip employees with the capabilities needed for the evolving business landscape, including digital literacy and remote work skills.

Online selling system: The company an introduced online selling system through its website during the COVID-19 pandemic. As a result, the company got orders through the website.

5S practices: The company practices the 5S technique for a clean, decorated, and safe workplace.

Occupational Health and Safety Management Systems

BSRM is committed to achieving excellence in health and safety by providing and maintaining safe and healthy working conditions. The management is firmly devoted to the policy, enabling all work activities to be carried out safely, and with all possible measures taken to remove (or at least reduce) risks to the health, safety, and welfare of workers, contractors, authorized visitors, and all other stakeholders.

Waste minimization: BSRM is practicing lean manufacturing production to reduce waste.

Process innovation: The company continuously innovates its processes in the production system by reducing the number of steps in the work process.

Resilience: Although the factory initially faced problems during COVID-19, they overcame the situation. The company's productivity and innovation practice helped them tide over the situation. During COVID-19, most of the construction work was suspended. Even the mega projects of Bangladesh remained closed. So, the demand for BSRM's products fell. In FY2020, profits also came down, but the company did not incur a loss. After the initial shock, it almost doubled its profits. Due to its strong productivity and innovative practices, the company did not incur any losses during the period. The company also introduced an online selling system through its website. Moreover, it ensured the safety of the employees, while using the bank loan carefully during COVID-19. It also got a stimulus package from government through bank at very low interest rate.

Workforce result: Figure 11 shows that the total manpower of the company has been increasing over the years. The factory had 1,329 employees in 2018–19, which increased to 1,402 in 2019–20. Although the number of employees increased in 2019–20, the production fell because the factory was closed for almost eight weeks due to the lockdown.

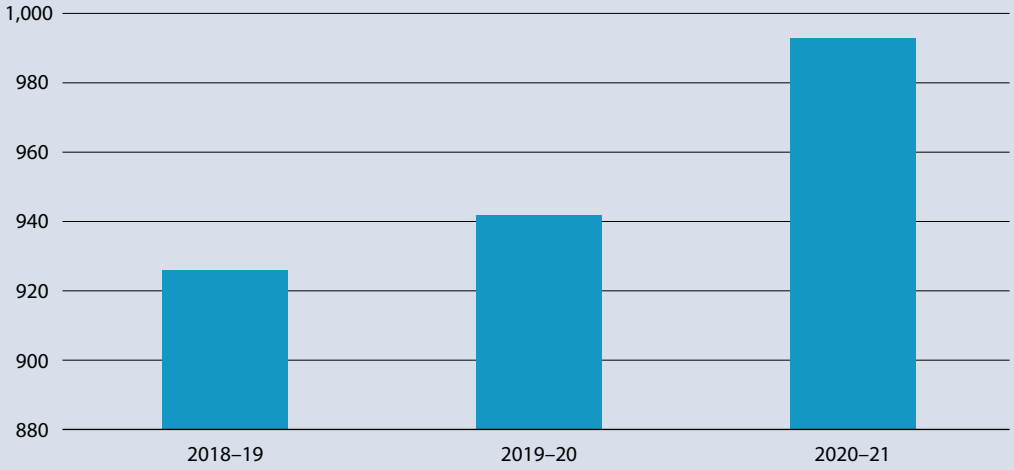
Implication: The case study shows that productivity and business resilience are related. Due to productivity practices, the company was able to cope with the changing situation very fast.

Case Study 2: Masco Pikaso Ltd

Masco Pikaso Ltd is a placement and embroidery producing factory in Bangladesh. The company had almost no effect on its productivity during the pandemic. Neither the production of the company was hampered in that period, nor did the demand for its products decrease. Although the factory was closed during early stages of COVID-19, it started production in three shifts (eight hours in

FIGURE 11

TOTAL EMPLOYEES OF BSRM.



one shift). In the year 2018–19, its production was 42.5 million units, which increased to 44.1 million units in 2019–20 and to 45.6 million units in 2020–21.

Productivity Initiative of the Company During and After COVID-19

(1) Diversified supply chain management:

- **Strategy:** Masco Pikaso Ltd expanded its supplier base to include local and regional suppliers in addition to the international ones.
- **Outcome:** The company reduced its dependency on a single source, mitigating risks of future disruptions, improving flexibility in procurement, and minimizing lead times.

(2) Digital transformation and operational efficiency:

- **Strategy:** Masco Pikaso Ltd invested in automation and digital technologies for production processes and inventory management.
- **Outcome:** The company enhanced its operational efficiency, reduced wastage, and improved production output. Real-time data analytics helped in better decision-making and resource allocation.

(3) Market adaptation and customer engagement:

- **Strategy:** Masco Pikaso Ltd conducted market research to understand changing consumer preferences and demand trends.
- **Outcome:** The company tailored its product offerings and marketing strategies to meet evolving market needs. It strengthened relationships with existing clients through proactive communication and responsive service delivery.

(4) Employee development and welfare:

- **Strategy:** Masco Pikaso Ltd implemented training programs on technical skills and workplace safety during and after COVID-19.

- **Outcome:** The company enhanced employee productivity and job satisfaction. It also achieved improved retention rates and reduced absenteeism, contributing to overall operational stability.

(5) Sustainability initiatives

- **Strategy:** The company adopted sustainable practices in manufacturing processes and supply chain management.

- **Outcome:** Masco Pikaso reduced its environmental footprint, attracted environmentally conscious clients, and enhanced brand reputation. It also complied with international sustainability standards, facilitating access to new markets and customers.

(6) **Investment in R&D:** Masco Pikaso Ltd. is at the cutting edge of fabric innovation with a vision to offer its customers a wide range of new fabrics with custom aesthetics and functions. A dedicated bunch of textile engineers with experience and smart working skills and assisted by advanced technology create new knit structures and finishes, inspired by trend analysis, international trade shows, and client needs. As a result, the company is doing well compared with the other factories. The company is using the latest technology for producing its products. The company has auto circular machines, laser cutting machines, oval machines, and other latest machines. The innovative approaches in doing business were introduced before COVID19, and helped the business greatly sustain its operations during the COVID-19 crisis.

(7) **5S activities:** The company has been practicing 5S since its inception. It has a good team to implement 5S in the organization. As a result, the workplace and factory have good environment.

(8) **Quality control circle (QCC):** The company is ensuring high QCC in its factory.

(9) **Waste management initiative:** Masco Pikaso has an effluent treatment plant (ETP) where sludge is incinerated by co-processing through the Lafarge Holcim cement industry and solid waste recycling is done by Azizu (cartridge, plastic, and electronics items).

(10) **Energy initiatives:** The company has renewable energy (solar PV system) and energy efficient machinery (IE3 motors).

(11) **Water initiatives:** It has done low liquor dyeing machine installation (SCLAVOS and BRAZZOLI dyeing machines).

(12) **Process optimization:** Water saving is achieved by reduction of cooling time in the dyeing process, rainwater harvesting system setup, and utilization of catchment rainwater in the production process.

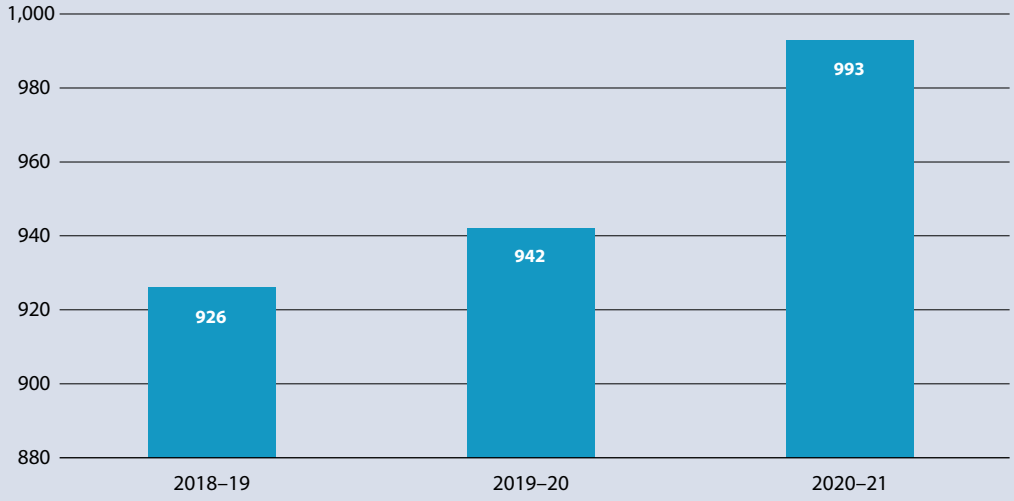
(13) **Own power plant and solar energy:** The company has its own power plant and solar energy. So, production may not be hampered even if the blackout happens during the production time.

Financial result: The company has not any financial issues in that time because the demand of their product does not fall at the covid time. The factory run their operation by maintain health policy of govt. of Bangladesh after initial closing 06 weeks. Profit was 38.5 million taka in 2018–19 but it increased to 40.80 million taka in 2019–20. After COVID-19, profit rose up to 58.2 million taka. So, the company was doing well even in the pandemic time.

Workforce result: Figure 12 shows that the total manpower of the company has increased over the years, including the COVID-19 period.

FIGURE 12

TOTAL EMPLOYEES OF MASCO PIKASO LTD.



Source: Masco Pikaso Ltd.

Implication: The case study shows that productivity and business resilience are related. Due to productivity activities, the company copes with changing situations very fast.

Guidelines for Productivity Enhancement

In the research, it is seen that business was disrupted during the COVID-19 period. Shortage of skilled manpower, low digital technology adoption, limited budget for R&D, and limited technology infrastructure can affect productivity badly. So, productivity improvement initiatives, government support, and innovation are necessary.

Productivity Improvement Initiative

Institutions can take support from National Productivity Organisation (NPO), Bangladesh in areas of

- 5S techniques for productivity improvement;

- lean manufacturing system;
- *kaizen* practices;
- supply chain management;
- total quality management (TQM); and
- total productive maintenance (TPM).

By practicing these, they can solve the productivity issues in their respective businesses.

Again, firms need to adopt the following strategies for productivity improvement:

- innovative technology adoption;
- investment in skills development;
- investment in R&D;
- efficient management practices;
- infrastructure development;
- supply chain diversification;
- ensuring safety measures;
- process optimization; and
- workforce management.

Businesses need continuous innovation for sustainability and productivity improvement. The research shows that innovation can enhance business resilience in any adverse situation. So continuous innovation in processes, products, and systems is inevitable for excellence in business. By embracing these strategies, businesses can not only enhance their productivity and profitability but also contribute to the broader goals of environmental sustainability and economic resilience in Bangladesh.

Figure 13 states the guideline for productive capacity development. For productive capacity development, improvement of productivity through technological upgradation and innovation is required. Again, skilling and reskilling of the workforce, advancing green transformation for future competitiveness and readiness, building supply-side capacities by extending backward and forward linkages, attracting FDI and revitalizing domestic investment, and strengthening of institutional capacity are required for productive capacity development.

Emerging technologies like internet of thing (IoT) and artificial intelligence (AI) are reshaping the global landscape, reducing the advantage of low labor costs (OECD, 2023b; Primi & Toselli,

FIGURE 13

GUIDELINES FOR PRODUCTIVE CAPACITY DEVELOPMENT.

Improving productivity through technological upgradation and innovation

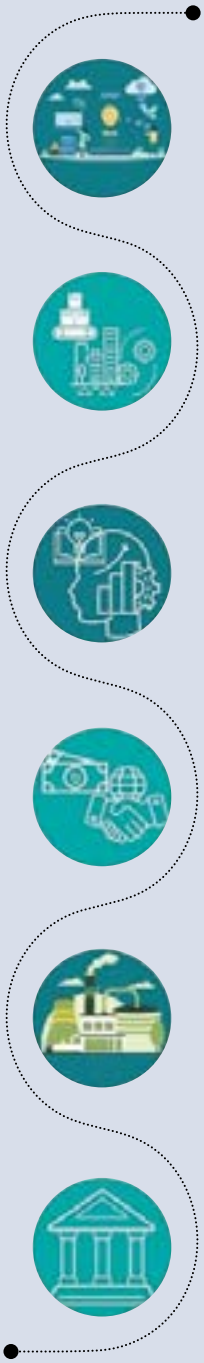
- Effectively implement the Bangladesh National Productivity Masterplan 2021–31.
- Strengthen the capacity of the National Productivity Organisation (NPO).
- Adopt industrial and technological upgradation including digitalization and automation.
- Develop an R&D strategy for Bangladesh and raise the capacity of research institutes.

Skilling and reskilling the workforce

- Update course curricula to match job market demands, establish more vocational training centers.
- Establish e-learning TVET institutions.
- Enhance NSDA capacities and implement the National Action Plan for skill development.

Advancing green transformation for future competitiveness and readiness

- Expand the scope for green financing.
- Take measures to reduce carbon emissions and improve climate resilience.
- Implement the actions to achieve the NDC commitments.
- Build wider awareness about sustainable production practices.
- Design appropriate incentive packages to encourage green transformations.



Building supply-side capacity by strengthening backward and forward linkages

- Extend easy access to finance in backward/forward linkage industries.
- Establish a low-cost strategic investment fund for promoting export diversification within the apparel sector.
- Implement the recommendations of the updated DTIS for expanding supply-side capacity of non-RMG sectors.

Attracting FDI and revitalizing domestic investment

- Ensure a business-friendly environment and provide investment incentives.
- Prioritize the exploration of FDI opportunities in export-oriented sectors.
- Improve the overall business climate to encourage private investment.
- Support SMEs through targeted programs and capacity-building initiatives.

Strengthening institutional capacity

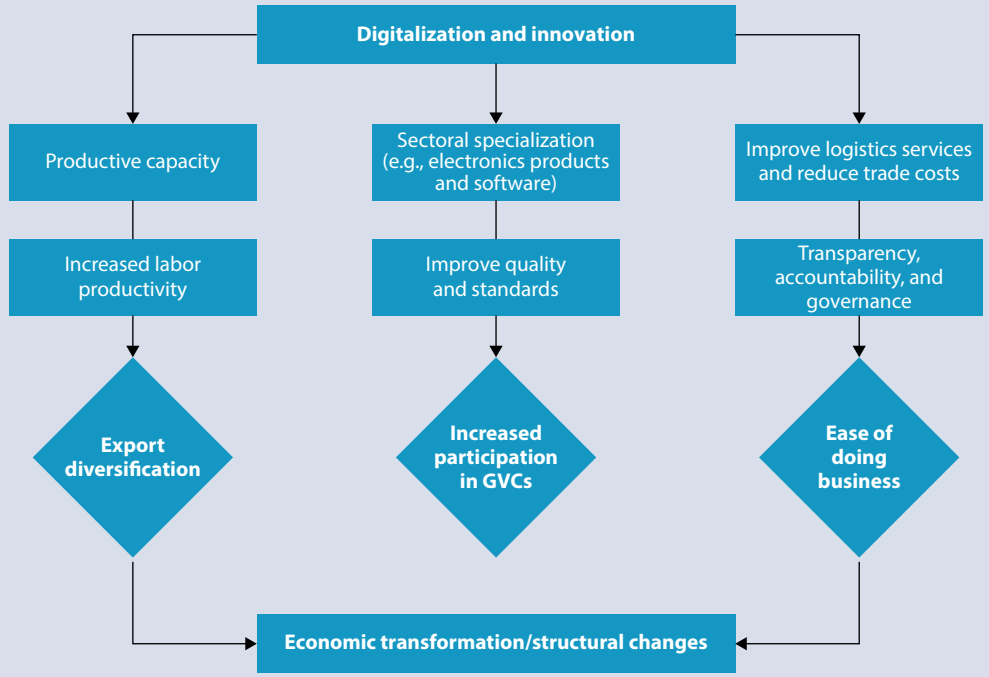
- Undertake capacity development of public institutions and agencies.
- Strengthen the legal framework for service delivery through transparency and accountability.
- Improve institutional coordination and private sector dialog mechanisms.

Source: Bangladesh Smooth Transition Strategy [12].

2020). However, there is no substitute for faster adoption as the productivity gains are of paramount importance to drive structural economic changes. The government initiatives, under the Digital Bangladesh Vision 2021 and Smart Bangladesh Vision 2041, aim to bridge infrastructural gaps and promote digital access, thereby significantly enhancing business and government operations.

FIGURE 14

STRUCTURAL TRANSFORMATION THROUGH DIGITALIZATION AND INNOVATION FOR THE ECONOMY.



Source: Bangladesh Smooth Transition Strategy [12].

Conclusion

The COVID-19 pandemic significantly affected various sectors of the Bangladesh economy. The most impacted sectors included readymade garments, real estate, tourism, health, education, airlines, transport, and SMEs. In response, the Bangladesh government, through BIDA and Bangladesh Bank, implemented a mix of fiscal and monetary stimuli, regulatory and supervisory measures, and financial policy innovations to alleviate the economic consequences.

These measures targeted various sectors, such as export-oriented industries, CMSMEs, agriculture, and social safety nets, with specific initiatives such as reductions in the cash reserve ratio, cuts in repo rates, and enhanced credit facilities. Additionally, BIDA and other regulatory bodies focused on removing investment barriers, facilitating import and export processes, and promoting new investments in sectors resilient to COVID-19.

Despite these measures, firms encountered numerous challenges in boosting productivity, including a lack of skilled labor, limited innovation, inadequate training facilities, restricted access to finance, limited technology adoption, and insufficient R&D infrastructure. The pandemic also disrupted supply chains, leading to shortages of raw materials and decreased demand for products.

However, the pandemic also prompted several positive changes, such as increased adoption of e-commerce, remote working, supply-chain adaptation, and innovation in product offerings. Firms that demonstrated resilience managed to sustain productivity through effective disaster recovery systems, efficient resource management, and adoption of improved processes.

To enhance firm-level productivity, several needs must be addressed, including better access to finance, skill development, technology adoption, efficient management practices, improved market access, infrastructure enhancements, innovation, R&D, and diversified supply chains. By addressing these areas, Bangladesh can develop a more resilient and productive economy capable of withstanding future disruptions.

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Appendix

SAMPLE FIRMS

BRB Cable Industries Ltd.
BSRM Steels Limited
Synavia Pharma PLC
Shell Tech Ceramics Limited
Matin Spinning Mills PLC
Pacific Jeans Limited
Olympic Industries Limited
Pran Dairy
Fortune Shoes Limited
Masco Picasso Limited
Gonga Foundry Ltd
Kushum Kali Shoe Factory
A K Housing Limited
Hasan Hastoshilpo
Jamuna Fertilizer Company LTD

CAMBODIA

Executive Summary

This research aims to analyze the emerging needs for productivity enhancement in Cambodia's agriculture and postharvest sectors, focusing on the resilience of such businesses during the COVID-19 pandemic. The research will examine the strategies, practices, and technologies used by successful agricultural and postharvest businesses to increase productivity during and after the pandemic. It will also investigate the challenges faced by these firms, such as access to markets, transportation, logistics, technology adoption, financial support, and workforce management. The study will use a qualitative approach and analyze the information from interviews and surveys with business owners, managers, and employees from various sectors. The findings will inform the development of targeted policies and programs to support farmers and businesses in their recovery and growth efforts. The research will also provide recommendations for firms on how to adapt and implement successful strategies to enhance productivity in the post-pandemic era.

Introduction

Background

This research is to identify and analyze the emerging needs for productivity enhancement in Cambodia, specifically focusing on agriculture and postharvest firms. The COVID-19 pandemic has had a significant impact on businesses worldwide, including those in the agriculture sector in Cambodia. The country's agricultural industry has faced numerous challenges due to lockdowns, supply chain disruptions, reduced export demand, and overall uncertainty [1]. In order to understand how agriculture and postharvest firms have managed to maintain or enhance their productivity levels during these challenging times, it is crucial to identify the success points that have contributed to their resilience and productivity. By analyzing these success points, the research aims to uncover the factors that have allowed firms in the agriculture and postharvest sectors to adapt and thrive despite the adverse circumstances. Furthermore, the research will examine how these success points can be applied in a post-pandemic context for the agriculture and postharvest sectors. As the world gradually recovers from the pandemic, it is essential to understand which strategies and practices will continue to be effective in maintaining and enhancing productivity in agriculture and postharvest. The research will explore whether these success points are sustainable in the long term and how they can be adapted to meet the evolving needs of agriculture and postharvest firms in a post-pandemic environment. The findings of this research will have practical implications for policymakers, agricultural leaders, and stakeholders in Cambodia. By identifying the emerging needs for productivity enhancement in the agriculture and postharvest sector, the research will inform the development of targeted policies and programs to support farmers, agriculture, and postharvest businesses in their recovery and growth efforts. It will also provide recommendations for firms on how to adapt and implement successful strategies to enhance their productivity in the post-pandemic era.

Research Objectives

The objectives of this research are to contribute to the economic growth and resilience of the agriculture sector in Cambodia. By understanding the success points, challenges, and emerging needs for productivity enhancement, the research will provide valuable insights that can help

farmers and agriculture businesses navigate challenges such as those of the pandemic and build a more resilient and productive agricultural and postharvest industry. This, in turn, will contribute to food security, employment generation, and overall economic development in Cambodia.

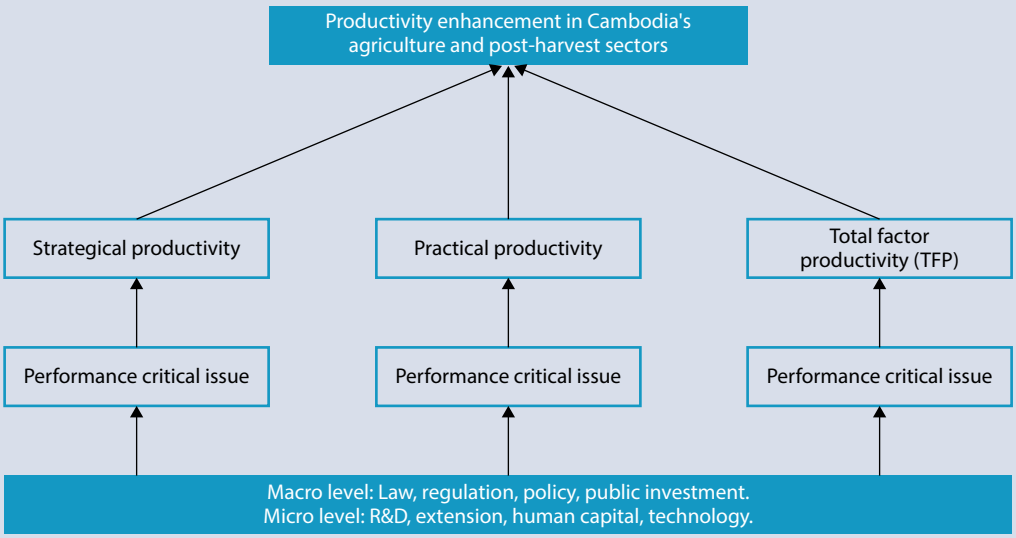
Research Methodology

The study of "Productivity Enhancement in Cambodia's Agriculture and Postharvest Sectors" is conducted by applying the analytical framework given in Figure 1, where agriculture and postharvest productivity are the key variables that depend on the combination of strategical productivity, practical productivity, and total factor productivity (TFP growth. Under this study, the researcher assesses the current status or performance of growth of strategical productivity (the efficiency and effectiveness of an organization's overall strategy in achieving its long-term goals and objectives); practical productivity (concerned with the day-to-day operational efficiency and effectiveness of an organization in delivering goods or services and focused on the practical aspects of getting work done efficiently); and TFP (a measure of overall efficiency that considers the combined productivity of all inputs used in the production process; and assesses how effectively inputs such as labor, capital, and technology are being utilized to generate output). In short, strategical productivity involves long-term planning and alignment with organizational goals, practical productivity deals with day-to-day operational efficiency, and TFP considers the overall efficiency of all inputs in the production process. Each concept provides a different perspective on improving productivity within an organization.

Critical challenges that affect the growth of respective productivity parameters are also discussed in this study. Additionally, the relevant parameters, which are part of the issues contributing to strategic productivity, are linked directly and indirectly to agriculture and postharvest productivity. These parameters include law, regulation, public investment, research and development (R&D), extension services, human capital, and technologies. They are incorporated in the analytical framework shown in Figure 1.

FIGURE 1

ANALYTICAL FRAMEWORK OF THE STUDY.



Source: [2].

The study aims to identify emerging productivity enhancement needs in Cambodia by analyzing the success points of agriculture and postharvest firms during and after the pandemic using a qualitative approach [3]. The research methodology for this study employs a qualitative approach through in-depth interviews and surveys. In-depth interviews were carried out with agriculture business owners, managers, and employees from a diverse range of agriculture and postharvest firms in Cambodia. This approach provides a comprehensive understanding of the success points and emerging needs within the industry. The selection of 20 participants for the interviews was done through purposive sampling. This sampling technique ensured that a diverse range of perspectives and experiences were represented in the study. Participants were selected based on their involvement in agriculture and postharvest firms, their levels of experience, and their ability to provide valuable insights into productivity enhancement strategies. The interviews were conducted in person or through virtual platforms, depending on the availability and preferences of the participants. The interviews used a semi-structured questionnaire, allowing for flexibility in exploring different topics while ensuring that key research questions were addressed. The interview component of the research was designed to gather data and information on specific aspects related to productivity enhancement in agriculture and postharvest firms.

The questionnaire was developed based on the findings from the initial interviews, ensuring that it captured relevant information and provided a comprehensive understanding of the driving forces, challenges, and emerging needs for productivity enhancement. Data analysis used a qualitative technique. The qualitative data from the 20 interviews was transcribed and coded to identify recurring themes, patterns, and success points. This thematic analysis would allow for a deep understanding of the strategies and practices that contributed to productivity enhancement. The data from the 20 interviews was analyzed using statistical techniques. Descriptive statistics were used to summarize the survey responses, while inferential statistics were employed to identify relationships and associations between different variables. The research also conducted a literature review to provide a theoretical framework and contextualize the findings within existing knowledge and research. The literature review helped identify gaps in the current understanding of productivity enhancement in the agriculture sector and agro-processing and also guided the research in exploring new and innovative strategies. Ethical considerations were taken into account throughout the research process. Informed consent was obtained from all participants, and their privacy and confidentiality were ensured. The research also adhered to ethical guidelines regarding data collection, storage, and analysis. The research findings are presented in this comprehensive report that includes a detailed analysis of the success points and emerging needs for productivity enhancement in agriculture and postharvest firms in Cambodia. The report also provides practical recommendations for policymakers, agricultural leaders, and stakeholders on how to support and enhance productivity in the sector.

Scope and Limitation

This is a study of productivity enhancement in Cambodia's agriculture and postharvest sectors. It was conducted to meet the following objectives:

(1) Access the current status of growth of TFP, strategical productivity, and practical productivity in agriculture and postharvest firms in Cambodia.

(2) Identify the critical challenges affecting the weak performance of agriculture and postharvest productivity growth.

(3) Provide policy recommendations aimed at accelerating the growth of agriculture and postharvest productivity, including strategical productivity, practical productivity, and TFP in Cambodia's agriculture.

This research aims to analyze the success points of agriculture and postharvest firms in Cambodia, focusing on strategies, practices, and technologies that have contributed to productivity enhancement during and post-pandemic. The approach allows for a comprehensive exploration of the various perspectives and experiences within the industry. By gathering insights from different stakeholders, the research can provide a holistic understanding of the factors that have led to productivity enhancement. It focuses on both the pandemic and post-pandemic periods to understand the impact of the pandemic on productivity enhancement in the agriculture and postharvest sectors. By analyzing success points during the pandemic, the research can identify strategies that have helped firms maintain or enhance productivity despite challenging circumstances. Additionally, by examining emerging needs in a post-pandemic context, the research can provide insights into the long-term changes and adaptations required for sustainable productivity enhancement.

However, it is important to acknowledge the limitations of this research. First, the research is limited to the agriculture and postharvest sector in Cambodia. While this provides a specific focus and allows for in-depth exploration, it may not capture the broader regional or global perspectives on productivity enhancement. Therefore, the findings may not be directly applicable to other contexts. Another limitation is the potential for sample bias. The research used the purposive sampling to select participants based on their involvement in agriculture and postharvest firms, experience, and ability to provide valuable insights. While this sampling technique allows for a diverse range of perspectives, it may not fully represent the entire population of agriculture and postharvest firms in Cambodia given the number of sample size. Therefore, the findings may not be generalized to the entire industry.

Second, the research relies on self-reported data from interviews and surveys. This introduces the possibility of response bias, where participants may provide socially desirable or incomplete responses, though efforts were made to mitigate this bias through careful question design and establishing rapport with participants.

Furthermore, the research was conducted within a specific timeframe and had resource constraints. This may limit the depth and breadth of the research, as not all aspects of productivity enhancement in the agriculture and postharvest sectors can be fully explored. The research prioritizes key success points and emerging needs, but there may be other factors that are not extensively covered.

Last, the research was conducted in a dynamic and evolving post-pandemic context. External factors like modifications to governmental policies, market conditions, or technological advancements may have an impact on the findings. Therefore, the research findings may have a limited shelf life and need to be regularly updated to remain relevant.

In conclusion, while the research has a specific scope and methodology, it is important to acknowledge its limitations. These include the focus on the agriculture and postharvest sector in Cambodia, reliance on self-reported data, potential sample bias, resource constraints, and the dynamic nature of the post-pandemic context. Despite these limitations, the research aims to provide valuable insights into productivity enhancement strategies and emerging needs in the agriculture and postharvest sector in Cambodia.

Report Structure

This report is structured meticulously to provide a comprehensive understanding of the topic. The structure follows a logical sequence, enabling readers to grasp the complex issues surrounding agricultural and postharvest productivity in Cambodia, particularly in the context of the COVID-19 pandemic. The report begins with an introduction that outlines the research objectives, methodology, its relevance, and the need for such a study. The second section examines the economic performance and is followed by government policies and initiatives in the third section. The subsequent section presents the findings and analyzes the challenges, driving forces, and needs for productivity enhancement. In this part, we present the primary data, interpreted in the light of the research questions. We identify emerging needs for productivity enhancement and analyze successful strategies that firms have implemented during and after the pandemic. This leads to the discussion section, where these findings are considered in a broader context. The researcher connects the results to existing theories and previous studies covered in the literature review. We discuss the implications for the stakeholders, i.e., farmers, firms, and policymakers, and provide nuanced insights into enhancing productivity amidst a pandemic. The next section is the analysis of the relationship between business reliance and productivity. The report concludes with a conclusion-and-recommendations section. It summarizes the key findings and their implications and suggests practical measures for productivity enhancement. It also points out the limitations of the current study and avenues for future research.

Ultimately, this structure ensures a logical flow of ideas, making the report accessible to readers while maintaining the academic rigor. It allows for a systematic investigation of the research problem, leading to meaningful conclusions and recommendations.

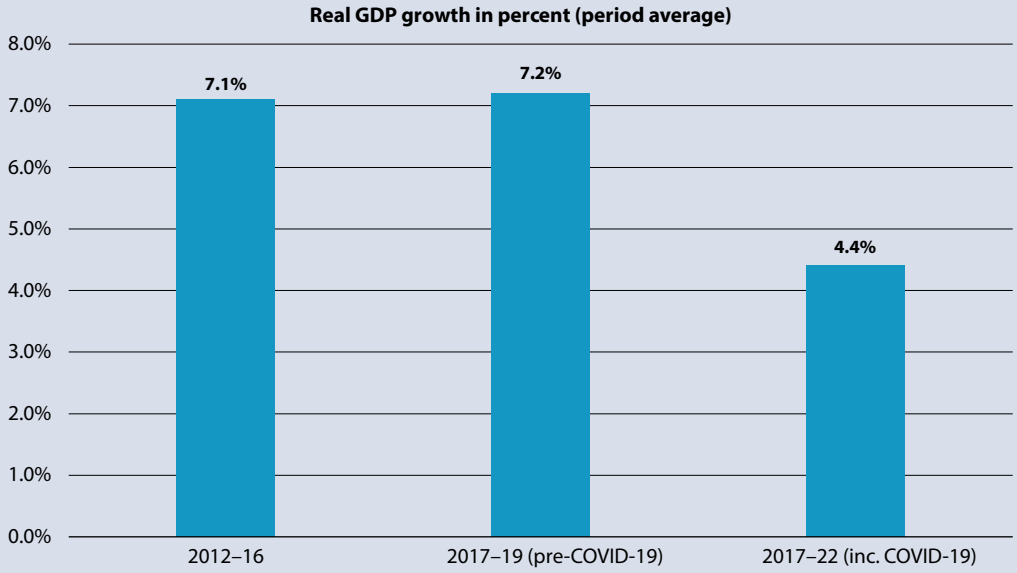
Economic Performance

Cambodia's economic performance over the past two decades has been characterized by significant growth, punctuated by notable fluctuations, particularly due to the impact of the COVID-19 pandemic [4]. Figures 2A and 2B provide insights into economic trends and growth factors over different periods, highlighting the impact of COVID-19. Figure 2A shows a decline in average real GDP growth from 7.1% during 2012–16 to 7.2% during 2017–19, with a significant drop to 4.4% during the COVID-19 period (2017–22), indicating a slowing growth trajectory exacerbated by the pandemic. Figure 2B decomposes growth contributions by labor quality, labor quantity, capital, and TFP. From 2012–16, capital (104%) and labor quantity (90%) were the main drivers, while TFP detracted from growth (–28%). In the pre-COVID period (2017–19), labor quality and capital remained significant, but labor quantity's contribution decreased. During COVID-19 (2020–22), capital and labor quality contributions increased, labor quantity had a negative impact (–251%), and TFP showed a slight positive shift. These changes highlight that the region's growth has increasingly relied on investment in capital rather than productivity improvements. The pandemic's disruptions to labor markets and investment flows underscore the economy's vulnerability to external shocks and the need for a balanced growth strategy that enhances productivity to ensure long-term resilience and sustainability.

Moreover, the government has focused on diversifying the economy to reduce its reliance on the garment industry and tourism. Initiatives have been launched to promote agriculture, manufacturing, and digital services, aiming to create a more balanced and resilient economic structure. Enhancements in digital infrastructure and business environment are expected to drive future economic stability and growth. These efforts are part of a broader strategy to ensure sustainable and inclusive economic

FIGURE 2A

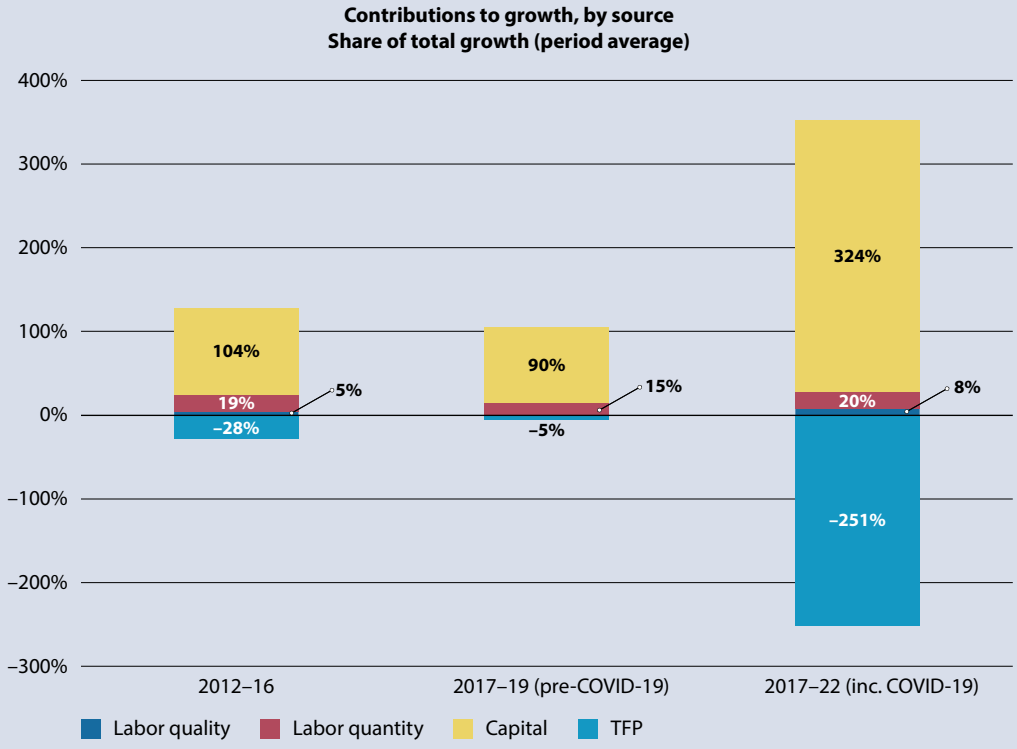
DECLINE IN GROWTH DURING THE PANDEMIC.



Source: [5].

FIGURE 2B

GROWTH IS DRIVEN BY INVESTMENT RATHER THAN PRODUCTIVITY.



Source: [5].

development, mitigating the impact of external shocks and fostering long-term resilience. Continued investments in infrastructure, human capital, and regulatory reforms are crucial for sustaining this growth trajectory. Improving education and skills training is vital to meet the demands of a diversifying economy. Furthermore, addressing governance and corruption issues remains essential to creating a more conducive business environment for both domestic and foreign investors [6].

Government Policies, Regulations, and Initiatives for Private Sector's Development

Government Policies and Regulations

The Cambodian government has recognized the importance of the agriculture and postharvest sectors in contributing to the country's economy and has thus prioritized these areas for development and growth. This prioritization is reflected in a range of policies and strategies, such as the Agriculture Master Plan 2030, the Agriculture Sector Strategy, the Industrial Development Plan, and the Pentagonal Strategy-Phase I. These frameworks are designed to enhance business resilience, productivity, and sustainability in these sectors. The government has implemented various training programs aimed at enhancing the skills and knowledge of farmers and workers in the agriculture and postharvest sectors. These programs focus on introducing efficient farming methods, promoting the use of modern technologies, and encouraging innovation [7]. By doing so, the government hopes to equip these workers with the necessary skills to navigate the challenges of modern farming and postharvest processing. Recognizing the transformative power of digital technology, the Cambodian government is also promoting digital transformation in these sectors. This involves improving data management, automating processes, and enhancing communication and collaboration through use of digital technologies. The goal is to increase efficiency, reduce costs, and improve decision-making in these sectors. To ensure that products from these sectors meet international standards, the Cambodian government has established regulatory frameworks and quality-control mechanisms. These measures are intended to improve product quality, increase market access, and enhance competitiveness. By complying with international standards, businesses in these sectors can gain access to more markets and attract more customers, thereby increasing their revenues [8].

However, despite these policies and strategies, there are still several challenges that need to be addressed. These include lack of infrastructure, lack of skilled workers, and limited access to technology. These challenges can hinder the growth and development of the agriculture and postharvest sectors. Therefore, it is important for the government to continue investing in infrastructure development, workforce training, and technology access [9].

In conclusion, the Cambodian government's policies and regulations for the agriculture and postharvest sectors reflect its commitment to supporting these sectors. Although there are challenges that need to be addressed, these initiatives are expected to lead to increased economic growth, job creation, and improved living standards in the long run. The success of these initiatives, however, depends on the government's ability to effectively implement these policies and regulations and the willingness of farmers and businesses to embrace these changes.

Initiatives or Support Programs

The Cambodian government has made significant strides in supporting the agriculture and postharvest sectors, recognizing their crucial role in the country's economy. The government's strategy involves a combination of financial assistance, training programs, digital transformation initiatives, and regulatory frameworks to boost these sectors' resilience, productivity, and

sustainability. One of the key strategies that the government has adopted is the provision of financial aid and subsidies to farmers and businesses involved in the agriculture and postharvest sectors, under initiatives such as the Agricultural and Rural Development Bank (ARDB). This financial support is aimed at enabling these entities to invest in new technologies and equipment, which are crucial for increasing productivity and efficiency [10]. Furthermore, the financial assistance also helps these businesses improve their infrastructure and adopt more sustainable farming practices, which are key to ensuring long-term growth and resilience. Training programs are another crucial initiative by the Cambodian government. These programs aim to enhance the skills and knowledge of farmers and workers in the agriculture and postharvest sectors. The focus is on introducing efficient farming methods, promoting modern technologies, and encouraging innovation. The government hopes that by equipping these workers with the necessary skills, they will be better prepared to face the challenges of modern farming. The government is also promoting digital transformation in these sectors. This includes improving data management, automating processes, and enhancing communication and collaboration through digital technologies. The goal is to increase efficiency, reduce costs, and improve decision-making [11, 12].

To ensure that products from these sectors meet international standards, the Cambodian government has established regulatory frameworks and quality-control mechanisms. These measures aim to improve product quality, increase market access, and enhance competitiveness. Despite these efforts, challenges such as lack of infrastructure, skilled workforce, and limited access to technology persist. Therefore, it is crucial for the government to continue investing in infrastructure development, workforce training, and technology access.

In conclusion, the Cambodian government's initiatives reflect its commitment to supporting the agriculture and postharvest sectors. While there are still challenges to overcome, these initiatives are expected to lead to increased economic growth, job creation, and improved living standards in the long run [13].

Challenges, Driving Forces, and Needs of Productivity Enhancement

Cambodia's agriculture sector is a cornerstone of the nation's economy but faces critical challenges in its postharvest management, which significantly impacts its overall productivity. Productivity enhancement is a critical aspect of any organization's strategy, for improving efficiency and output. However, it comes with its own set of challenges, driving forces, and needs. This section analyzes challenges, driving forces, and needs for productivity enhancement of enterprises in Cambodia.

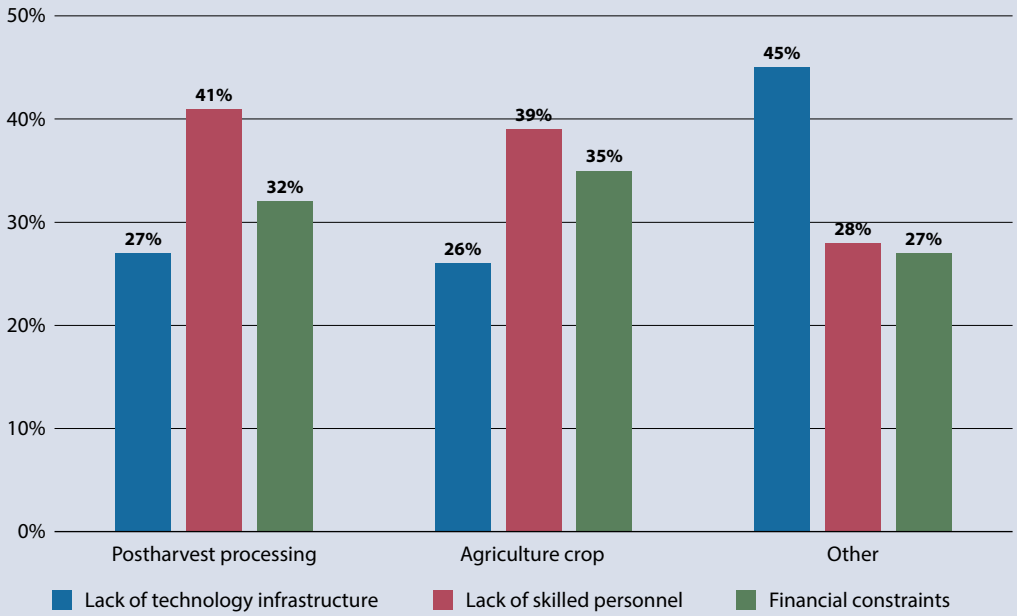
Challenges

The first challenge while enhancing productivity is the resistance to change. Employees often resist new technologies or processes either due to fear of the unknown or their comfort with existing practices. Another challenge is inadequate training and support, which can hinder the effective implementation of productivity-enhancing measures. Additionally, the cost of implementing new technologies or processes can be prohibitive for many organizations. Productivity enhancement also requires a culture that encourages innovation and continuous improvement, which can be difficult to foster, as is indicated by Figure 3.

The results for both the postharvest processing and agriculture sectors indicate that the lack of skilled personnel and technology infrastructure have been significant challenges for firms, particularly during the COVID-19 pandemic. This highlights the need for government support in

FIGURE 3

CHALLENGES THAT FIRMS FACED DURING COVID-19.



Note: The data is for 20 firms. "Other" refers to other agriculture sub-sectors rather than agriculture crops.

the form of training programs, technology investment, and infrastructure development to address these challenges. By providing targeted support in these areas, the government can help firms in both the sectors to adapt to the changing business environment and improve their overall operations. The similarities in the challenges faced by firms in both sectors, such as customs clearance, tax clearance, and business registration, suggest that there may be opportunities for the government to develop comprehensive support programs that address these common challenges across the agricultural value chain. By taking a holistic approach to addressing these challenges, the government can have a more significant impact on the overall success and development of both the postharvest processing and agriculture sectors.

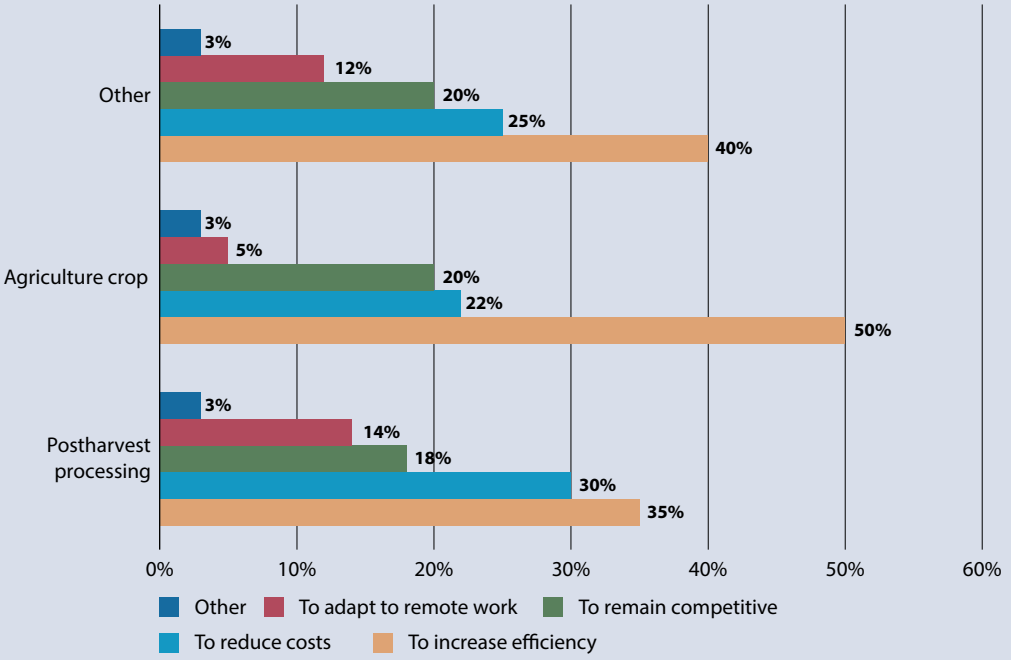
Driving Forces

The primary driving force behind productivity enhancement is the need to stay competitive. In an increasingly globalized and digital economy, organizations must continually improve their efficiency and output to keep up with competitors. Other driving forces include the need to reduce costs, improve customer satisfaction, and meet regulatory requirements. Technological advancements also drive productivity enhancement by providing new tools and methods for improving efficiency (see Figure 4).

In Figure 4, the postharvest processing sector indicates that the primary driving force behind the decision to implement technology or non-technology innovations during COVID-19 was to increase efficiency, with 35% of respondents selecting this option. This suggests that firms in the postharvest processing sector are focused on improving their operational processes to meet the challenges posed by the pandemic. Additionally, 30% of the respondents indicated that reducing costs was a key factor driving their innovation decisions, thereby highlighting the importance of cost-saving measures taken during this time. The relatively lower percentages for

FIGURE 4

DRIVING FORCES FOR IMPLEMENTING INNOVATIONS DURING COVID-19.



Note: The data is for 20 firms. 'Other refers' to other agricultural sub-sectors rather than agriculture crops.

remaining competitive and adapting to remote work indicate that these factors are less prominent in driving innovation decisions in the postharvest processing sector. On the other hand, the results of the survey for the agriculture sector show that increasing efficiency is an even more significant driving force behind innovation decisions, with 50% of respondents selecting this option. This suggests that firms in the agriculture sector are particularly focused on improving their productivity and operational processes to navigate the challenges brought on by the pandemic. Additionally, 22% of respondents indicated that reducing costs is a key factor driving their innovation decisions, similar to the postharvest processing sector. However, a higher percentage of respondents (20%) selected remaining competitive as a driving force, indicating a greater emphasis on maintaining a competitive edge in the agriculture sector. The lower percentage for adapting to remote work suggests that this factor is less influential in driving innovation decisions in the agriculture sector compared with the postharvest processing sector. The survey results highlight the common focus on increasing efficiency and reducing costs in both the postharvest processing and agriculture sectors, indicating a shared priority on operational improvements during COVID-19. However, there are differences in the emphasis on remaining competitive and adapting to remote work, reflecting sector-specific considerations in driving innovation decisions.

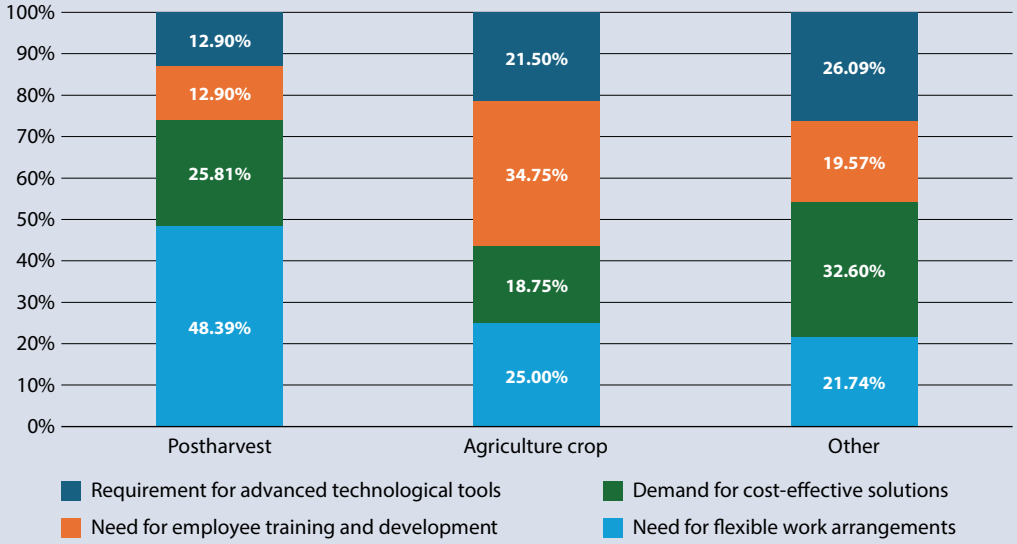
Needs for Productivity Enhancement

Planning for business continuity was another key factor that contributed to the resilience of these firms. They proactively developed innovation needs to manage potential labor shortages and supply chain disruptions, ensuring their ability to maintain operations amidst the uncertainties brought about by the pandemic (see Figure 5).

Based on these results, it is clear that both the postharvest processing and agriculture sectors are in need of innovations to address their specific challenges. In the postharvest processing sector, the need for flexible work arrangements was identified as the most pressing innovation requirement, with 48.39% of the respondents highlighting it as a priority. This suggests that firms in this sector are seeking ways to adapt their work arrangements to be more responsive to changing conditions, such as those brought about by the COVID-19 pandemic. Additionally, the demand for cost-effective solutions was also identified as a significant innovation requirement, indicating a need for more efficient and affordable methods of postharvest processing. In contrast, the agriculture sector had different priorities for innovation. While the need for flexible work arrangements was still identified as an important requirement, it was not as dominant as in the postharvest processing sector, with only 25% of respondents citing it as a priority. Instead, the necessity for employee training and development was highlighted as the most significant innovation requirement, with 34.75% of the respondents identifying it as a priority. This indicates that firms in the agriculture sector are seeking to invest in their workforce to improve productivity and efficiency. Additionally, the requirement for advanced technological tools was also identified as a priority, suggesting that firms in this sector recognize the importance of technology in addressing their challenges. Additionally, the survey results indicate that firms in both the postharvest processing and agriculture sectors are seeking innovations to address their specific needs. These findings suggest that targeted interventions and support in areas such as flexible work arrangements, cost-effective solutions, employee training and development, and advanced technological tools would have been necessary to help firms in these sectors overcome their challenges and improve productivity during COVID-19.

FIGURE 5

IDENTIFYING INNOVATIONS BY THE NEEDS OF FIRMS.



Note: The data is for 20 firms. 'Other' refers to other agriculture subsectors rather than agriculture crops.

Furthermore, strong leadership is a need for productivity enhancement. Leaders must champion productivity enhancement initiatives, overcome resistance to change, and foster a culture that values innovation and continuous improvement. Another need is for adequate resources, including time, money, and personnel. Organizations also need effective training and support systems to

ensure that employees can effectively use new technologies or processes. Additionally, organizations need to regularly evaluate and adjust their productivity enhancement strategies based on feedback and results.

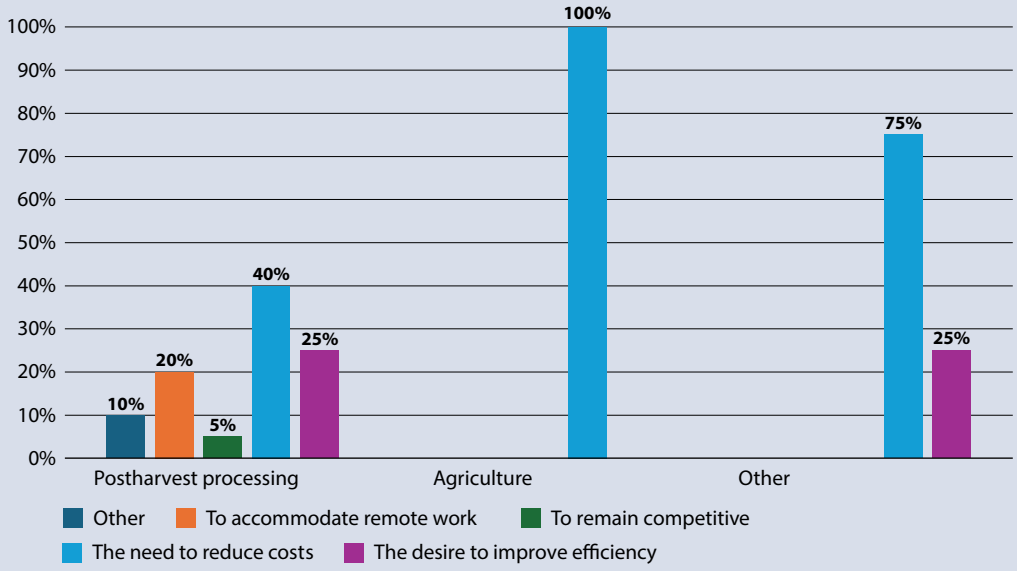
In conclusion, productivity enhancement is a complex process that involves overcoming various challenges, leveraging driving forces, and meeting certain needs. Despite the difficulties, it is essential for organizations to continually strive for productivity enhancement in order to stay competitive and meet their goals.

Keys Successes

Innovation also played a crucial role in maintaining productivity. Agriculture and postharvest firms adopted digital technologies to facilitate online sales and home deliveries, ensuring that their products reached consumers despite health concerns preventing market visits. This innovative approach helped them maintain sales and productivity levels as can be seen in Figure 6.

FIGURE 6

CATALYSTS FOR TECHNOLOGY AND NON-TECHNOLOGY INNOVATIONS DURING COVID-19.



Note: The data is for 20 firms. 'Other' refers to other agriculture sub-sectors rather than agriculture crops.

The postharvest processing sector indicates that firms were primarily focused on non-technology innovations to address their challenges during COVID-19. The need to reduce costs was identified as the most pressing innovation requirement, with 40% of the respondents highlighting it as a priority. This suggests that firms in this sector are looking for cost-effective solutions to improve their operations and remain competitive. Additionally, the desire to improve efficiency was also identified as an important innovation requirement, indicating a focus on streamlining processes and maximizing productivity. The need to accommodate remote work was also highlighted, albeit to a lesser extent, suggesting that firms in this sector were seeking flexible work arrangements to adapt to changing conditions. Otherwise, for the agriculture sector, survey results show a strong emphasis on the need to reduce costs as the most significant innovation requirement, with 100% of the respondents citing it as a priority. This indicates that firms in this sector were primarily focused

on finding cost-effective solutions to improve their operations and remain competitive during COVID-19. Interestingly, the desire to improve efficiency, remain competitive, and accommodate remote work were not identified as priorities for innovation in this sector based on the survey results. This suggests that firms in the agriculture sector may be more focused on cost-saving measures rather than technological or flexible work arrangements.

Basically, these results highlight the specific innovation priorities of firms in the postharvest processing and agriculture sectors during COVID-19. While both the sectors are seeking innovations to address their challenges, the focus on non-technology innovations such as cost reduction and efficiency improvement is particularly prominent, especially in the agriculture sector. This suggests that targeted interventions and support in these areas may be necessary to help firms in these sectors overcome their challenges and improve productivity.

Furthermore, prioritizing the health and safety of workers by implementing protective measures ensures a safe working environment, thereby maintaining morale and efficiency. This focus on employee wellbeing is a critical aspect of business resilience.

In conclusion, the performance of Cambodian agriculture and postharvest firms during COVID-19 pandemic demonstrates the strong correlation between business resilience and productivity. Their ability to adapt, plan for continuity, innovate, and prioritize employee wellbeing has not only ensured their survival but also sustained their productivity. These experiences offer valuable insights into the importance of business resilience in navigating future crises.

The study highlights several key challenges. Challenges include resistance to change, inadequate training, high costs of new technologies, and the need for a culture of innovation. Driving forces for productivity enhancements are competitiveness, cost reduction, technological advancements, and regulatory compliance. Identified needs are flexible work arrangements, cost-effective solutions, employee training, advanced technological tools, strong leadership, adequate resources, and regular evaluation of strategies. Key successes include the adoption of digital technologies for online sales and maintaining productivity during COVID-19 through non-technology innovations, particularly in cost reduction and efficiency improvement. Health and safety measures maintain morale and efficiency, while government support through training programs and technology investments is essential. Overall, the case study demonstrates the importance of business resilience, adaptability, and innovation in sustaining productivity and navigating future crises.

Case Study 1: Amru Rice (Cambodia) Co., Ltd.

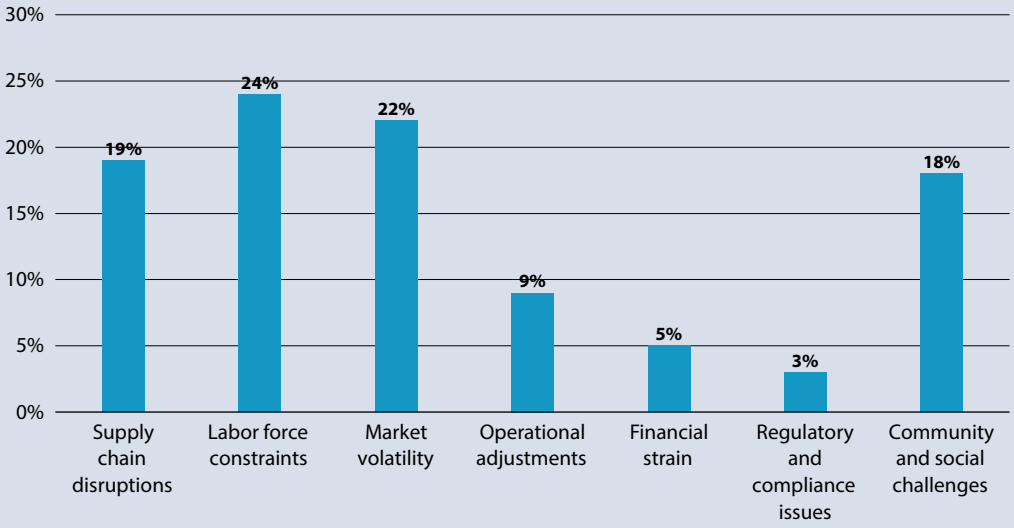
Challenges

The COVID-19 pandemic presented a multifaceted set of challenges for Amru Rice (Cambodia) Co., Ltd., affecting every aspect of its operations from supply chain management and labor force availability to market dynamics and financial stability. The company's ability to navigate these challenges required flexibility, innovation, and strong leadership, with a focus on ensuring the health and safety of its workforce, maintaining operational continuity, and adapting to rapidly changing market conditions.

Figure 7 illustrates the challenges that Amru Rice faced during the pandemic. Labor force constraints representing the most significant challenge at 24%, included reduced workforce availability due to lockdowns, health concerns, and movement restrictions, and severely impacted the company's operations. Market volatility, accounting for 22%, reflected the uncertainty and

FIGURE 7

CHALLENGES FACED BY AMRU RICE DURING THE COVID-19 PANDEMIC.



fluctuations in market demand and prices, complicating the company's planning and execution. Supply chain disruptions, at 19%, resulted from the pandemic causing shortages of essential inputs such as fertilizers and pesticides, and transportation restrictions affecting raw materials supply and product exports. Community and social challenges made up 18%, pertaining to broader social and community-related issues affecting the company's operations, such as maintaining good relationships with local communities and addressing social responsibilities amidst the pandemic. Operational adjustments constituted 9% of the challenges, highlighting the need for the company to adapt its operations to new conditions imposed by the pandemic. Financial constraints, at 5%, indicated the pressure on the company's financial resources due to reduced income and increased operational costs. Regulatory and compliance issues represented 3% of the challenges, focusing on the difficulties in meeting regulatory requirements and compliance standards, especially with the added complexity of COVID-19 protocols. In summary, the chart effectively highlights the varying degrees of challenges faced by Amru Rice, with labor force constraints, market volatility, and supply chain disruptions being the most critical, followed by community and social challenges, operational adjustments, financial strain, and regulatory and compliance issues. These insights underscore the multifaceted impact of the COVID-19 pandemic on the company's operations and the necessity for comprehensive strategies to address these challenges.

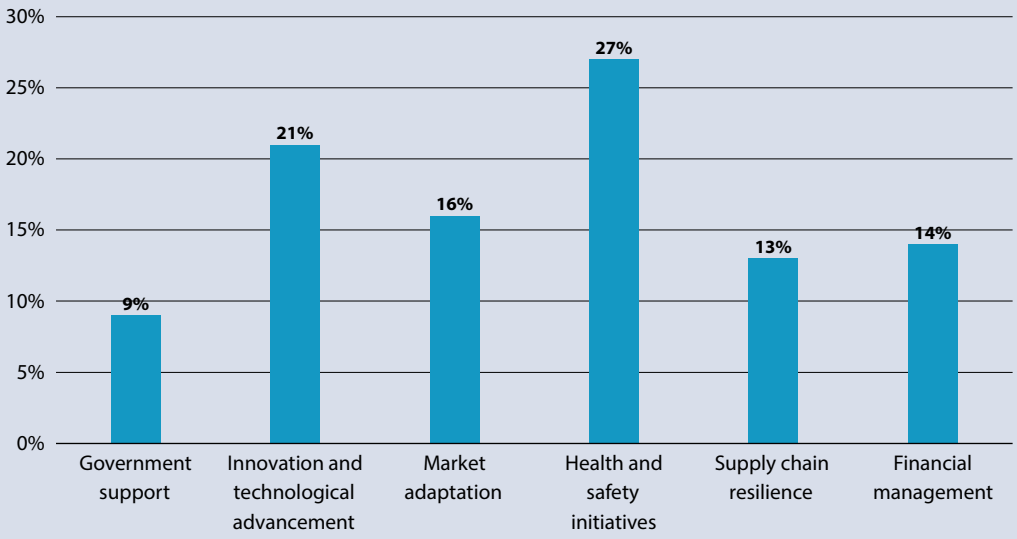
Driving Forces

The driving forces that helped Amru Rice (Cambodia) Co., Ltd navigate the challenges of the COVID-19 pandemic were multifaceted. Government support, technological innovation, market adaptation, health and safety initiatives, supply chain resilience, and sound financial management played crucial roles. These driving forces enabled the company to maintain operations, support its workforce and communities, and build a more resilient and adaptable business model for the future.

Figure 8 highlights several factors that encouraged Amru Rice to enhance productivity, each represented by a specific percentage. Health and safety initiatives, accounting for 27%, emerged as the most significant driving force, emphasizing the importance of implementing comprehensive

FIGURE 8

DRIVING FORCES THAT MOTIVATED AMRU RICE TO PURSUE PRODUCTIVITY ENHANCEMENT.



protocols to protect workers and ensure a safe working environment during the pandemic. Innovation and technological advancements, at 21%, underscored the need to adopt new technologies and innovative practices to maintain and enhance productivity. Financial management, at 14%, involved accessing low-interest loans, optimizing operational costs, and efficiently managing financial resources. Market adaptation, constituting 16%, reflected the need to adjust strategies and operations in response to changing market conditions and consumer preferences. Supply chain resilience, making up 13%, focused on developing strategies to strengthen and diversify the supply chain to mitigate disruptions. Lastly, government support, accounting for 9%, included access to relief programs, subsidies, and policies aimed at assisting businesses during the pandemic, providing crucial financial assistance. In summary, the chart underscores the multifaceted approach needed to navigate the challenges and leverage opportunities for productivity enhancement, with health and safety initiatives and technological advancement being key driving forces.

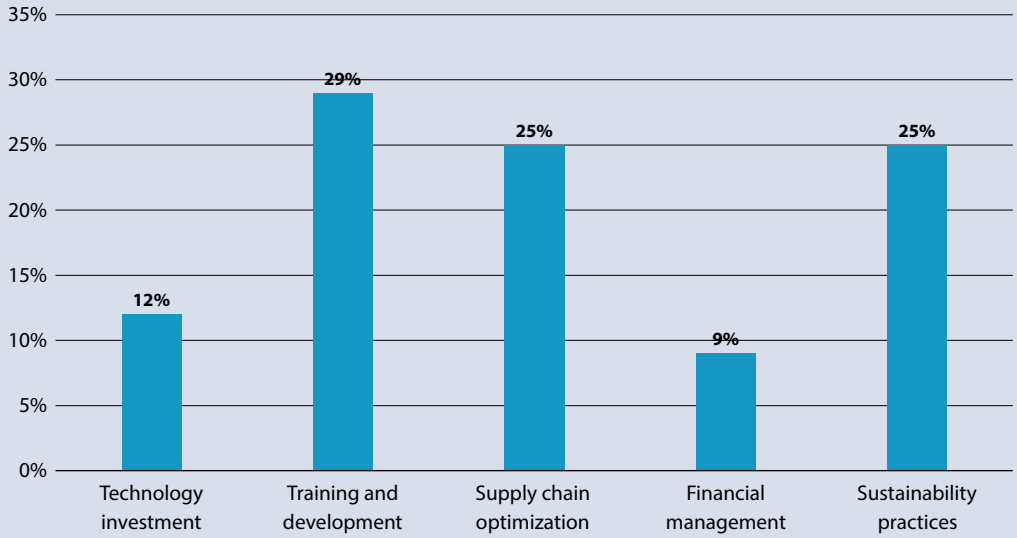
Needs for Productivity Enhancement

To enhance productivity during the COVID-19 pandemic, Amru Rice (Cambodia) Co., Ltd needed to focus on technological investment, training and development, supply chain optimization, financial management, and sustainability practices. By addressing these key areas, the company could improve operational efficiency, maintain financial stability, and build a resilient business model capable of thriving in the face of future challenges.

Figure 9 highlights various areas identified by Amru Rice as essential for enhancing productivity, each represented by a specific percentage. The most significant need, at 29%, was training and development, emphasizing the necessity of equipping employees with the skills and knowledge required to operate new technologies and adapt to new processes, ensuring a competent and versatile workforce. Supply chain optimization, constituting 25%, reflected the need to enhance the efficiency and resilience of the supply chain, including diversifying suppliers and improving

FIGURE 9

NEEDS OF AMRU RICE FOR PRODUCTIVITY ENHANCEMENT DURING THE PANDEMIC.



logistics. Similarly, sustainability practices, also at 25%, underscored the importance of implementing environmentally friendly and sustainable practices in production to meet regulatory requirements and consumer expectations. Technology investment accounted for 12% of the needs, highlighting the importance of investing in modern technology to improve production efficiency and reduce reliance on manual labor. Lastly, financial management, at 9%, highlighted the need for effective financial strategies to manage costs, access low-interest loans, and secure financial stability to support ongoing operations and investments. In summary, the graph underscores the various needs identified by Amru Rice to enhance productivity during the COVID-19 pandemic, with training and development, supply chain optimization, and sustainability practices being the most critical areas. These insights highlight the multifaceted approach required to address the challenges and leverage opportunities for productivity enhancement amidst the pandemic.

Conclusion

The COVID-19 pandemic posed significant challenges for Amru Rice (Cambodia) Co., Ltd., affecting supply chain management, labor availability, market dynamics, and financial stability. Key challenges included labor force constraints (24%), market volatility (22%), and supply chain disruptions (19%), among others, necessitating comprehensive strategies for mitigation. Despite these obstacles, various driving forces such as government support, technological innovation, market adaptation, health and safety initiatives, supply chain resilience, and sound financial management played crucial roles in helping the company navigate through the crisis. Health and safety initiatives (27%) and innovation (21%) were particularly significant in maintaining operations and enhancing productivity. To further boost productivity during the pandemic, Amru Rice identified several key needs, including technological investment (12%), training and development (29%), supply chain optimization (25%), financial management (9%), and sustainability practices (25%). Addressing these areas is essential for improving operational efficiency, maintaining financial stability, and building a resilient business model capable of thriving in future challenges.

Case Study 2: YOU HENG Fish Sauce

Challenges

YOU HENG Fish Sauce, which is a small-to-mid-sized business in Kampot province specializing in the production of traditional fish sauce, faced several significant challenges during the COVID-19 pandemic. The disruptions in the supply chain led to shortages of essential raw materials such as fish and salt, complicating the production process and making it difficult to transport products to the markets. Labor shortages due to lockdowns and health concerns further reduced the workforce, impacting production capacity. Additionally, the closure of local markets and restrictions on export channels hindered the firm's ability to reach its customers, resulting in decreased sales and revenues. The need to implement COVID-19 health and safety protocols added another layer of complexity and costs to the production process. Financial constraints became a pressing issue as reduced income and increased operational costs strained the firm's resources, making it challenging to invest in necessary improvements.

FIGURE 10

CHALLENGES FACED BY YOU HENG FISH SAUCE FIRM DURING THE PANDEMIC.

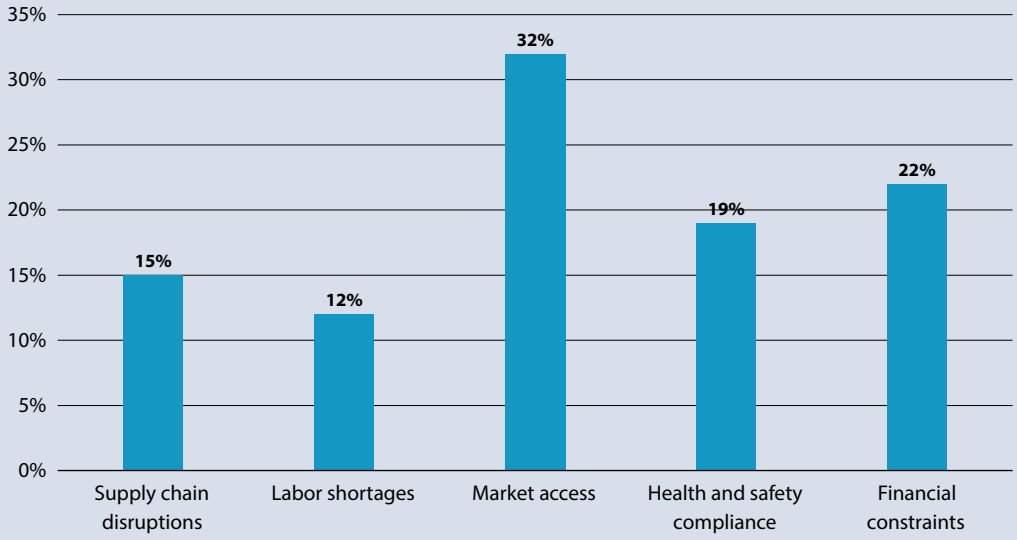


Figure 10 illustrates the distribution of challenges faced by YOU HENG Fish Sauce in Kampot province, during the COVID-19 pandemic. Market access emerged as the most significant challenge, comprising 32% of the total issues. This difficulty was primarily due to closed local markets, export restrictions, and decreased consumer demand. Financial constraints were the next major challenge, representing 22% of the difficulties, driven by reduced income, higher operational costs, and the overall economic impact of the pandemic. Health and safety compliance accounted for 19% of the challenges, as implementing and maintaining COVID-19 protocols added complexity and expense to the operations. Supply chain disruptions affected 15% of the enterprise's activities, leading to delays and shortages in raw materials due to transportation issues and procurement difficulties. Lastly, labor shortages constituted 12% of the challenges, resulting from lockdown measures, health concerns, and movement restrictions that reduced the available workforce and impacted production capacity. Overall, the graph highlights that the enterprise faced multifaceted challenges during the pandemic, with market access and financial constraints being the most prominent, followed by health and safety compliance, supply chain disruptions, and labor shortages.

Driving Forces

The primary driving force behind productivity enhancement is the need to stay competitive. In an increasingly globalized and digital economy, organizations must continually improve their efficiency and output to keep up with competitors.

FIGURE 11

DRIVING FORCES THAT MOTIVATED YOU HENG FISH SAUCE TO PURSUE PRODUCTIVITY ENHANCEMENT.

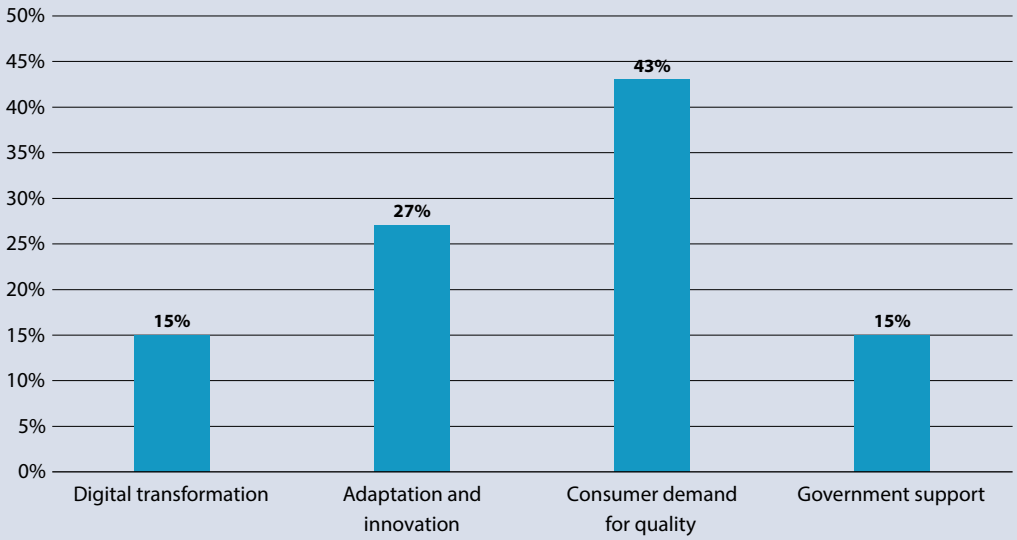


Figure 11 illustrates the driving forces behind YOU HENG fish sauce firm in Kampot province, deciding to pursue productivity enhancement during the COVID-19 pandemic. The most significant driving force, representing 43% of the total, was consumer demand for quality. This high percentage underscores the critical importance of meeting and maintaining high consumer expectations. During the pandemic, consumers increasingly sought out high-quality, reliable products, pushing the enterprise to enhance productivity to satisfy these evolving preferences. Adaptation and innovation emerged as the second most significant factor, accounting for 27% of the driving forces. This highlights the enterprise's recognition of the necessity to innovate and adapt to the rapidly changing market conditions induced by the pandemic. Such adaptations could include adopting new business models, introducing product innovations, and improving operational efficiency to remain competitive in an unpredictable environment. Digital transformation accounted for 15% of the driving forces. The pandemic significantly accelerated the shift towards digital technologies, prompting the enterprise to integrate digital solutions to boost productivity. This transformation could involve implementing digital marketing strategies, setting up online sales platforms, and utilizing data analytics to optimize operations. By embracing digital transformation, the firm aimed to enhance its reach and efficiency amid the pandemic's challenges. Government support also constituted 15% of the driving forces. This highlights the crucial role of government initiatives, such as financial aid, subsidies, and supportive policies, in encouraging the enterprise to pursue productivity enhancements. During the uncertain times of the pandemic, government support provided the necessary resources and confidence for the enterprise to invest in productivity improvements. In summary, consumer demand for quality was the predominant driving force, significantly influencing the firm's decision to enhance productivity. Adaptation and innovation

were also crucial, followed by digital transformation and government support. These factors collectively motivated YOU HENG fish sauce firm in Kampot province to pursue productivity enhancements during the COVID-19 pandemic, ensuring it could meet consumer expectations, remain competitive, and leverage available support.

Needs for Productivity Enhancement

Planning for business continuity was another key factor that contributed to the resilience of this firm. It proactively developed innovation needs to manage potential labor shortages and supply chain disruptions, ensuring an ability to maintain operations amidst the uncertainties brought about by the pandemic (see Figure 12).

FIGURE 12

NEEDS OF YOU HENG FISH SAUCE FOR PRODUCTIVITY ENHANCEMENT DURING THE PANDEMIC.

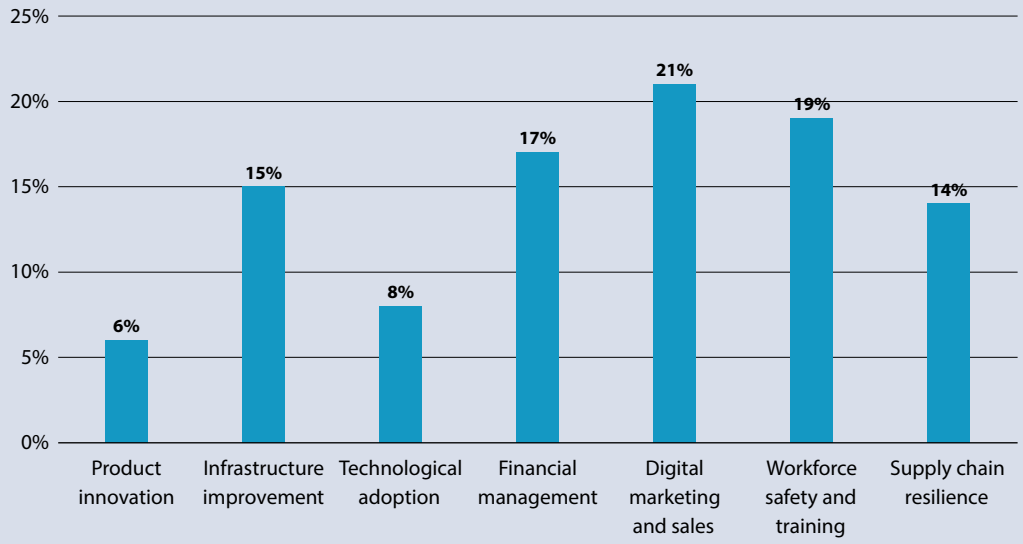


Figure 12 illustrates the identified needs for productivity enhancement by YOU HENG Fish Sauce firm during the COVID-19 pandemic. Product innovation, constituting 6% of the needs, focused on exploring new product variations and packaging solutions to meet changing consumer preferences and increase market appeal. Infrastructure improvement, at 15%, involved upgrading facilities to meet health and safety standards, ensuring compliance with COVID-19 guidelines, and improving overall production efficiency. Technological adoption, accounting for 8%, involved investing in automation and modern equipment to increase production efficiency and reduce reliance on manual labor. Digital marketing and sales, the highest priority at 21%, highlighted the need to expand the use of digital platforms to reach customers directly, including setting up online stores, leveraging social media, and participating in virtual trade fairs. Financial management, representing 17%, focused on accessing government relief funds, low-interest loans, and grants to support operational costs and invest in essential upgrades. Workforce safety and training, comprising 19%, involved implementing comprehensive health and safety protocols to protect workers and providing training on new safety measures and efficient production techniques. Lastly, supply chain resilience, representing 14%, involved developing strategies to diversify suppliers and improve supply chain resilience to mitigate disruptions. The graph effectively highlights the

varying importance of each need, with digital marketing and sales being the most critical, followed by workforce safety and training, financial management, infrastructure improvement, supply chain resilience, technological adoption, and product innovation.

In summary, YOU HENG Fish Sauce firm faced multifaceted challenges during the pandemic, but driving forces such as consumer demand, adaptation, digital transformation, and government support motivated the firm to pursue productivity enhancements. The identified needs for enhancement reflected a strategic approach to overcoming obstacles and ensuring business continuity.

Relationship between Business Resilience and Productivity

The COVID-19 pandemic has posed unprecedented challenges to the global economy, and the agriculture and postharvest sectors in Cambodia are no exception. The crisis has underscored the importance of business resilience, which is essentially the ability of a business to adapt and respond to disruptions while maintaining continuous business operations, safeguarding people and assets, and delivering on customer commitments. The relationship between business resilience and productivity is particularly crucial for these sectors in Cambodia, given their pivotal role in the country's economy.

Business resilience has a direct impact on productivity in agriculture and postharvest firms. During the pandemic, resilient businesses have been able to maintain or even increase productivity despite the disruptions. They have done this by adopting innovative practices, leveraging technology, and adjusting their business models to cope with the new normal.

One of the key aspects of business resilience is the ability to adapt quickly to changing circumstances. For instance, during the lockdowns, many Cambodian farmers, including the firms that we have interviewed, had to find alternative ways to sell their produce as traditional markets were shut down. Some turned to digital platforms to connect with customers directly, demonstrating adaptability and resilience. This not only helped them sustain their businesses during the crisis but also increased their productivity by reducing intermediaries and reaching a wider customer base.

Another aspect of business resilience is risk management. Firms that had contingency plans in place were better prepared to handle the disruptions caused by the pandemic. They were able to manage supply chain disruptions, labor shortages, and other operational challenges more effectively, which minimized downtime and maintained productivity levels.

The Cambodian government's initiatives played a significant role in enhancing business resilience in these sectors. Financial assistance provided a much-needed lifeline for businesses struggling with cash flow problems due to the pandemic. Training programs equipped farmers and workers with new skills and knowledge to navigate the crisis. Digital transformation initiatives enabled businesses to leverage technology to overcome operational challenges and maintain productivity.

Post the COVID-19 pandemic, business resilience will continue to be crucial for productivity in the agriculture and postharvest sectors. The pandemic has highlighted the need for businesses to be prepared for future disruptions. Firms that continue to invest in resilience measures, such as digital transformation, risk management, and workforce training, are likely to be more productive and competitive in the long run.

In conclusion, business resilience and productivity are closely linked in the context of agriculture and postharvest firms in Cambodia. The COVID-19 pandemic has underscored the importance of resilience in maintaining productivity during disruptions. The Cambodian government's initiatives have been instrumental in enhancing resilience in these sectors, and continued investment in this area will be key to boosting productivity and driving economic growth post-pandemic.

Conclusion and Recommendations

The agriculture and postharvest sectors in Cambodia face numerous challenges that hinder productivity and economic growth. Limited access to modern technology, inadequate infrastructure, and a lack of skilled labor are key factors contributing to low productivity in these sectors. As a result, there is a significant impact on economic growth, food security, and rural development in the country.

Strategical productivity, practical productivity, and TFP play crucial roles in driving growth and efficiency in the agriculture and postharvest sectors. Strategical productivity involves making strategic decisions to maximize output and minimize input, while practical productivity focuses on the efficiency of production processes. TFP encompasses the overall efficiency of all inputs in production. In Cambodia, there is great potential for improvement in all these areas. To address the challenges and opportunities for productivity enhancement, it is essential to invest in modern farming techniques, develop infrastructure, and provide capacity building for farmers and workers. By improving access to modern technology and knowledge, farmers can enhance their strategical and practical productivity. Additionally, infrastructure development can facilitate the transportation and storage of agricultural products, leading to improved TFP. Furthermore, government policies and regulations also play a significant role in promoting productivity enhancement in the agriculture and postharvest sectors. Supportive policies can facilitate the implementation of productivity enhancement strategies and interventions by providing incentives for investment and innovation in these sectors.

By enhancing productivity in Cambodia's agriculture and postharvest sectors, there is potential for significant impact on economic growth, food security, and rural development. Improvements in strategical, practical, and TFP can contribute to the overall development of these sectors, leading to increased agricultural output, income generation for farmers, and improved food security for the population.

In conclusion, by focusing on strategical productivity, practical productivity, and TFP, Cambodia can accelerate the growth of its agriculture and postharvest sectors. This will not only improve the livelihoods of farmers but also contribute to the overall development of the country.

TABLE 1

GUIDELINES AND RECOMMENDATIONS FOR PRODUCTIVITY ENHANCEMENT.

No.	Guidelines for productivity enhancement
1	Begin by providing an overview of the current state of agriculture and postharvest sectors in Cambodia, highlighting the challenges and opportunities for productivity enhancement.
2	Discuss the importance of strategical productivity, practical productivity, and TFP in driving growth and efficiency in the agriculture and postharvest sectors.
3	Identify key factors contributing to low productivity in the agriculture and postharvest sectors, such as limited access to modern technology, inadequate infrastructure, and lack of skilled labor.

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No.	Guidelines for productivity enhancement
4	Explore potential strategies and interventions to enhance productivity, including investment in modern farming techniques, infrastructure development, and capacity building for farmers and workers.
5	Discuss the role of government policies and regulations in promoting productivity enhancement in the agriculture and postharvest sectors.
6	Consider the potential impact of productivity enhancement on economic growth, food security, and rural development in Cambodia.
No.	**Recommendations for Productivity Enhancement**
1	Invest in modern farming techniques: Encourage the adoption of modern agricultural practices, such as precision farming, use of high-yield seeds, and efficient irrigation systems, to increase crop yields and reduce postharvest losses.
2	Improve infrastructure: Develop and upgrade rural infrastructure, including roads, storage facilities, and market access, to facilitate the transportation and marketing of agricultural products.
3	Capacity building for farmers and workers: Provide training and education programs to enhance the skills and knowledge of farmers and workers in the agriculture and postharvest sectors, including training on sustainable farming practices and postharvest management techniques.
4	Strengthen research and development: Support research and innovation in agriculture to develop new technologies and practices that can improve productivity and efficiency in the sector.
5	Enhance policy support: Implement policies and regulations that promote investment in agriculture, provide incentives for productivity enhancement, and ensure fair market access for smallholder farmers.
6	Foster public-private partnerships: Encourage collaboration between government, private sector, and civil society organizations to drive productivity enhancement initiatives in the agriculture and postharvest sectors.

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FIJI

Executive Summary

Fiji is a small developing island nation that was greatly affected by the COVID-19 pandemic. Fiji heavily relies on remittances, tourism, and agriculture as its revenue sources. In the past years, Fiji has seen major developments in infrastructure, jobs, and employability through funding from donor agencies, support from partner countries, and borrowing from major banks such as the Asian Development Bank (ADB). Through this research, we determine the emerging needs for productivity enhancement of some critical economic sectors, explore how selected businesses coped with COVID-19, and ascertain best practices for business resilience. This research used a qualitative approach to gather data and analyzed common themes and threads through secondary sources, as well as carried out structured in-depth interviews of five selected firms. The findings showed that the emerging needs for productivity enhancements include overcoming the immense skills and labor shortage in Fiji, implementation of a range of productivity enhancement initiatives, funding for research and development, and adaptation of technology and innovation. To achieve business resilience, the findings reveal the mutual relationship between productivity enhancement and resilience through the case study of Future Farms Fiji Limited.

Introduction

Fiji is the second largest economy in the Pacific Islands, just behind Papua New Guinea, comprising over 300 islands and 880,000 people [1]. Private enterprises, mostly small and medium enterprises (SMEs) are vital to Fiji's economy since they contribute around 19% of the gross domestic product (GDP) and create almost 60% of the employment in Fiji [2].

Reserve Bank of Fiji classifies private enterprises based on the turnover or total assets and number of employees [3]:

- **Small enterprise:** This refers to an enterprise with a turnover or total assets between USD30,000 and USD100,000 and 6–20 employees.

- **Medium enterprise:** This refers to an enterprise with a turnover or total assets between USD100,000 and USD500,000 and 21–50 employees.

Women-owned micro, small, and medium-sized enterprises (WMSMEs) in Fiji account for 19% of micro, small, and medium-sized enterprises (MSMEs), and 36% of the total employed population work in SMEs [4]. There are over 5,500 registered WMSMEs in addition to 18,742 self-employed women and 4,650 women working in handicrafts. The productivity of private enterprises in Fiji is crucial for its long-term success and resilience to external shocks.

This report uses the Asian Productivity Organization (APO)'s definition of productivity and refers to the APO Productivity Databook for a comparison of productivity levels in Fiji and other APO member economies.

"Productivity refers to the relation between the output, including goods and services produced, and resources or inputs (labor, materials, machinery, and energy) used to produce them. Some examples

of input are labor, materials, machinery, and energy. If a product is made at the lowest possible cost with high quality and can be sold competitively on the market at a good price, then its productivity level is considered high." [5].

An analysis of Fiji's productivity performance shows that the track record has not been consistent. In 1995, Fiji's productivity level was 11% higher than the average for 20 APO member economies (APO20). However, it then grew by only 1.2% a year for the period of 1995 to 2016, at about half of the 2.5% rate of APO20. Consequently, Fiji's productivity level increased by just 28.8% over the two decades and was overtaken by APO20. In 2016, Fiji's productivity level was 84.7% that of APO20. Compared with the three other upper-middle-income economies in the APO, namely, the Islamic Republic of Iran (IR Iran), Malaysia, and Thailand, Fiji has lagged, and its productivity gap has widened. From a level that was lower than Fiji's (97%) in 1995, Thailand has since overtaken Fiji [6].

The impact of the COVID-19 pandemic on the Fijian economy was enormous. Job losses and reduced hours affected at least one-third of Fiji's labor force. Most job losses occurred in the tourism sector with an estimated 100,000 workers losing their jobs due to COVID-19 [7]. Moreover, the Fiji Hotel and Tourism Association announced that 93% of its members had terminated business at least until the reopening of borders. To avoid running out of business, many firms had to renegotiate rents, defer loan repayments, and reduce wages and salaries. Hours were reduced temporarily by 59% of the businesses during the pandemic. This meant that six of every ten businesses reduced hours for their staff [8].

The low levels of productivity and the recent external shocks like the COVID-19 pandemic and wars in different regions of the world make Fiji's economy more vulnerable, and therefore, well-planned strategies to enhance business productivity and maintain resilience are explored in this report.

Although there has been sufficient funding available for SMEs in Fiji, there are certain criteria that these businesses must fulfill before they can access the grants. For example, Business Link Pacific announced the availability of new Business Support Grants for small and medium-sized enterprises in Fiji in June 2023. Grants were awarded based on business size and other factors [9]. Furthermore, the Fiji Development Bank also provides small and medium business loans that allow businesses to take loans up to USD500,000 with a minimum of 20% equity contribution, that is, 20% cofinancing by these enterprises. These loans are available for business purchase or establishment, contractual transport, or plant operations for the following subsectors [10]:

(1) Transport: taxis, hire cars, trucks, marine vessels, minibuses, etc.

(2) Distribution: delivery, storage, etc.

(3) Wholesale/retail: for purchase of fixed assets and or initial working capital requirements.

(4) Services, including

- repair shops, fuel stations, wreckers, etc.
- fast food services, restaurants, etc.
- tourism (accommodation, resorts, tours, eco-tourism projects, etc.); and
- accountancy, dentistry, law, medicine, etc.

(5) Manufacturing

During the COVID-19 pandemic, many SMEs were forced to stop operations due to movement and travel restrictions. The Reserve Bank of Fiji (RBF) Governor Ariff Ali highlighted that when the Fijian economy contracted by 17.2% in 2020, MSMEs were the first to suffer, and several businesses closed while large businesses struggled to survive. During this time, the RBF assisted 5,500 SMEs that were struggling to meet their financial needs [11]. Additionally, it was also elaborated that in 2015, Fijian Prime Minister Voreqe Bainimarama launched the Micro Small Business Grant (MSBG) Scheme, which was designed to provide grants for startups and assistance to new and existing micro and small businesses, of up to FJD1,000 (around USD457.6). Furthermore, a Fiji Government business survey stated that 74% of MSMEs had either closed temporarily or permanently or were operating with reduced hours [12].

To get businesses on their feet, many new ideas and innovations were proposed. A potential for digital technologies to transform MSME business models and unlock new revenue streams was released; and digital literacy became the key to bridging the digital divide between urban and rural communities [13]. Although M-PAiSA (digital wallet) was launched in 2010 by Vodafone (Fiji Government, 2010), it was fully utilized during the COVID-19 pandemic, when the platform was used for cashless transactions. While delivering a ministerial statement in Parliament in 2021, the then Attorney-General and Economy Minister Aiyaz Sayed-Khaiyum said Vodafone's M-PAiSA digital wallet platform recorded 2000% growth in the past 12 months [14]. Vodafone Fiji currently has over 580,000 registered M-PAiSA customers, with more than 334,000 of them actively using the service every month, thereby creating a significant multiplier effect for the economy [15].

Productivity measurement of SMEs in Fiji has been fairly difficult since there is a significant number of unregistered SMEs that are either operating remotely or operating from home. However, budget allocation announcements have been designed such that many SMEs need to register with the Registrar of Companies Office to access any funds allocated to the development of SMEs in Fiji. In the 2020 budget announcement, the Small and Medium Enterprises Credit Guarantee Scheme got an USD5 million boost [16].

Research Objectives

Given the negative impact of COVID-19 on private firms in Fiji, this research aims to understand the difficulties, driving forces for success factors, and needs for the recovery of the productivity of private firms during and after the pandemic, particularly focusing on the years 2020–22. The research aims to assess the needs of private-sector businesses. The specific objectives are to:

- identify the emerging needs for productivity enhancement by analyzing selected firms' success points during and post-pandemic;
- examine how to connect the successful business practices with the productivity in participating firms; and
- provide guidelines on successful best practices in private sector firms for widespread application.

To achieve the objectives, the case studies were developed by drawing attention to approaches and techniques for successful business operations. The results of the study will be integrated into the strategies and used as a showcase of best practices for other businesses, especially on productivity enhancement.

Research Methodology

This research uses a qualitative approach to gather data and analyze common themes and threads through secondary and primary sources of information.

First, a list of fifteen private sector organizations from the manufacturing, agriculture food, and accommodation sectors was selected based on purposive and convenience sampling. These sectors are deemed important for the Fijian economy based on the government's national priority and economic development. Secondary research for each firm was conducted to identify the impacts of COVID-19 on the businesses, changes in revenue and profitability, changes in workforce size, emerging needs of productivity, and critical success factors of coping with the challenges presented by COVID-19.

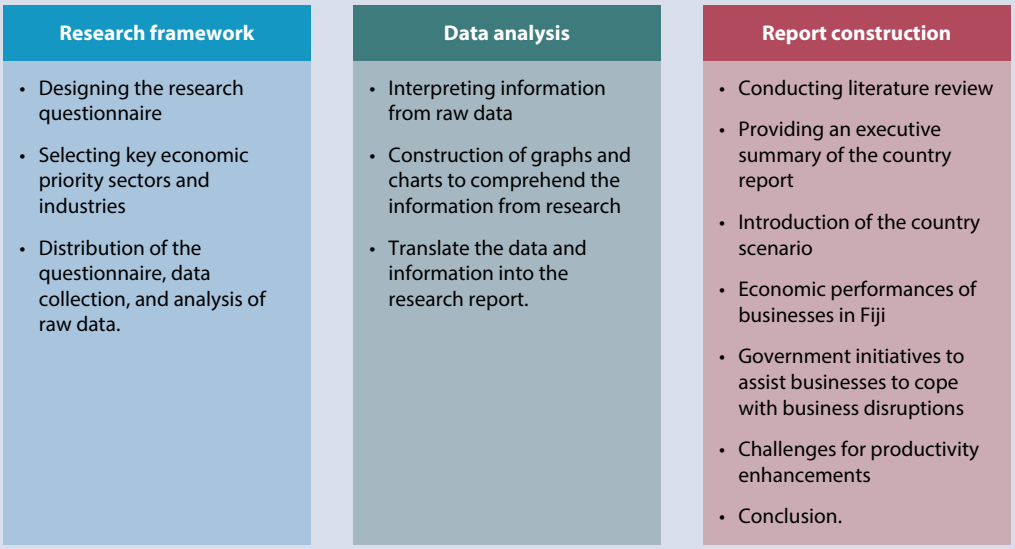
To gain more insights, five private firms were interviewed through a structured interview process and the information was analyzed for common trends and patterns of productivity and resilience. The firms were (identity concealed):

- Firm A, a business outsourcing agency;
- Firm B, a food manufacturing company;
- Firm C, a restaurant;
- Firm D, a hotel/resort group; and
- Firm E, an agri-processing (livestock) enterprise.

The research framework is illustrated in Figure 1.

FIGURE 1

RESEARCH FRAMEWORK.



Scope and Limitation

The sample size selected was based on the time available for the research and the funding available. The interview questions were designed and formatted to capture the relevant information that would paint a picture of how organizations managed their business before, during, and after the pandemic. Due to the limited time in which business owners had to answer the questions, there were limitations in having in-depth discussions. Some of the responses from business owners were brief.

The questions had some items that private organizations felt were confidential and were hesitant to provide at first. Nonetheless, steps were taken to ensure that the information provided by the respondents did not breach any confidentiality obligations while also meeting the research requirements.

Report Structure

The report is presented in six sections. The first section will introduce the purpose and aims of the research and provide background information on the key concepts. The second section will discuss the economic and business performance, while the third section will discuss the government policies, regulations, and initiatives toward the private sector's development. The fourth section will deal with the challenges, driving forces, and needs for productivity enhancement. The fifth section will discuss the relationship between productivity and business resilience, while guidelines for businesses will be proposed in the sixth section of the report.

Economic and Business Performance

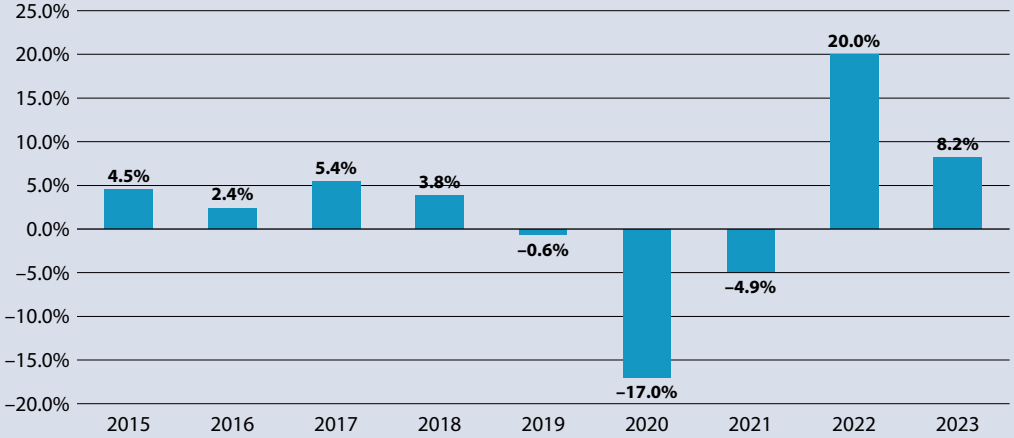
Economic Performance

The real GDP is a strong indicator of the economic performance in Fiji. Data maintained by the RBF [17], using 2014 as a baseline for growth rate, shows that the annual real GDP growth rates of Fiji saw some unusual trends in the years during 2019–22 due to the impact of the COVID-19 pandemic.

The significant increase in Fiji's GDP growth rate in 2022 was primarily driven by a stronger-than-anticipated rebound in its tourism sector (see Figure 2). This rebound had positive spillover effects, meaning it also boosted domestic demand within the country.

FIGURE 2

REAL GDP GROWTH.



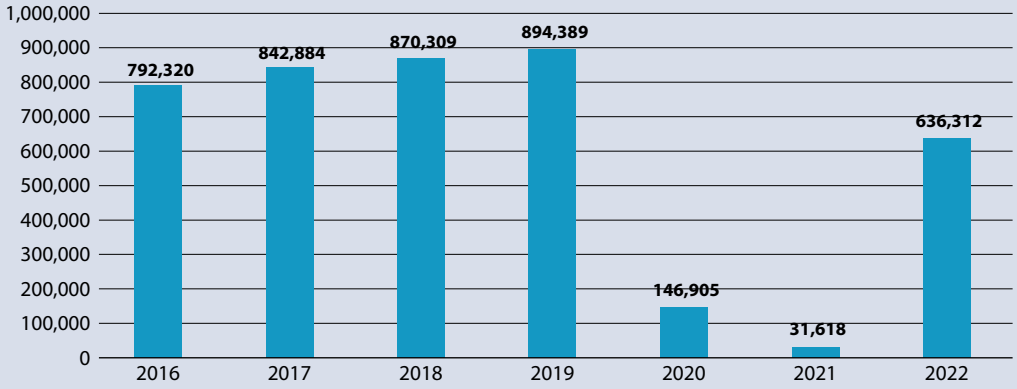
Source: Fiji Bureau of Statistics.

Since tourism is the main engine of GDP growth in Fiji, contributing around 40% to the GDP, and a key source of foreign exchange earnings [18] for Fiji, most of these trends can be attributed to the low-to-no-visitor arrivals during COVID-19 due to international closures and lockdowns.

Fiji's economic performance significantly depends on tourism and agriculture. Its key visitor markets include Australia, New Zealand, and North America, with most people traveling here for a tropical holiday; to visit family and friends; to transit; or for business, education, and sporting events. According to the data provided by the Fiji Bureau of Statistics, there was a sharp decline in visitor numbers in 2020 and 2021. This is summarized in Figure 3:

FIGURE 3

FIJI VISITOR ARRIVALS STATISTICS.

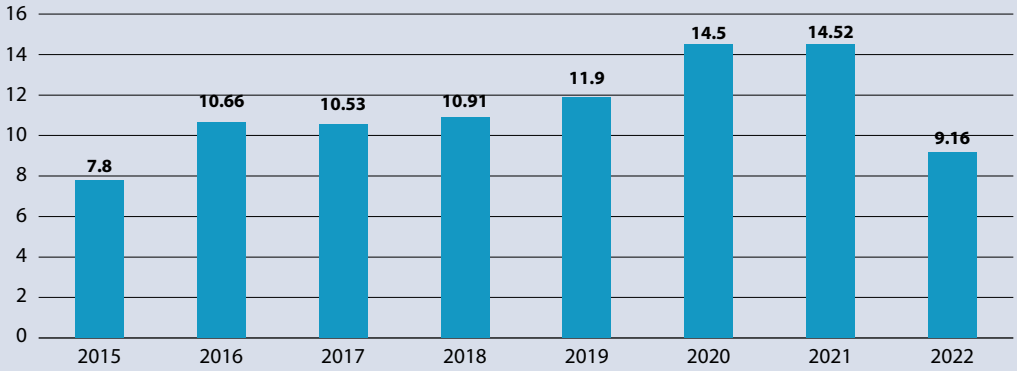


Source: Fiji Bureau of Statistics.

As stated earlier, the agriculture sector is also a significant contributor to Fiji's GDP. During the COVID-19 pandemic between 2020 and 2021, a lot of workers were released from their work because there was little to zero operational activity. Thus, many retreated to their villages and engaged in farming activities, which led to a larger agricultural output. This then strongly affected agriculture's contribution to the national GDP. The chart in Figure 4 validates this statement.

FIGURE 4

SHARE OF AGRICULTURE IN FIJI'S GDP IN %.

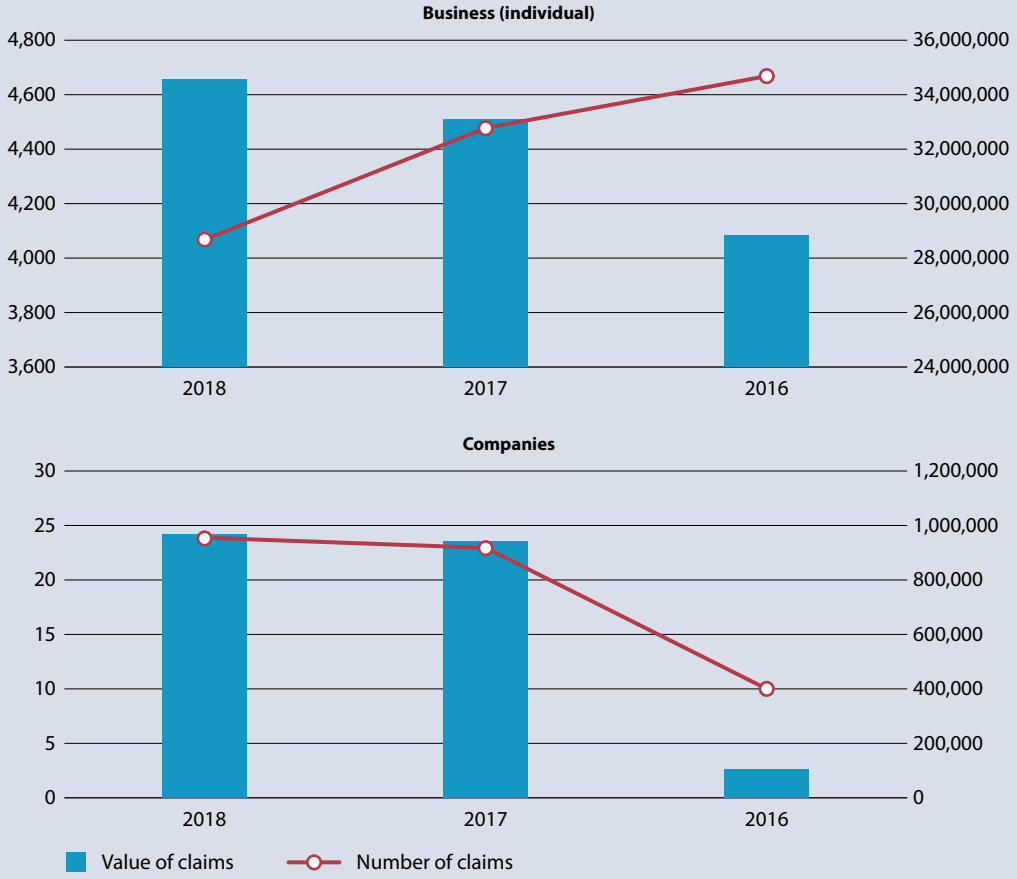


Source: Fiji Bureau of Statistics.

From 2016 to 2018, a total of 13,283 SME operators benefitted from the various incentives and duty concessions provided by the Fijian Government worth USD98.6 million. Out of the 13,283 SME operators that benefitted from these incentives, 13,226 were sole traders and 57 were companies with turnover of less than USD500,000 per annum. Some of the incentives provided to the SME sector include stamp duty concession under the Stamp Act 1920, tax concession under the Income Tax Act 2015 (see Figure 5), and relaxation of the taxable period under the VAT Act 1991. SME business owners must know about these incentives so that they can utilize the opportunities for growth provided to them by the Fijian Government.

FIGURE 5

VALUE OF TAX CONCESSION.



Source: Fiji Revenue and Customs Service.

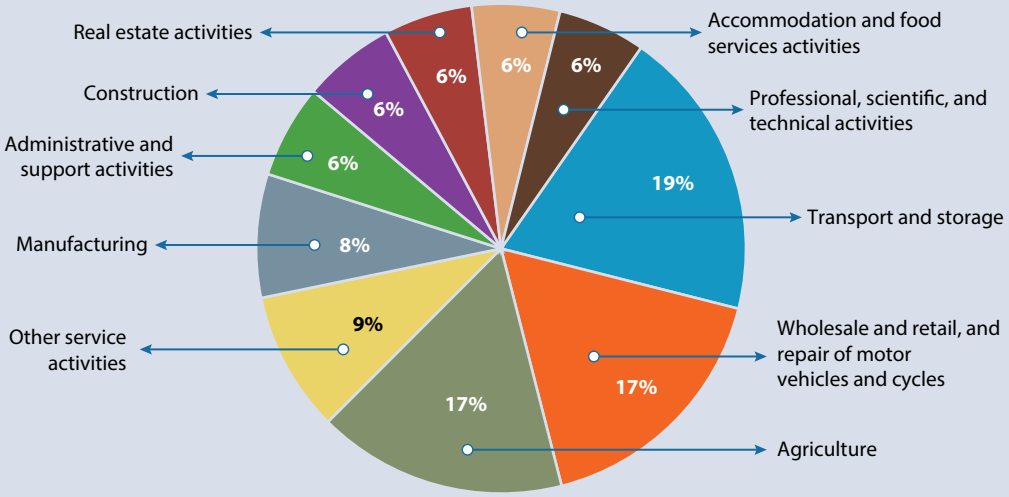
The Fijian Government announced the waiver of stamp duty on all instruments or written documents for SMEs effective from 1 January 2016. Under the Stamp Duties Act, this waiver is available to any business that has an annual gross turnover or sale not exceeding USD500,000, provided it is a registered business with a valid business license, is tax and customs-compliant, and provides a statutory declaration confirming that its gross turnover does not exceed USD500,000. These businesses must provide copies of financial statements where applicable. The policy intention for this incentive is to assist the SMEs. Post-assessment audits will be conducted to verify declarations. Penalties will be imposed when taxpayers make false declarations or schemes to evade this tax [19].

Business Performance, including Number of Enterprises and Nature of Business

The Fiji Revenue and Customs Service (FRCS) has 28,984 registered SMEs in its database. Between 2016 and 2018, these businesses contributed USD378,763,052 in taxes toward the Fijian economy. The transport and storage sector is the largest SME sector in Fiji with 2,740 registered businesses, followed by the agricultural sector with 2,213 businesses and the wholesale and retail sector with 2,143 registered businesses. Figure 7 provides a snapshot of the top 10 sectors for SMEs in Fiji [19].

FIGURE 6

TOP 10 SECTORS FOR SMES IN FIJI.



Source: Fiji Revenue and Customs Service.

The government has sponsored a support service called the National Centre for Small and Micro-Enterprises Development (NCSMED), an advisory committee that was set up by the government to oversee the development of medium-sized enterprises in Fiji [20]. From this 2013 study, it was established that price competition, fixed costs, competition, production costs, distribution costs, marketing costs, labor costs, government tax, insurance costs, telephone charges, electricity bills, rents, water bills, environmental regulations, currency devaluation, training and development costs, and other miscellaneous and hidden costs have been major problems that SMEs face. These are bottlenecks to business performance and economic development.

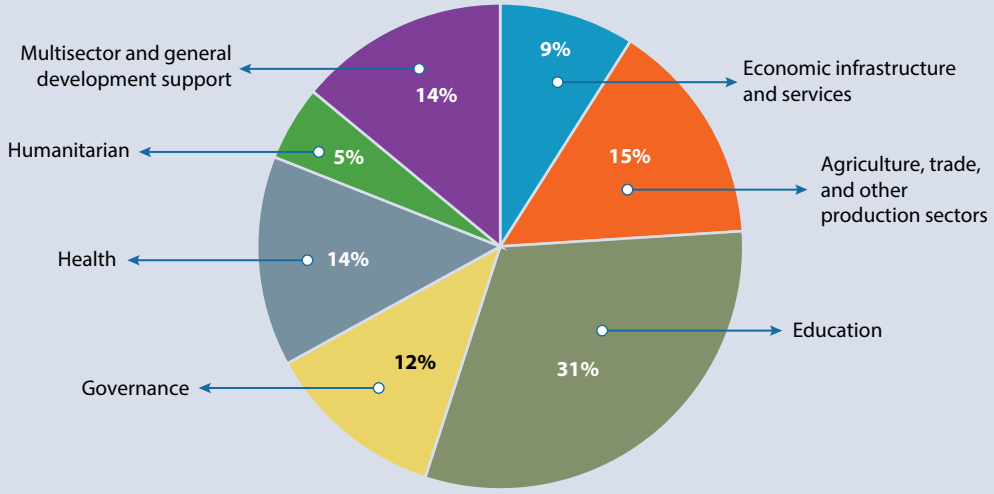
Government Priority Sectors

Donor countries illustrate their regional interests by where they choose to put their cash. Fiji is the second largest contributor to the Pacific region's GDP with 14% contribution while Papua New Guinea contributes 70% to the region's GDP [21]. Overseas Development Assistance, commonly called foreign aid, comes mostly from Australia. Australia gives nearly 45% of all foreign aid while the Asian Development Bank and the World Bank account for 5% and 4% contributions, respectively, in foreign aid to the region. The Organisation for Economic Co-operation and Development (OECD) is an intergovernmental organization with 38 member countries, founded in 1961 to stimulate economic progress and world trade [22]. The OECD defines governance as "the exercise of political, economic, and administrative authority necessary to manage a nation's affairs" [22]. Thus, when looking at the sectorial distribution of aid to the Pacific, governance is

the first allocated sector, with 24% of the total aid to the region. Then comes transport (14%), followed by health (13%) and education (11%). The only reason that governance is highly prioritized over infrastructure and education is that Australia places particular emphasis on governance. A report published by the Australian government in May 2023 showed that Australia's estimated Official Development Assistance (ODA) to Fiji was AUD87.8 million. The 2023–24 budget estimate of Australian ODA to Fiji can be summarized using a pie chart by sector as shown in Figure 7.

FIGURE 7

AUSTRALIAN ODA TO FIJI BY SECTOR, 2023–24 BUDGET ESTIMATE.



Source: Fiji Revenue and Customs Service.

The priority sectors in the country are also determined by the donor's area of interest for development. The estimate from the Australian ODA highlights some of the important developments in the country. The COVID-19 budget support to Fiji enabled the implementation of agreed reforms on public financial management; inclusive fiscal and social policies to support the most vulnerable; and the environment for the private sector's recovery. Additionally, the Australian funding to local women's organizations helped strengthen the critical work. Partnerships between Australian and Fijian institutions also supported capacity and capability-building efforts in key organizations. Finally, the Australian funding is enabling Fiji to develop and trial emissions projects in support of its National Climate Change Act (2021).

Apart from the key priority sectors of the Fijian Government, "Investment Fiji" has identified growing sectors of interest that investors can finance. Business process outsourcing (BPO) industry contributes approximately AUD150 million per annum to the Fijian economy and Fiji has managed to secure its position by attracting major and renowned BPO investors to reposition their back-office processing in Fiji. The technology sector is also attracting a lot of investors. Investors are showing great interest in audio visual, ICT, and energy developments. Investors understand that Fiji can be a technological hub for the region. And lastly, the geographical and geological location of Fiji has drawn investor attention. Mining of mineral deposits such as gold and mineral water is a great investment opportunity for multinational exploration companies.

Government Policies, Regulations, and Initiatives toward Private Sector's Development

Government Policies and Regulations

The Pacific Private Sector Development Initiative (PSDI) is a regional technical assistance program undertaken in partnership with the Government of Australia, the Government of New Zealand, and the Asian Development Bank. Since 2007, the PSDI has worked to alleviate poverty and promote economic growth in the Pacific region through reforms that reduce the constraints to doing business and promote inclusive growth, entrepreneurship, and new business models. The support of the Australian and New Zealand governments has enabled PSDI to assist with more than 300 reforms.

The PSDI helps Pacific countries address their problems through its five focus areas. The specific goals of the focus areas are to:

- modernize business laws;
- develop better financial markets and services that increase access to finance;
- reform state-owned enterprises and pursue public-private partnerships;
- establish effective competition and consumer protection frameworks; and
- advance the economic empowerment of women.

In Fiji, the PSDI is supporting reforms that create an accommodating environment for businesses to establish, innovate, and increase productivity. The PSDI has been working with the Government of Fiji to:

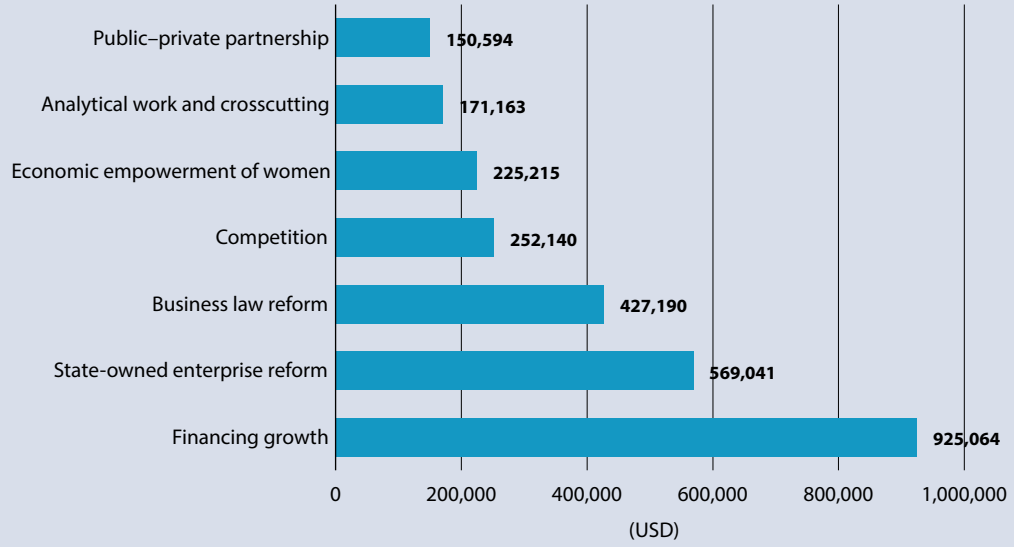
- increase the use of the Secured Transactions Framework established in June 2019 has made it easier for lenders to accept movable property as collateral;
- assist with the commercial transformation of the Fiji Development Bank;
- develop effective state-owned enterprise (SOE) policy and legislative reform, supported by regional SOE benchmarking and analysis;
- strengthen the capacity of the Fiji Competition and Consumer Commission;
- draft a National Competition and Consumer Protection Policy; and
- implement pilot projects to help make workplaces more women-friendly and provide leadership pathways for women.

The PSDI has spent more than USD2.7 million on private-sector development-related reforms in Fiji since 2007. This is illustrated in Figure 8:

The Pacific PSDI, together with other reforms, laws, regulations, and amendments to legislation forms a solid foundation for the development of the private sector and SMEs in Fiji.

FIGURE 8

FIJI SPENDING BY FOCUS AREA, 2007–19.



Source: Fiji Revenue and Customs Service.

Initiatives or Support Programs

The Fiji Business Disaster Resilience Council (FBDRC), hosted by the Fiji Commerce and Employers Federation (FCEF), provides a coordination mechanism for the private sector to engage with the government and partners on resilience building, response, and recovery activities [23]. In response to the destructive impact of Tropical Cyclone Winston, the Business Disaster Resilience Council (BDRC) was established in 2016 [24].

The council:

- supports businesses, particularly SMEs, to strengthen their resilience by providing training, tools, and guidelines;
- integrates the private sector into national disaster management and resilience plans and processes;
- collectively lobbies for resources for business training and capacity building;
- provides a single-entry point and voice for the private sector on issues relating to disasters and resilience; and
- identifies and engages private sector capacities and resources to respond to emergencies, preposition agreements in preparation for emergencies, and match capacities to humanitarian needs before, during, and after emergencies.

In early 2021, Fiji had to deal with the consequences of cyclone Yasa (which struck the country in December 2020) and cyclone Ana (which caused extensive flooding and destruction in January 2021), as well as the impact of the COVID-19 pandemic. The FBDRC partnered with the National

National Disaster Management Office (NDMO) to help spread awareness messages and support information management. In addition, in January and February 2021, the FBDRC conducted a business continuity plan training with USAID Climate Ready. The workshops helped disseminate information on disaster awareness and preparedness and provided practical solutions to overcome the ongoing impacts of the pandemic on businesses.

The primary focus at FBDRC is to work together with key stakeholders to achieve risk reduction, preparedness, prompt response, and recovery. The FBDRC actively engages with the private sector in Fiji, offering the companies a platform to effectively address their challenges while also assisting the Fiji government, civil society, and development partners in enhancing climate resilience, disaster preparedness, and emergency response. To understand how well the private sector helps after a disaster, the FBDRC was established to improve cooperation between private businesses in Fiji, the NDMO, UN Agencies, and groups that provide aid during emergencies. The key objectives include reducing disaster risks, improving emergency preparedness, facilitating response efforts, and promoting recovery. The council has developed comprehensive toolkits for SMEs, focusing on business continuity after disasters, and has actively engaged with communities in Fiji through disaster risk reduction training. Membership is open to all entities involved in disaster risk management.

Some of the activities that the council has carried out since its inception in 2016 are:

(1) 2016

- Fiji-wide tsunami drill
- Knowing and accessing the Green Global Funding
- Climate financing
- Insurance initiatives
- World Food Programme (unsolicited bulk good's impact in the periods after cyclones Pam and Winston)
- Business Continuity Plan Toolkit

(2) 2017

- Disaster response during tropical cyclones (TCs) Josie and Keni
- Vinaka Fiji project
- Seaqaqa and Korovou risk-informed township developments.
- Training on business continuity plan
- Representation on the Climate Action Forum
- Discussion on green and resilient businesses in Fiji and the Pacific.

(3) 2018

- UNDP partnership for developing resilient townships in Fiji.
- Participation in COP24
- Discussions on:
  - Developments regarding the National Adaptation Plan (NAP)
  - Introduction to the UN guiding principles on business and human rights in the context of climate change
  - Cash and voucher assistance
  - Green climate funding
  - Opportunities for small off-grid business access solar energy
  - Review of the National Disaster Management Act and Plan
  - How the private sector businesses can make an early influence on the Asia Pacific Ministerial Conference on Disaster Risk Reduction (DRR).

(4) 2019

- Coordinated engagement of the private sector with government and partners on resilience building, response, and recovery activities.
- In collaboration with FCEF and Business Link Pacific, continue to prepare business continuity plans for SMEs.
- Conducted a call out to members to provide their point(s) of contact that FCEF could liaise with. MSMEs were encouraged to come on board as well, during the pandemic and disaster periods.
- Providing awareness and information sharing on COVID-19 (risks and prevention) to members through emails and social media and create a tab (COVID-19 Resources) on the FCEF website. This robust activity was carried out during the COVID-19 lockdown and when the first phase of the pandemic struck Fiji.
- Populating a private-sector information sheet for preparedness and response. This will assist FCEF and the government to identify business focal points from different sectors, i.e., FBDRC Information Sheet
- Help map out key service providers in essential industries to assist in preparedness and response.

- Partnering with the ILO to support TC Harold recovery work in five communities in the Yasawa Islands.

- Worked closely with the National Disaster Management Office, and development partners to provide a list of suppliers from the Private Sector for relief and recovery work.

Similarly, the Fiji Business Disaster Resilience Council has continued its work to assist SMEs and its members in business sustainability and resilience. All their activities are presented and discussed in the annual general meeting. The meeting outcomes and discussions are published in the Annual General Meeting Minutes.

Challenges, Driving Forces, and Needs of Productivity Enhancement

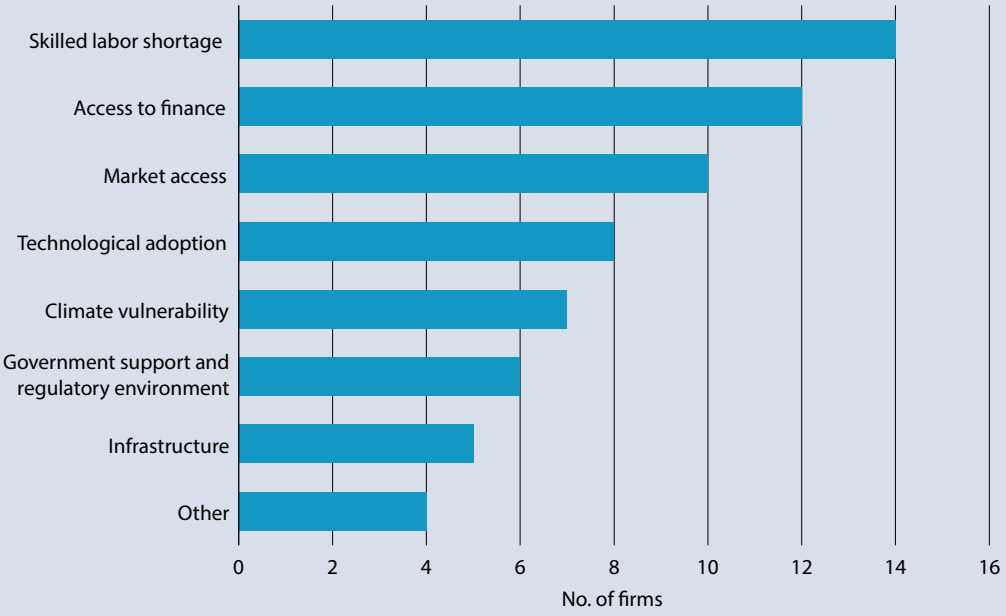
The ultimate goal of development and productivity enhancement is to achieve a better standard of living and a high quality of life for the people. Fiji, currently classified as an upper-middle-income country by the World Bank, needs to continue to grow its economy within the limitations of resources and labor supply, to be able to deliver a high quality of life determined by indicators like the poverty rate, health and mortality, education, crime rates, and other factors. Some of the key findings of the research conducted on the challenges, driving forces, and the need for productivity enhancement in Fiji are discussed below.

Challenges in Enhancing Firm Productivity

Based on a secondary research conducted on 15 private enterprises in Fiji and an interview conducted for a selected five of these enterprises, the common challenges are illustrated in Figure 9.

FIGURE 9

CHALLENGES IN PRODUCTIVITY ENHANCEMENT OF PRIVATE FIRMS IN FIJI.



Labor and skills shortage: Almost all the firms studied in this research indicated that they faced a lot of challenges in recruiting and retaining talent, as well as the low skill levels of the people available in the job market. This factor is attributed to the current state of labor mobility in the Pacific region, wherein skilled workers are moving in massive numbers to Australia and New Zealand. For a small island developing nation with an estimated annual total workforce of 376,303 people, the migration of over 22,000 workers in 2022 and over 8,000 workers in 2023 has had a huge impact on the labor supply for private firms in Fiji [25].

While it is difficult for Fiji to compete with the wages and work conditions of developed countries, it is becoming more apparent that businesses in Fiji need to offer attractive wages and work conditions to the workers to minimize labor loss. In addition to this, an investment in training and development, and overall employee well-being needs to be considered to address this challenge.

Funding constraints: According to the findings of this research, the availability of funds for businesses to invest in research and innovation, technology, infrastructure, employee training, and other initiatives to enhance firm productivity is also a notable challenge for productivity enhancement. Some of the major constraints identified by the business owners are:

- lack of funding availability for research and development;
- high cost of machinery imports including freight costs and taxes;
- high cost of maintaining certification to standards like HACCP, ISO 9001, and ISO 22000; and
- high cost of maintaining internet and data connection, software maintenance, and related hardware for automation.

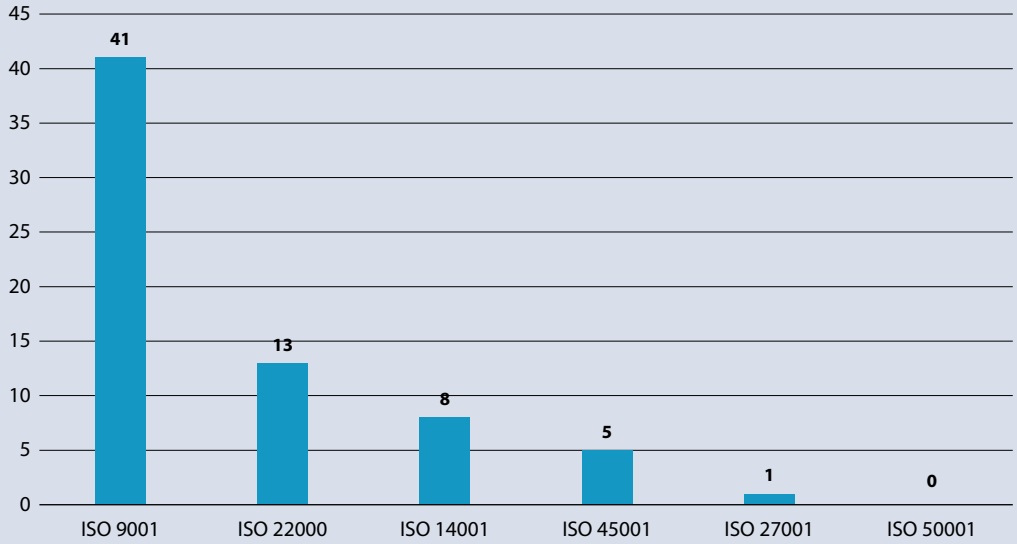
While there are local providers of training in productivity improvement, the costs incurred for certification of standards like ISO 9001, ISO 22000, ISO 45001, ISO 14001, and ISO 27001 are quite high since there are no certification bodies available in Fiji. The total number of organizations certified with some popular ISO standards is illustrated in Figure 10. According to the business owners that have maintained these certifications, the major reason for them to maintain the certification was to obtain wider market access to their products and services. However, the SMEs in Fiji are not able to access these services at all due to limited funding.

Market access: The imminent characteristic of a small island developing country is the small local market size when working on technology and automation in production systems to gain economies of scale in production. For example, FMF Foods Limited has made significant investments in automation and improvement of its production throughput, thereby minimizing unit cost of production. However, the market size available in Fiji, and the surrounding Pacific Island countries is not sufficient to absorb the full production capacity. Moreover, export opportunities for developed countries are determined mostly by the cost of shipment due to the distance factor, as shown in the map in Figure 11. According to the management of FMF Foods, the limitation in the market is a major factor in further refinements in technology-led productivity of their operations.

Technological adoption: While the adoption of technology was noted to be a critical success factor during COVID-19, the limited access to information on new technologies and the high costs

FIGURE 10

CERTIFICATIONS FOR PRODUCTIVITY ENHANCEMENT OF PRIVATE FIRMS IN FIJI.



Source: International Organization for Standardization.

FIGURE 11

FIJI AND THE MAJOR MARKETS.

Source: Fiji Airways.

of implementation impeded technological advancement among SMEs. Lack of awareness and financial constraints hindered the adoption of modern tools, thereby limiting productivity gains.

Although the duty and taxes on hardware like automatic farm machinery, automatic and intelligent machines for the manufacturing sector, and other hardware are low, the high freight costs and initial investment required are the limiting factors to access technology.

Climate vulnerability: During the COVID-19 pandemic alone, Fiji was hit by three TCs that added to the COVID-19-induced downturn and resulted in further challenges. Amid the COVID-19 pandemic, three TCs hit the country, namely Harold in April 2020, Yasa in December 2020, and Ana in January 2021. Both TC Harold and TC Yasa were category 5, while TC Yasa was also one of the strongest cyclones ever recorded in the Pacific. Destructive winds and flooding caused significant property damage, destroying villages, homes, and government buildings. The cyclone also severely affected agriculture and infrastructure, including water supply, waste and sanitation, electricity, and communications. Following TC Harold, the Ministry of Health identified outbreaks of typhoid, leptospirosis, and dengue fever as a major concern. In monetary terms, the impact of TC Harold is estimated at FJD29 million (USD13 million) and of TC Yasa at FJD25 (USD12 million) [26] These cyclones disrupted the food supply and amplified the negative effects of the COVID-19 pandemic.

Needs of Productivity Enhancement

National Scenario

Labor growth and labor productivity: With a nearly stagnant population of below 1 million and a limited size of labor force, the economic growth of Fiji can be fueled by productivity enhancement through innovation, automation, and other techniques. According to the World Bank, the total labor in Fiji in 2023 was 376,303 [18]. In addition to the limitations in the supply of labor, emigration to neighboring developed countries like Australia and New Zealand also limits the supply of labor to fuel Fiji's economic growth indicating that careful productivity enhancement techniques need to be planned and implemented.

Due to this, the unemployment rate remains low in Fiji, leading to high labor costs and a lack of skilled labor to maintain a productive workforce as expected.

In addition to the limited growth in labor, APO Databook shows relatively lower labor productivity for Fiji when compared with other member economies like Singapore, Japan, and Malaysia. To grow the Fijian economy, productivity therefore is a key to achieving the aspirations of the citizens.

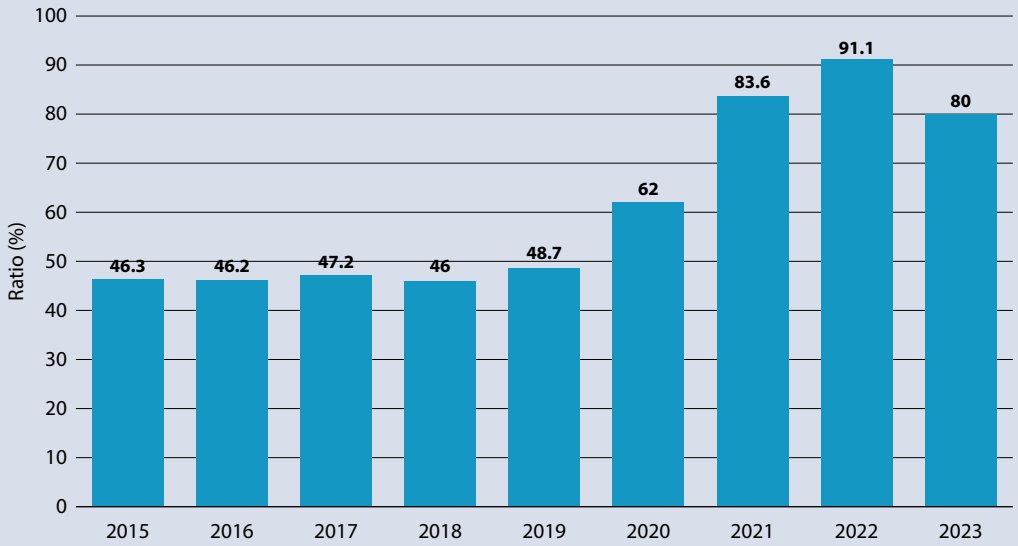
National debt: Overcoming the high national debt level of Fiji, as indicated in the debt-to-GDP ratio in Figure 12, enhancement of productivity in all its economic sectors is imperative for Fiji. As the economy is prone to a lot of uncertainties due to its limited size and vulnerability to climate events like cyclones and floods, a controlled national debt will enable Fiji to sustain its economy in times of crisis and be resilient to external shocks like a pandemic or impacts of recent wars. The recovery from TC Winston in 2019 resulted in a sharp increase in the debt-to-GDP ratio in 2020, which was worsened by the impact of the COVID-19 pandemic in 2021 and 2022.

Large dependence on imports: According to the Reserve Bank of Fiji, the country has maintained a large trade deficit due to considerably large value of products imported relative to the exports.

The high imports are mainly due to the small population and low economies of scale of products and services in Fiji. It is also due to the lack of availability of resources like steel, fossil fuel, and other commodities, for which Fiji heavily relies on imports. In addition to this, the cost of freight and insurance required to transfer large volumes of cargo from Asia and Europe to the South Pacific Island nation of Fiji is quite high, which intensifies during global disruptions like pandemics and wars.

FIGURE 12

DEBT TO GDP RATIO.



Source: Reserve Bank of Fiji.

Needs for Firm-level Productivity Enhancement

In this research, businesses identified several areas where they need support to enhance their productivity.

Training and development: One of the key needs of businesses is a national-level systematic approach to training and development of the workforce to ensure that investment made into staff training and development is not lost rapidly through migration. A specific issue identified by all businesses interviewed was that they pay a 1% training levy to the Fiji National University, and they expect to use the funds as a source of budget for their training and development. However, since 2018, the government has collected these funds and diverted 90% of it to other areas like accident claims and medical funds. The training and development departments' funds have therefore depleted, and several businesses have significantly reduced the training and development departments as well as the in-service training activities.

Continual learning and development are paramount for the enhancement of workforce productivity, particularly at the firm level. This change in government policy, coupled with the impacts of COVID-19 and global labor mobility since 2022, has led to a significant 'brain drain' of the Fijian workforce. A systematic, national-level approach to utilize the training levy to its intended purpose will ensure that the workforce training and skills level are maintained to boost firm-level productivity.

Standards certification: One of the challenges facing businesses that drive productivity through implementing global standards and certification is the cost of obtaining audit services and certification through a reliable third party. This is because there are no certification bodies in Fiji, and mostly, firms through Australia or New Zealand are engaged.

To overcome this challenge, one of the needs of businesses in Fiji is for the regulatory agencies to facilitate the establishment of a certification body, as well as certified laboratory services that deal with

the testing of food and related products. For example, FMF Foods Limited and Future Farms Limited are ISO 9001 and ISO 22000 certified businesses in Fiji. While maintaining the certification to boost productivity and business market resilience, the cost of certification is increasing. A reputable local certification body could offer the same service at a fraction of the cost. This would make standards implementation and certification more appealing to other businesses, especially SMEs, who could benefit from improvement in productivity through standards implementation and certification.

Productivity enhancement initiatives: According to APO Handbook on Productivity, a range of 31 productivity improvement initiatives have been discussed. The 31 initiatives are illustrated in Figure 13. Some of the common initiatives used by businesses in Fiji include 5S, 3Rs, 7Ws, Business Excellence, Quality Circles, ISO 9001 Quality Management Systems, and HACCP. There is a need for businesses to understand more of these initiatives and implement the relevant ones to improve the productivity of their workforce.

FIGURE 13

PRODUCTIVITY ENHANCEMENT INITIATIVES.

Productivity-enhancing Initiatives		Impact Area			
		Product	Process	People	Policy
Cross-cutting					
1	5S/Good Housekeeping	★	★	★	★
2	7 Wastes	★	★	★	★
3	Benchmarking	★	★	★	★
4	Green Productivity	★	★	★	★
5	Kaizen	★	★	★	★
6	Knowledge Management				
7	Quality Circles/Work Improvement Teams	★	★	★	
Product					
8	3Rs: Reduce, Reuse, Recycle	★			
9	Customer Satisfaction Index	★			
10	Eco-design	★			
11	Hazard Analysis and Critical Control Points (HACCP)	★			
12	Niche Marketing	★			
13	Quality Management System	★			
14	Supply Chain Management	★			
Process					
15	Business Process Reengineering		★		
16	Just-in-time Production System		★		
17	Preventive/Productive Maintenance		★		
18	Six Sigma		★		

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Productivity-enhancing Initiatives		Impact Area			
		Product	Process	People	Policy
People					
19	Employee Suggestion Schemes			★	
20	Lean (Toyota) Management System			★	
21	OHSAS 18000			★	
22	Social Accountability (SA) 8000			★	
23	Workplace Cooperation			★	
Policy					
24	Balanced Scorecard				★
25	Business Excellence Framework				★
26	Corporate Social Responsibility				★
27	Energy Conservation/ Management				★
28	Environmental Management System				★
29	Global Agricultural Practices (GAP)				★
30	ISO 9000 Quality Management System				★
31	National Quality Award				★

Source: Asian Productivity Organization.

Research and development: Research and development was another challenge faced by the organizations interviewed. In order to develop new products and services to suit changing customer needs and business landscape, the research and development activities undertaken by businesses at the firm level assist in identifying new products, features, and attributes that make the products more marketable and relevant. However, businesses focus mostly on operations and normal transactions, because the focus, strategies, and funding are not allocated for proper research and development activities.

Relationship between Business Resilience and Productivity

Business Resilience

During the COVID-19 pandemic, it was difficult for most businesses to cope with the unique challenges presented, and numerous technological and non-technological innovations were adopted and implemented to keep the businesses operational. Some of these measures instilled a level of resilience in the businesses in dealing with such difficulties in future.

However, tourism was one of the most hard-hit sectors of the Fijian economy, and no matter what was done, the sector could not cope with the challenges until vaccination was completed and flights and travel resumed globally.

This section discusses business resilience demonstrated during the COVID-19 pandemic by the five firms interviewed and its relationship to productivity.

The indicators assessed for business resilience of the five firms studied, with the findings tabulated in Table 1.

TABLE 1

INDICATORS OF BUSINESS RESILIENCE.

	Firm A (BPO)	Firm B (Manufacturing)	Firm C (Restaurant)	Firm D (Resort)	Firm E (Livestock)
Operational strategies	Hybrid delivery model Flexible work	Facilities maintenance and upgrade	Quality assurance	Focus on excellence and quality Flexible work	Flexible work
Business models	–	New products launched	B2B model (Fiji Eats)	Go-local campaign	Agile decision-making
Supply chains	–	Increased supply partners	More local suppliers	–	–
New markets	Mobile telephone, retail, health and fitness, leisure	Cereal market New snack products	–	–	Fresh products Increase exports
Operational support	Vaccination	Vaccination	Vaccination	International marketing Vaccination	Vaccination Isolation facility

This result shows that businesses need to work on their operational strategies, business models, supply chains, and markets to strengthen their resilience to external shocks. However, in a crisis like the pandemic, international support as well as government support are crucial to overcome the barriers. In the case of COVID-19, regardless of what businesses do, the vaccination program at the international and local levels was a key factor in the reopening of borders and resumption of businesses for many organizations.

To deal with the pandemic, some of the innovative strategies adopted by businesses were as listed in Table 2.

TABLE 2

INNOVATIVE STRATEGIES OF THE FIVE FIRMS STUDIED.

Technological innovation	Non-technological innovation
Chatbots	Flexible work and work from home
Customer relations management	Implementation of new ISO standards
Power BI	Employee rewards program
E-commerce	Promotion of women's sports
Social media	Productivity initiatives like Quality Circles, Business Excellence
Mobile apps	
Virtual meetings	

Case Study 1: Future Farms Limited, Trading as Rooster Poultry

Overview

Future Farms Pte Limited, trading as Rooster Poultry (see Figure 14), is a major commercial poultry grower and processor based in Ba, Fiji. It is a wholly owned subsidiary of BSP Life (Fiji) Ltd. The company is a recipient of the Prestigious Fiji Business Excellence President's Award and has had ISO certifications in Quality and Food Safety for over 10 years.

FIGURE 14

THE ROOSTER POULTRY BRAND.

Source: Future Farms Fiji Limited.

Productivity Initiatives

5S certification: The business is 5S certified by the National Training and Productivity Centre.

Quality circles: The business has won numerous medals including gold at the National Quality Convention. The NCQ is a premiere business event at the national level recognizing the best quality circles in Fiji. The business also won awards at the International Team Excellence Awards (ITEX).

Business excellence: The business has received the highest level of awards, including the President's Award twice through the Fiji Business Excellence Awards.

ISO 9001 and ISO 22000 certification: The business is ISO 9001 and ISO 22000 certified by Telarc for the last 10 years.

The productivity initiatives discussed above have been part of the business culture from prior to COVID-19. These initiatives have sustained well during and after the pandemic.

Innovation

Solar power generation: The business has a 500kW roof-top solar generation system that meets most of its energy needs.

Organic compost: The business converts chicken litter (by-product) into safe-to-handle and nutrient-rich organic compost. It recovered its capital expenses within the first year of the product's introduction.

These innovative approaches to doing business were introduced before the pandemic, and have helped the business greatly in sustaining its operations during the COVID-19 crisis.

Resilience

Financial results: While the business did not disclose its annual revenue and profit figures due to confidentiality, it mentioned that the revenues grew exponentially during the years 2018 to 2022. This reflects that the business demonstrated strong resilience to COVID-19 and such practices that led to the resilience were related to its productivity and innovation initiatives.

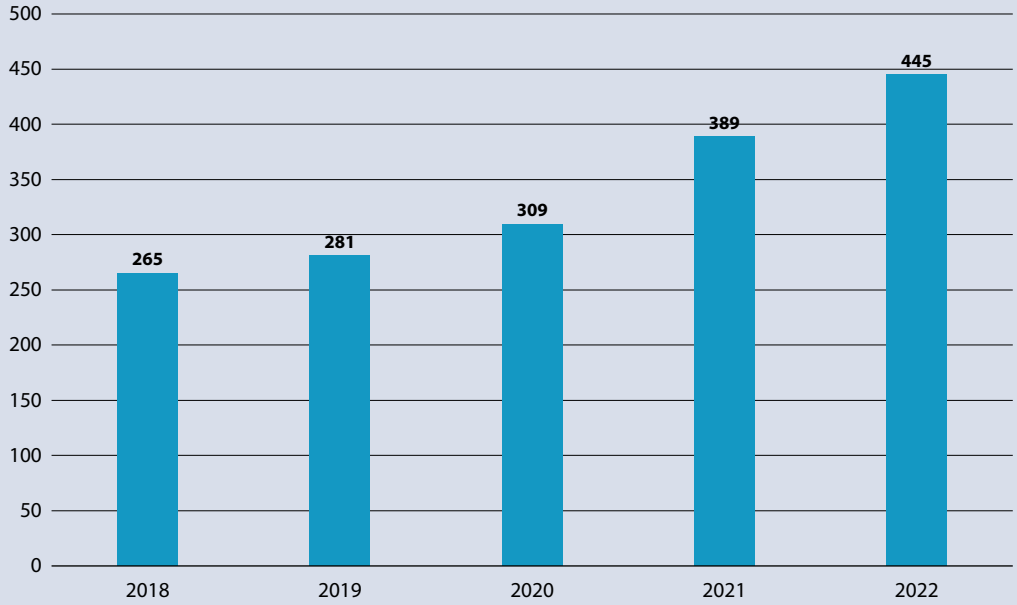
To achieve this result, some of the new initiatives introduced to cope with the COVID-19 challenges by the company are:

- use of e-commerce, social media, and mobile apps to maintain sales;
- use of carefully planned and company-funded facility to accommodate workers, workplace bubbles, and isolation facility, for its manufacturing and farm staff; and
- maintaining and continuing its other productivity and innovation initiatives discussed above, without any lapse in focus on its ISO 9001 and ISO 22000 standards.

Workforce results: The growth of the number of employees during the term of the study of this research is shown in Figure 15. A considerable growth of 68% is seen between the years 2018 and 2022.

FIGURE 15

TOTAL EMPLOYEES.



Source: Future Farms Limited.

Implications: This case study demonstrates the fact that business resilience and productivity enhancement are mutually related. Due to the numerous productivity enhancement measures put in place by Rooster Poultry, it demonstrated a high level of resilience during the pandemic. The resilience of Rooster Poultry has enabled it to continue to enhance its productivity.

Case Study 2: Raffe Group of Hotels and Resorts

Raffe Hotels and Resorts' collection of properties (see Figure 16) includes the iconic Plantation Island Resort, the premium Nadi airport hotel Fiji Gateway Hotel, and the boutique adults-only Lomani Island Resort. Each property has celebrated several recognitions of excellence from industry partners in the last couple of years after COVID-19.

FIGURE 16

THE RAFFE GROUP PROPERTIES.

Raffe Hotels and Resorts (RHR) states the 'Bula Spirit' as the core of its values and vision for the future. It views the 'Bula Spirit' as embracing acceptance, warm compassion, and inclusivity. The group welcomes guests to its properties to share with them the Fijian hospitality, traditions, and joy for life. It strives for excellence so that its guests could leave Fiji with a family-like feeling and memories that not only serve them for a lifetime but also compel them to return to Fiji time and again. It believes that the 'Bula Spirit' captures a sense of resilience and optimism.

While COVID-19 posed drastic challenges for the entire tourism and hospitality industry, the post-pandemic period has seen a strong comeback for the business. 'Quality improvements and Quality People' has been the motto for the hotel industry.

RHR has embarked on a journey to excellence by adapting the following:

(1) 5S good Housekeeping Practices;

(2) Quality Circles;

(3) participation in the National Quality and Innovation Convention;

(4) Fiji Business Excellence Awards;

(5) investment in technology;

(6) creation of Environment and Sustainability Division and Framework;

(7) Staff Suggestion Scheme, e.g., climate surveys;

(8) investment in REVINATE, a customer relationship management system;

(9) robust establishment of Labour Management Cooperation and Consultation Committee;

(10) establishment of Quality Assurance Division; and

(11) multiple partnerships with educational institutes such as NTPC, USP, FNU, and others.

These have been absolutely beneficial to the group as it has not only upgraded its overall processes but also enabled continuous learning and development in the group. Some results pertaining to its individual properties are given below:

Plantation Island Resort

- Voted by the people as Fiji's Favourite Family Resort in the four-star and below category for 'Holiday with Kids' magazine

- Included among the top 10 winners circle since its inception in 2008, at no. 6. The property has received the top ranking for eight times, in 2015, 2016, 2019, 2020, 2021, and 2023.

Lomani Island Resort

- Agoda's Customer Review Award for 2023

- Trip Advisor Top Hotels in the South Pacific

Fiji Gateway Hotel

- Trip Advisor: No. 1 Nadi Hotel 2023

- Travelers Choice Award for Top 10% in the World

- Kayak Travel Awards
- Top Traveler Experience 2023 award by Expedia

Overall Group Recognitions

2022: Gold Prize Learning and Development by the ANZ Excellence in Tourism Awards

2023: Silver Recognition L&D, Silver Recognition Marketing Destination, Silver Recognition in Accommodation Deluxe for Lomani Island Resort, and Bronze recognition for CSR and Environment and Sustainability for Plantation Island Resort.

2023: 2-star Recognition at the National Quality and Innovation Conference

2023: Achievement in Business Excellence, FBEA

The RHR is now working toward Prize Level in 2024.

There have been multiple people's growth initiatives in the organization such as:

(1) promotion of local talents;

(2) local leaders at the EXCOM level;

(3) HR and training empowered and promoted to EXCOM team;

(4) external trainings for the team;

(5) repurposed standard operating procedures; and

(6) robust on-boarding initiatives.

Financial and Business Gains

Continuous improvements have enabled the business with:

(1) increased revenue for all the three properties;

(2) heathier financial gains;

(3) better cost management;

(4) well maintained manpower;

(5) controlled injuries, accidents, and incidents; and

(6) empowered and motivated employees.

The below data demonstrates RHR's service standards derived from its guest feedback:

- Fiji Gateway Hotel scored 81%;
- Plantation Island Resort scored 80%; and
- Lomani Island Resort scored 92%.

Guidelines

Through this research, it can be concluded that government support, productivity improvement initiatives, and innovation are the key factors in ensuring that businesses can develop resilience and deal with unforeseen challenges that may arise in the future.

Productivity Improvement Initiatives

Some of the productivity initiatives that can be commonly accessed through the National Training and Productivity Centre and implemented in Fiji are:

- 5S Good Housekeeping Practices Certification
- Quality Circles
- Management systems implementations and certifications
    - ISO 9001 Quality Management System;
    - ISO 22000 Food Safety Management System;
    - ISO 14001 Environmental Management System; and
    - ISO 45001 Occupational Health and Safety Management System.
- Fiji Business Excellence Awards
- Lean Management
- Six Sigma
- Total Productive Maintenance

While these are some of the initiatives provided at a National Level, we recognize that individual businesses may choose to implement other business-specific productivity improvement initiatives.

Innovation

This research also supports that innovation is also a cornerstone of resilience. Innovation in products, processes, delivery, and business operations can help develop sustainable practices that are resilient to external shocks.

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MONGOLIA

Executive Summary

There are various dimensions affecting productivity enhancement. The perpetually emerging new tools bring bigger impacts on productivity enhancement, especially business, socioeconomic, and environmental changes, which require us to think differently to stay relevant.

Several surveys and research were conducted by research institutions including the Mongolia Productivity Organization (MPO) to define the impact of the COVID-19 pandemic on business and socioeconomic development. Studies found that companies with comprehensive productivity programs stayed resilient during the pandemic and got ready for any changes. At the same time, the MPO supported innovation initiatives for productivity enhancement for SMEs, which ensured the SMEs' resilience. The MPO implemented several innovation projects, e.g., on "Internet of Thing (IoT) for Health organization" and "IoT and digitization for SMEs" during the pandemic to help critical sectors to survive downtimes and be ready for a new normal. Our case study proved that digitization and technical innovation would increase productivity incrementally. It can provide confidence to SMEs utilizing high-tech and industrial revolution (IR) 4.0 tools to advance their businesses.

Findings of the "Research on Needs in productivity enhancement after Pandemic COVID-19" show a strong linkage between business resilience and productivity and innovation tools. The difficulties, driving forces for success, and needs for the improvement of firms' productivity during and after the pandemic period were analyzed to provide a clear roadmap for less harmful recovery and productivity enhancement during the external shock.

There are common difficulties for SMEs in productivity enhancement like financial and investment deficiency, particularly for digitization and human resource (HR) shortage. On the other hand, SMEs are agile and ready to embrace any changes. The cost of IT, digital solutions, and hi-tech is getting more affordable for SMEs.

The research case study demonstrates certain examples of how SMEs enhance their productivity using innovation and management tools. These companies, which are committed to have effective management tools, embrace risk thinking, and be prepared for unexpected challenges, are more likely to navigate disruptions effectively and maintain sustainable growth in their respective businesses.

Also, economic infrastructure and government policy play key roles in the stability of businesses, especially the SMEs. It shows that a pandemic or an external shock that leads to low productivity in the short term requires a practical approach and integrated strategies to overcome any risks of downturn and find new ways of working.

Introduction

The MPO is the key productivity promoting institution in Mongolia to provide advisory services for developing and adopting the recent productivity concepts and tools.

To ensure a sustainable and inclusive economic growth in Mongolia, one needs to focus on productivity enhancement of the key economic sectors by introducing highly productive advanced technologies; promoting resource-efficient green production; and increasing productive employment and HR capacities.

Although the contribution of agriculture, mining, and service sectors in economic development is high, the fact is that there is still a need to promote productivity in all economic sectors. The MPO is promoting productivity-improvement programs in critical economic sectors such as agriculture, SMEs, and public sector, in collaboration with the relevant institutions like government agencies, associations, and funding organizations (see Table 1).

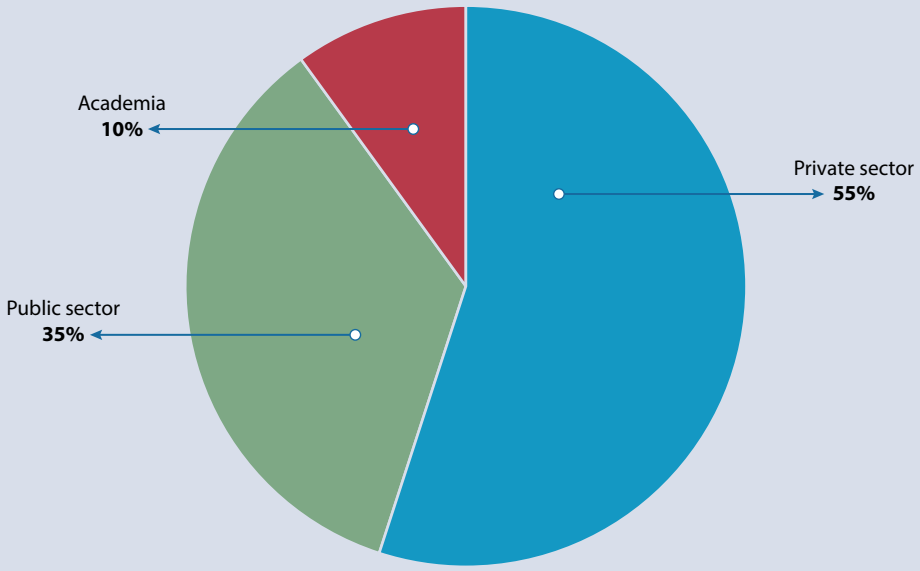
TABLE 1

PRODUCTIVITY MOVEMENT VALUE NETWORK.

Government, APO, public, and funding organizations			
Stakeholders	**Activities**	**Promotion**	**Dissemination**
Customers	Research	Forum	Publication
Communities	Training	Conference	Mass media
Industry	Advisory consultancy	Seminar	Partnering
Interested groups	Networking	Awards	TV channel
Government organizations	Productivity Specialists' certification	Convention	Video audio broadcast
Academia	Technical support	BP sharing	
Mongolian Productivity Organization			

FIGURE 1

PRODUCTIVITY INVOLVEMENT BY SECTORS.



Enterprises from critical sectors are often targeted for productivity improvement initiatives due to their significant impact on the economy and their potential for efficiency gains.

The assessment of needs of Mongolian businesses and enterprises in productivity enhancement post COVID-19 is based on an analysis of primary and secondary data. The recommendations and guidelines are developed based on research findings and case studies of private small enterprises and small-sized public service organizations. The case of the public service organization included in this report best represents the post-COVID-19 needs of small service organizations to enhance their productivity.

First, SMEs play an important role in the economic development of Mongolia. They form the primary economic sector addressing employment issues, poverty, economic diversification, and inequality.

According to the Mongolia's law on SMEs, which introduced a streamlined definition of MSMEs on 6 June 2019, three types of enterprises (micro, small, and medium-sized) are defined with the following characteristics:

(1) Micro enterprises are defined as businesses with up to ten employees, engaged in production, trade, and service sectors, with a sales income of up to MNT300 million (around EUR100,000) annually;

(2) Small enterprises are defined as businesses with between ten and 50 employees, engaged in production, trade, and service sectors and having annual income between MNT300 million to MNT1 billion (around EUR333,000);

(3) Medium-sized enterprises are businesses with up to 200 employees, engaged in production, trade, and service sectors and having an annual income of up to MNT2.2 billion (EUR745,000).

The law further specifies that the number of employees should be used as a key indicator in case other data are lacking.

SMEs employ 52.5% of the total workforce as they dominate in the private sector, accounting for nearly 80% of businesses in the country. Besides, the SME sector's value-added or total production share is 17.8% of the gross domestic product (GDP). It has been increasing incrementally and has almost doubled in the last five years. However, the productivity of this sector is very low, contributing just 5.6% to the overall share of the GDP in 2020, which decreased by 0.1% in 2021. Exports consist of 2.4% of products from the SME sector, which also decreased by 1% from 2020 [1].

Then, public sector productivity is the main focus area of the policy of Government of Mongolia, as expressed by the performance of public sector activities that align the public's needs and preferences with resources.

The total number of civil servants in Mongolia was 225,205 and number of public organizations was 4,232 in 2022, according to the National Statistical Office of Mongolia. The overall tax burden equaled 23.2% of total domestic income. Government spending amounted to 33.4% of the country's output (GDP) over the past three years, and budget deficits averaged 7.4% of GDP. Public debt was equivalent to 73.3% of GDP [1].

The government aims to improve the capabilities and effectiveness of its operations by lowering the corruption index; expanding public control of state-owned enterprises; and reforming the structure of the public services and digitizing them to create better socioeconomic environment for the public and businesses.

Definition of Productivity

According to the APO, productivity refers to the relation between the output, including goods and services produced, and resources or inputs (labor, materials, machinery, and energy) used to produce them. Some examples of input are labor, materials, machinery, and energy. "If a product is made at the lowest possible cost with high quality and can be sold competitively on the market at a good price, then its productivity level is considered high."

The productivity indicators measure the efficiency of a given input in the generation of output. Labor productivity is defined as a ratio of GDP index and labor input (person employed) index. Estimation of labor productivity excludes the imputed rent of owner-occupied dwellings [1].

Output can be measured in forms of goods produced or services provided or in the form of a financial value, e.g., through calculation of sales, production value, or value added. Value added measures the real output of an organization. Value added can be measured by the difference between sales value and the value of purchased material or sum of operational costs.

Input can be measured in forms of labor (number of hours worked, number of workers used, and cost of labor); capital (machinery, inventories, land, and building); and financial value of assets, net of depreciation.

Productivity is contingent on several factors: physical capital value creation/expansion (capital productivity) and total factor productivity (TFP). TFP measures the qualitative aspect of labor and the capital inputs and efficiency with which these two inputs work together. TFP refers to skill upgrading, better management system, technological advancement and improvement methods, and transformation for higher value-added processes and industries.([4])

A productive and efficient public sector plays an important role in ensuring sustainable development of a nation by being constantly relevant and responsive to emerging challenges. Higher public-sector productivity positively affects and leads to increased citizen satisfaction and quality of life, and to a restoration of trust in public-sector institutions as well as in the processes of governance, participation, and accountability [12].

Thornhill [11] identified in "Productivity attainment in a diverse public sector" three main reasons why public-sector productivity is crucial. First, the public sector is a major employer and has a significant share of the total employment figures of any country. Second, the public sector is a major provider of services, including those provided by no one else but the government. Third, the public sector is a consumer of tax resources.

Public-sector productivity is defined as optimizing the delivery of government services through efficient use of public funds, resulting in increased citizen satisfaction, better accountability, cost effectiveness, competitiveness, and quality of life for people.

Research Objective

Given the negative impact of COVID-19 on the firms, the study aims to understand the difficulties, driving forces for success factors, and needs for the recovery of productivity of private firms during and after the pandemic. The specific objectives are to:

(1) identify the emerging needs for productivity enhancement of private firms in Mongolia by analyzing firms' success points during and after the pandemic;

(2) examine how to connect the successful business practices with productivity in Mongolia along with its priorities; and

(3) provide guidelines on successful best practices in private-sector firms for widespread application in APO member economies.

Research Methodology and Approaches

The research focused on defining the business resilience and innovation performance of enterprises and how these factors leveraged productivity during the pandemic period.

The indicators for business resilience focused on:

- operational and business continuity and adaptation;
- financial stability; and
- employment continuity and adaptation.

For innovation, as an indicator for productivity, both tech and non-tech innovations were considered.

In order to achieve the objectives of the study, the qualitative method was used to analyze data. The data was obtained from both primary and secondary sources.

The target group for the research comprised SMEs (public and private), and the research aimed to address the challenges faced by SMEs as the most-affected sector by the COVID-19 pandemic.

By reviewing the existing studies, the direct impact of concessions and exemptions provided by the local government and international donors during the pandemic on labor productivity and economic condition was estimated.

By conducting interviews with 15 SMEs, the pain points of businesses in enhancing productivity during the external shock were defined. Also, the survey results of SMEs, in which 100 SMEs were surveyed using pre-designed questionnaires for business continuity and digital transformation readiness, were analyzed for defining the needs for productivity enhancement after COVID-19.

The analysis is done from three perspectives: (1) challenges, driving forces, and needs for productivity enhancement; (2) productivity driving successful businesses; and (3) guidelines for successful best practices in small firms.

(1) Productivity challenges and driving forces, including innovations for productivity growth during the pandemic, were defined based on the enterprise survey. The emerging needs for productivity enhancement were also defined based on survey analyses and study.

(2) Relationships between business resilience and productivity were examined by defining the reasons and strategies for successful businesses or business survival during COVID-19. The study shows that productivity is the driving force for business resilience.

(3) Guidelines on successful best practice in small firms are provided.

A survey and key informant interviews were used to collect primary data for case study development. The sample size for the research was 15 for interviews and 100 for survey questionnaire. The case studies were developed by drawing attention to approaches and techniques for successful business operations to cope with the external shocks or uncertainties. Primary data was collected by conducting interviews with top managers of the companies. The case studies explain the best practices of the two selected organizations to survive and remain resilient during COVID-19, while adopting the advantages of digital transformation for higher productivity. The results of the study were integrated in the strategies and used as a showcase of best practices for other businesses, especially for productivity enhancement.

Scope and Limitations

The data from both primary and secondary sources comprises data from the periods during and after the COVID-19 pandemic. However, it is important to note that the results may not fully capture the context dimensions of a non-COVID-19 or post-Covid-19 situation.

The research mainly relied on secondary data at the macro level, while primary data was utilized for correlation analysis in a qualitative approach. Research data, especially primary data gathered from SMEs through interviews and survey questionnaires, may introduce partiality into the conclusion of findings.

It is crucial to consider these limitations when interpreting the findings of the research.

This report summarizes the findings of a productivity analysis conducted using data from various sources, including the APO Productivity Databook [2], ILO statistics, National Statistics of Mongolia (NSO database), and the World Bank [10].

Economic and Business Performance

Economic Performance

Mongolia is a landlocked country situated in Central Asia, bordered on the north by Russia and on the south by PR China. The total land area is 1,564.1 thousand sq km. The total population of Mongolia in 2022 was 3,457.5 thousand, an increase of 47.6 thousand (1.4%) from the previous year. [3]

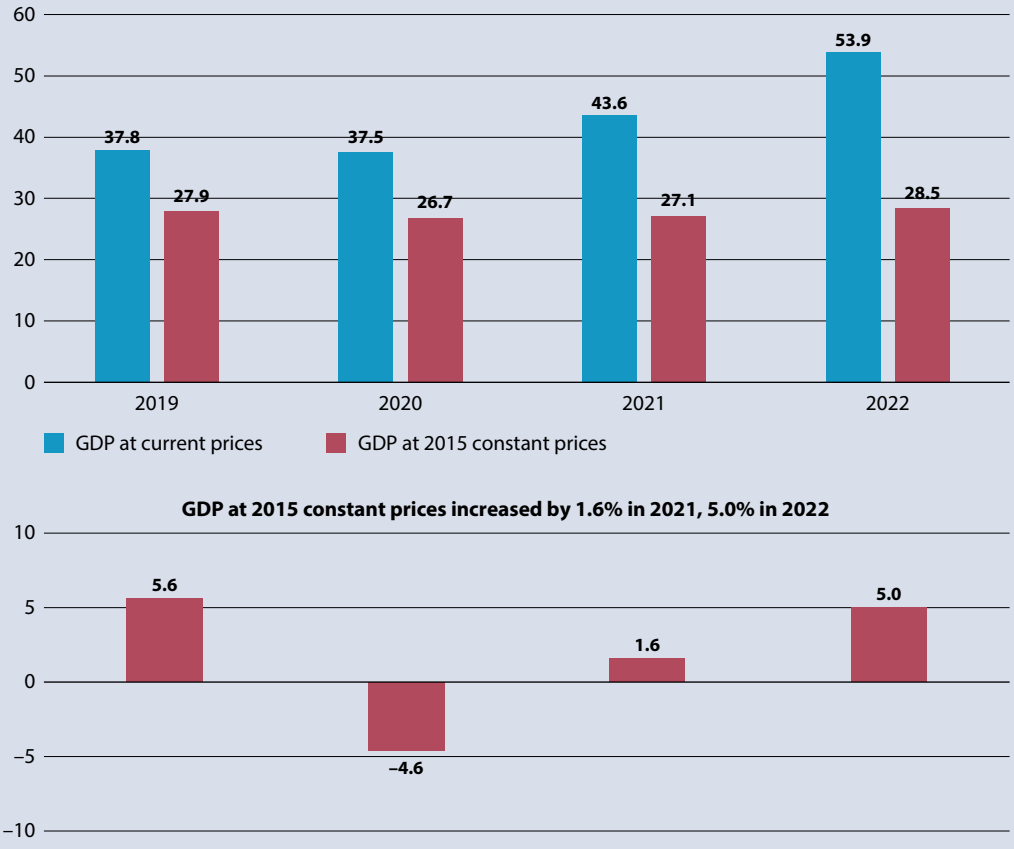
Mongolia's economy is growing steadily, attaining triple increase in GDP in the last three decades. Its GDP per capita reached USD5,033 in 2022. The country's economy is mostly based on mineral commodities, which accounted for 22% of GDP and 61% of industrial value added (NSO 2023).

During the outbreak of COVID-19, GDP growth was negative at –4.6 % in 2020 (see Figure 2). From 2020, the growth in social economic development slowed down slightly due to lingering border frictions with PR China, weaker global economic prospects, and higher prices of imports due to the war in Ukraine, as these factors are expected to constrain the economic recovery (NSO 2023).

After COVID-19, in 2022, the economy grew by 4.8%. The economy of Mongolia is transitioning to post-pandemic expansion, driven by the economic reopening in PR China, robust demand for mineral commodities, and revival of domestic demand. This contrasts with previous low growth expectations, despite tightened financing conditions globally and domestically. [7]

FIGURE 2

REAL GDP OF MONGOLIA 2019–22.



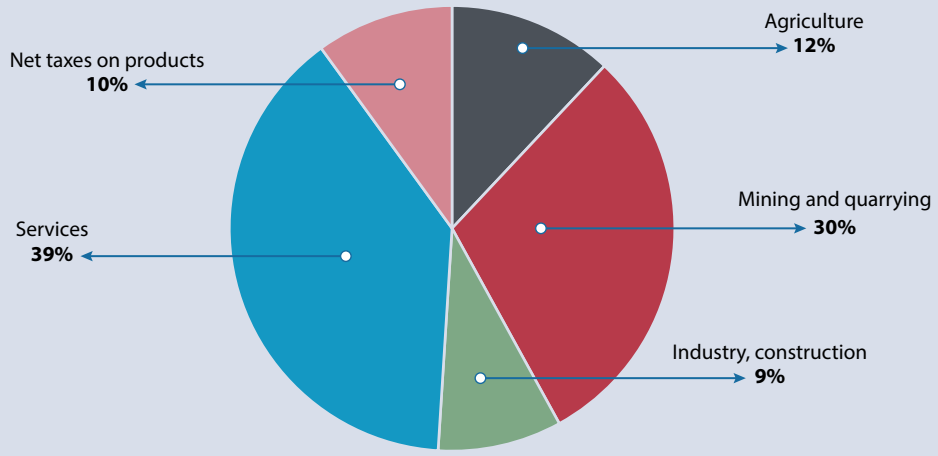
Source: NSO 2023.

The shares of value added of sectors to GDP in 2023, the share of the service sector was 39%, the share of mining and quarrying was 30%, the share of agriculture was 12%, the share of industry and construction sector was 9% [3]

Mongolia was facing a high unemployment rate during the pandemic (10% in 2019, 7% in 2020, and 7.8% in 2021) as it was severely impacted by COVID-19. However, in 2022, the unemployment rate dropped to 6.7% and labor participation rate was 58.6%. At the end of 2022, the number of civil servants reached 225.2 thousand, which was an increase of 16.3 thousand (7.8%) over the previous year.

FIGURE 3

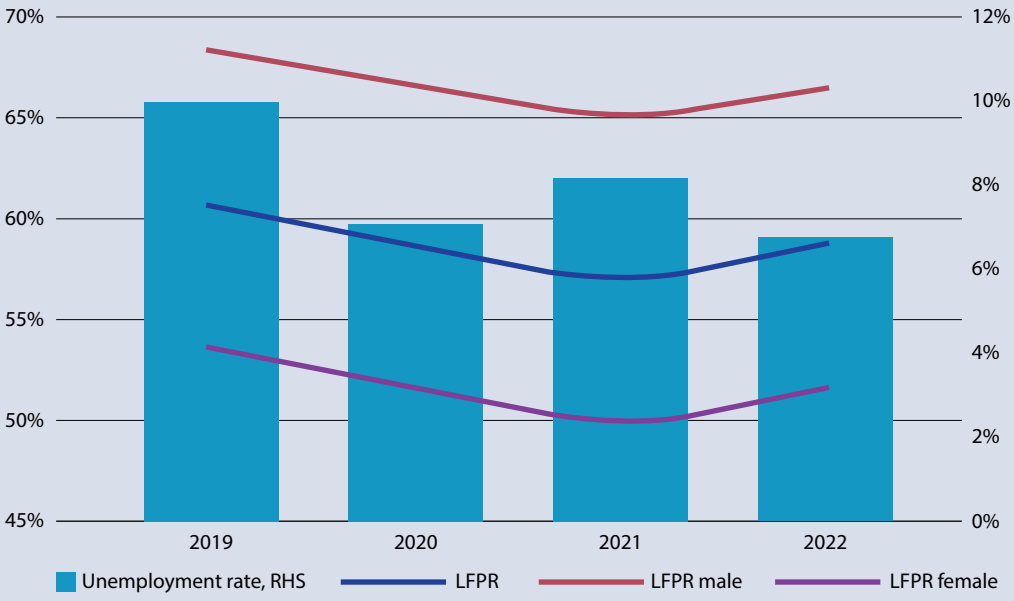
GDP SHARE BY INDUSTRY.



Source: NSO 2023.

FIGURE 4

LFP RATE FOR 2019–23.



Source: NSO 2023.

Before or after the pandemic period, the productivity indicators of a country (see Tables 2 through 4) are pertinent to economic performance. They can provide insights into the specific sectors that have been most impacted by the pandemic and help policymakers and businesses make informed decisions. This information can also aid in identifying areas that require targeted support and in developing strategies that mitigate the negative effects of the pandemic on socioeconomic development.

TABLE 2

MONGOLIA'S PRODUCTIVITY INDICATORS BEFORE AND AFTER THE PANDEMIC.

Years	Global Competitiveness Index	Ease of Doing Business Index	Human Development Index	Global Innovation Index	Corruption Perception Index
2019	101/135	64/190	92/135	53/126	87/180
2022	102/141	73/176	n/a	71/132	109/178

Source: MPO 2023.

TABLE 3

GDP PER CAPITA.

Indicators	2019	2020	2021	2022
GDP per capita in USD	4,385	4,107	4,107	4,242

Source: NSO 2023.

TABLE 4

LABOR, CAPITAL, AND TOTAL FACTOR PRODUCTIVITY TRENDS IN MONGOLIA.

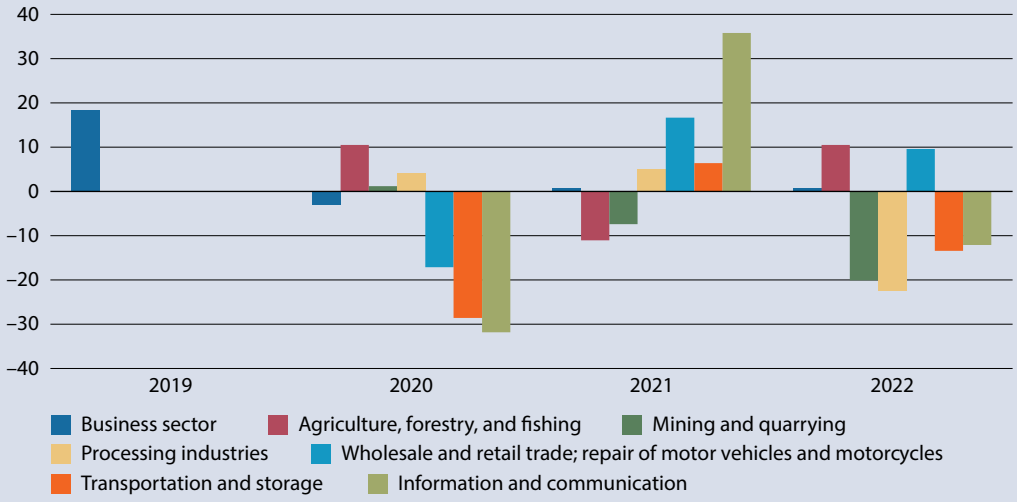
Rates, %	2019–20	2020–21	2021–22	2022–23
Labor productivity	–5.9	–3.4	2.4	5.1
	–3.7	4.5	3.2	2.9
Capital productivity	–5.2	–1.8	–0.7	2.1
	–3.8	2.0	0.1	–0.4
TFP	–7.4	–0.4	–0.5	2.3
	–5.5	2.6	1.4	1.0

Source: NSO 2023.

After the pandemic, the productivity of business sectors has a tendency to increase slightly. However, it is relatively low compared with the pre-COVID-19 period (see Figure 5).

FIGURE 5

PRODUCTIVITY OF BUSINESS SECTORS, BY CLASSIFICATION OF ECONOMIC ACTIVITIES.



Source: NSO 2023.

Several major technological transformations, e.g., artificial intelligence (AI), fintech, the internet of things (IoT), and Industry 4.0, are putting the global economy on a new track. They bring immense economic opportunities and productivity enhancement, such as new ways of doing business, new industries, new and better jobs, higher GDP growth, and better living standards.

Mongolia performs better in innovation outputs according to the World Intellectual Property Organization (WIPO) and ranks 71st among 132 economies in the Global Innovation Index 2022. The relationship between its GDP per capita and innovation performance (GII score) is positive, and the trend line gives an indication of the expected innovation performance according to GDP growth (see Figure 6 and Table 5).

FIGURE 6

RELATIVE TO GDP, MONGOLIA'S PERFORMANCE IS ABOVE EXPECTATIONS FOR ITS LEVEL OF DEVELOPMENT.

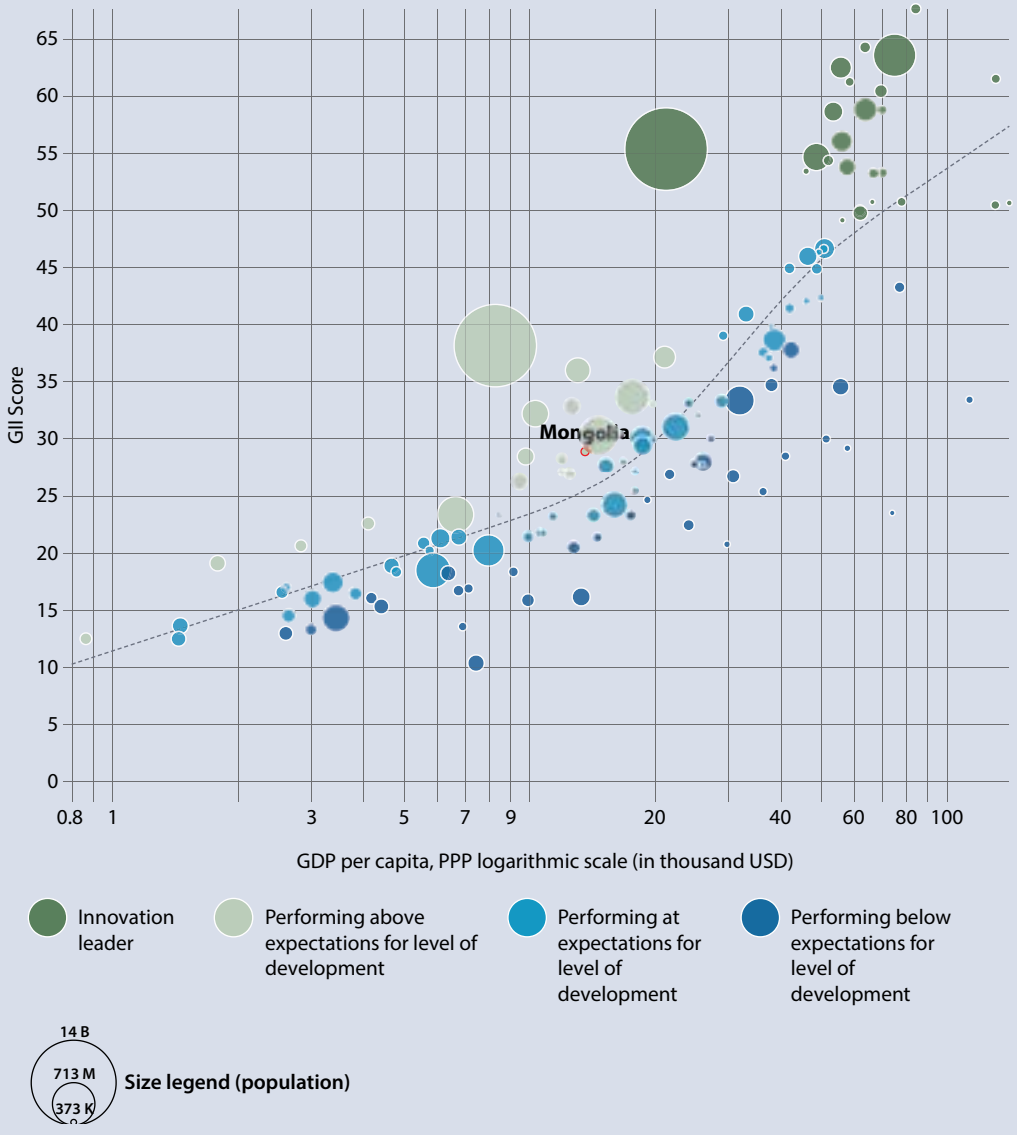


TABLE 5

STRENGTHS AND WEAKNESSES FOR MONGOLIA IN GII.

Strengths	Weaknesses
Cost of redundancy dismissal	Global corporate R&D investors, top 3, in USD million
Gross capital formation, % GDP	QS university ranking, top 3
Firms offering formal training, %	Domestic industry diversification
Females employed w/advanced degrees, %	Patent families/bn PPP$ GDP
FDI net inflows, % GDP	High-tech imports, % total trade
Utility models by origin/billion PPP$ GDP	High-tech manufacturing, %
New businesses (per thousand population, 15–64 years old)	High-tech exports, % total trade
Trademarks by origin/billion PPP$ GDP**	Intangible asset intensity, top 15, %
Industrial designs by origin/bn PPP$ GDP	Global brand value, top 5,000, % GDP
Printing and other media, % manufacturing	Creative goods exports, % total trade

Source: WIPO, 2022 [8].

Business Performance

In 2020, Mongolia experienced its first recession since 2009 due to the COVID-19 pandemic. The weak external and internal demands and the government's emergency measures severely impacted businesses. According to a survey in August 2020 conducted by the National Statistical Office, 86% of the businesses in manufacturing and 76% of the businesses in the trade and service sector experienced income losses since January 2020.

The businesses, especially small businesses, reacted by reducing costs, laying off workers, while the micro and informal businesses resorted to reducing their household expenditure.

TABLE 6

SMES AND THEIR ROLE IN THE ECONOMY.

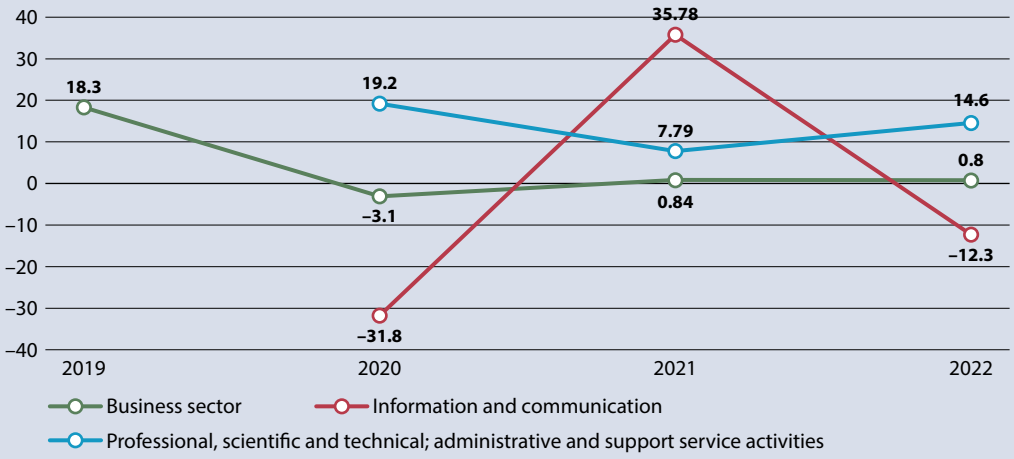
Indicators for SMEs	2019	2020	2021	2022
Business sector productivity	18.3	–3.1	0.837	0.8
Number of SMEs	53,810	55,230	58,015	69,539
SME Gross value added in million USD	467.1	635.3	727.9	n/a
GDP share	4.1	5.6	5.5	n/a

According to the SME Agency survey findings, since the outbreak of the COVID-19 pandemic and the transition to a state of emergency, SMEs lost a total of 9,065 jobs, including downtimes, layoffs, vacations, and layoffs. As a result of the outbreak of COVID-19, 55.6% of the SMEs were not able to pay their employees, while 22% of employees were paid for idle time. Further, 73.9% of SMEs had some kind of loan, with 52.8% of SMEs having commercial bank (business) loans; 29.8% having non-bank financial institutions (NBFI) loans; 28% had pawnshop loans; and 23.8% had raw material loans.

During the quarantine period, the sales revenue of SMEs fell by 50%. This led to a situation where 36% of SMEs had enough cash reserve for only a month and 31% had no cash at all. SMEs faced the greatest challenges, such as maintaining jobs, paying wages, repaying loans, having no working capital, and running out of raw materials and supplies.

FIGURE 7

PRODUCTIVITY IN BUSINESS SECTOR, 2019–22.



The Government of Mongolia promoted the digitization of the public service operations, especially with intensified efforts during the COVID-19 pandemic. Most of the public service bodies transformed their operations into digital modes. Introduction of the E-Mongolia digital platform by Communication and Information Technology Authority was a significant step in this regard. There was substantial increase in the number of services offered through this platform (from 181 types of services by 23 government agencies to 450 types of services by 35 organizations) by end of the 2021. This demonstrated the strong commitment to provide accessible and efficient digital services to the public.

Constraints to Business Environment

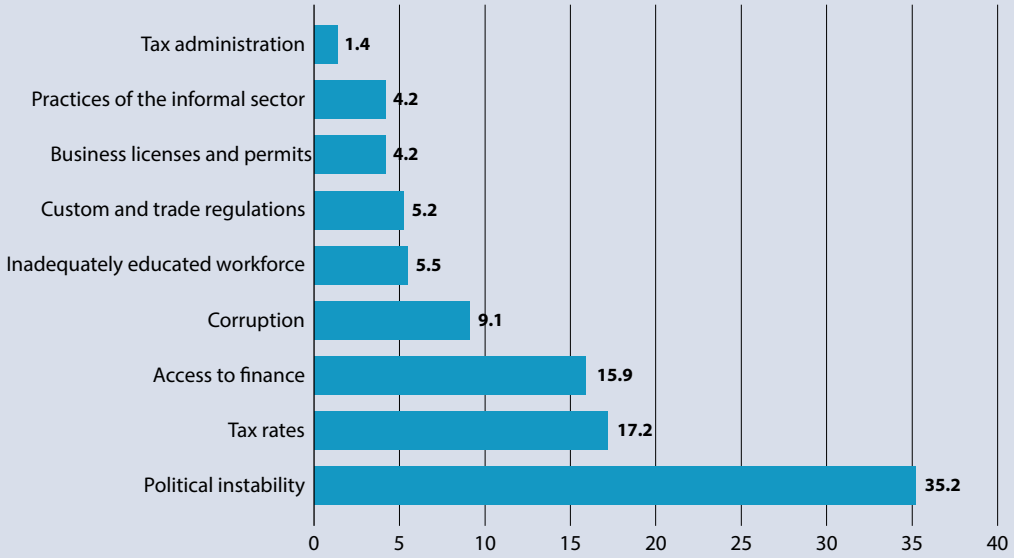
Mongolia's position in the World Bank's Ease of Doing Business Rankings fell from 74 out of 190 countries in 2018 to 81 in 2020. The most serious problems were electricity (ranked 152), insolvency (150), and cross-border trade (143). Although a number of government initiatives were implemented to improve business registration and permit processes, the rankings reflected the fact that serious barriers exist for starting a business (100). It takes 12 days on an average and eight procedures to start a limited liability company in Mongolia.

Corruption in all sectors of government and political clientelism remain a serious challenge to doing business and prevent the creation of an even playing field. Politically connected and larger business groups enjoy access to favorable financial resources and regulatory environments, while SMEs and new entrants face significant financial and administrative barriers. Approximately 90% of private-sector entities receive financing from Mongolia's domestic banks.

The graph in Figure 8 provides an overview of the sample and highlights the biggest obstacles experienced by private-sector firms in Mongolia.

FIGURE 8

PRIVATE SECTOR FIRMS IN MONGOLIA.



Sources: World Bank Enterprise Surveys, Mongolia 2019

Opportunities for businesses include:

- a diversified and growing market in Mongolia;
- a Technology Innovation Hub;
- large mineral resource base that can be leveraged for value added processing;
- a developing industry and infrastructure;
- Mongolia as a bridge between two economic powerhouses of Russia and PR China;
- a young, well-educated population;
- private sector and privatization of major state assets, listing of Mongolian conglomerates and exploration license aggregators on the MSE;
- public private partnership (PPP) and modernizing infrastructure;
- rule of law and regulatory quality and transparency;
- ensuring guarantee for investors, tax and nontax;
- promising mega projects; and
- thriving telecoms and IT.

Government Policies, Regulations, and Initiatives toward Private Sector's Development

Government Policies and Regulations

"Sustainable Development Concept of Mongolia-2030," approved in 2016, emphasizes high productivity. Cutting-edge technologies are introduced in every sector, supporting and encouraging new types of goods, production, and services that incorporate innovation; support production that is resource-efficient and has low greenhouse gas emissions and wastage; and strictly adhere to the fundamentals of economy and efficiency in all economic and social sectors. Moreover, there is a vision to progress the industry through creativity, technology, and advanced practices, in addition to increasing productivity in three phases, as discussed below.

Phase I (2016–20): Increase the share of processing industry in total exports to 15%, improve the exchange network of agricultural products, and develop export-oriented advanced technologies. Develop the processing industry cluster, increase productivity, and reach 60% complete-processing level of raw materials such as leather, wool, and cashmere.

Phase II (2021–25): Increase the share of processing industry in total exports to 25%, develop an export-oriented processing industry cluster based on advanced technologies and innovation, increase productivity, and increase the complete processing level of raw materials such as leather, wool, and cashmere to 70%.

Phase III (2026–30): To increase productivity, develop an export-oriented processing industry cluster based on advanced technologies and innovation, and increase the complete processing of raw materials such as leather, wool, and cashmere to 80%, in order to ensure sustainable social development. Science and industry ensure the interconnection and develop a knowledge-based society.

The "Vision 2050 long-term development policy of Mongolia" [5] of 2020 stated, "... the new economy differs from the traditional economic growth model based on capital accumulation by formulating knowledge, technology, entrepreneurship, and innovation as the main drivers of economic growth." It determined the goal to develop an internationally competitive national science, technology, and innovation system, with stages of implementation and expected results under the objective.

Initiatives or Support Programs

Evaluating an economy's competitiveness requires considering factors beyond GDP and productivity. Political, social, and cultural dimensions play crucial roles. Governments play a vital role in creating an environment that supports efficient infrastructures, institutions, and policies to encourage sustainable value creation by enterprises. This was especially important during the unexpected external shock of the COVID-19 pandemic. Mongolia, like many other countries, implemented various measures to manage and mitigate the impact of the pandemic.

To a certain extent, regulations were issued to carry out disinfection measures for public service organizations and business entities. Government Resolution No. 139, with articles of public health, income protection, job security, and stimulation of the economy, was issued on 15 April 2020.

There was exemption of personal income tax from salaries, wages, bonuses, incentives, and similar employment income earned by Mongolian citizens. Legal entities that maintained jobs and paid

social insurance of their employees regardless of the pandemic's negative impact and income reduction, were exempted from payments such as pensions, social welfare, unemployment, industrial accidents, and occupational insurance, as well as employee social insurance.

This provided opportunities for factories and service centers, which continued to operate in a healthy and safe environment through sterilization, disinfection, and sanitation.

Government Resolution No. 168 of 6 May 2020 included stimulation of the economy during the pandemic, to create more jobs, support the livelihoods of herder households and vulnerable people, prevent and fight the pandemic, and reduce the negative impact on the economy.

Government Resolution No. 167 of 6 May 2020 called for four sets of measures to revive the economy in response to the spread of COVID-19.

Government Resolution No. 211 of 13 December 2020 provided support to households, businesses, and organizations by providing them with discounts on electricity and water.

The government initiated the 'New revival policy' to catalyze the economy and stabilize the recovery by stopping the decline of socioeconomic development measures taken by the government during and after the pandemic. It was approved and implemented on 30 December 2021. The policy included six main perspectives: port recovery, energy recovery, revival of industrialization, revival of urban and rural areas, revival of green development, and public sector productivity.

As part of the new revival policy, the aim was to bring the corruption index to double digits within the next two years, and in this context, to improve the efficiency index by expanding public control of state-owned enterprises as well as by reforming the structure of the public service and digitalizing public services.

On 14 December 2022, Mongolia was one of the first countries to lift all the restrictions related to the pandemic. With widespread consumption of imported food due to the COVID-19 ban, inflation had increased to 6.4%. The freight industry, rooted in logistics, was one of the sectors that suffered the most economic damage. Across the entire country, 10.2 million tons of cargo were loaded, which was a decrease of 33.4% from the same period in the previous year. The number of passengers traveling by all types of transport also decreased by 31.4%. The total revenue of this sector decreased by 25% from the previous year. The industry that suffered the most during the pandemic was tourism. Travel of foreign passengers arriving from abroad decreased by 51.6% in 2021.

The measures taken through the government resolutions were helpful to some extent in providing practical support to SMEs by allowing them to do business, reduce interest rates, avail interest rate incentives, and improve the VAT (though not in all business areas). Moreover, in order to reduce the negative social and economic impact of the COVID-19 epidemic, the government and policymakers should support the activities of SMEs after pandemic, clarify government decisions and regulations to restore business, improve coordination, and reduce interest rates.

There is a need to urgently provide support such as interest rate concessions; grants for SMEs and service providers; and low-interest, flexible loans from non-commercial investment banks.

Government Priority Sectors

In May 2020, the Government of Mongolia introduced its new Long-Term Development Policy 'Vision 2050,' which further enshrined sustainable development principles in its long-term policies. Vision 2050 set specific goals that aimed to transform the country's social development, economic growth, and quality of life.

Under this document, short-term objectives of economic diversification, innovation, human development, new technology, and green growth have been set. These objectives aim to promote a more diverse and resilient economy by launching economic structural reform; enhancing competitive capacity; and developing import substitution and export-oriented heavy and light industry.

The Government of Mongolia has identified SME development as a key priority for economic diversification, employment generation, and sustainable growth.

Policy implementation is partly spelled out in the recently released 'New Recovery Policy,' a medium-term program [6] focused on (1) expanding border capacity and connectivity; (2) upgrading industrial technology; (3) regional integration; (4) enhancing energy transmission and distribution networks; (5) adopting climate change mitigation measures; and (6) increasing public and state enterprises' productivity. Each of these recovery areas aim to overcome obstacles that limit Mongolia's development.

Challenges, Driving Forces, and Needs for Productivity Enhancement

Based on the enterprise survey and in-depth interviews with the selected five SMEs, the challenges, driving forces, and needs for technical innovation for productivity enhancement at enterprises in Mongolia are discussed in this section.

According to the digital transformation readiness survey conducted by the MPO in 2022, business entities are ready for digitization. After the COVID-19 pandemic, there is an increase in working remotely, online purchases, and official meetings conducted online compared with previous years.

Digital adoption is the key common factor for enterprises to enhance productivity from a technological perspective.

SMEs and public organizations need to apply high-technology solutions to bring incremental changes in their operations and supply chains. It will improve productivity of operations and increase their market access locally as well as the internationally.

At the same time, digitization will create challenges for businesses and public organizations. They will likely need to change business models, patterns of comparative advantage, skills, or the organization of work. Despite large-scale technological investments, workforce productivity growth remains low. Maximizing the productivity benefits of technology is not just a case of the right investment strategy, it requires the right human skills via a motivated workforce along with a good management scheme.

The enterprise survey (MPO 2022)[1] shows that 47% of respondents said there was no responsible person for handling the organization's internet connection and managing the digital environment.

[1] The MPO conducted the survey in 2022 with a sample size of 100 SMEs.

Priority issues included internet-based communication (33%) and increasing the capacity of information technology (21%). Barriers to digital transformation included financial capability (32%) and cost issues (24%). Further, 72% were planning radical innovation to make their business more competitive; 56% had accepted new markets and partnerships in certain business aspects; 49% were at a partial level of digital transformation; while 39% were non-existent. Also, 38% lacked the necessary skills for digital transformation, while 35% lacked the necessary finance. Moreover, 63% of the organizations' processes required digitization, while 60% had no support from people for investment in digitization.

Of the respondents who said they used digital tools in their operations, mostly did so to manage their finances, sales, and human resources.

However, the majority of respondents expressed a desire to radically innovate their businesses to increase their competitiveness, i.e., to use digital innovation to improve the productivity and continuous growth of their business operations.

Based on in-depth interviews with selected companies and the enterprise survey, the following challenges for digital transformation for productivity enhancement were identified:

- SMEs are not ready to adopt technology due to a lack of human resources, particularly that of IT persons. Even when they purchase a software, the staff are not willing to use it as they see it as too complicated and extra work for them.

- Technology is too costly. It requires high-cost investments in infrastructure, such as servers, data centers, and software.

- Labor cost for hiring the IT person is high. Adequate capacity to take care of digital infrastructure in the firm is always missing.

- Another challenge is the maintenance issue. Technology changes very fast and needs updates quite often, which causes the burden of extra cost for SMEs. Additionally, businesses need to invest in cybersecurity measures to protect sensitive customer data and comply with regulations.

- Most digital solutions do not suit well for SMEs in terms of interoperability and collaboration. In the market, there are many platforms, but they are often not interoperable.

- Other challenges include the lack of experience to implement non-technological innovations, as managers are resistant to change their ways of working.

- Lack of funding or necessary resources; lack of leadership, knowledge, and experience; and lack of the right approach to successfully carry out digital transformation are other reported challenges.

Driving forces to increase digitization are following:

- Digital technologies and tools are becoming more user friendly and affordable. They are getting more practical and applicable for SMEs.

- Market dynamics are changing, and many businesses/competitors are transitioning their sales and operations to online, which leads to some reduction in operational costs.
- Customers tend to do online purchases more because of accessibility and convenience.
- The younger generation prefers to work with technology and has the skills to handle smart technologies.
- Disruptions in the business, for example, due to the recent COVID-19 pandemic, force an increase in remote working, online purchase, and official online meetings, with the ICT's performance rapidly increasing during the pandemic (see Figure 7).
- SMEs as well as other sectors have certainly emphasized the importance of technology during external shocks, while learning to use innovative methods to identify opportunities for rapid recovery and minimizing risks.
- Also, the government has developed a policy to promote digital transformation and innovation in the SME sector as well as the public sector.

Some potential areas that SMEs need to address in order to be more productive and successful in the digital era are:

- It is necessary for small and medium manufacturing and service owners to identify business opportunities and risks of digital transformation first.
- They should analyze their existing business models and recommend smart-technology interventions for further improvement.
- The necessary technical assistance and training to introduce smart technologies and start the digitization process is required.
- Revisiting the business strategy and identifying the program strategy for digitization is important.
- Implementing game changing projects to initiate and introduce digital transformation can be very effective.
- SMEs should learn from best practices and do R&D on innovation.
- It is equally important to build an innovation culture and encourage the team to adopt digital tools.
- One potential solution could be the development of a standardized framework or platform that allows for the seamless exchange of IP between different digital solutions. This could help SMEs to better integrate their processes and systems, leading to improved efficiency and productivity.

Relationship Between Business Resilience and Productivity

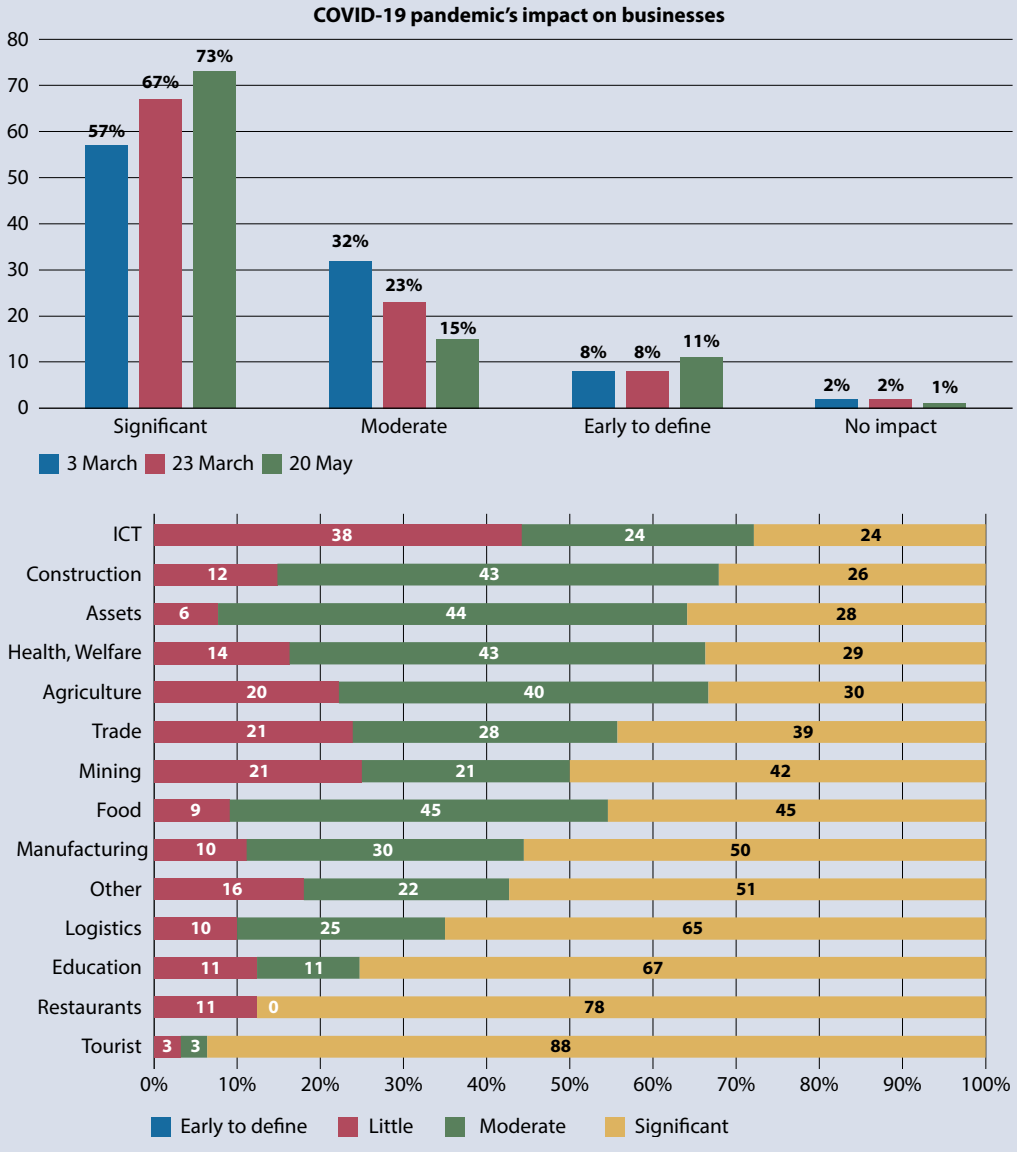
According to a survey conducted by the SME Agency of Mongolia (2020), a significant majority of small and medium enterprises (98.6%) and service providers believe that the COVID-19 pandemic has had a negative impact on their businesses, presenting numerous challenges.

During the quarantine period, various sectors such as self-employment, business activities and services, non-food processing industry, education, culture and arts, domestic transportation, and foreign trade activities have come to a complete halt. This highlights the widespread disruption caused by the pandemic, affecting multiple industries and sectors.

The findings of the survey underscore the urgent need for support and measures to help businesses navigate through these challenging times and mitigate the adverse effects of the pandemic on their operations.

FIGURE 9

RESULTS OF THE SURVEY DONE BY SME AGENCY OF MONGOLIA IN MARCH–MAY 2020.



During the lockdown, one out of two SMEs ceased to operate, while one out of three SMEs operated on a limited basis. During the lockdown period, the service, construction, road, infrastructure, non-food processing, and tourism sectors had higher rates of complete shutdown than other sectors. In addition, 55.8% of the self-employed came to a complete halt, while 33.9% operated in a limited period of time.

In the survey by the SME Agency of Mongolia, 72% of the enterprises said that during the pandemic, there was a risk of exposure for workers coming and going from the workplace. 72% of the survey participants mentioned that sick leaves and absent leaves increased due to the illness. As noted by 78% of the participants, due to the nature of the work (e.g., production), remote working was not possible for many employees. 59% of the participants said it was difficult to obtain some of the necessary disinfectants (hand sanitizers, gloves, masks, etc.). 82% of the participants said that due to temporary closures of schools and kindergartens, in case of the illness of a family member, the responsibility to take care of the family increased for employees. 63% of the participants said there were cases of outbreak transmission from someone related to employees or between the employees.

With the exception of the food processing industry, there was lack of long-term employment opportunities in all sectors. SMEs' workers that lost their jobs, often took unpaid leaves for indefinite periods of time. 12% of those who lost their jobs before and during the quarantine period were laid off. 94% of the SMEs believed that sales revenue decreased because of the COVID-19 epidemic. During the quarantine period, sales revenues of SMEs fell by 50%. [7] The survey results demonstrate that during the pandemic, businesses' main suppliers and their ability to supply inputs were adversely affected, and markets and sales volumes declined.

The pandemic negatively affected the primary suppliers, operations, and their ability to supply the inputs on time, which resulted in a contraction of the market and sales. The majority of business owners (78.4%) who participated in the research, faced a problem in finding the necessary machinery and tools from the suppliers in order to operate effectively and normally. It is possible that this was directly related to the situation in which 75% of the core inputs were supplied by a single supplier (66% of the responses said so). Moreover, the prices of materials and products increased suddenly as these were mostly imported and stored in a single warehouse. Based on these factors, businesses were affected in a negative way. Study results also show that SME businesses were affected by the pandemic badly, especially because the government measures and restrictions were limiting them to operate normally. 76% of the respondents said that increased restrictions/ requirements issued by the government had a negative impact on enterprises (e.g., increased health inspections that delayed the delivery of products entering/leaving the premises). This meant that SMEs needed to change their ways of working and needed to predict the risks and opportunities during the pandemic or in an unexpected business environment.

In-depth interviews with selected companies show that they were not able to operate their businesses normally during the pandemic. However, because of the government measures and their effective strategies to survive, they managed to operate even though their businesses were downsized, or businesses models were changed.

For example, the auto services company was incrementally affected and had to downsize its business, but never let its people leave.

However, some other companies such as the health service and air ticketing companies that were interviewed, had to completely shut down during the pandemic and reopened only after the pandemic. The service companies mostly laid off technical staff and shifted to the online mode. Nevertheless, after the pandemic, most of the companies could recover quickly. Business also grew as they introduced new strategies to enhance productivity, such as improvement in operations management and demand management.

Non-food-processing industries, which accounted for 20% of the interviews, had loss of sales, decreased productivity, and financial difficulties due to the measures and restrictions that limited their ability to operate normally during the pandemic. After COVID-19, however, there was an increase in demand, which helped them survive in the market and recover quickly.

In addition, the majority of participants noted that during the pandemic, the prices of raw materials and goods suddenly increased. As the raw materials were imported, these factors negatively affected business operations.

Moreover, 87% of the organizations reported having difficulties with their staff, as employees from these industries were unable to commute, fell ill, and experienced anxiety.

Further, 27% of those interviewed experienced complete shutdowns during the pandemic as they were from the tourism and service sector. Business continuity challenges directly affected the productivity and sustainability of businesses.

A majority of business owners interviewed said they did not have a business risk management plan in place. This shows that SMEs need to create risk readiness by defining the necessary business plans and measures to assess possible risks for continuous and sustainable development of their businesses. This emphasizes the need for SMEs to adapt their ways of doing business and proactively anticipate risks and opportunities in uncertain business environments such as a pandemic.

The food processing industry and public service organizations experienced no loss or low impact, as they were able to operate continuously during the pandemic due to their business nature, agility, and, most importantly, government measures. The companies experienced output-driven productivity increase during the pandemic as sales and revenues grew significantly. They mostly paid attention to sustainability of the business or improved their productivity and launched quality programs and innovation tools and applications during the lockdown.

In summary, we can conclude that business continuity is the most important factor for productivity. Business resilience leads to long-term growth in terms of productivity and pushes businesses to take appropriate measures against any risks and be more agile. SMEs need to have clear strategies to minimize the impact of a pandemic-like situation, prevent further harm in unexpected situations, and facilitate a swift transition into the new normal. Applying the concepts of productivity and quality tools for business continuity can greatly aid in this effort.

On the other hand, case studies and surveys show that companies that prioritize productivity and have a culture of continuous improvement are better equipped to handle external shocks or uncertainties. The companies that are committed to have a proactive approach, embrace risk thinking, and are prepared for unexpected challenges are more likely to navigate causes of disruptions effectively and maintain stability in their businesses.

Research findings also highlight that business resilience of SMEs during external shocks or uncertain times is not guaranteed without the support of government policies. SMEs often face unique challenges and vulnerabilities, especially during the times of crises. Government policies and support play a crucial role in helping SMEs navigate these difficult periods and build resilience.

Effective government policies can include measures such as financial assistance programs, tax incentives, access to credit and funding, business training and mentorship programs, streamlined regulations, and support for digitalization and innovation. These initiatives can help SMEs overcome financial constraints, adapt their business models, enhance their operational capabilities, and seize new opportunities.

Case Study 1: Bagro LLC

The case study will explain how business continuity leads to higher productivity and discuss the strategy to sustain success after the pandemic.

Bagro LLC was established in 2008 with the investment of the 'WE Group,' and put its food factory into operation in 2009. The factory processes vegetables, fruits, and dried fruits to produce final products that replace imports.

Bagro Food Factory is the first modern factory in Mongolia established as per European standards in its field, which was able to comprehensively solve problems such as a comfortable working environment for employees; electricity, heat, hot and cold water treatment facilities; and food production safety.

The production line is 100% equipped with the equipment of the famous Italian company Tecnoceam, and in terms of capacity, it can process 3.5–4 tons of fruits and vegetables per hour and produce 3,000–3,500 canned products.

Bagro Food Factory can process 23,000 tons of fruits and vegetables per year, which is 25–30% of the total vegetables harvested in the country. By being able to process fruits and vegetables into final products like this, the company is opening up a good opportunity for local and general growers to cooperate with the factory.

Products/services include

(1) canned pickles;

(2) all kinds of vegetable salads;

(3) berry jams;

(4) fruit mix in syrup;

(5) pickled garlic; and

(6) honey.

FIGURE 10

BAGRO FOOD FACTORY PRODUCTS.

Bargo customers: wholesalers; governmental and non-governmental organizations; Erdenet Mining Corporation; and buyers from Bulgan aimag and soums.

Competitive advantages: The final product is carried out using the latest modern technology of pasteurization. It is characterized by the fact that it does not destroy the nutrients of vegetables and fruits, which are the raw materials of the product.

Weaknesses: There is a lack of management standards and policies as well as of innovation and creation practices that are necessary for modern production.

Business resilience and productivity: The driving forces during and after the pandemic were: government support and intervention for food producers; board closer; and demand increase in the local market. Most importantly, the company had a sustainable supply chain.

Successful productivity-driven business practices of Bagro Food Factory include good hygiene practice or 5S; good production standards; HR policy, and outstanding supply chain management, which resulted in its productivity improvement.

During the pandemic, because of the government intervention, Bagro could operate nonstop and without any layoffs and production cuts, with sales and other related parameters improving during the pandemic. Discounted bills for electricity and water, social benefits for workers, tax exemptions, and favorable loan conditions gave it the chance to save the operating costs. Increase in sales led to the increase in productivity output (see Figures 11 to 18).

Bagro LLC, as a food producer, was exempt from closures during the quarantine, and was allowed to continue its operations. It even experienced an increase in sales (see Figure 11). The increase in sales during the quarantine period and border closures can be attributed to several factors. People staying at home for longer periods likely increased their demand for food products, leading to higher sales for Bagro. Additionally, the almost complete shutdown of imports could have limited the availability of certain food products in the market, creating an opportunity for local food producers like Bagro to meet the increased demand.

FIGURE 11

SALES GROWTH FOR BAGRO.

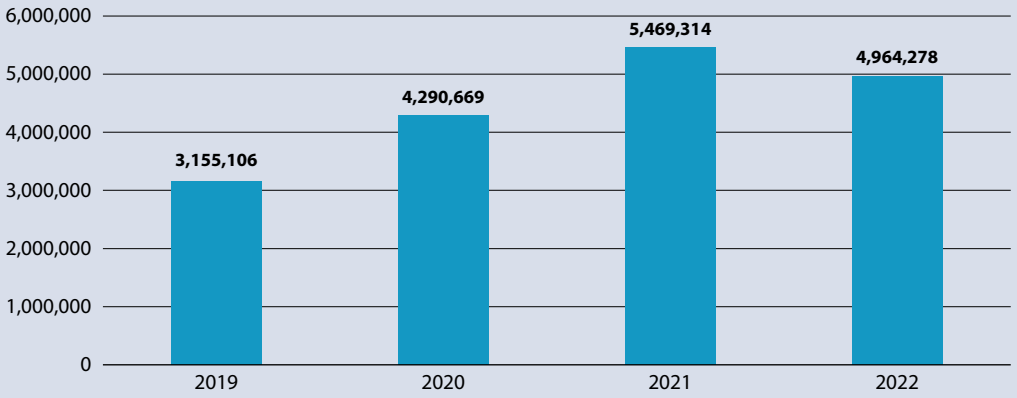


FIGURE 12

BAGRO'S OPERATING COSTS AND GENERAL ADMINISTRATIVE EXPENSES.

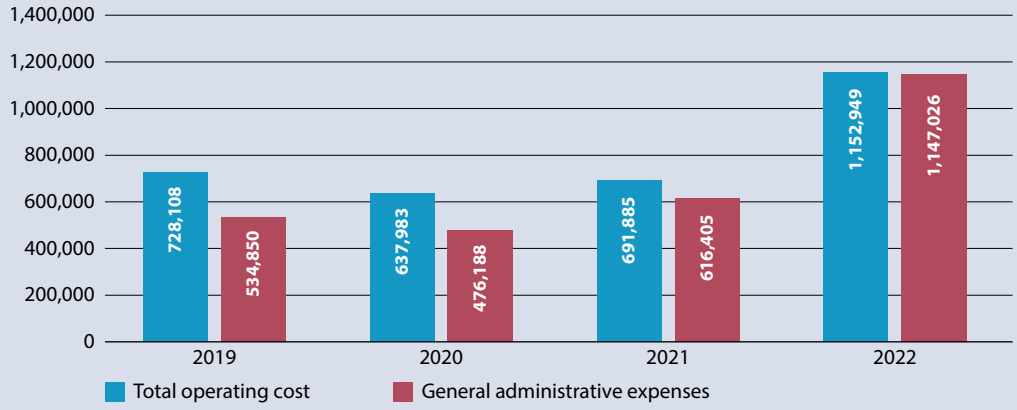
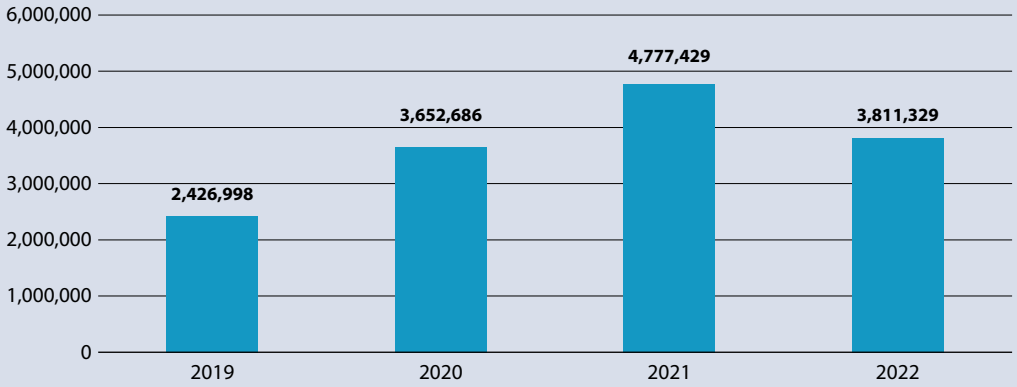


FIGURE 13

VALUE ADDED AT BAGRO.



Note: Value added is calculated by the difference between total sales amount and cost of purchased goods. It represents the additional value created by a factory through its production process.

FIGURE 14

INVENTORY AT BAGRO.

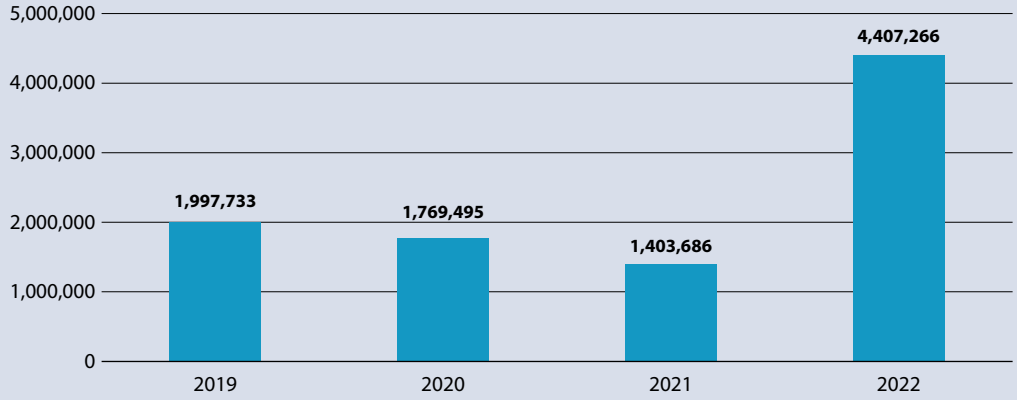


FIGURE 15

NET PROFIT AT BAGRO.

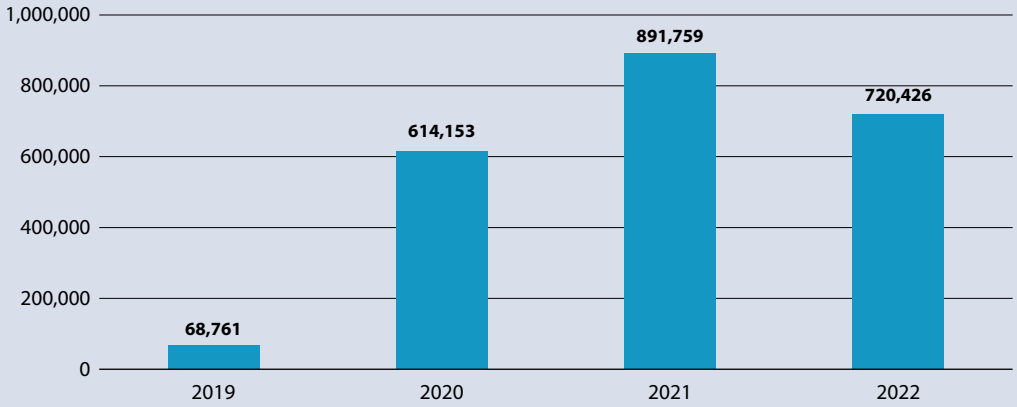


FIGURE 16

CAPITAL PRODUCTIVITY AT BAGRO.

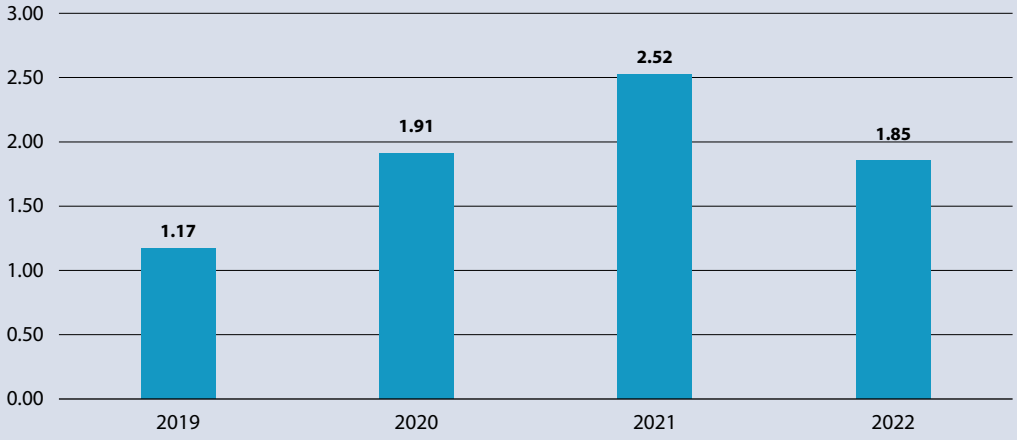


FIGURE 17

GROWTH IN NUMBER OF EMPLOYEES AT BAGRO.

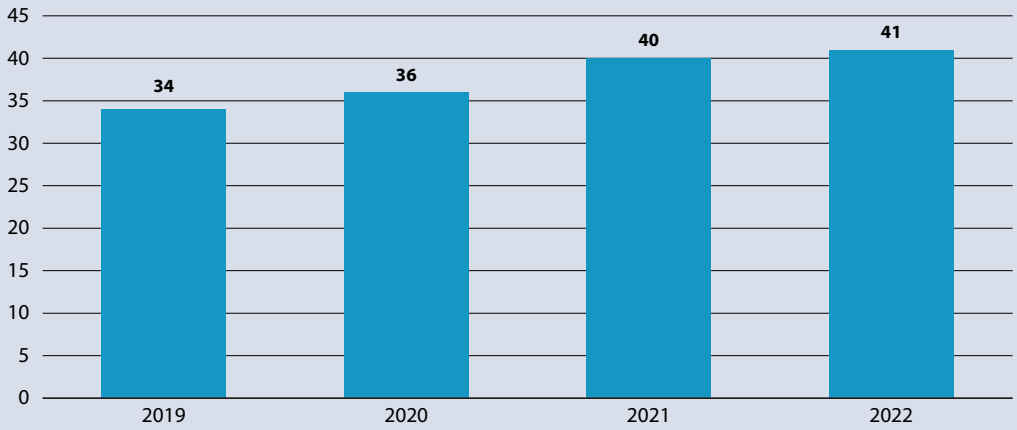
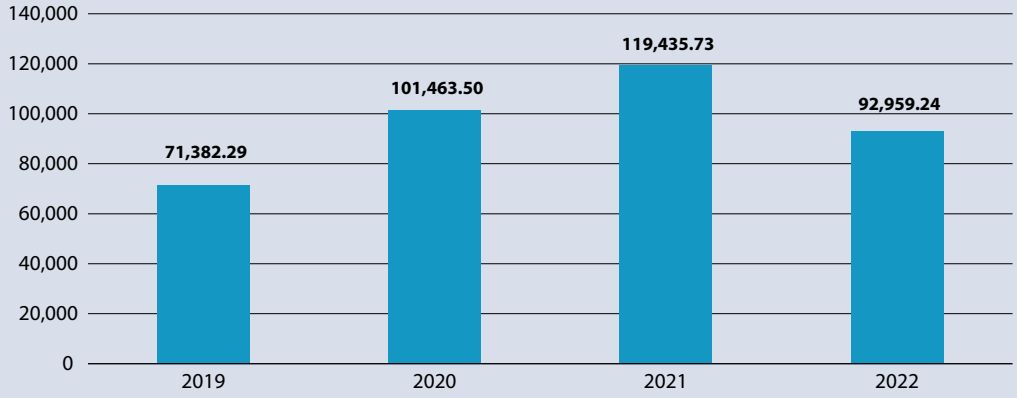


FIGURE 18

LABOR PRODUCTIVITY AT BAGRO.



Labor productivity in 2021 was higher than that in 2019 (see Figure 18). The reason for this is that the company operated at full capacity and sourced 100% of its raw materials from local growers. This allowed the company to ensure a consistent and reliable supply of raw materials while also supporting the local economy and community.

Another factor for labor productivity growth was that the HR situation at Bagro Food Factory remained unchanged during the pandemic. The employees are mostly local people. The population density in this area being lower compared with urban areas, there was a lower infection rate. This allowed Bagro to mitigate the risk of infection and maintain a stable workforce. Workers were paid based on performance, which was beneficial for motivating workers and rewarding them for their contributions to productivity.

Bagro also provided opportunities for the employees to continue to operate in a healthy and safe environment through sterilization, disinfection, and sanitation. It also supplemented the 5S practice of factory to improve the work environment brought a positive impact on productivity during the pandemic.

The most impactful factors for productivity were the government measures and border closures. The nonavailability of similar imported products in the market provided an opportunity for local products to be recognized in the market.

After the pandemic, all the interventions by the government were lifted off and the operations cost increased incrementally, even though the market demand also increased. The inventory levels also increased while sales, value added, and productivity indices started declining.

Key challenges that the company needed to solve immediately after the pandemic were:

- high operational cost due to higher wastage or non-value-added activities in the process;
- drop in the number of customers because of severe competitiveness in the local market and vague customer process;
- inconsistency in quality;
- poor management capacity;
- labor shortages;
- inefficiency due to seasonal operations; and
- lack of workplace directives.

In terms of strategic planning, the company needed to focus on:

- improving financial records and increase sales revenue;
- improving internal processes;
- employees' training and development; and
- improving customer satisfaction.

After COVID-19, the company management struggled to maintain the success and increase sales to meet the market demand. They launched the quality management project with components of 5S, QC, and MFCA in 2023. Likewise, the management set the strategy to introduce the digitization and innovation project from 2024. Within this strategy, they planned to apply digitization on management processes and install new machinery and technologies in the factory.

The overall objective of the quality management project was to improve management effectiveness through introducing quality management principles and initiating digital transformation. Experience has shown that the integrated implementation of these tools makes an organizational change more effective and efficient.

Within the scope of the project, main operational processes would be mapped out and workplaces would be better organized, which would impact the reduction of non-value adding time. Further, losses

would be identified and eliminated through the utilization of the green productivity tool and the digital solution. The final goal would be to improve productivity and quality, with people's involvement.

Digital Transformation and Productivity

Case Study 2. Social Insurance Authority

Social Insurance Authority (SIA) is a public service organization that was established in 1978. With an employee strength of 50, it provides social insurance service to the public as well as to business entities.

The business is located at the Social Insurance Office Building, Bayan-Undur sum, Erdenet city, Orkhon Province, Mongolia.

During COVID-19, SIA faced challenges in managing operational expenses within its budget; provisioning productive online work within a short timeframe; minimizing employee illnesses; and maintaining mental preparedness.

The advantage of public services lies in their financing, which comes from the organization's operating costs, centralized social insurance funds, and the state budget. While operating costs remained stable within the approved budget, the social insurance fund's indicators saw an increase during COVID-19 due to government-provided discounts on social insurance contributions and incentive support policies for both citizens and enterprises.

The commitment of citizens and enterprises to regularly pay their contributions to the social insurance fund, even in difficult conditions, positively impacted SIA's financial stability. Despite the increase in the total number of citizens with special needs exceeding the average growth rate, the social insurance income plans were not interrupted, and the risks for the insured individuals were minimized in accordance with the law. These observations are reflected in Figures 19 through 25.

FIGURE 19

FINANCING FOR SIA.

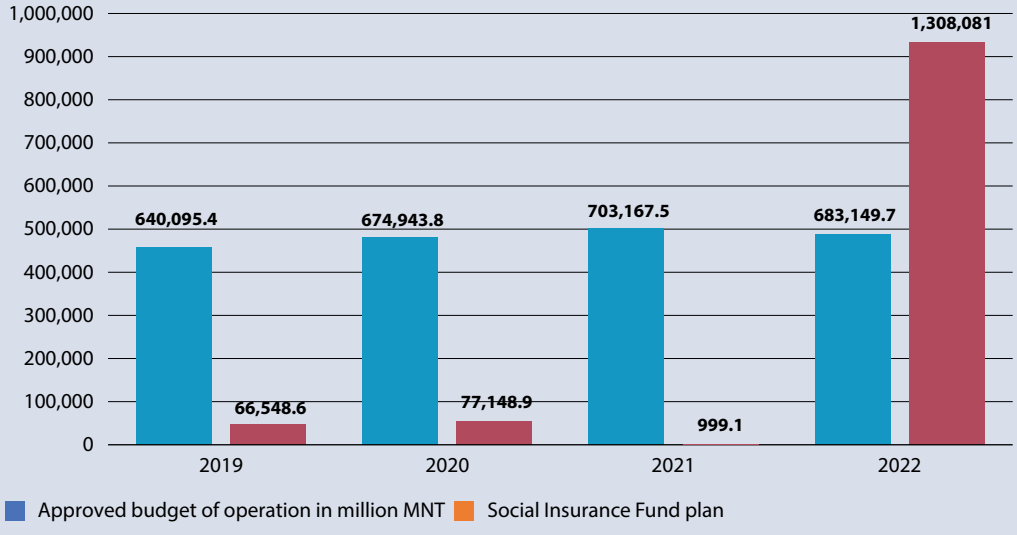


FIGURE 20

FINANCIAL PERFORMANCE OF THE ORGANIZATION.

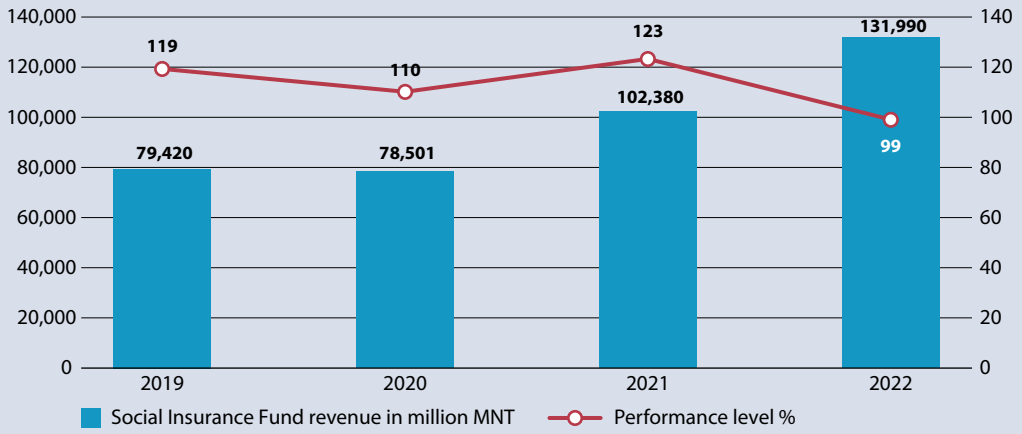


FIGURE 21

TOTAL COST IN MNT MILLION.

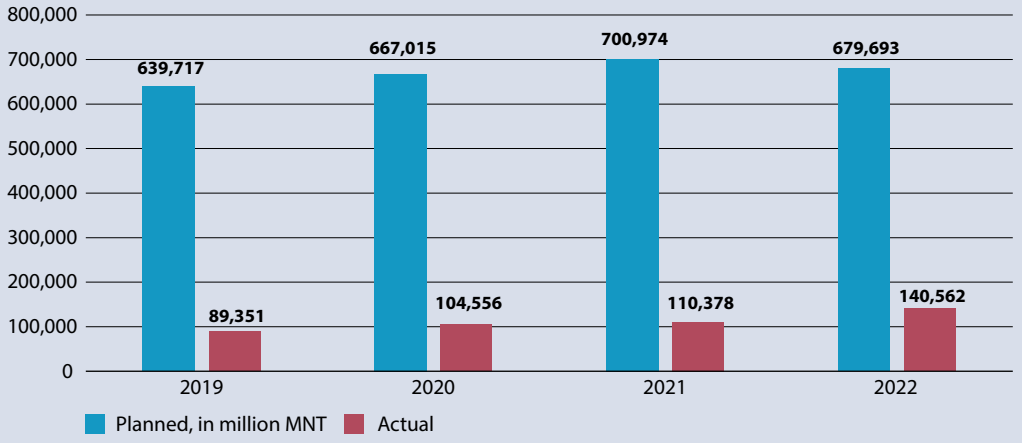


FIGURE 22

SALES PERFORMANCE OF THE ORGANIZATION.

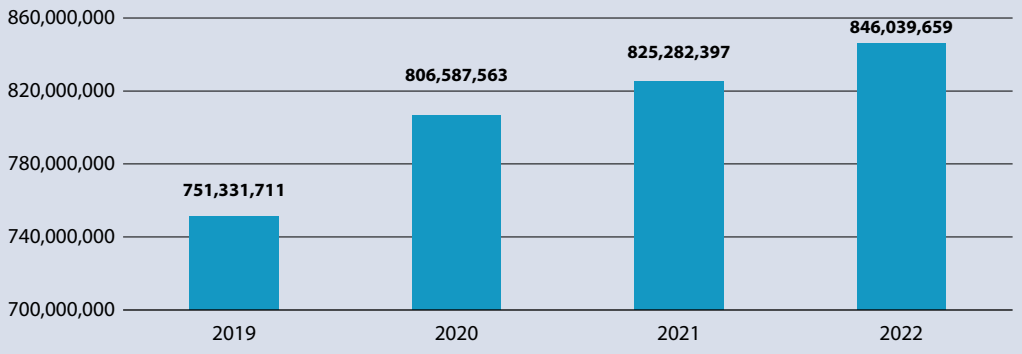


FIGURE 23

TOTAL OPERATING COST AND GENERAL ADMINISTRATIVE EXPENSES.

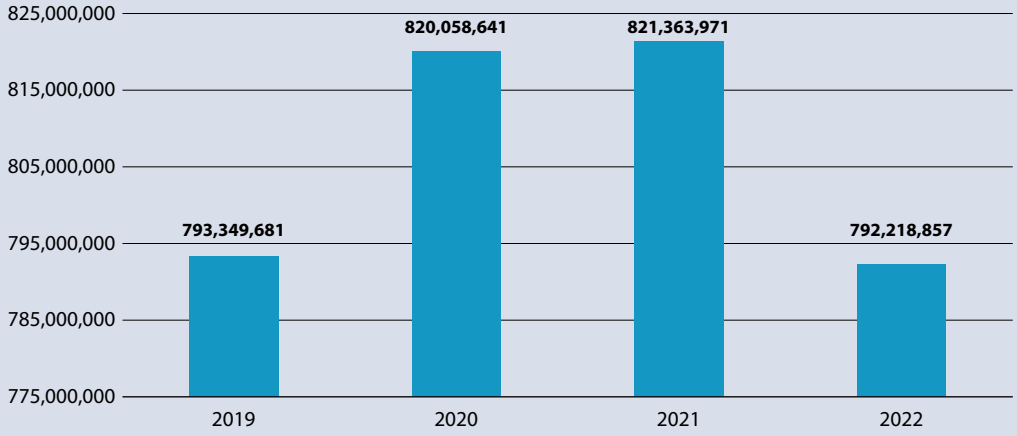


FIGURE 24

VALUE ADDED PERFORMANCE OF THE ORGANIZATION.

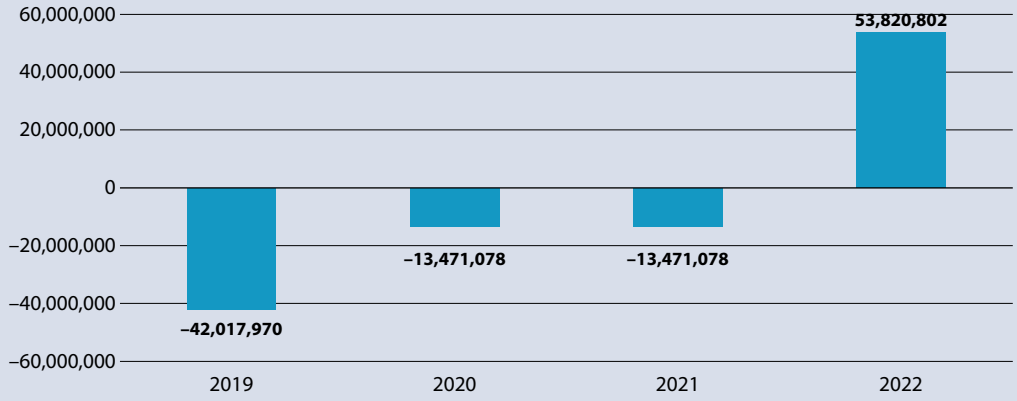
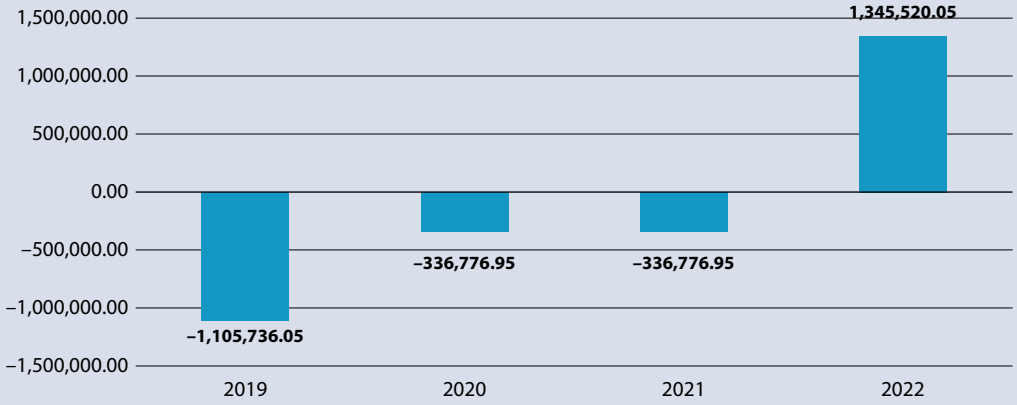


FIGURE 25

LABOR PRODUCTIVITY OF THE ORGANIZATION.



SIA's operational strategy for innovation, aimed at enhancing productivity and service excellence, is an excellent example for SMEs. During the pandemic, SIA successfully transformed its operations to a digital model, achieving the objective of "one registration, one monitoring," with a focus on fostering a positive attitude, digital development, legacy building, and digital innovation. The strategic thinking and leadership ensured that there were no operational interruptions during the COVID-19 period.

In 2019, SIA introduced the "GPR – Public Sector Process Reengineering" business model to provide all services for an insuree. It also introduced call center services, appointment booking services, electronic receipt of materials related to pensions and benefits, and a chatbot auto-responder. Initiatives such as the digital archive and smart archive projects and robotic process automation (RPA) further enhanced its digital capabilities.

The GPR system's data registration improved, laying the basis for digital transitioning, and SIA was able to deliver 10 social insurance services in digital mode after COVID-19. It prepared 163 digital contents and 47 live recordings during COVID-19, serving a total of 1.2 million citizens. This has resulted in a reduction in the number of in-person customers who are now accustomed to receiving services online.

The satisfaction index of citizens increased from 4.1 to 4.3 during the pandemic, indicating a higher level of satisfaction compared to the pre-COVID-19 period.

It was not easy to create innovative public services aimed at increasing customer satisfaction and improving citizens' understanding of social insurance at the early stage, as the public was not ready to receive services online. Increasing the usage of innovative services was difficult, as people were not used to online platforms and tools and also had limited access to affordable PCs, laptops, and reliable internet connections.

With the process reengineering, one insurance inspector gained the ability to deliver all types of social insurance services to an insuree. Knowing that using technological advances could increase productivity by simplifying work that is often done mechanically, the inspector was able to provide all social insurance services electronically by communicating with the insured from the convenience of his home.

These best practices of SIA are applicable to any service company.

There was no change in human capital at SIA during the pandemic. Work-hour regulation to support flexibility was applied. In response to the extended period of partial transfer, a level of high preparedness was achieved to enhance disinfection efforts at the department level, take organizational measures to prevent risks, and ensure the safety of both citizens and employees. Social insurance services were provided in person from 8 am to 12 noon and 2 pm to 4 pm, while between 4 pm and 6 pm, services were provided to citizens internally and electronically. A work-from-home schedule was worked out for employees.

Also, pregnant women and mothers with children aged up to five years were employed 100% online. Shift leaves and work from home were allowed, except for essential work requirements.

"Home is a workplace campaign" was organized for employees with young children who changed working hours, which had a positive effect on employee satisfaction and work productivity.

Flexible working hours have been a key driver of the digital transition and a reason to adapt to new technologies. It also had a positive effect on the work-life balance and immunity of employees.

During the working hours of 8 am to 12 noon, and 2 pm to 4 pm, 50% of the employees worked online and 50% worked in the office with different working schedules.

One of the biggest changes introduced in the workplace due to the COVID-19 pandemic has been flexible working hours. Thanks to technological advancement, it was possible to do the work regardless of space and time in any condition. It was also possible to reduce the costs for the organization while increasing productivity.

The SIA's internal training was organized 28 times, with 312 inspectors participating and training their staff; three inspectors receiving new state inspector rights; and nine inspectors extending their rights and becoming 100% state inspectors.

In 2020, 21 training sessions were held to empower social insurance inspectors and employees, as well as to improve their ability to interact with citizens. The training was attended by a total of 281 employees. Due to the new type of coronavirus infection, it was prohibited for two or more people to gather and to organize meetings, gatherings, and trainings from 13 February to 23 September, and from November 12, 2020, by the decision of the State Emergency Commission. As a result, the training scheduled for these timeslots was canceled.

In 2021, 591 inspectors attended 74 online and in-person training sessions. The training schedule was prepared, the processes and results were reviewed, and 138 employees participated in 21 tests to assess their knowledge. The average examination score was 84.6%.

In 2022, 766 inspectors took part in the training, which was held 80 times in the classroom and online according to the internal training schedule. SIA prepared the training schedule, reviewed the processes and results, and took action to reinforce the knowledge provided by the training. 68 employees took part in seven tests to assess their knowledge. The average examination score was 92.6%.

Introducing the flexible working hours and blended workplaces was a new challenge for the office and it was requisite to quickly introduce an electronic system that would work smoothly for the insured without reducing the quality of work.

SIA was required to appoint advisors to solve problems faced by the insured citizens regarding the electronic system or inspectors who worked from home using advanced technology.

Transferring to a flexible percentage of working hours while supporting immunity by balancing the work-life balance of employees was the key for SIA.

To provide one-to-one services, the knowledge of all employees was enhanced, with the internal training focusing on offering practical experience in the workplace.

The impact of the COVID-19 pandemic resulted in rapid changes in the way employees lived and worked. Home became a workplace; work experience and practices were updated and digitized; and it became possible to provide and receive services regardless of the location.

The provision of online working also solved the problem of short working hours as well as the shortage of staff.

Adoption of digitization and technology at SIA (regardless of the stage) provides a good reference for SMEs.

In 2019, out of a total of 22 types of services, two services (9%) were completely digitized. In 2022, out of the 22 types of services, 11 services (50%) had been completely digitized. Employees were fully trained and used all newly adopted technologies and software.

Online promotion of app usage and platform in the community was broadly successful. This improved user experience, introduced an auto-responder system for page chats, and disseminated information more effectively. The COVID-19 situation thus accelerated the usage of IT and demonstrated that the services of public organizations can be conducted largely digitally.

Lifestyle changes and technological advancements have clearly boosted work productivity, leading to comprehensive improvements in 22 types of services through the use of digital technology, both in business and government sectors. The priorities for delivering government services to insured citizens are speed, quality, and convenience by reducing the number of in-person visits. Through continuous technological development, it is possible to further digitize government services.

Increasing the use of digital services by the public and promoting the services, despite the benefits and exemptions, however, remains challenging.

SIA needs to adopt effective approaches to change citizens' behavior and increase the use of digital signatures. All employees have learned to provide SIA services electronically, promote the use of digital platforms, and define the services that can be digitized.

Automation of repetitive tasks has increased productivity. Increased e-skills have had a positive impact on time and financial savings. There is also an incremental improvement in the digital exchange of information between government institutions. Transferring documents between government agencies is no longer an issue. The reduction in traffic has helped reduce time and paper consumption.

The increased knowledge and ability of citizens to use electronic applications has thus saved both time and resources, as well as reduced the use of paper, which is an environmentally friendly development. By Introducing new technologies, SIA is also able to meet the international standards.

Due to complete digitization of 11 social insurance services, citizens can now access the services they need from any location without any delay. This has also significantly reduced employees' workload, thereby eliminating the need for overtime work and resulting in reduced work stress and increased motivation.

SIA keeps implementing innovative management tools to improve productivity sustainably. These include,

- Social Insurance Representative for local community inclusiveness;
- Smart green workplace development; and
- Customer Satisfaction index.

The improvement projects significantly increased productivity by reducing idle resources, minimizing waste, digitizing public services, and automating routine tasks. This enabled the office to operate without interruption during the pandemic and establish a strategy for sustainability.

The key is to identify the problem, perform process engineering to determine the root cause of the problem, select an improvement method and calculate its effectiveness, and continue to improve. The goal is to constantly improve citizen and employee satisfaction. It is necessary to boost productivity by implementing best practices and cutting-edge technologies from other countries.

Game Changing Project for Productivity Improvement

(1) The Smart Archive project has been implemented on three archives: main archives of social insurance; pension archives; and archives of sum inspector/of government agency. This project is well known for promoting smart governance, digital innovation, and high productivity in the government sector. The project has been awarded as the best innovative and productive project in the field of archive by Archive General Authority of the Mongolian government.

(2) The Smart Organization project has been implemented successfully. This project is designed to create an integrated smart governance system with high-end innovation regarding AI technology, robotic process automation, process reengineering, and big data creation. The Civil Service Commission of Mongolia has noted this project's outcome officially as one of the leading and successful innovative and productive projects in the government sector.

(3) A successful implementation of the project "Social Insurance Representative" is aiming to support better local community inclusiveness. Among the benefits of this project, new opportunities and platforms have been created for those who cannot access government services. Inclusiveness of the local community has been improved dramatically in a short period of time.

(4) Customer satisfaction indices and new platforms to measure customer satisfaction were created, along with a government productivity measurement system that publicly reports data on daily, monthly, semi-annual, and annual basis. This project demonstrated the direct relationship between citizen satisfaction indices and government productivity indices, through SIA's own system for measuring and ongoing analysis of the indices.

(5) In 2017, SIA launched the Smart & Green Office project to create a highly productive, transparent, and innovative way of administering government services to a large number of citizens. The project was implemented in three main stages:

    (1) Extensive analysis of organizational operations and client needs for efficiently and satisfactorily serving the clients.

    (2) Reengineering the workflow of the Orkhon province's Social Insurance Authority to create a more productive and transparent process using digital means, with a focus on eliminating corruption gateways.

(3) The gradual implementation of innovations such as a digital archive for case files, AI-based robotic process automation, integrated big data creation, an automated appointment system, and digitization of the workflow. This led to complete digital processing of case management, transparency in decision-making processes, and creation of strategic roles for public-sector workers, thanks to successful implementation of AI-based robotic process automation.

This transformation aligns with the need for public administration to leverage the Fourth Industrial Revolution strategy.

Overall, the study shows that SMEs lack the human capital, funding, leadership, knowledge, experience, and the right approach to successfully carry out digital transformation. While most SMEs are ready to begin their digital transition, they lack clarity on where they stand and where to begin.

After the COVID-19 pandemic, there has been an increase in remote working, online purchases, and virtual official meetings compared with the previous years.

It is evident that organizations that practice innovation management and adopt technology improvements achieve higher productivity and sustainability. To support digitization and technological advancement in the SME sector, it is necessary for the government to build effective infrastructure. This will lead to a bigger impact on the economy and the business environment.

Conclusion and Recommendations

It is evident that disruptions to businesses can directly affect productivity, as seen in the decrease (–4.6%) in Mongolia's GDP in 2020, followed by an increase of 1.6% in 2021 and 5% in 2022.

The study shows that integration of technological advances and digitization is expected to increase the productivity of the nation by creating new value across all sectors.

There is a need to launch new programs focused on youth productivity, creativity, innovation, and workplace diversification to increase employment opportunities. At the same time, with the APO's support, the MPO will focus on accelerating value addition and creation through advanced technologies and innovation for all economic sectors, particularly for critical sectors like SMEs.

The MPO aims to encourage industries to implement game-changing productivity improvement programs through digitalization, technological advances, and management innovation.

Another important area to focus on is sustainability programs through implementation of QMS principles, risk-based thinking, and supply chain management. SMEs need to have a clear strategy to minimize the impact of any destruction and uncertainty, and to be more agile. Applying the concepts of productivity and quality tools for business continuity can greatly aid in this effort.

The government should make efforts at the national level to respond to existing emergencies, reduce the impact of a crisis, and enhance social resilience in line with the Disaster Protection Law to prevent and protect businesses from potential risks. The government should focus on job creation as well as on building a favorable environment for SME development through regulations, social wellbeing, infrastructure, and financing.

Recommendations for the MPO

- Train the businesses to maintain operational sustainability by identifying risks, developing response plans, and ensuring that workplaces and staff are protected and prepared;
- Provide consultancy and technical assistance programs to help businesses adopt high-tech tools and digitization for enhanced productivity;
- Organize forums and meetings to identify programs and opportunities for SMEs to introduce smart technologies for productivity enhancement and business continuity;
- Develop an accessible methodology for business continuity assessment;
- Disseminate good practices for productivity improvement that can be applied to SMEs; and
- Develop sector-specific programs for critical sectors such as the public sector, SMEs, food and agriculture, and logistics and transportation.

Recommendations for Government Agencies

- Be prepared at all stages to mitigate risks, reduce the impact of disruptions, increase resilience, and protect jobs and livelihoods;
- Undertake periodic firm surveys and focus-group discussions with potential beneficiaries to validate SME needs, program designs, and KPIs;
- Pilot new programs that support SME digitalization and economic diversification, incorporating international best practices in program design, implementation, and monitoring, especially in the ICT and tourism sectors;
- Develop a sector-specific productivity enhancement framework;
- Encourage SMEs to implement productivity enhancement projects;
- Increase the number of entrepreneurs;
- Finance productivity enhancement and innovation programs implemented by SMEs; and
- Provide incentives for technological innovation.

Even though the pandemic period was very challenging for SMEs, it also presented an opportunity to adopt new development approaches and leverage the situation for positive changes. The case studies discussed above can inspire confidence among SMEs for development, especially when utilizing high-tech and IR4.0 tools to advance their businesses.

Recommendations for SMEs

SME owners should have strong management system to:

- Introduce productivity methods and tools, especially basic tools such as 5S, quality circle, suggestion scheme, and QMS;

- Enhance the ability to continuously improve operational productivity methods;
- Regularize the analysis of factors affecting business continuity;
- Sustain risk-based thinking and practice risk plans;
- Assess the organization's digital readiness for transformation and launch and introduce digital transformation and innovation projects;
- Evaluate and promote the results of continuous improvement productivity projects, digital transformation projects, as well as best practices;
- Expand business cooperation and collaborate with local suppliers for better supply-chain management; and
- Manage the knowledge in the company.

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Annexure

Annexure 1. Interview Questionnaire

Indicator	Measure	2019	2020	2021	2022
Financial stability	Revenues and profit before and during COVID-19				
	Total sales				
	Total expenses				
Please describe financial stability challenges during/after COVID-19					
Please describe financial stability opportunities during/after COVID-19					
Operational and business continuity and adaptation	New operational strategies				
	Continuous operation policy				
	New business model				
	Continue supply and market link				
	Redefining market and customers				
	Direct operational support and advisory				
Please describe operational and business continuity challenges during/after COVID-19					
Please describe operational and business continuity opportunities during/after COVID-19					
Employment continuity and adaptation	Number of employees before and during COVID-19				
	Compensation condition (reduction or unchanged) during COVID-19				
	Work-time arrangements (promoting work flexibility) during COVID-19				
	Increase or decrease reskilling and upskilling during COVID-19				
Please describe HR challenges during/after COVID-19					
Please describe HR opportunities during/after COVID-19					
Technology and digital adoption	Introduce and adopt digital or technology in business, regardless of digital adoption stage About what percentage of your goods or services delivered online?				
	During the COVID-19 pandemic, has this enterprise started the use of internet, online social media, specialized apps, or digital platforms for the first time?				
	Impact of technology adoption on business, particularly productivity In your opinion, how has the performance of your business been affected by ICT? Rate 1–5				
Please describe technology and digital adoption challenges during/after COVID-19					
Please describe technology and digital adoption opportunities during/after COVID-19					

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Indicator	Measure	2019	2020	2021	2022
Non-technology innovation	Introduce new marketing and sales methods				
	Implement new organizational method (workplace and external relations) Other non-technology innovation				
	Impact of non-technology innovation on business, particularly productivity				
	Did you receive any support (technical assistance or subsidies) for adoption of digital technologies from the government?				
Please describe non-technology innovation challenges during/after COVID-19					
Please describe non-technology innovation opportunities during/after COVID-19					

- If your enterprise did not sell any goods or services online during COVID-19, which of the following reasons would best describe your status?
    - We do not have sufficient facilities (e.g., computers, smart phones, internet) for online sales
    - We do not know much about online sales
    - Cost is too high to start online sales
    - Our customer did not use online services
    - We are not interested in online sales
    - Others (please specify)
    - Not applicable (as we had some online sales)
- Which of the following business functions has this enterprise started or increased using the internet, online social media, specialized apps or digital platform? Select all options that apply.
    - Business administration (including labor, inventory, and cash flow management)
    - Production (including planning and procurement)
    - Sales (including marketing, service delivery, and distribution)
    - Finance (including settlement, raising capital, and making loans)
    - Others, please specify

Annexure 2. Business Resilience Survey

Research Background

It is necessary for small and medium manufacturing and service owners to identify business continuity, business innovation, opportunities, and risks of digital transformation. Ensuring business continuity and stable operations during the pandemic was crucial.

Objectives

The objective of this survey was to determine business development, business continuity of change, and digital transformation readiness of SME owners.

Methodology

The implementing agency, i.e., Department of Small and Medium enterprises, Government of Mongolia, and the MPO jointly conducted a survey of SMEs. Business development, continuity of change, and digital transformation readiness survey was conducted in 2022. Responses were obtained from around 100 SMEs through a questionnaire form.

Questions	Number of participants (n)	Yes	No
Organizational human resource			
There is risk of exposure to pandemic for workers coming to the workplace and going out from workplace.	100	72%	28%
Sick leave and absenteeism have increased due to illness.	100	72%	28%
Due to the nature of the work, remote working is not possible for employees.	100	78%	22%
It is difficult to obtain some of the necessary disinfectants. (washing machine, disinfectants, hand sanitizers, gloves, masks, etc.).	100	59%	41%
Due to the temporary closure of schools, kindergartens and illness of a family member, the responsibility to take care of the family members has increased among employees.	100	82%	18%
There have been cases of outbreak transmission from someone related to employees or between the employees.	100	63%	37%
Due to the government measure against the COVID-19 pandemic, stress has increased among employees in the workplace, while initiatives and motivations have decreased.	100	73%	27%
Workers are leaving their workplace due to the potential risk and safety issues.	100	62%	38%
There is a need for close physical contact with customers and clients.	100	81%	19%
In order to provide manufacture and service, it is necessary to work at a very close distance in the workplace.	100	76%	24%
There is no responsible person in the workplace for providing daily information and guidance about the COVID-19 pandemic, control on implementations against measurements on pandemic outbreak.	100	65%	35%
There is little or no prevention activities on COVID-19 in the organization. (Health and safety inspections are carried out regularly).	100	73%	27%

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Questions	Number of participants (n)	Yes	No
Business activity			
In order to run business activities effectively, did you face trouble finding a necessary equipment and equipment from the suppliers?	100	78.40%	21.60%
Is your business insured fully or partially (e.g., employee, equipment, livestock)?	100	54.60%	45.40%
Raw material supply			
More than 70% of the raw materials and materials are imported.	100	75%	25%
Increase in restrictions/requirements by the government has adversely affected your business negatively (increased health inspection resulted delaying the delivery of products entering and leaving your premises).	100	76%	24%
Is there burden or delay to buy raw materials, equipment from abroad?	100	81%	19%
All resources and inventory are in one place.	100	62%	38%
Marketing			
Did COVID-19 negatively affected customers' ability to purchase products and services?	100	81%	19%
Sales in the market have decreased.	100	81%	19%
The pandemic is negatively affecting your core supplier and its ability to run business effectively and supply inputs.	100	81%	19%
The necessary key inputs, raw materials you need for your business are supplied by a single supplier (more than 75% of key inputs).	100	66%	34%
The prices of inputs and other goods required to run your business have suddenly increased.	100	89%	11%
Due to the economic crisis, criminal activities occurred in your enterprise, or the risk of criminal acts have increased.	100	55%	45%
Risk management			
My business does not have a plan to deal with or prevent a crisis.	100	73%	27%

Annexure 3. Digital Transformation Readiness Survey

Questions	
Who is responsible for handling the organization's internet connection and digital environment management?	**Yes**
Department of Information Technology	18%
IT engineer	12%
IT officer	23%
No responsible person	47%
What are the priority issues to be solved by e-transition?	
Security and integrated policy	17%
Creation of an integrated database	14%
Interned-based communication	33%
Increase the capacity of information technology	21%
Update the business model	15%
What are the barriers to digital transformation	
Legal framework	16%
Culture	6%
Rules and procedures	6%
Capability	32%
Industry specifics	15%
Cost	24%
How application user may connect	
From company	
Via mobile phone	55%
VPN	
Both from the company and the mobile phone	26%
Are you planning a radical innovation to make your business more competitive?	
Yes	72%
No	21%
Our activities, products, platform, and business environment are perfect	7%
How quickly are new markets and partnerships accepted?	
Yes, but the policy is unclear	17%
Yes, but in certain business aspect	56%
Yes, there is a clear policy planning	20%
No	7%
Does the organization's upper management support digital transformation? How do they support it?	
Yes, but the policy is unclear	17%

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Questions	
Yes, but in certain business aspects	56%
Yes, there is clear policy and leadership	20%
No	7%
How does leadership in operations, product and service, and engineering work?	
No culture in participation	20%
Digital business areas are considered separately from the core business	38%
Some pilot projects	25%
Define your digital transformation level	
Non	39%
Partial	49%
Has system	12%
Do you have enough resource for digital transformation?	
Skills	35%
Finance	38%
Team	24%
Need for digitization	
Some processes require digitization	63%
Some service has	7%
Investment policy for digitization	
Non	31%
No support from people	60%
We have lab and system	8%
Wide application is available	1%

PAKISTAN

Executive Summary

This study aims to identify and assess the needs for productivity improvement, examine the relationship between business resilience and productivity, and highlight best practices that can be applied to other industries and member countries. The scope of the study includes interventions related to business resilience, innovation, productivity growth, SME growth, and the challenges facing productivity. As small and medium enterprises (SMEs) dominate Pakistan's business landscape and are often closely linked with large-scale enterprises for product or raw material sourcing, the study analyzes the productivity needs and resilience of both SMEs and large enterprises.

The study collected data from both primary and secondary sources. Primary data was gathered through interviews with selected enterprises, while secondary data was derived from existing studies. This information was used to evaluate the needs and challenges faced by enterprises across operational, financial, employment, technology, and non-technology parameters. The study also identifies the key drivers required to transform the industrial infrastructure to meet changing global dynamics. Additionally, organizational changes implemented during and after the pandemic are categorized as best practices that can be adopted by other industries to prepare for future crises.

The research further explores the relationship between business growth and productivity in large-scale manufacturing organizations, particularly in the textile and food sectors. This analysis helps in understanding the key factors that enable organizations to adapt to and overcome crises, ensuring sustainable transformation, continuous operational excellence, and the identification of best practices for widespread application in APO member economies.

The results of the study show that, regardless of business size, firms faced financial and operational challenges during COVID-19, which led to business closures, delays in product deliveries, asset reductions, outsourcing of subprocesses, diversification of product ranges for market survival, supply chain disruptions, and increased reliance on grants, savings, and loans from the government and other donors. In terms of workforce challenges, industries across the country experienced reduced working hours, job losses, financial burdens, increased sick leaves, and remote working.

However, these challenges also gave rise to several driving forces, such as changes in business culture, financial difficulties, material and service shortages, workforce shortages, and government support, all of which prompted businesses to align their strategies with global shifts and reduce expenditures, including utilities, fixed costs, and management and operational expenses. The analysis of these challenges and driving forces revealed that incorporating information technology (IT) and artificial intelligence (AI), implementing teleworking, reducing financial expenditures, diversifying supply chains, adjusting procurement models, retaining skilled workers, reshaping operational procedures, investing in R&D, and developing new products emerged as the most significant productivity improvement interventions. These

interventions led to tangible savings and demonstrated a positive correlation between productivity and business resilience.

Introduction

COVID-19 was one of the many fatal pandemics the world has faced, with an impact comparable to the 1918 influenza pandemic, which resulted in 50 million deaths worldwide and exposed the vulnerabilities in the economic infrastructure [1]. The level of uncertainty during COVID-19 surpassed that of the 2008–09 recession, during which global trade declined by 11.6%, the global unemployment rate rose to 3%, and 30 million jobs were lost [38]. International organizations such as the United Nations Conference on Trade and Development (UNCTAD); the World Economic Forum (WEF); the World Health Organization (WHO); and the International Monetary Fund (IMF) forecasted that the pandemic would cause a greater global depression, with a growth rate below 2% and had the potential to wipe USD1 trillion off the global economy [4]. The intensifying uncertainties affected small, medium, and large enterprises, as well as their production levels, with major stock markets collapsing during the two successive years of the pandemic. This led to elevation of global poverty and inequality within communities.

Pakistan, the fifth most populous country and the 44th largest economy in the world, currently has over 64% of its population under the age of 30. However, despite this demographic advantage, Pakistan ranked 110th out of 141 in the Global Competitiveness Index of 2019; 82nd out of 152 in the Competitive Industrial Performance Index 2020; 107th out of 131 in the Global Innovation Index 2020; and 154th out of 183 in the Youth Development Index 2016 [2]. These statistics do not reflect the potential of a country blessed with abundant natural resources, diverse minerals, and a talented population. Despite being a founding member of the Asian Productivity Organization (APO), Pakistan continues to struggle with low productivity levels. The APO Handbook 2019 shows that Pakistan's productivity grew by only 1.4% from 2000 to 2017, compared with 3.9% in Bangladesh, 5.8% in India, and 8.5% in PR China, a gap that was further widened by the pandemic [3].

In the 1990s, Vietnam's economic structure was similar to Pakistan's, with a reliance on the textile and agriculture sectors. If we compare the two countries, the average Pakistani worker today is 40% more productive than 30 years ago, but the average Vietnamese worker is 328% more productive by comparison, growing at a rate eight times faster than Pakistan. This remarkable growth is largely due to Vietnam's strong political will and commitment to transforming its infrastructure, resulting in overall economic growth and improved productivity. Vietnam now ranks 69th in the Ease of Doing Business Index, has a trade surplus of USD27.81 billion, an unemployment rate of 2.05%, and foreign direct investment (FDI) of USD14.10 billion. In contrast, Pakistan's political instability, widening trade deficit, unclear policies, and low productivity have contributed to the decline of its overall economy [2].

It is essential to recognize that opportunities often arise from challenges, and understanding these uncertainties provides the foundation for identifying areas of improvement. Productivity is at the core of sustainable development, which can be achieved by aligning with emerging needs. This report analyzes the challenges, driving forces, and productivity improvement needs that became evident in the aftermath of the pandemic, with the goal of transforming the economy into a resilient and sustainable one with higher productivity.

Research Objectives

The research aims to understand the challenges and success factors of the firms, focusing on business and operations flexibilities, financial and human resources changes, and use of innovation and technology that resulted in firms' recovery and productivity improvement during and after COVID-19. The specific objectives of the research are to:

1. identify the emerging needs for productivity enhancement by analyzing firms' success points during and after the pandemic;

2. examine the successful business practices that have led to productivity enhancement; and

3. identify successful best practices in private firms.

Methodology

To achieve the research objectives, the study employed the following methodology comprising primary and secondary data analysis:

(1) The primary data was collected by interviewing the enterprises. Initial surveys and interviews were conducted with 15 enterprises, and five of these them were selected for in-depth interviews. The selected companies represented the key sectors contributing to Pakistan's GDP, such as the textile and food industries. The selection criteria included their contribution to imports and exports, sectoral share in GDP, business size, and workforce size. The aim was to understand firms' adaptability, productivity, resilience, and strategies to cope with the COVID-19 pandemic. The interviews included both SMEs and large enterprises located in different regions of the country (i.e., Central Punjab, South Punjab, North Punjab, and Sindh) to capture the diverse challenges and strategies across regions.

(2) Secondary data was collected from existing literature on economic, business, financial, and performance factors affecting firms. This data was used to analyze the challenges faced by businesses and the recovery measures implemented by their management to ensure resilience and productivity.

In addition, mean and descriptive statistical approaches were employed to analyze the data gathered through literature review. The analysis focused on two key pillars: business resilience and innovation. Business resilience included operational and business continuity, financial stability, and employment retention and adaptation. Innovation encompassed both technological and non-technological interventions that impacted organizational productivity and business performance.

Selection Criteria

The selection of companies for the primary data (interviews) was based on the priority sectors of Pakistan, which focus on improving exports and reducing imports. These sectors were selected according to their share in national GDP, their contribution to imports and exports, and their reliance on SMEs for operational activities. The goal was to understand the cumulative impacts and productivity improvement needs, as well as to identify best practices that can be replicated in both SMEs and large enterprises. Additionally, the selected firms were chosen based on their

integration into supply chains, involving SMEs in their subprocesses, sales within and outside the country, and significant market shares in their respective sectors.

Based on the data analysis, the first sector considered was the textiles sector, which contributes 8.5% to the GDP, employs nearly 40% of the total labor force, generates 20% of manufacturing output, and accounts for the highest share (68%) of the country's total exports. Pakistan is the ninth largest exporter of textile products and the third largest manufacturer of hosiery, representing many international brands like H&M, Levi's, Nike, Adidas, and others. Despite its importance as a key economic and export sector, the textile industry is considered low performing in terms of productivity. The selected industrial units for analysis in this sector are integrated, with a supply chain presence across dyeing, knitting, weaving, cutting, spinning, stitching, and dispatch.

The agro-food sector is the second-largest industry after textiles, contributing nearly 13% to large-scale manufacturing. This sector witnessed a growth of 27.1% in 2022, accounting for 27% of value-added production and 16% of employment in Pakistan's food manufacturing sector. It is also the second-largest contributor to exports, with a share of 11.8%, while it has an import share of 8.27%. Pakistan ranks as the fourth largest milk producer, twelfth largest citrus producer, grows 35 different varieties of vegetables, and produces 29 types of fruits. It also has the seventh largest cattle inventory. However, despite this, Pakistan experiences 30–35% post-harvest losses due to the lack of post-harvest processing facilities and food processing units, which could add value and reduce this national loss, and consequently improve productivity.

Among the 15 shortlisted firms, five enterprises from the textile and food sectors were selected for in-depth interviews, based on their availability to participate, enterprise size, market share, and business operations within and outside the country, as presented in Table 1.

TABLE 1

THE ENTERPRISES SELECTED FOR IN-DEPTH INTERVIEWS.

Sr no.	Companies	Sector
1	Company A	Food and allied sector
2	Company B	
3	Company C	
4	Company D	Textile sector
5	Company E	

Scope and Limitations

The scope of the study is limited to the analysis of national and international private firms within Pakistan for identifying the best practices implemented during the pandemic that led to increased productivity and business resilience. The findings will be shared with APO member economies.

Due to the budget constraints, online interviews were conducted instead of face-to-face interviews. The timeframe of interview varied from 30 minutes to 120 minutes. Also, the firms are represented using a nomenclature to ensure confidentiality and protect data privacy.

The report is presented in a structured outlined in Figure 1.

FIGURE 1

REPORT STRUCTURE.

Definitions

Productivity

Productivity is commonly defined as "the ratio of the volume of output to the volume of inputs, which generally refers to how efficiently production inputs, such as labor and capital, are utilized to produce a given level of output" [36]. On a broader scale, productivity is also described as "a measure of economic performance that compares the amount of goods and services produced (output) with the amount of inputs used to produce those goods and services" [37].

Productivity is considered the foundation of an economy, competitiveness, and production when assessing the economic performance of a country or a firm. At the enterprise level, productivity typically measures the efficiency of the company's production process and can be calculated in two different ways, using parameters such as labor, number of units, net sales, and cumulative output. For the purpose of this study, the second definition is employed to analyze the overall productivity of firms.

Productivity is generally measured in the following ways:

Partial factor productivity: Partial factor productivity measures the ratio of total output to a single input, such as labor or capital. This type of productivity is used to assess how effectively each unit of input contributes to output production. Inputs and parameters can include labor, capital, machinery, materials, etc. Labor inputs are typically easier to measure, as statistics on employment and labor hours are more readily available than other productivity parameters.

Multifactor or total productivity: Multifactor productivity measures the ratio of total output to the combined inputs used in production. It reflects the overall efficiency with which labor and capital inputs are utilized in the production process. Multifactor productivity considers factors such as management practices, brands, networks, spillovers, adjusted costs, utilities, overhead costs, economies of scale, competition, trade, and balance. GDP growth is also linked to multifactor

productivity, and factors that cannot be accounted for through labor and capital are usually measured through indices and annual growth rates.

SMEs and Large Enterprises in Pakistan

The primary purpose of defining any enterprise is to enable the government to develop policies and programs that support such businesses. These policies vary depending on the sector and size of the enterprise and may include regulatory duties, taxation, subsidized services, and financial support. The goal of such policies is to collect and organize data, evaluate the impact of interventions, and support coordination among various departments, including the Small and Medium Enterprise Development Authority (SMEDA), the State Bank of Pakistan (SBP), Small Industries Corporation (SIC), the Federal Board of Revenue (FBR), and the Securities and Exchange Commission of Pakistan (SECP). SMEs are typically categorized by the number of employees, assets, and turnover, and it is the government's mandate to ensure that the SME definition is standardized across all regions of Pakistan.

Through circular no. 6, Infrastructure Housing & SME Finance Department (IH&SMEFD), the Government of Pakistan defined small and medium enterprises on the basis of their annual sales turnover and workforce and aligned this with the SME policy of 2021. The same definition has been perceived by various departments including SMEDA and SBP. The small, medium and large enterprises are classified as given in Table 2:

TABLE 2

CRITERION OF SMALL, MEDIUM, AND LARGE ENTERPRISES.

Enterprise category	Annual sales turnover	Workforce range
Small enterprise	Up to PKR150 million	Less than 50 people
Medium enterprise	Above PKR150 million to PKR800 million	Less than 250 people
Large enterprises	More than PKR800 million	More than 250 people

In Pakistan, there are 5.2 million SMEs working to meet both local and international demands, with 90% operating in the private sector and only 10% associated with government and semi-government institutions. SMEs account for nearly 80% of the non-agricultural workforce, contribute 25% to manufacturing exports, and represent 35–40% of the country's GDP [25]. These SMEs are widely spread across various sectors, including food, textiles, chemicals, surgical instruments, automobiles, machinery, logistics, construction, and other industrial sectors.

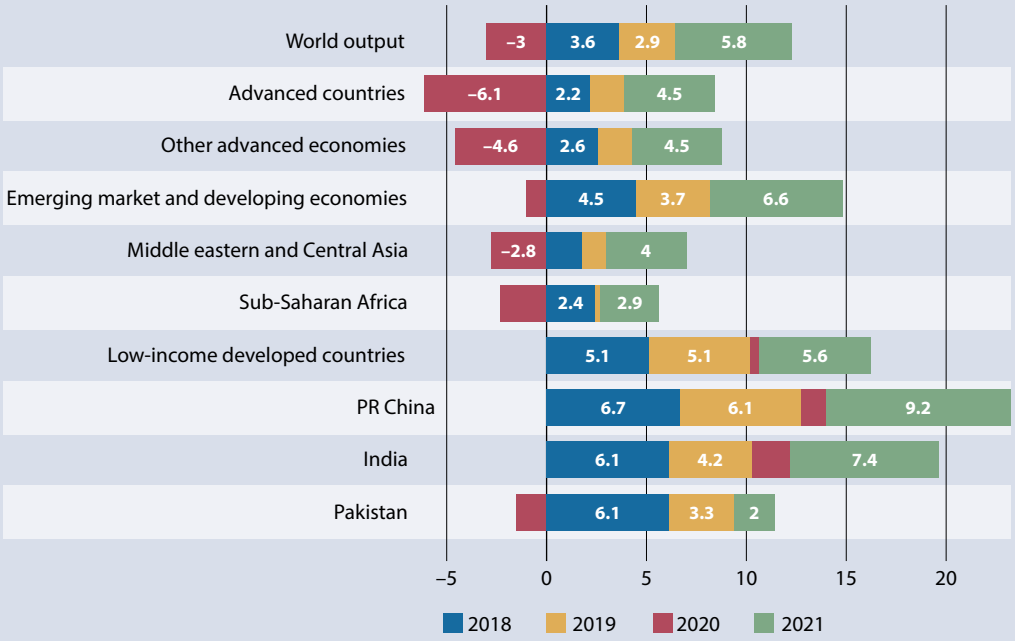
Business Performance in Pakistan and COVID-19

The global GDP contracted by –3.0% in 2020 compared with 2.9% in 2019, marking a downturn worse than the financial crisis of 2008–09 (see Figure 2). Most advanced economies saw a collective reduction in economic output, falling from 1.7% in 2019 to –6.1% in 2020. Emerging and developing economies experienced a similar decline, shrinking from 3.7% in 2019 to –1.0%. The middle eastern and central Asian regions saw GDP contraction from 1.8% to –2.8%, while sub-Saharan Africa witnessed a sharp decline from 0.3% to –2.3%. Low-income developing countries also saw a decrease from 5.1% to 0.5%. Asia was the only region to experience positive growth at 1.0%, driven by growth in India, PR China, and Indonesia. However, PR China, as the world's leading manufacturing hub and the epicenter of the outbreak, experienced a historic decline of 8%, halting production operations and reducing demand for oil, materials, and intermediate goods, contributing to the overall global economic downturn [5].

A country's trade is generally measured through merchandise or goods and services indicators. Total merchandise trade refers to the value of goods exchanged between countries, including raw materials, finished goods, and intermediate products. The second key indicator is the services sector, which is categorized into various subsectors such as manufacturing services, maintenance and repair services, transport, travel, construction, finance, telecommunications and IT, cultural, and recreational services. During the initial phase of the pandemic, there was an increase in demand for common commodities like vegetables, fruits, face masks, and sanitizers due to "panic buying." However, the subsequent economic shock had a significant negative impact on small, medium, and large-scale industries as well as the services sector, exacerbated by uncertain economic activity and political tensions across regions.

FIGURE 2

WORLD GDP AND SELECTED COUNTRIES, 2018–21.



Source: World Economic Outlook April 2020 [4].

Global trade experienced a significant decline in imports and exports, with a reduction of USD1.94 trillion in imports and USD1.9 trillion in exports from 2018 to 2020. In OECD countries, services exports alone fell by around 16%, which was double the reduction in goods exports (–8.2%) during the same period. Globally, services sector exports decreased to USD4.28 trillion, while imports fell to USD4.37 trillion between 2018 and 2020, resulting in a 14.56% loss in global GDP in 2020. The services sector comprises various components: travel (23.5%), transport (16.7%), computer, IT, and telecommunication services (10.4%), goods-related services (3.8%), and manufacturing services (including maintenance and repair at 2% and 1.7%, respectively) [7].

The lockdowns led to a significant collapse in international travel, with a 73% decline equating to 1 billion fewer travelers and affecting 100 million jobs worldwide. This drop, termed as "travel shock," continued to impact the global economy until 2022. In Pakistan, the tourism sector's contribution to the economy was 5.7% before COVID-19, but it fell to 2.9% in 2019 and then plummeted to –65.1%

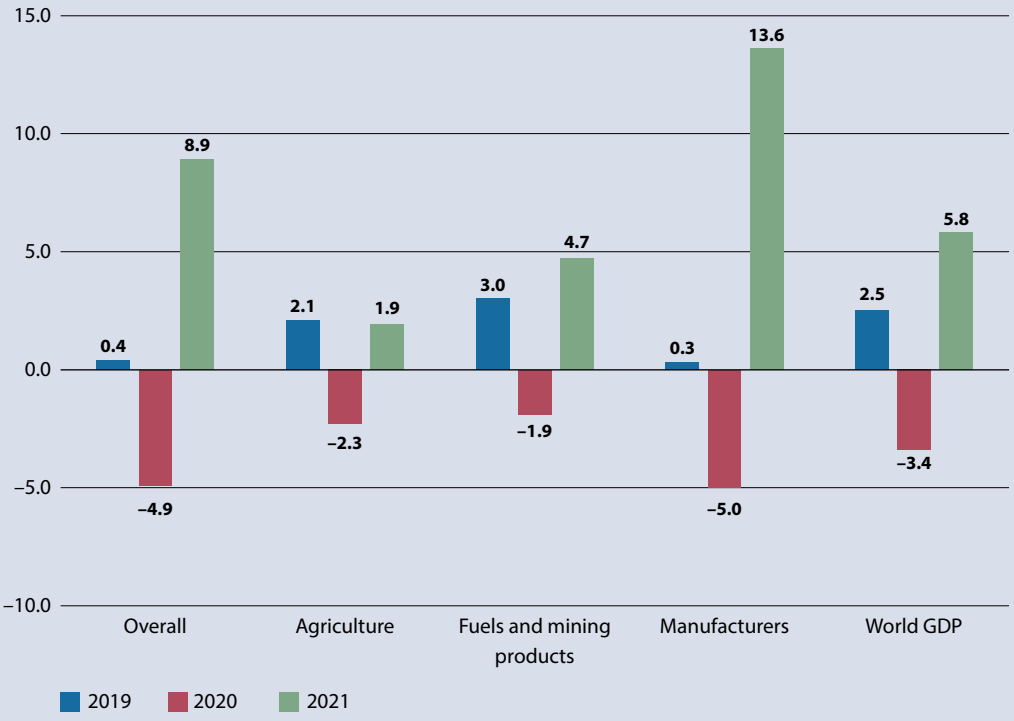
in 2020 [7, 8]. This led to a revenue decline of 22.8% between 2019 and 2020 and impacted the livelihoods of 3.9 million people associated with the travel and tourism sector [10, 11, 12].

Additionally, global transportation services saw a 16% decline, with air transportation particularly hard-hit, dropping by 46.8%. Sea transportation also decreased, from 8.7% in 2019 to just 0.81% in 2020. Manufacturing services and repair services declined by 6% and 22.4%, respectively, while goods-related services dropped by 14% and trade-related services by 10% [13]. In contrast, telecommunications, computer, IT, and postal services saw increases of 5.5%, 12.2%, and 12.2%, respectively.

Merchandise trade also suffered, with nearly 5% drop overall, while the agriculture sector contracted by –2.3% and fuels and mining products by –1.9% (see Figure 3). The cumulative decline reached an all-time high of –4.9% over the past five years, leading to –4.68% decrease in global production. This downturn, which lasted for 16 months from February 2019 to May 2020, placed significant pressure on global supply chains, making it difficult for large, medium, and small enterprises to survive and continue operations [5].

FIGURE 3

WORLD MERCHANDISE TRADE.

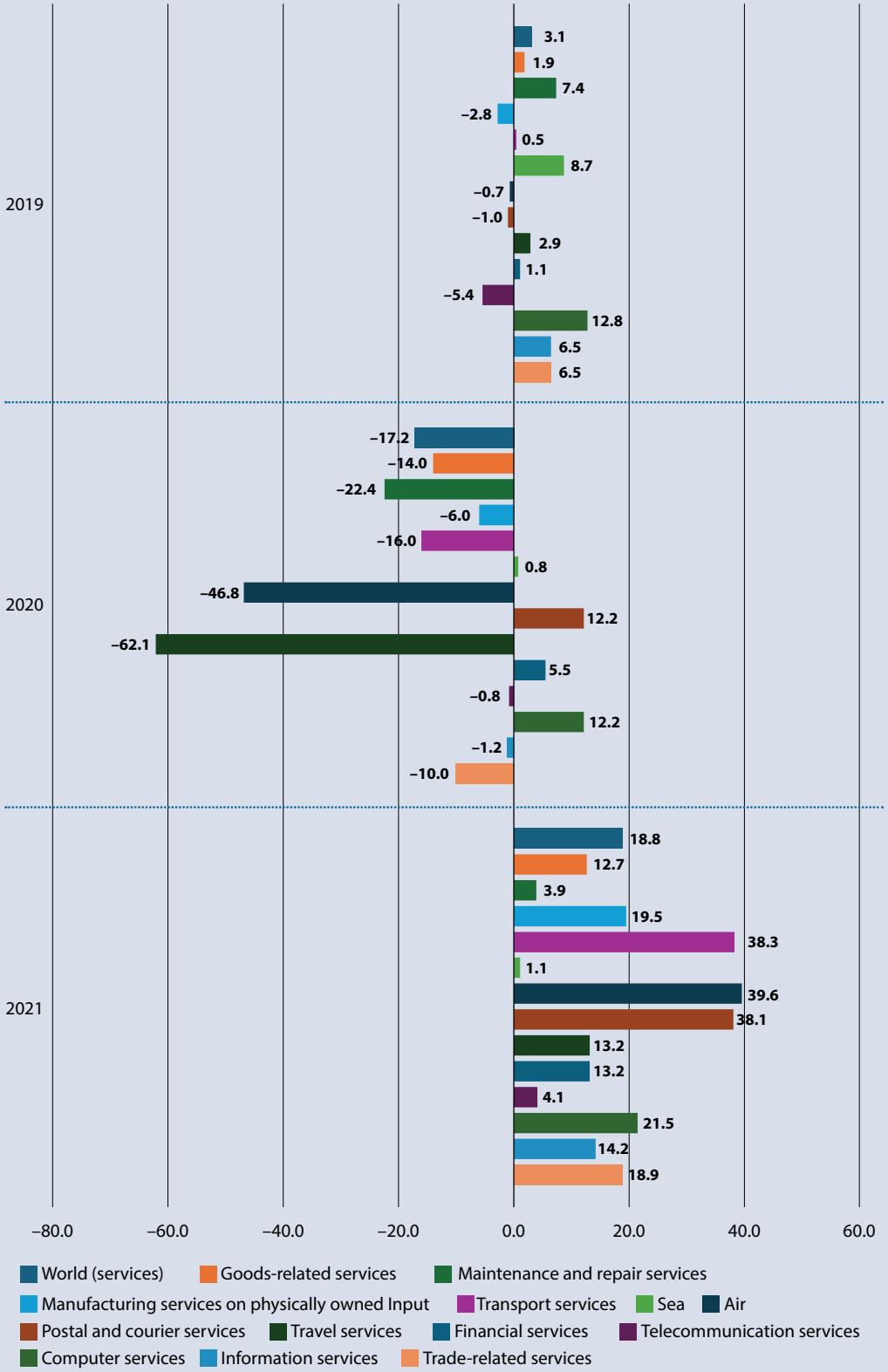


Source: World Trade Statistics Review 2022 [6].

The manufacturing sector is the backbone of any economy, accounting for 17% of global GDP and employing 14% of the global workforce, often at higher wages than other sectors. Moreover, manufacturing has a significant multiplier effect, with studies showing that every USD1 spent in manufacturing contributes USD2.68 to the overall economy [14]. Notably, manufacturing in the USA alone accounted for 3–5% of global R&D spending, 55% of all patent registrations, and 71% of global

FIGURE 4

WORLD SERVICES BY CATEGORY (PERCENT CHANGE DURING 2019–21).



Source: UNCTAD Database [7].

merchandise trade in 2020, representing a value of approximately USD12 trillion to the global economy. This highlights that industrialization, beyond driving economic activity, enhances social capabilities and productivity through innovation and the development of modern infrastructure.

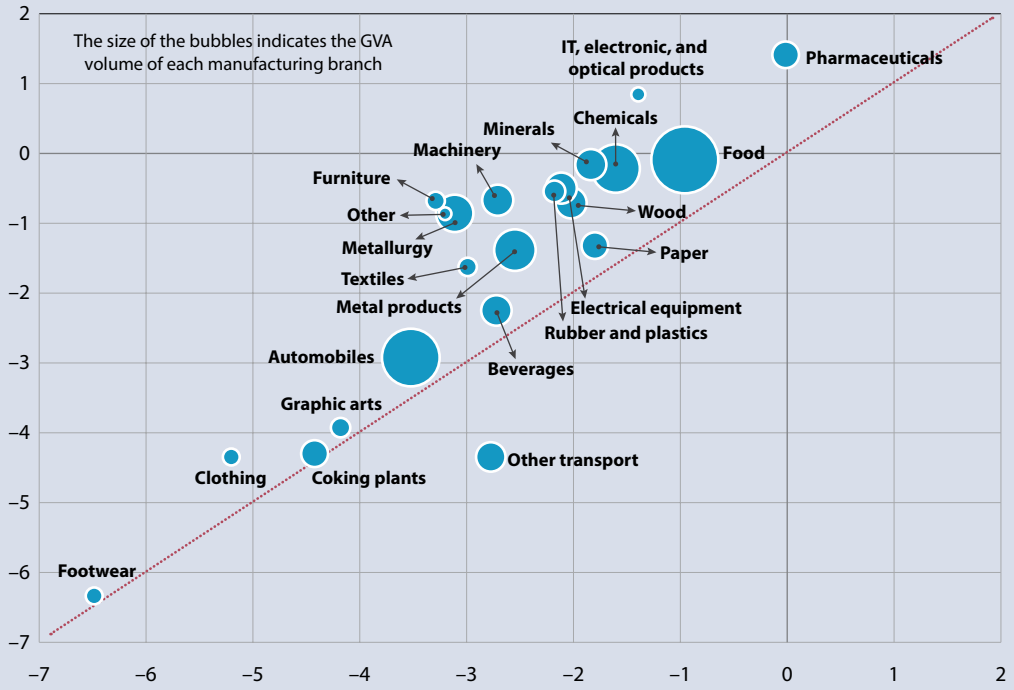
In the 1970s, developing economies had an agricultural output of 32.98%, compared with the world average of 9.46%. At the same time, Asia's industrial value addition was 10.57%, even lower than Africa's 12.89%, with a global GDP share of 8.49% in the 1990s. However, by 2020, Asia's GDP had grown to 39.9%, while total industrial value addition and manufacturing value addition in the region saw increases of 551% and 523%, respectively. In comparison, global cumulative growth in these areas was only 258% and 349%. According to the IMF in 2019, 71% of global economic growth would be driven by Asian countries, primarily PR China (39%) and India (16%), which would contribute significantly to the global economy. Additionally, Asian countries are expected to meet 40% of global industrial demand while playing a crucial role in maintaining critical supply chains worldwide [15].

The pandemic reduced global manufacturing growth to –1.08%, with a further decline to –2.88% in 2020. The global production rate fell by –6% due to the impact of lockdowns worldwide. European manufacturing was particularly hard-hit, with sectors such as automotive, food, chemicals, and pharmaceuticals affected globally. In Spain, manufacturing declined dramatically by 28.5% in 2020 compared with the previous year, contributing to a cumulative loss of –11% in the national GDP.

As seen in Figure 5, the textile sector was among the hardest hit, experiencing minimal recovery. Other sectors, such as coking plants, clothing items, and the arts, followed a similar pattern, driven by factors including low demand, rising inflation, increased commodity prices, and transportation

FIGURE 5

CHANGE IN SYNTHETIC ACTIVITY INDEX 2020.



Source: Caxia Bank Research.

restrictions. High-value sectors like automobiles, beverages, metal products, transportation, electrical equipment, and machinery saw their growth decline from –1% to –3%, with slow recovery due to global supply chain disruptions. Only the food and pharmaceutical sectors experienced positive growth, largely due to increased demand for disinfectants, antiseptics, and food items.

It is clear that the industry was unprepared to handle the crisis, but the pandemic also forced technological and structural transformations. While the pandemic exposed weaknesses in industrial infrastructure, some factors remained constant: consumers continued to demand lower prices, firms faced limits on price changes due to manufacturing costs, and competition ensured that companies operated efficiently while delivering the best value to consumers. To sustain growth in the long term, manufacturers will need to balance culture and innovation to identify and seize opportunities for stability and increased productivity in the global manufacturing industry [16].

In Pakistan, the pandemic's impact was deeply felt across all sectors of the economy. The country's GDP fell from 3.3% (USD 322 billion) in 2018–19 to –1.5% (USD 301 billion) in 2020–21. The unemployment rate increased from 5.8% in 2018 to 6.9% in 2019 and 6.6% in 2020, partly due to the inclusion of contributing family workers in the definition of employed people, whose share in total employment was above one-fifth. Public debt also rose from 64.6% in 2019 to 79.6% in 2020 [17].

Pakistan's economy is based on three major sectors: agriculture, industry, and services (see Figure 6). As per an estimate for 2022–23, the services sector held the largest share at 58.6%, followed by industry at 18.5%, and agriculture at 22.9%. However, the services sector saw a cumulative decline of –0.26%, driven by a reduction in transportation and storage (–4.36%), wholesale and trade (–0.26%), and tourism (–8.5%) in 2018–19 compared with the previous year. Pakistan's tourism industry had been growing steadily, achieving its highest milestone of USD 992 million in 2019, but the pandemic led to a 23% decline, reducing tourism revenue to USD763.84 million in a single year. Additionally, the hotel industry reported a loss of PKR100 million in February alone, with hotel bookings dropping by 45–95% in the second quarter of 2020 compared to the same period the previous year [22, 23].

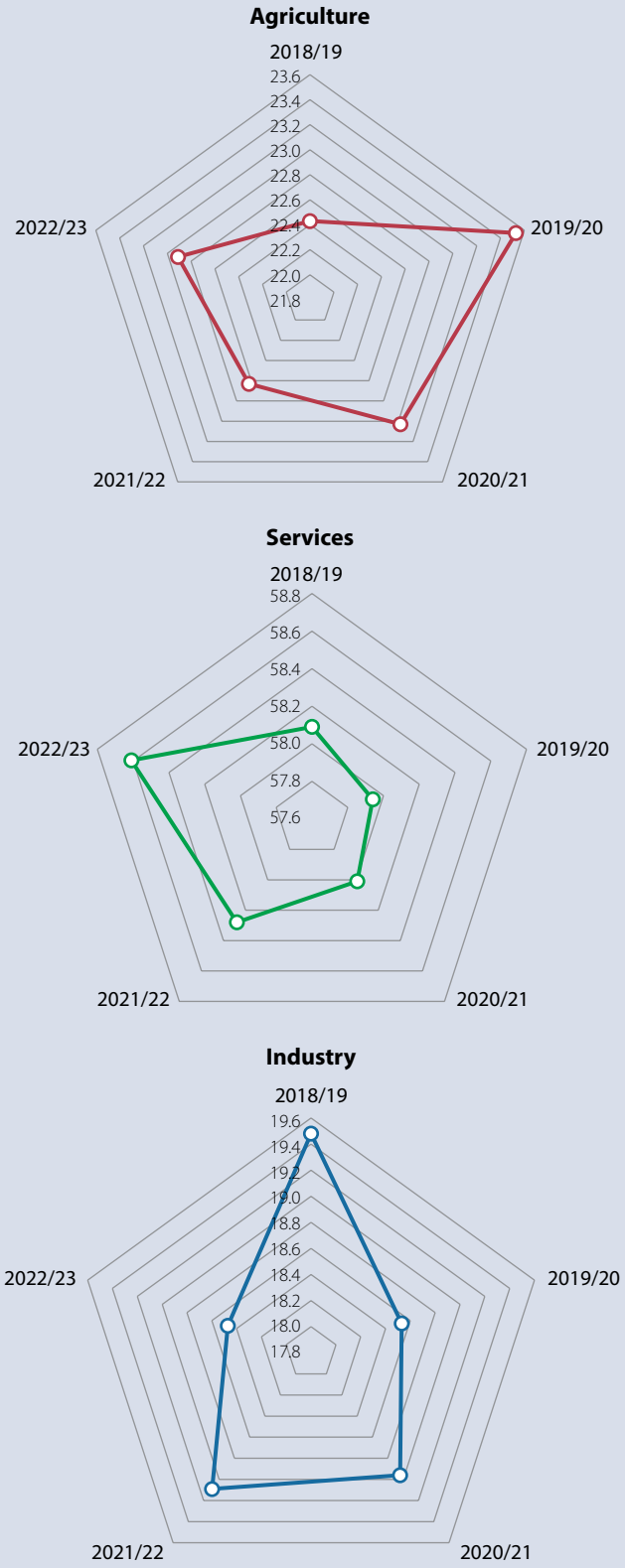
The information and computer-related sector grew by 26%, reaching USD1.23 billion in 2019–20, compared with USD0.994 billion in 2018–19, with a growth rate of nearly 24%, despite the economic challenges faced by the country. This growth was the fastest in Asia and the fourth fastest in the world, after the USA, the UK, and Brazil, with a remarkable 950% increase since 2018. IT-related exports reached USD5 billion, representing an impressive 137% increase over the past five years, making it the fifth-largest net exporter in the country's export list [24]. This rapid expansion has propelled the country to a new sphere of digital transformation, reshaping working culture and reducing financial liabilities to create a more productive and efficient environment.

The agro-food chain disruption led to a severe shortage of perishable and processed food items. It was also anticipated that changing consumer behavior would further challenge companies to adapt their supply chains. Escalating oil prices, low procurement drives, import hurdles, and structural weaknesses contributed to skyrocketing prices of food commodities such as tomatoes, onions, chicken, and meat. Although the food processing sector's supply side remained largely unaffected by the pandemic, farming activities were hit hard due to transportation disruptions, harsh climatic conditions, locust attacks, and other factors, leading to production shortages in certain crops.

On the demand side, reduced purchasing power and income loss led to a decline in food consumption. However, in urban areas, the reduction in consumption was mitigated by appropriate measures and

FIGURE 6

ANALYSIS OF THREE BASIC ECONOMIC SECTOR OF PAKISTAN.



Source: PBS 2023.

the partial continuity of supply chains. Despite increased inflation and rising commodity prices, the agriculture sector experienced a 4.9% growth in 2019, driven by a surge in demand for food items.

Industrial activity is a key pillar of Pakistan's economy, with the industrial sector contributing nearly 19% to GDP. Manufacturing, a subsector of the industrial sector, accounts for around 12% of GDP, provides 17% of employment in the labor force, and contributed 60% of tax revenue in 2020–21. The manufacturing sector is further classified into large-scale manufacturing, small-scale manufacturing, and slaughtering, as defined by the government. Large-scale manufacturing holds the largest share, contributing nearly 80% to the total manufacturing output and 12.2% to the country's GDP, while small- and medium-scale manufacturing accounts for 13.8% of the total manufacturing output.

Pakistan's manufacturing sector is versatile, with a presence in almost every sector of the global economy, including steel, cement, sugar, pharmaceuticals, textiles, chemicals, automobiles, engineering, and other allied industries. However, a significant decline in industrial activity was observed during the two crucial periods of lockdown and restrictions, primarily due to supply chain disruptions. Much of Pakistan's raw materials and semi-finished products are imported from PR China, which dominates the country's import market. Imports from PR China include machinery, transport equipment, manufactured goods, food and animals, chemicals, mineral fuels, and animal and vegetable oils, accounting for 22% of imports in 2022. Other major import partners include the United Arab Emirates (10.33%), Indonesia (8.13%), Saudi Arabia (7.12%), and others.

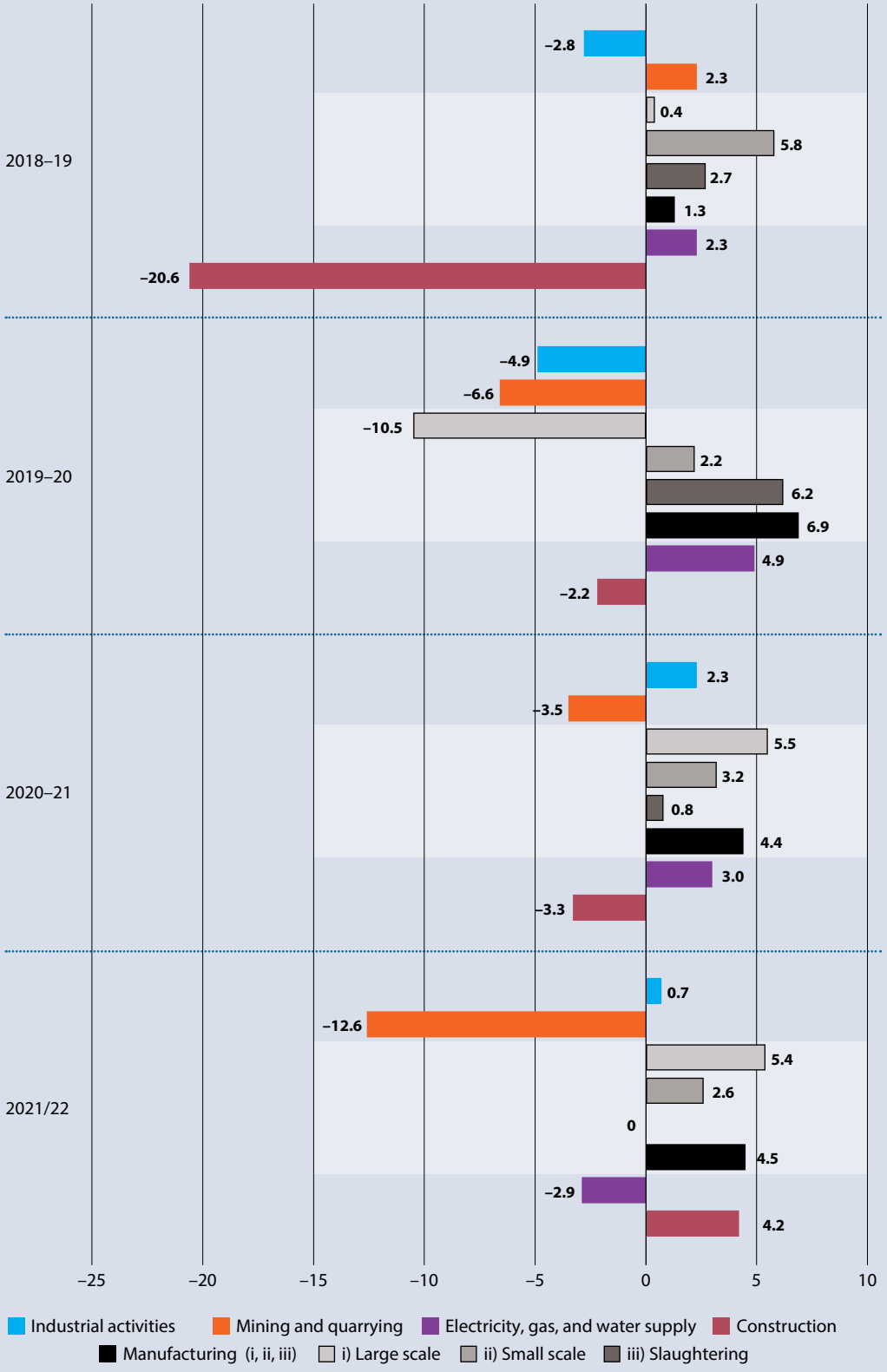
The mining and quarrying sector experienced a decline of –2.3% in 2019, which further worsened to –6.6% the following year due to transportation restrictions. The initial period of 2019 was particularly challenging, with manufacturing output drastically reduced to –6.9%. Large-scale manufacturing was especially hard-hit, with an overall decrease of –10.5%, putting millions of livelihoods at risk and plunging many organizations into financial distress (see Figure 7). The large-scale manufacturing sector was also impacted by a sharp decline in the construction and allied sectors, which saw a reduction of –20% in early 2019. Although there was some recovery, the sector still experienced an average decline of –2.73% over the next two years.

The manufacturing sector is also classified based on the Quantum Index of Manufacturing (QIM), with textiles holding the largest share at nearly 20% (see Figure 8). During the pandemic, textile production declined by –0.17% in 2018–19, followed by a further reduction to –2.6% in 2019–20. This decline was largely attributed to a decrease in cotton yarn production due to floods, locust attacks, and harsh climatic conditions. Imports surged from USD 377.5 million to USD 621.7 million, marking a 65% increase, while exports rose from USD 11.4 billion to USD 14.2 billion in 2020, with substantial financing from the State Bank of Pakistan amounting to nearly 95 billion for the textile sector. In response to growing demand, the textile industry saw an 8% growth in 2020–21, driven by a rise in the demand for blankets (38.9%), woolen and carpet yarn (27.9%), and woolen and worsted cloth (19.1%). This growth ultimately led to the expansion and increased production capacity of Pakistan's textile sector to meet global demand.

The food, beverages, and tobacco sector is the second-largest contributor to large-scale manufacturing, with a share of 12.4% in the Quantum Index of Manufacturing. This sector also saw a reduction in output, with decline of –3.6% in 2019 and –2.33% in 2020. Major decreases were observed in the sugar industry (–1.7%) and tobacco (–31.4%). However, there was growth in 2021 in sugar, confectionery, tea, and starch production, with increases of 38.1%, 11.9%, and

FIGURE 7

IMPACT OF PANDEMIC ON INDUSTRIAL ACTIVITIES.



Source: PBS, 2023.

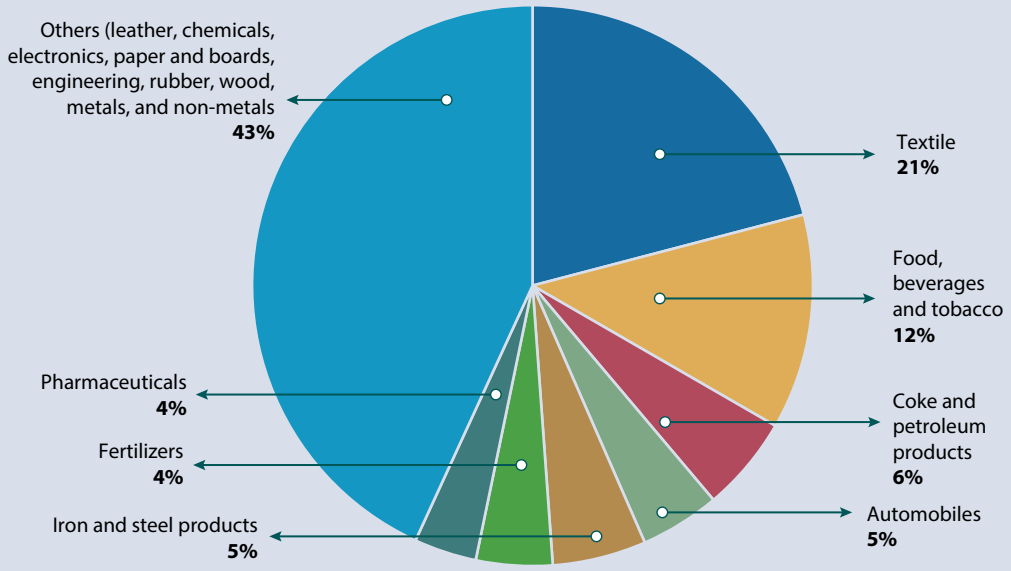
10.6%, respectively, due to the lifting of lockdown policies. Additionally, the production of cooking oil, vegetable ghee, and wheat and grain grew during the pandemic, with average increases of 10.09%, 3.5%, and 15.8%, respectively. Despite rising raw material costs, such as palm oil and soybeans, and the depreciating rupee, the food sector experienced significant growth during and after the pandemic.

The construction industry and iron and steel sectors declined, largely due to decreased demand for billets, ingots, sheets, coils, plates, and steel. The automobile sector also suffered, with high electricity costs, natural gas shortages, and financing issues contributing to declines of –11% in 2019, –7.6% in 2020, and –8.6% in 2021. Automobile production saw an initial drop of –7.5%, which escalated to –36.5% in 2020, mainly due to lower passenger car production caused by rising prices and reduced demand. However, in 2022, automobile sales rebounded by 54.1%, spurred by government incentives such as duty reductions, a new automobile policy, and the promotion of local manufacturers.

The coke and petroleum industry saw a decline of –6% to –17.46% from 2019 to 2020 but later rebounded to 12.3% due to a surge in the automobile and power sectors and increased utilization of transportation services. The pharmaceutical industry declined by –5.38% in 2019 and –8.66% in 2020. Similarly, chemicals manufacturing output decreased by –4.1% in 2019 and –2.3% in 2020. Other sectors, including paper and board (–2.48% in 2019), wood products (–8.24%), leather products (–0.4%), and non-metallic mineral products (–5%), also saw declines during the pandemic [25, 26, 27].

FIGURE 8

LARGE-SCALE MANUFACTURING INDUSTRIES.



Source: Pakistan Economic Survey, 2018–21.

The impact reduced the overall output of the manufacturing sector, which led to increased pressure while government measures in the form of financial packages, changes in policies and partial lockdowns ensured minimum loss to the manufacturing setups.

Government Policies

In the wake of COVID-19 and economic challenges faced by the country, the following policy interventions were made by the government for maintaining productivity levels of industries in the country.

Policies and Regulations during the Pandemic

1. PM's Economic Support Package (1.2 trillion package): This included
    - monetary support to small and medium enterprises;
    - elimination of import duties on health equipment's;
    - tax refund program to the export industry;
    - relief in fuel prices; and
    - daily wager workforce support program;
2. Support programs from State Bank of Pakistan: These programs included
    - Temporary Economic Refinancing Facility (TREF) worth PKR100 billion for mobilizing investment at 7% fixed rate for 10 years;
    - Refinancing Facility for Combating COVID-19 (RFCC) worth PKR5 billion to support hospitals and medical centers; and
    - Rozgar Scheme to prevent layoffs and finance wages and salaries of employees in the industry, reduce capital payments, reduce policy rate from 13.25% to 7%, and reduce credit requirements.

Policies and Regulations after the Pandemic

(1) 5E's Framework: The 5E's Framework, developed by the Ministry of Planning, Development, and Special Initiatives, provides a strategic plan to achieve Vision 2025 and long-term objectives. It focuses on five key elements of the economy: exports, E-Pakistan, environment and climate change, energy and infrastructure, and equity and empowerment. This framework addresses the broader challenges of Pakistan's socioeconomic development by promoting growth in foreign reserves through increased exports, value addition in key manufacturing sectors (such as mining, agriculture, manpower, and IT), and fostering innovation. It also emphasizes transforming the environment, energy infrastructure, information and communication technologies, and empowering marginalized groups to ensure sustainable industrial development. By translating the benefits of the digital economy into e-governance and other services, the framework aims to accelerate growth, increase transparency, and promote inclusivity for national prosperity.

(2) Land Information and Management System (LIMS): The LIMS is a collaborative initiative between the Federal Government and the Pakistan Army to modernize Pakistan's agriculture sector, which contributes 23% to the economy and employs nearly 38% of the workforce. The Chief of Army Staff (COAS) has termed this initiative

the "Green Revolution." Under this initiative, new canals will be built, and the irrigation system will be expanded to reclaim 9 million hectares of barren land and convert that into productive agricultural land. LIMS will provide real-time information and guidance to farmers on high-yield crops, fertilizers, and modern technologies. This will attract foreign investments of up to USD3 billion from the Middle East, the USA, and European countries.

(3) Establishment of the Special Investment Facilitation Council (SIFC): The Government of Pakistan has launched the SIFC under the leadership of the Prime Minister, with provincial leaders and the Army Chief as members. The goal of SIFC is to attract nearly $5 billion in foreign direct investment [29]. The SIFC will act as a "One-Window Operation," facilitating investors and stakeholders, including the government, to fast-track development and capitalize on untapped potential in key sectors such as agriculture, mining, information technology (IT), energy, and defense production. This initiative aims to ensure transparency, build trust among foreign investors, and direct investments into critical development areas to enhance the national economy, generate employment, and reduce the trade deficit.

These initiatives are focused on reviving and modernizing Pakistan's industrial and agricultural infrastructure, tapping into underutilized economic areas for resilient growth, improving productivity, and developing an efficient industrial ecosystem through clear policies and facilitation for both local and foreign investors.

Challenges

The analysis of SMEs in Pakistan covers 2,742 enterprises from large, medium, and small-scale businesses in the manufacturing sector, representing various subsectors such as food, textiles, surgical goods, leather, readymade garments, chemicals, paper, rubber, basic metals, machinery, medical appliances, automobiles, and other key sectors of the economy [30, 31, 32, 33, 34]. Among these businesses, five firms were selected for interviews. These interviewed SME and large firms employed more than 1,000 people.

The general analysis indicates that these firms reported a high employee layoff rate in the textile sector during the pandemic due to export reductions, while the food sector faced moderate risk due to increased local demand. However, after the pandemic, the level of risk (financial, operational, and business-related) remained unchanged for the food sector, whereas the textile sector saw relief from an increase in export orders from European and Asian markets.

The firms encountered three major challenges: production and operational challenges accounted for 50% of the issues, workforce and employment challenges for 37.5%, and financial constraints for 12.5%. These challenges led to significant changes, with 60% of organizations undergoing structural changes and 40% reporting impacts on their technology and IT departments after the pandemic.

A detailed analysis of the challenges, driving forces, and interventions carried out by the firms is as follows:

Financial Challenges

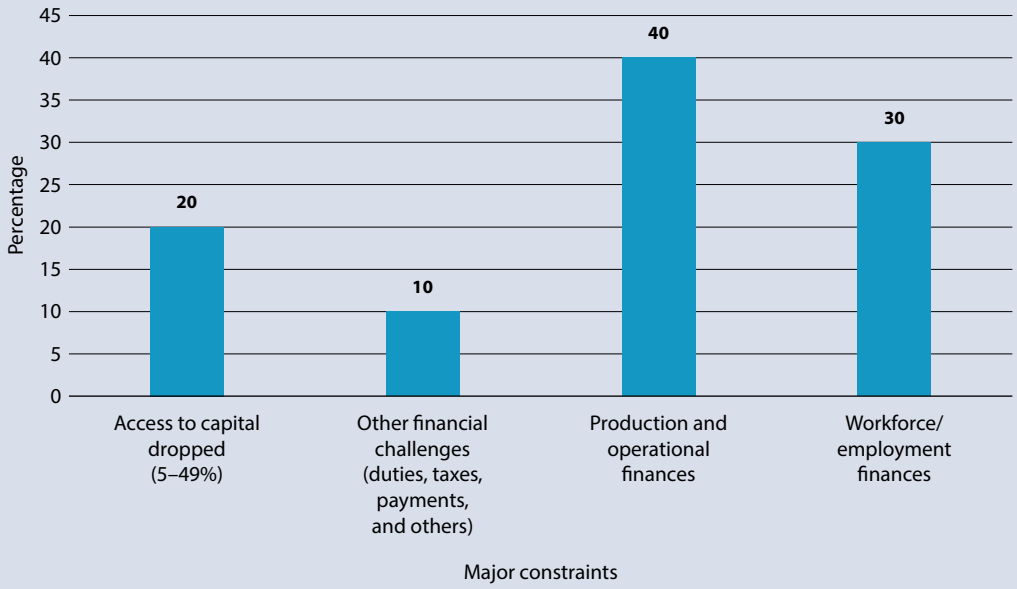
Primary data indicates that 40% of firms in the textile and food sectors reported an increase in production and operational expenses, including workforce costs, maintenance, and logistics. An

additional 30% of expenses were related to workforce salaries and benefits, 20% were due to reduced access to capital needed to meet the financial demands of the organization, and 10% were related to secondary financial constraints such as utilities, rent, and contractual obligations (see Figure 9).

Secondary data analysis revealed that 82% of industries identified financial issues as their primary challenge (see Figure 10). This was exacerbated by reduced revenue due to decreased sales and shrinking profit margins, making it difficult to cover regular expenses such as worker salaries, invoice payments, fixed costs, and loan repayments. These conditions created a scenario of payment imbalances, leading to increased financial risk and uncertainty.

FIGURE 9

KEY FINANCIAL CHALLENGES BASED ON PRIMARY DATA.



Sources: [2, 12, 19, 20, 28].

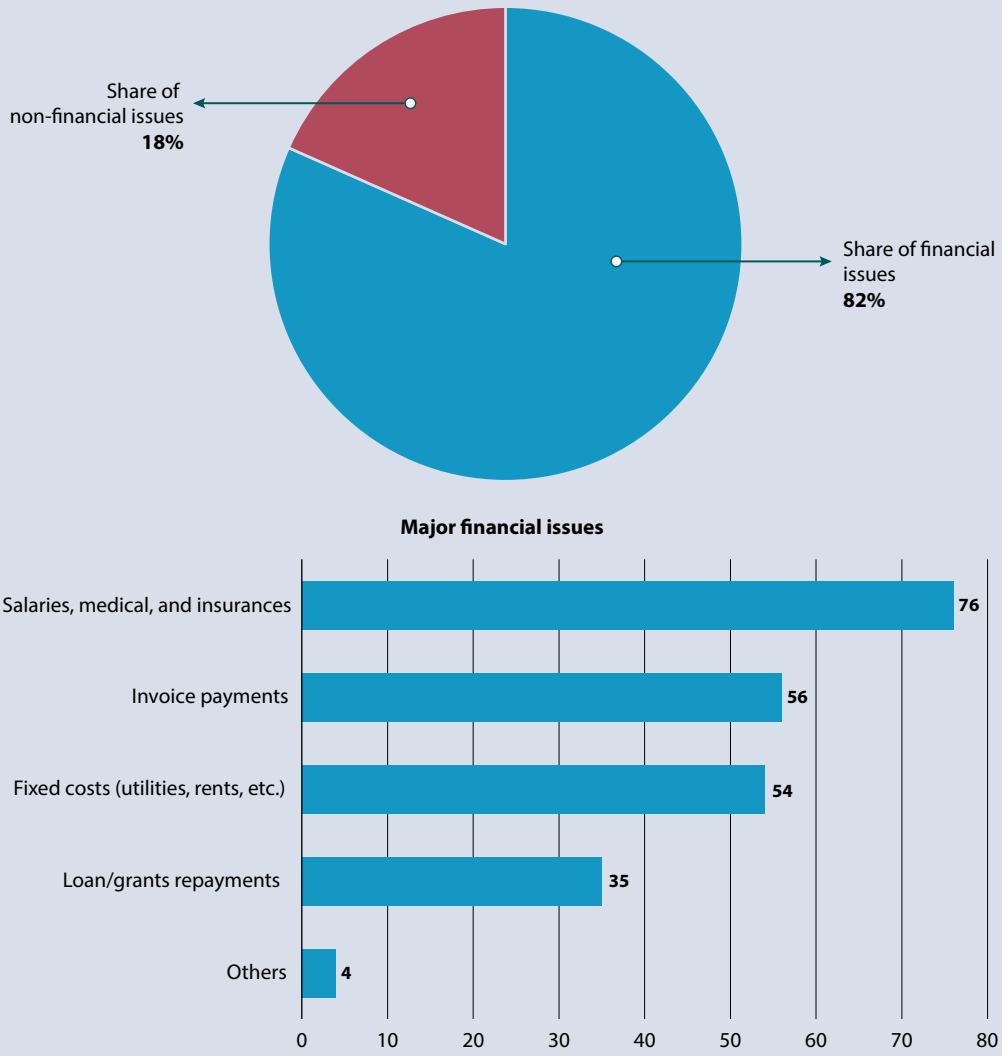
Business and Operational Continuity Challenges

Primary data shows that around 31% of firms experienced a significant drop in production and operational levels, from 10% to 49%, due to disruptions in raw material and product supplies from PR China and European countries. This shortage of production materials was identified as the second most critical challenge, accounting for 17.8% of the issues, followed by transport and logistics disruptions at 15.6% (see Figure 11).

Obtaining letters of credit (LC) for the export and import industries became another major challenge, as the State Bank of Pakistan halted the issuance of LCs due to the rupee's devaluation and capital outflow. This stoppage severely impacted trade within the country, creating a sense of disparity among the business community and affecting various industries. Additionally, 8.9% of firms reported difficulties in reaching national and international customers, 6.25% faced supply shortages, 4.5% dealt with rising material prices, and 3.9% encountered storage issues that further affected operational performance.

FIGURE 10

KEY FINANCIAL ISSUES BASED ON SECONDARY DATA.



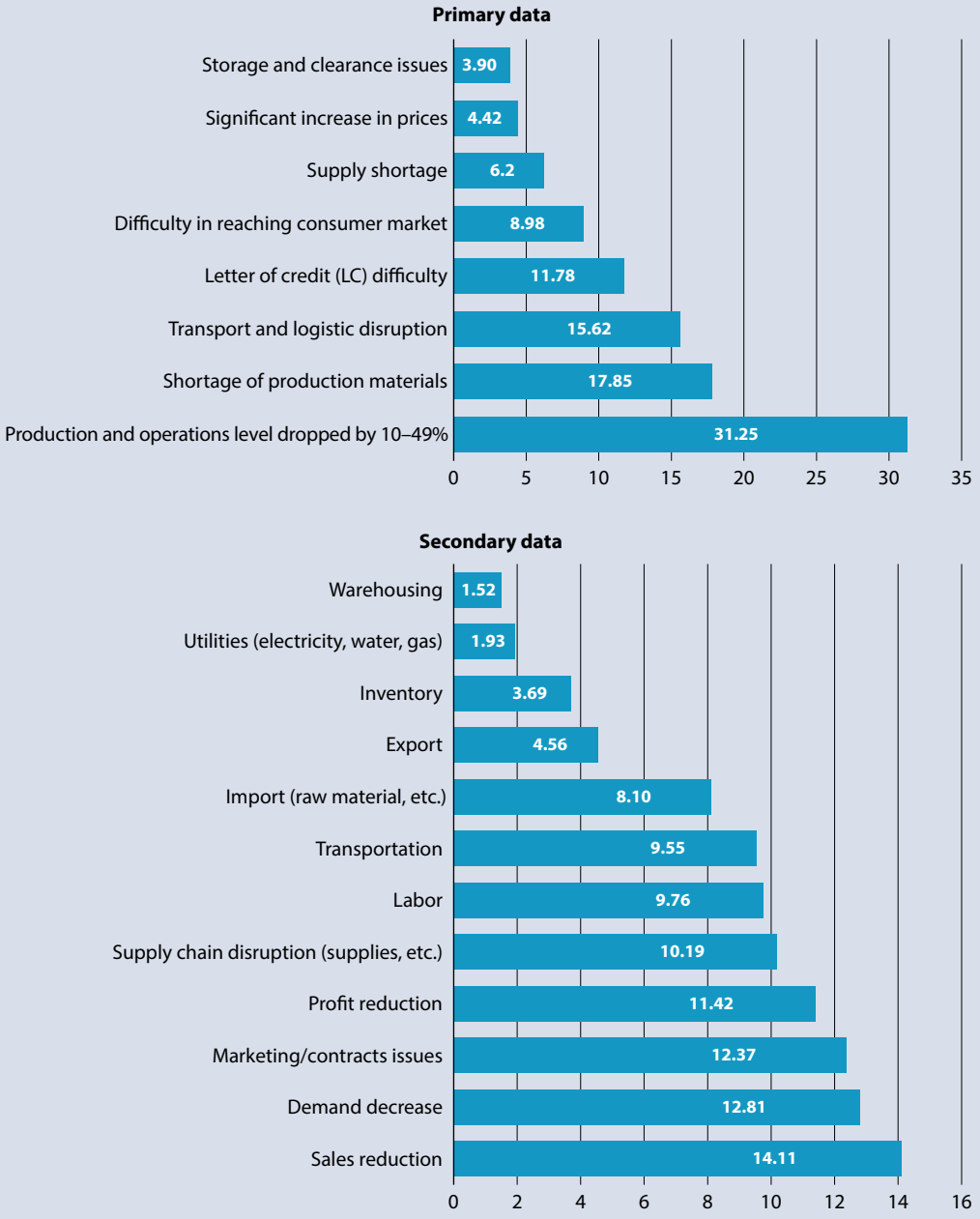
Sources: [2, 12, 19, 20, 28].

It is important to note that the primary and secondary challenges identified are similar. Secondary data highlighted business challenges such as 26.9% reduction in sales and demand, primarily due to disruptions in the supply of raw materials from PR China and exports to European countries, as also indicated by the primary data. This led to a significant consumption shock, rising unemployment, decreased income, and partial or complete business closures. Many industries that were heavily reliant on contracts and orders saw sharp declines in their profits as the global economic activity came to a halt, with profit margins dropping to 12.36% and 11.41%, respectively.

Lockdowns and travel restrictions contributed to 10.18% of the supply chain disruptions, while labor shortages accounted for 9.76%. Other challenges included transportation issues (9.54%), import and export regulations (8.1% and 4.5%), inventory management difficulties (3.68%), rising utility costs (1.93%), and warehousing problems (1.51%).

FIGURE 11

BUSINESS AND OPERATIONAL CHALLENGES BASED ON PRIMARY AND SECONDARY DATA.



Sources: [2, 12, 19, 20, 28].

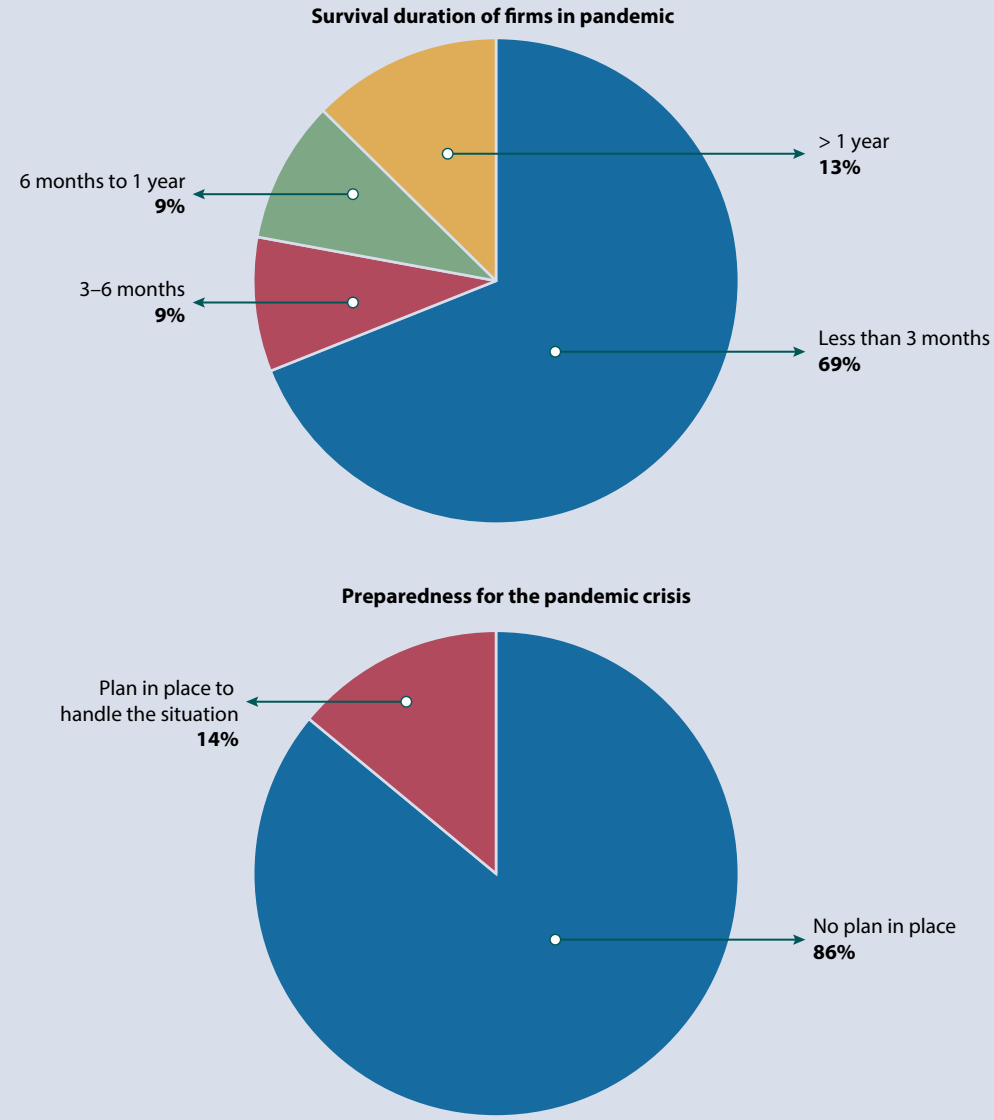
Due to these unprecedented challenges and restrictions, firms were asked about their ability to survive if the pandemic persisted over a long period. Of the firms surveyed, 69% stated that they would not be able to sustain operations beyond three months, 9% believed they could survive for 3–6 months, 9% had sufficient resources to continue for one year, and only 13% reported having the resources to last more than a year (see Figure 12). This reveals that the majority of firms were unprepared, lacking a strategy to maintain sufficient financial health, continue operations, and retain employees during extended periods of crisis.

Employment Challenges

Primary data analysis indicates that there were no significant changes in the employment of permanent and non-permanent employees, as firms supported their staff through sick leave policies, continued pay, and minimal downsizing. However, due to health concerns and government-enforced home quarantines for COVID-19 patients, there was a shortage of workers. Companies addressed this issue by retaining skilled employees, recognizing that they had invested valuable resources in developing the skills required to meet the high standards of the textile and food sectors. Both sectors are quality-focused, and losing skilled workers would have had long-term negative effects on firms' ability to maintain the desired quality and production outcomes.

FIGURE 12

SURVIVAL DURATION AND PREPAREDNESS AGAINST THE PANDEMIC CRISIS.



Secondary data suggests that 53.25% of firms, particularly small and medium enterprises, laid off permanent, non-permanent, contractual, and daily wage employees. The most significant impact

was observed in the informal employment sector, which constitutes a major share of the country's industrial workforce. In addition to layoffs, 46.74% of firms reduced wages as a cost-cutting measure to manage expenses. While this posed challenges, it was also a necessary step taken by companies to ensure they had sufficient funds to sustain operations and avoid bankruptcy.

Strategies and Driving Forces

Strategies

The primary data analysis reveals that significant interventions were made in marketing strategies, including expanding the customer base, identifying new markets, and introducing value-added products to attract customers. Firms also reduced operational and workforce expenses by shifting to teleworking and work-from-home policies, as well as expanding e-commerce networks. Some companies focused on developing new products and using advanced technologies like AI and the IoT to anticipate market trends, helping them create products that would capture attention and grow their customer base. Additionally, firms aligned their organizational strategies with evolving global dynamics.

In the textile and agro-food sectors, unique interventions were implemented to address the shortage of skilled labor, including hiring temporary employees, adopting advanced technologies, and outsourcing entire processes or subprocesses to meet demand. In some cases, firms intentionally delayed product deliveries and reduced production operations to cope with worker shortages and material scarcity, doing so with customer consensus and without negatively impacting revenue. Workers were also trained on COVID-19 safety measures, work-life balance, and stress management, which were the areas that emerged as the most challenging for worker satisfaction. In some instances, working hours were reduced, and benefits were increased to support employees.

To address financial challenges, 44% of firms took out loans, received grants, or brought in new stakeholders by selling company shares to cover expenses and support expansion plans initiated before the pandemic. About 11% benefited from tax and duty waivers, and another 11% halted operations temporarily, even though product demand persisted, in order to manage financial pressures (see Figure 13). These strategies proved successful, with 50% of the firms reporting significant improvements in productivity and the other 50% seeing moderate positive impacts on workforce productivity.

According to secondary data, 10.3% of firms relied on loans, grants, and savings to manage cash flow, while 8.6% sold assets to meet financial needs (see Figure 14). Reductions in operating costs also impacted the workforce, with some employees being laid off or placed on rotational work schedules. Additionally, 20.2% of firms delayed product deliveries; 16.5% completely shut down operations due to lack of orders, raw material shortages, workforce issues, and lockdown restrictions; and 9.5% affirmed partial business closures. Only 3.6% of firms continued with their operations despite the challenging circumstances, while 3% indicated they would either change their business line or diversify.

To manage employment challenges, 20.4% of firms reduced work hours to retain skilled labor, while 14.7% increased paid sick leave to support employees during health crises. Innovation and technology adoption also increased during and after the pandemic. Due to declining market conditions and rising prices, 6% of the firms were forced to innovate and diversify their product offerings, focusing on low-cost options to align with reduced purchasing power and changing customer needs.

FIGURE 13

STRATEGIES OPTED BASED ON PRIMARY DATA.

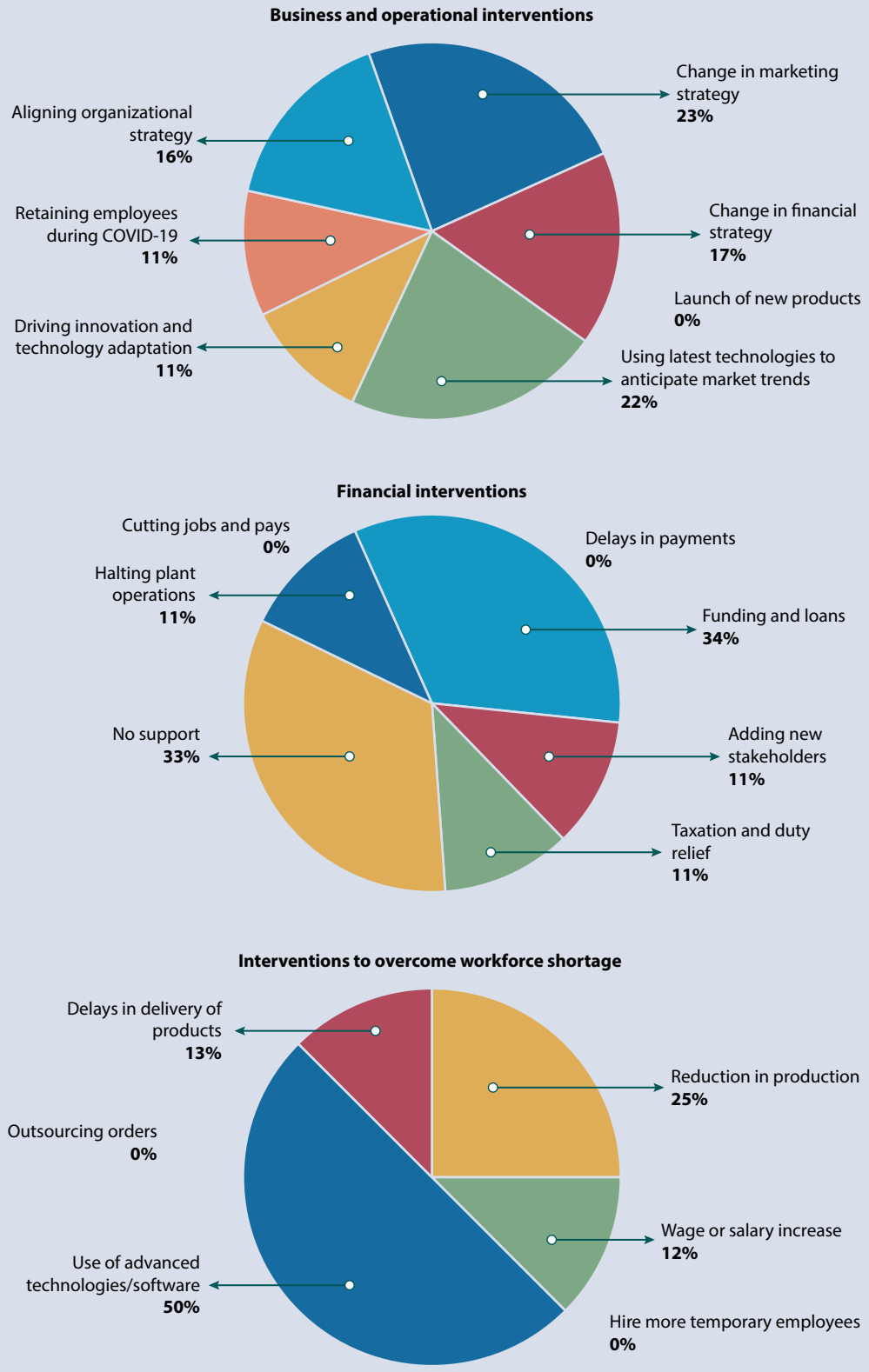
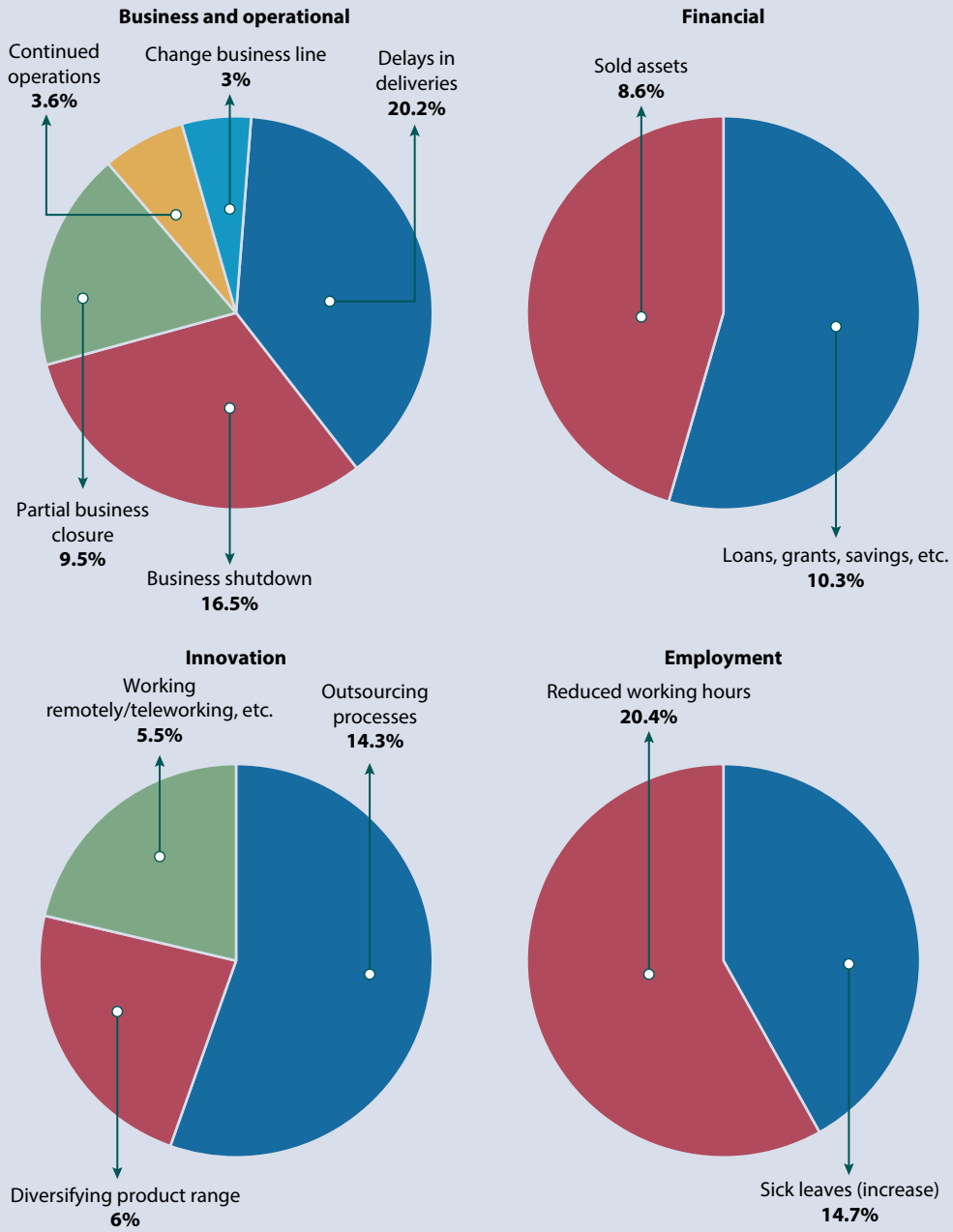


FIGURE 14

STRATEGIES OPTED BASED ON SECONDARY DATA.



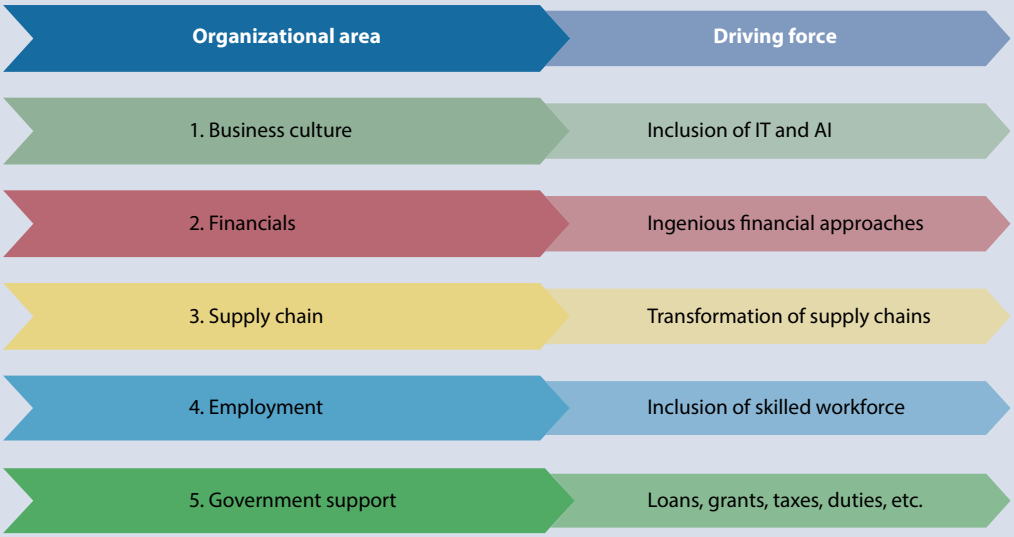
Driving Forces

Certain driving forces compelled organizations to adapt their existing culture and align their strategies with the evolving global business dynamics (see Figure 15). IT and AI emerged as the most critical driving forces, with strategies such as work-from-home, teleworking, and virtual business meetings helping to reduce direct costs, including utilities; fixed costs; management expenses; and operational costs. These measures also addressed the second driving force, i.e., financial constraints [35].

The third driving force was the transformation of supply chains. Disruptions in the flow of raw materials and a decrease in exports exposed weaknesses in international trade and transportation systems, prompting changes in supply chain models to build resilience. The fourth driving force was the inclusion and shortage of skilled labor, which revealed internal vulnerabilities within firms, such as the inability to meet quality standards, ensure timely deliveries, and maintain production levels. The fifth driving force identified was the government support required by industries to secure finances and sustain operations. All these driving forces collectively led to the implementation of strategic changes aimed at enhancing the productivity of firms.

FIGURE 15

DRIVING FORCES FOR ORGANIZATIONS.



Case Studies

The following best practices from the food and textile sectors can be beneficial for other firms within the country as well as for APO member economies in improving productivity and business resilience.

Case Study 1: Food and Allied Sector

The selected firms from the food and allied sector are considered to be the oldest and the finest. Company A initiated its operations in 1953 and has a workforce of 1,097. This firm involves processing of maize as a raw material for production of confectionary, bakery, diary, beverages, snacks, and savory items; and is one of the largest processed food raw material manufacturer that supplies to other multinational organizations such as Engro and Unilever. Other firms also allied with the food sector include Company B, which initiated its operation in 1956 and has an employee strength of 3,000; and Company B, which started its operations in 1901, has a global workforce of 39000. These firms have their business operations in areas of packaging, pharmaceutical, industrial, and animal nutrition section. All these firms are large enterprises as per the criteria mentioned earlier. The selected firms represent integrated units with supply chains in agro-food, agro-food-related medicines, and food packaging. These sectors are strongly interconnected within a rigorous supply chain that involves multiple SMEs in their subprocesses. The best practices noted in Table 3 were implemented to enhance resilience during the pandemic period.

TABLE 3

BEST PRACTICES IMPLEMENTED DURING THE PANDEMIC PERIOD.

Sr no.	Problem	Best practices implemented	Impact
1	Workplace disruption due to pandemic (companies A, B, and C)	Completely transitioned to virtual and digital communication for marketing, business-to-business (B2B) interactions, stakeholder engagement, and internal meetings, replacing in-person meetings with channel partners.	It became possible to maintain or enhance productivity during the COVID-19 pandemic Technology made it easier to reach customers effectively and manage the production workforce engagement. Virtual arrangement led to OPEX savings.
2	Low profits and irrelevant business entities (company A)	Streamlining finances from other unproductive businesses to the food business, which provides better return on investment. For instance, the firm sold its real estate, and the profits were invested in the food business and such high profit businesses in the country	Gross margins increased while operational costs reduced as the new entities that were purchased led to an increase in production quantity.
	Old products depletion (company A)	Investment of R&D and new products development Imported products were manufactured locally to avoid disruption of supply chain and meet export orders.	High value product development and customer attraction.
3	Business model challenges (company C)	Business model for each specific country was redesigned, e.g., by separating business lines, administration, and operations. Before COVID-19, two business lines, namely, animal nutrition and foods were managed financially and operationally by a single management. After COVID-19, animal nutrition and food lines were separated operationally, financially, and administratively to avoid impact of one business on the other one. Moreover, the firm also sold some plants such as those in South Africa and other markets due to low sales for specific products and acquired a new plant in Germany to enhance production capacity of high-sales products.	Led to increased productivity and utilization of resources. Reduced financial risk. Reduced operational risk. The effect of one business's downfall on other business lines was reduced. Each business met its own expenses. Financial and operational risks were reduced. Impact on a business affected only the employees of the concerned business line.

Case Study 2: Textile Sector

The firms representing the textile sector are considered to be from the medium and large scale firms and exporter of textile products in Pakistan. Company D initiated its operation in 1969 and has a workforce of 8000 people, while Company E initiated its operation in 1990 and has 2300 employees working across various departments. It has a production capacity of 4,500 tons of yarn per month, 7,000,000 woven and processed fabric per month. Both companies deal with home textiles, fabrics, yarn and yarn dyeing. The firms selected are integrated units having supply chain presence from dyeing, knitting, weaving, cutting, spinning, stitching and dispatch and involves several SMEs associated with it for completion of production activities. The best practices implemented by these firms to enhance resilience during the pandemic period are given in Table 4.

TABLE 4

BEST PRACTICES IMPLEMENTED BY TEXTILE FIRMS DURING THE PANDEMIC.

Sr no.	Problem	Best practice implemented	Impact
1	Shrinking market demand (companies D and E)	Market diversification was achieved by focusing on new markets as the marketing team was assigned to reach other markets instead of Europe and the USA for increasing the market base.	Increased market segmentation Increase in orders
2	Operational Barriers Company D	Streamlining organizational structure to reduce complexity, which are as follows: • online meeting modes; • changes in procurement models; • reducing vendors and increasing in-house production; and • separation of administration, financial, and operational business lines for simplifying the organization structure. Focus on investments in priority areas that could drive growth and innovation, such as • selling the real-estate business line for expanding operations in core textile manufacturing; • purchasing latest textile machinery for increased productivity and production; and • digitalization of manufacturing facilities to avoid production lapses.	Resulted in significant monetary savings, offset the impact of inflation, drove incremental productivity, and enabled focused investments for growth and innovation. Enhance productivity
3	Shortage of skilled employees (company D and E)	Retaining skilled employees by not laying off during pandemic and training them on stress, work-life balance, and pandemics. Training new workforce on specific skillset to overcome workforce shortage as per demand.	Helped in retaining skilled workers for high-quality production and improving workforce efficiency through training programs.

(Continued on next page)

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Sr no.	Problem	Best practice implemented	Impact
4	Supply chain disruption (company D)	Procurement model was changed. Before the pandemic, the material for a complete year was purchased at a base percentage of 100% but after the pandemic, the procurement of materials was done at a percentage of 120% for each chemical and raw material.	Helped prevent supply chain disruptions, maintain production levels, and avoid delays in deliveries, thereby sustaining overall productivity.

Relationship between Business Resilience and Productivity

Resilience is often described as the dynamic attribute of an organization, reflecting its ability to adapt to changes in both external and internal environments. This includes adjustments in business models, innovation, processes, and operations, all of which are crucial for an organization's sustainability. Various studies on resilience and productivity have identified three essential components: resourcefulness, dynamic competitiveness, and a learning culture that transforms the organization. These elements are vital for any enterprise aiming to grow and adapt to changing circumstances.

Given the uncertainty and complexity of the situation during the pandemic, firms need to be able to assess the situation and respond accordingly. To address challenges like a pandemic, firms must possess resilient capabilities that allow them to bounce back. This includes maintaining positive changes under difficult conditions, having sufficient planning to recover from financial or unforeseen events, and the ability to continue essential operations amid complexity.

During challenging times, SMEs often lack the knowledge to manage disruptions, whereas large-scale enterprises typically have the resources and expertise to analyze the situation and develop strategies that minimize damage. Therefore, enterprises with high resilience, i.e., encompassing forecasting, planning, and financial capabilities, not only absorb the impact of disruptions but also adjust more quickly in difficult circumstances.

In this study, business resilience and productivity are evaluated across business operations, employment and workforce, and technology and non-technology interventions. Data suggests that organizational restructuring had a significant impact on productivity, with changes in marketing strategies, business models, and the separation of business lines helping to minimize risk. Workforce interventions had a moderate impact, affecting yield and production output, which, in turn, influenced total factor productivity. Financial interventions generally had a smaller effect, as reducing operational expenses could negatively impact production quality, leading to a potential loss of productivity in some cases.

The analysis also highlights that digitization, including the integration of IT and AI, played a crucial role in improving business resilience during the pandemic. The use of e-commerce platforms, teleworking, virtual meetings, and home-based work approaches resulted in higher revenues, reduced operational costs, less employee stress, and better work-life balance. Around

80% of organizations reported an increase in online sales due to e-commerce, which improved financial productivity, while companies relying on traditional methods experienced significant financial and operational losses. Additionally, retaining skilled employees and investing in their training during challenging times helped many organizations maintain or even increase pre-pandemic productivity levels.

Changes in work culture also contributed to improved labor productivity. The analysis shows that 40% of organizations observed a strong correlation between business resilience and productivity, while another 40% rated the correlation as moderate. Only 20% reported no correlation. A majority of the respondents indicated a positive relationship between workforce interventions, business interventions, and increased productivity during the period of the pandemic and global lockdown (see Figures 16 and 17).

FIGURE 16

RELATIONSHIP BETWEEN BUSINESS INTERVENTIONS AND INCREASED PRODUCTIVITY.

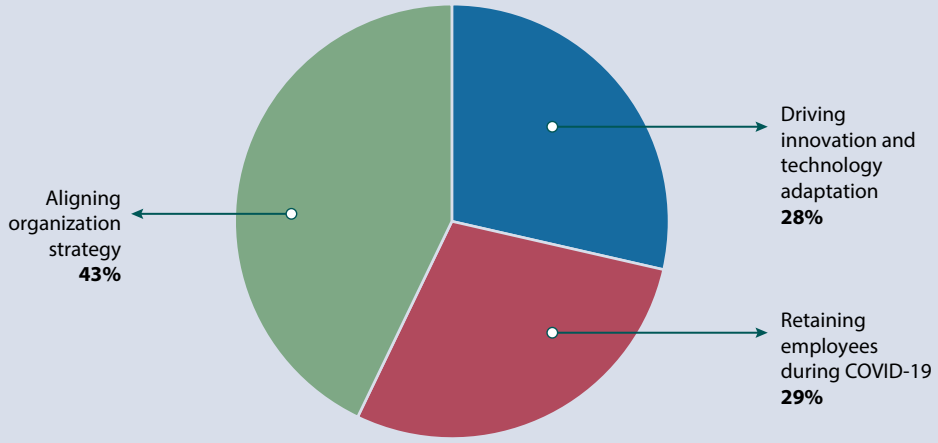
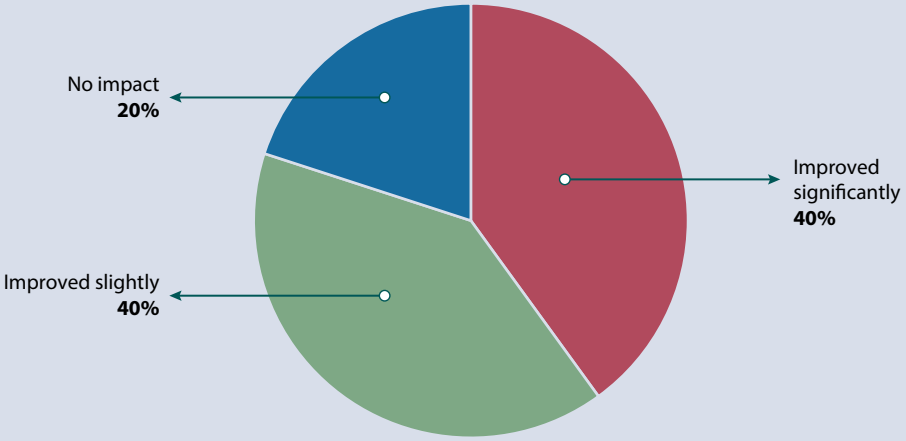


FIGURE 17

RELATIONSHIP BETWEEN WORKFORCE AND INTERVENTIONS AND INCREASED PRODUCTIVITY.



Needs for Productivity Enhancement

It can be concluded from the study that organizations are in dire need for improvement and the changing global dynamics are forcing organizations to improve their productivity. The key points are as follows:

(1) Digitalization has significantly influenced business resilience and total factor productivity by reducing operational expenses, incorporating teleworking and virtual meetings, improving work-life balance, aligning organizational strategies, and fostering a dynamic and proactive business environment.

(2) Retaining and improving the skill level of employees is critical for any organization to enhance workforce productivity.

(3) Training employees in areas such as productivity, stress management, health issues, and adapting to changing global dynamics also boosts workforce productivity.

(4) Developing a knowledge database and utilizing AI for forecasting future demand and trends is essential for firms to anticipate changes and prepare in advance, thereby reducing the impact on business operations.

(5) Adapting procurement and marketing strategies helps mitigate the influence of uncontrollable external factors responsible for operational disruptions.

(6) Altering business models by separating business units, including management and finances, can increase productivity by minimizing the negative impact of one business unit on another within a holding group. This ensures that finances and operations remain stable despite unforeseen events.

It is important to note that while organizations that observe a positive correlation between business resilience and productivity benefit from these practices, the scale of their impact depends on the size and structure of the organization, as well as external forces. Nevertheless, the best practices discussed in this chapter can be applied to struggling firms to help increase productivity while establishing internal mechanisms that minimize the impact of external environments and unforeseen events like pandemics.

Conclusion

In conclusion, the pandemic has underscored the critical importance of productivity and business resilience in overcoming unforeseen challenges. Moving forward, it is essential for businesses to prioritize adaptability, digitalization, skill development, innovative marketing and procurement models, and employee well-being to thrive in an ever-evolving landscape. By embracing new working methods, fostering a culture of resilience, and remaining agile in the face of adversity, organizations can position themselves for long-term success and growth. The lessons learned during these challenging times can serve as a roadmap for building more resilient, efficient, and productive businesses in the future.

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Appendix A: Tables

TABLE A1

IMPACT OF COVID-19 ON GLOBAL ECONOMY.

Impact in annual percentage as per real GDP				
Countries	**2018**	**2019**	**2020**	**2021**
World Output	3.6	2.9	–3.0	5.8
Advanced countries	2.2	1.7	–6.1	4.5
USA	2.9	2.3	–5.9	4.7
Euro Area	1.9	1.2	–7.5	4.7
Germany	1.5	0.6	–7.0	5.2
France	1.7	1.3	–7.2	4.5
Italy	0.8	0.3	–9.1	4.8
Spain	2.4	2.0	–8.0	4.3
Japan	0.3	0.7	–5.2	3.0
UK	1.3	1.4	–6.5	4.0
Canada	2.0	1.6	–6.2	4.0
Other advanced economies	2.6	1.7	–4.6	4.5
Emerging markets and developing economies	4.5	3.7	–1.0	6.6
PR China	6.7	6.1	1.2	9.2
India	6.1	4.2	1.9	7.4
ASEAN-5	5.3	4.8	–0.6	7.8
Russia	2.5	1.3	–5.5	3.5
Brazil	1.3	1.1	–5.3	2.9
Mexico	2.1	–0.1	–6.6	3.0
Middle eastern and central Asia	1.8	1.2	–2.8	4.0
Sub-Saharan Africa	2.4	0.3	–2.3	2.9
Low-income developed countries	5.1	5.1	0.4	5.6
Pakistan	6.1	3.3	–1.5	2.0

Source: World Economic Outlook April 2020 [3].

TABLE A2

WORLD TRADE STATISTICS, 2018–22.

World trade statistics					
	2018	**2019**	**2020**	**2021**	**2022**
January	–0.1	1.5	–2.3	0.7	–0.8
February	–0.6	–1	0.1	–0.1	0.4
March	–0.6	0.8	–2.4	3.2	–1.4

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World trade statistics					
	2018	2019	2020	2021	2022
April	0.6	–0.4	–11.6	–0.5	–0.2
May	1.1	1.3	–0.1	–0.9	2.7
June	–0.1	–2.1	3.3	0.6	–0.5
July	0.8	1.8	5.1	–0.6	0
August	0.2	–0.1	1.7	0.5	1
September	–0.9	–0.8	2.9	–0.2	0.3
October	1.6	0.8	0.5	1	–1.4
November	–1.8	–1.3	1.4	2.4	–2.5
December	–1.5	0.1	0.6	2.4	

Source: CBP Economic Policy Analysis, World Trade Monitor [4].

TABLE A3

WORLD MERCHANDISE TRADE STATISTICS, 2018–22.

Merchandise trade, world (year-on-year change)			
	2019	2020	2021
Overall	0.4	–4.9	8.9
Agriculture	2.1	–2.3	1.9
Fuels and Mining Products	3	–1.9	4.7
Manufacturers	0.3	–5	13.6
World GDP	2.5	–3.4	5.8

Source: World Trade Statistics Review 2022 [6]

TABLE A4

WORLD MERCHANDISE AND SERVICES IMPORT–EXPORT STATISTICS, 2018–22.

World Merchandise and Service Import and Export					
	2018	2019	2020	2021	2022
Merchandise imports	19.816322	19.341026	17.878572	22.60282	25.670095
Merchandise exports	19.550037	19.017108	17.653275	22.365766	24.925766
Services exports	32.935266	32.427442	28.662884	35.619679	39.534773
Services imports	32.612072	32.478467	28.242847	34.834089	39.33036

Source: International Trade Statistics, WTO [9].

TABLE A5

WORLD SERVICES SHARE BY CATEGORY INCLUDING PERCENTAGE CHANGE.

Category	USD million				Percentage change		
	2018	2019	2020	2021	2019	2020	2021
World (services)	6122528.767	6314659.175	5228310.49	6209934.12	3.13	–17.20	18.77
Goods-related services	228337.3714	232682.0706	200221.1702	225607.9738	1.90	–13.95	12.67
Maintenance and repair services	105336.7779	113083.9356	87753.00513	91177.78719	7.35	–22.40	3.90
Manufacturing services on physically owned input	122999.5996	119598.2739	112469.313	134430.9609	–2.76	–5.96	19.52
Transport services	1026382.43	1031192.449	866424.737	1198152.446	0.46	–15.97	38.28
Sea	357213.0391	388414.4548	391588.6913	395818.5055	8.73	0.81	1.08
Air	358667.2938	356163.3837	189476.9097	264484.584	–0.69	–46.80	39.58
Postal and courier services	20452	20249	22729	31388	–0.99	12.24	38.09
Travel services	1444659	1486030	563683	638333	2.86	–62.06	13.24
Financial Services	533376	539003	568529	643627	1.05	5.47	13.20
Telecommunication services	96666	91403	90651	94324	–5.44	–0.82	4.05
Computer services	499677	563757	632670	768708	12.82	12.22	21.50
Information services	41167	43854	43319	49473	6.52	–1.21	14.20
Trade-related services	89544	95404	85883	102139	6.54	–9.97	18.92

Source: UNCTAD (Data Book) [6].

TABLE A6

GLOBAL SHARE OF MAJOR SERVICES BY CATEGORY INCLUDING PERCENTAGE CHANGE.

World major services (percentage)	
Travel	23.5957895
Transport	16.76402789
Manufacturing services	2.008967279
Maintenance and repairs	1.720478284
Goods-related services	3.729461798
Computer, IT, and telecommunication Services	10.41252764

Source: UNCTAD (Data Book) [6].

TABLE A7

WORLD TRANSPORT SERVICES PERCENTAGE.

Services	Total Transport Share in Various Modes
Transport	100
Air transport	34.80311322
Sea transport	34.94480062
Other modes of transport	30.25208616

Source: UNCTAD (Data Book) [6].

TABLE A8

COMPARISON OF WORLD INDICATORS, 1990 VS 2021.

Asia and world comparison, 1990 vs 2021				
		1990	2021	Percentage Increase
GDP, average (billion USD)	Asia	516	36800	7031%
	World	3400	96100	2726%
Total industrial value addition (billion USD)	Asia	1666.1121003	10857.79501	641%
	World	5834.566231	20944.81153	258.97%
Total manufacturing value addition (billion USD)	Asia	1348.286332	8522.346438	532%
	World	4667.963394	15692.31	349%
Developed Asia's share in global GDP	Asia	8.42%	39.90%	
Share of population (billion)	Asia	3.211352077	4.722634726	
	World	5.313679586	7.905576991	

Source: UNIDO Data Portal [15].

TABLE A9

MANUFACTURING VALUE ADDITION, 2018–21.

Country description	2018	2019	2020	2021
Africa	265.3381	285.6011	282.8478	319.7628
Asia	7285.67	7184.079	7159.159	8522.346
BRICS	4747.437	4672.775	4626.302	5791.198
Central America	246.046	251.431	220.7819	265.6209
Central Asia	45.61434	48.88608	52.09793	60.60374
Europe	3098.373	3025.15	2899.393	3304.323
Eurozone	2064.26	1994.417	1911.688	2145.602
G20	12244.37	12062.5	11676.85	13653.31
High income (World Bank)	7532.164	7408.453	7129.063	7942.969

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Country description	2018	2019	2020	2021
High-income industrial economies	7197.952	7085.953	6830.358	7591.497
High-income industrializing economies	334.2112	322.5007	298.7047	351.4725
Industrial economies	12746.6	12613.06	12262.67	14289.76
Landlocked developing countries (LLDCs)	96.45816	101.3226	104.1456	117.3883
Low income (World Bank)	48.60244	47.45945	46.2558	49.19272
Low-income economies	48.60244	47.45945	46.2558	49.19272
Lower middle income (World Bank)	1214.854	1264.01	1244.998	1399.565
Middle income (World Bank)	6428.082	6422.845	6311.563	7700.148
Middle-income industrial economies	5548.644	5527.107	5432.309	6698.262
Middle-income industrial economies (excluding PR China)	1680.161	1703.685	1571.608	1832.419
Middle-income industrializing economies	879.4381	895.7379	879.2541	1001.886
World	14008.85	13878.76	13486.88	15692.31

TABLE A10

INDUSTRIAL VALUE ADDITION (2018–2021).

Country description	2018	2019	2020	2021
Africa	580.2757	590.2898	522.4297	612.5443
Asia	9419.388	9252.918	8950.586	10857.8
BRICS	5877.919	5815.314	5673.145	7182.692
Central America	370.1241	386.8043	336.6678	381.5453
Central Asia	80.82126	84.72908	81.39833	97.28004
Europe	3979.253	3884.363	3684.083	4318.807
Eurozone	2436.332	2364.846	2286.443	2572.117
G20	15658.23	15444.94	14765.1	17572.47
High income (World Bank)	10038.63	9814.629	9276.756	10710.68
High-income industrial economies	8968.848	8841.97	8520.602	9644.026
High-income industrializing economies	1069.786	972.6589	756.1545	1066.65
Industrial economies	16030.18	15908.57	15326.01	18108.15
Landlocked developing countries (LLDCs)	192.2186	195.1393	183.0549	217.5104
Low income (World Bank)	96.32874	91.70268	88.37756	98.86362

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Country description	2018	2019	2020	2021
Low-income economies	96.32874	91.70268	88.37756	98.86362
Lower middle income (World Bank)	1906.476	1917.32	1793.419	2089.957
Middle income (World Bank)	8674.945	8635.602	8206.992	10135.27
Middle-income industrial economies	7061.335	7066.595	6805.413	8464.125
Middle-income industrial economies (excl. China)	2510.379	2552.391	2271.093	2686.846
Middle-income industrializing economies	1613.61	1569.007	1401.579	1671.147
World	18809.91	18541.93	17572.13	20944.81

TABLE A11

LABOR FORCE STATISTICS FOR PAKISTAN, 2018–20.

	Million people
Agriculture	25.18
Non-agriculture	42.07
Informal	11.58
Formal	30.49

	Total workforce		Informal sector	
	2018/19	2020/21	2018/19	2020/21
Agriculture (forestry, hunting, and fishing)	39.2	37.4	–	–
Manufacturing	15	14.9	20.9	20.2
Construction	8	9.5	17.4	19.6
Wholesale and retail trade	14.5	14.4	32.1	30.5
Transportation, storage, and communication	6.2	6.2	12	11.7
Community/social and personal service	15.5	16	15.5	17.5
Others	1.6	1.5	2.1	0.5

Source: Pakistan Labor Force Statistics (PBS, 2023) [18].

TABLE A12

SECTORAL SHARE IN GDP OF PAKISTAN.

Sector	2018/19	2019/20	2020/21	2021/22	2022/23
Agriculture	22.43	23.53	23.03	22.63	22.91
Industry	19.48	18.53	18.96	19.09	18.47
Services	58.09	57.94	58.01	58.28	58.61

Source: PBS 2023.

TABLE A13

SHARE OF SERVICES SECTOR AND ITS SUBSECTORS, IN PAKISTAN.

	2018–19	2019–20	2020–21	2021–22
Services	**58.09**	**57.94**	**58.01**	**58.28**
Wholesale and retail trade	**18.13**	**17.34**	**18.17**	**18.89**
Transportation and storage	**11.43**	**10.51**	**10.42**	**10.22**
Accommodation and food services				
Activities (hotels and restaurants)	1.37	1.44	1.42	1.39
Information and communication	2.19	2.51	2.61	2.86
Financial and insurance activities	1.9	1.87	1.87	1.89
Real estate activities (OD)	5.54	5.8	5.69	5.56
Public administration and social				
Security (general government)	5.09	5.29	4.98	4.77
Education	2.84	2.96	2.77	2.76
Human health and social work				
Activities	1.53	1.64	1.6	1.55
Other private services	8.07	8.56	8.5	8.39

Source: PBS 2023.

TABLE A14

SHARE OF INDUSTRIAL SECTOR IN PAKISTAN.

	2017–18	2018–19	2019–20	2020–21	2021–22
Industrial Activities (1 to 4)	**20.04**	**19.48**	**18.53**	**18.96**	**19.09**
1. Mining and Quarrying	2.17	2.12	1.98	1.91	1.67
2. Manufacturing (i+ii+iii)	12.17	12.33	11.48	11.99	12.53
i) Large Scale	9.34	9.38	8.4	8.86	9.34
ii) Small Scale	1.73	1.83	1.87	1.93	1.98
iii) Slaughtering	1.1	1.13	1.2	1.21	1.21
3 Electricity, Gas and Water supply	2.2	2.25	2.36	2.43	2.36
4. Construction	3.5	2.78	2.72	2.63	2.52

Source: PBS (2023).

TABLE A15

IMPORT AND EXPORT PERCENTAGE IN PAKISTAN, 2018–22.

Groups	% change (July–Mar)		
	2018–19	2019–20	2020–21
Textile	–0.17	–2.57	8
Food, beverages, and tobacco	–3.59	–2.33	27.1

(Continued on next page)

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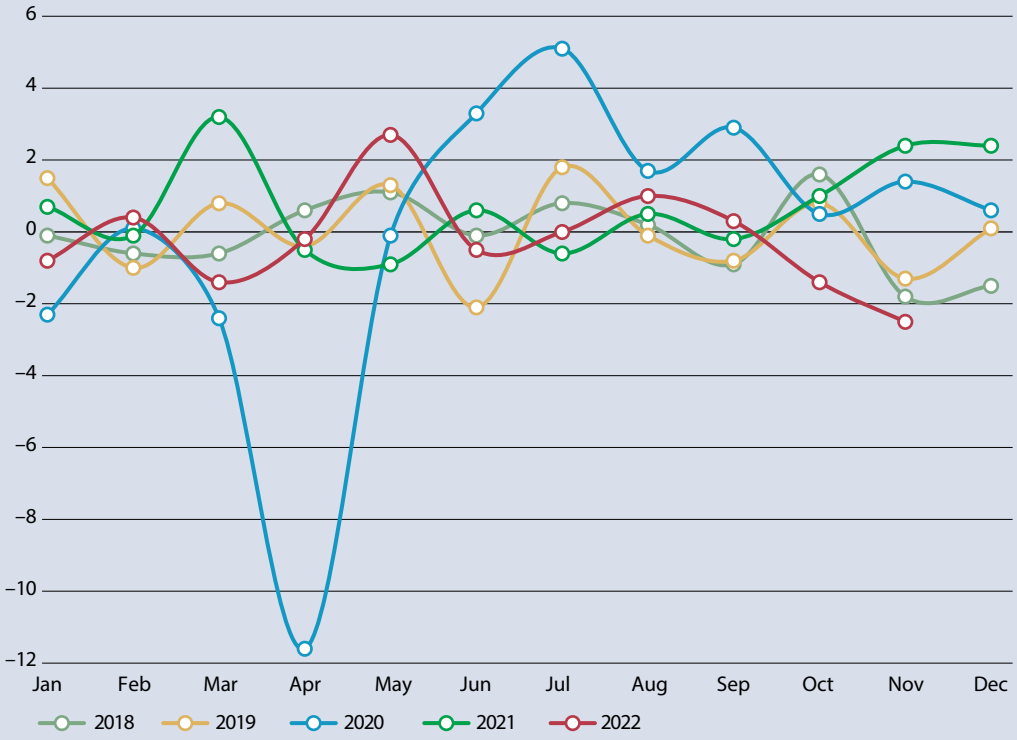
Groups	% change (July–Mar)		
	2018–19	2019–20	2020–21
Coke and petroleum products	–6	–17.46	12.3
Pharmaceuticals	–8.66	–5.38	10.5
Chemicals	–4.1	–2.3	9
Automobiles	–7.56	–36.5	21.6
Iron and steel products	–11	–7.96	–8.6
Fertilizers	4.5	5.81	5.9
Electronics	39.9	–13.54	–38.6
Leather products	–0.04	4.96	–37.8
Paper and board	–2.48	4.23	–0.6
Engineering products	9.9	–7.05	–
Rubber products	3.74	4.31	–13.1
Non-metallic mineral products	–4.93	1.82	18.5
Wood products	–8.24	–22.11	–46.2

Source: Pakistan Economic Survey, 2021–22.

Appendix B: Figures

FIGURE B1

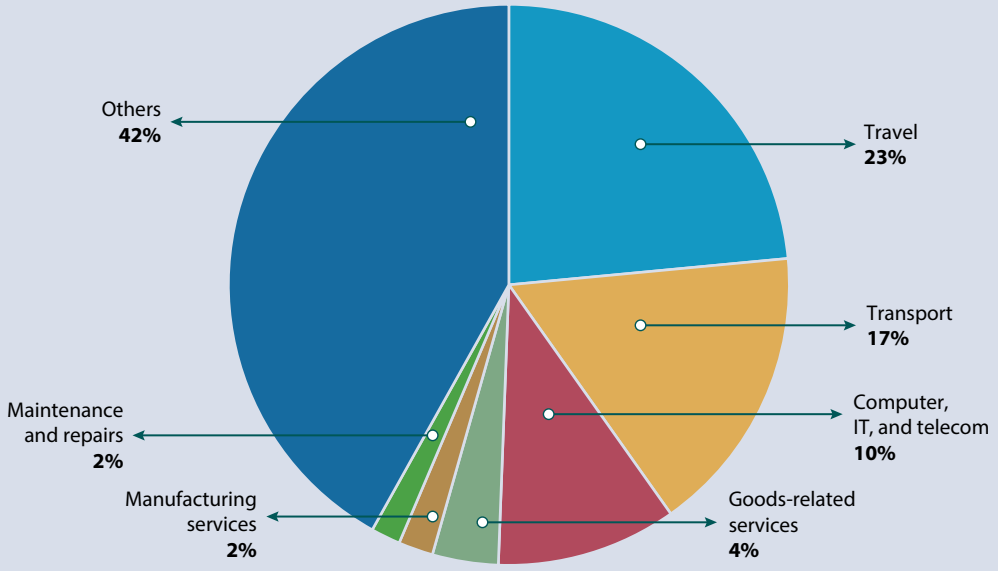
VARIATIONS IN WORLD TRADE VOLUMES, 2018–22.



Source: World Trade Monitor, CPB Economic Policy Analysis [4].

FIGURE B2

SHARES OF VARIOUS SERVICES IN THE SERVICES SECTOR.



Source: UNCTAD Data Base [7].

FIGURE B3

INDUSTRIAL AND MANUFACTURING VALUE ADDITION GROWTH, WORLD VS ASIA.

FIGURE B4

SERVICES SECTORS' SHARES, 2018–21.

Source: PBS 2023.

FIGURE B5

VARIATIONS IN LARGE-SCALE MANUFACTURING OUTPUT, 2018–21.

Source: Pakistan Economic Survey [25, 26].

FIGURE B6

MAJOR SECTORS IN PAKISTAN'S EXPORTS AND IMPORTS.

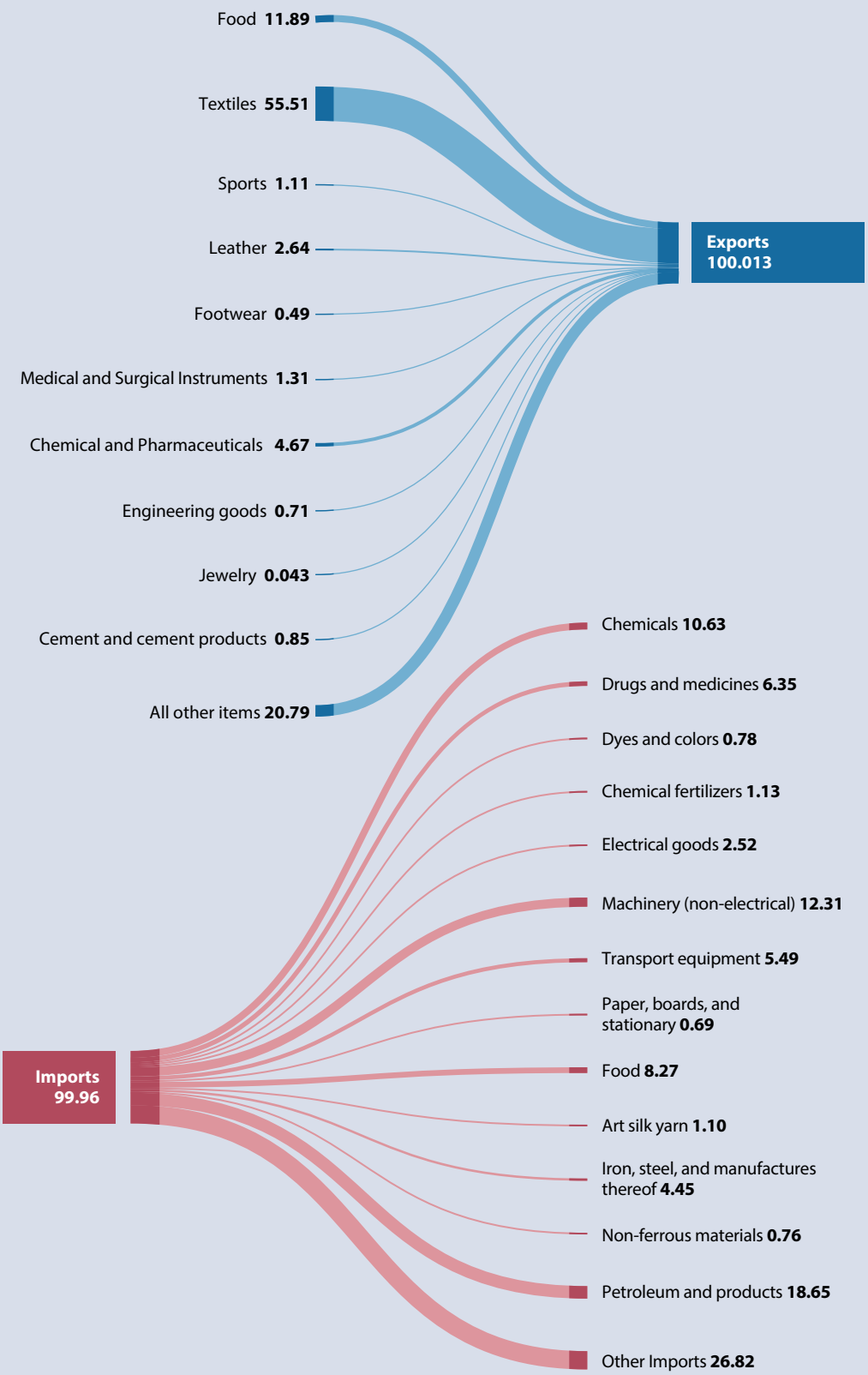
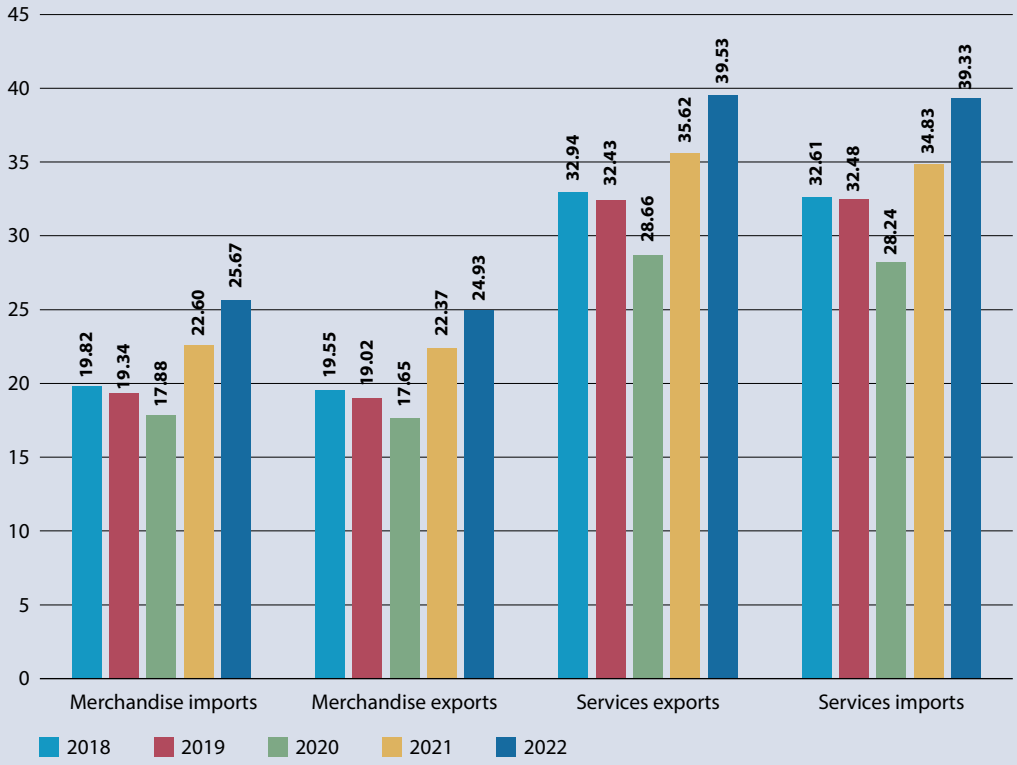


FIGURE B7

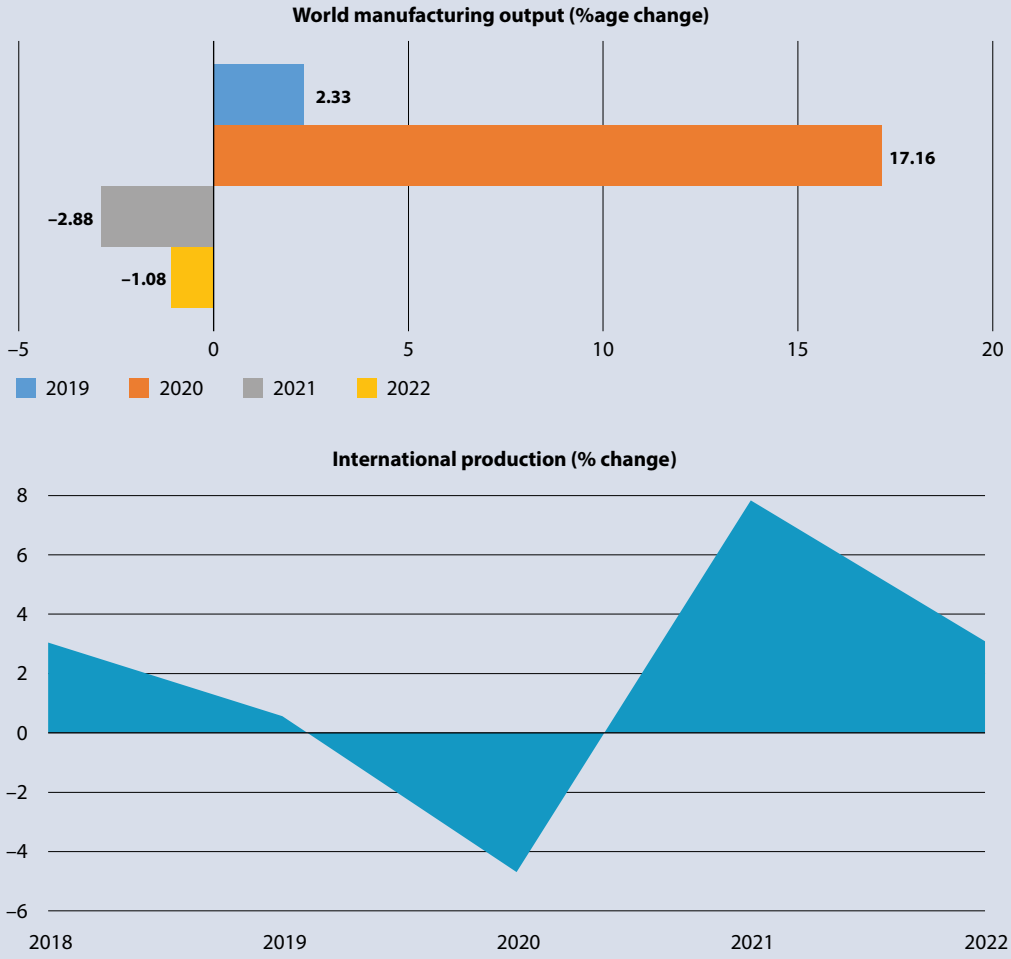
WORLD MERCHANDISE AND SERVICES VOLUME IN TRILLION USD.



Source: Data & Statistics, World Trade Organization [5].

FIGURE B8

WORLD MANUFACTURING OUTPUT IN PERCENTAGE.



Sources: CPB World Trade Monitor & UNIDO Data Base [15].

SRI LANKA

This report analyzes the positive insights provided by business sector enterprises operating in a small economy like Sri Lanka that was severely affected by the COVID-19 pandemic (during 2020 and 2021) and a subsequent macroeconomic crisis (2022 onward). Despite the national economy's poor performance since 2010 and the devastating impact of multiple crises, business owners remain optimistic about the economic recovery in the coming years. Survey evidence reveals that productivity enhancement measures adopted by the business sector include cost minimization, application of digital technologies, investment in human capital development, factor substitution, and search for new supply sources. Case studies in the 'blood collection tube' and 'instant noodle' manufacturing industries highlight contrasting yet insightful findings on business resilience and innovative solutions aimed at improving productivity.

Introduction

Sri Lanka is a small economy with a population of 22 million and a per capita income of USD3,474[1]. The agriculture sector contributes around 9% to GDP, while industry and services account for 27% and 59%, respectively[2]. In terms of employment, agriculture provides 24%, industry 22%, and services 54% of jobs. From 2010 to 2019, Sri Lanka experienced slow economic growth, and since then, it has transitioned into a negative growth economy. In the fourth quarter of 2022, the country recorded a significant negative growth rate (–12.4%), which improved slightly to –3.2% in the second quarter of 2023[3]. This negative growth reflects a contraction in economic activity and the underutilization of labor and other inputs.

Sri Lanka has yet to embark on a recovery path, and in October 2023, exports declined by 10% on a year-on-year (YoY) basis. Heightened fiscal, external, and financial sector imbalances, coupled with political instability, continue to create uncertainty regarding Sri Lanka's prospects for economic recovery. These issues stem from longstanding structural weaknesses that were exacerbated by a series of external shocks. Contributing factors include poor governance, a restrictive trade regime, a weak investment climate, episodes of loose monetary policy, and an administered exchange rate, all of which have contributed to macroeconomic imbalances over the past two decades. To address these issues, key stakeholders must also prioritize enhancing productivity in critical economic sectors as a central strategy for business recovery.

Objectives and methodology

Given the negative impact of COVID-19 and the ongoing economic crisis on businesses, particularly micro, small, and medium-sized enterprises (MSMEs), it was crucial to understand the challenges, success drivers, and the need for productivity recovery during and after the period of multiple crises[4]. The study's specific objectives were to:

[1] In 2022. This was USD4,292 in 2017.
[2] 2023 2nd quarter data.
[3] The growth performance of the economy further improved with a positive growth of 1.6% in the 3rd quarter of 2023.
[4] The term multiple crises used to denote COVID-19 crisis (2020 and 2021), economic crisis (2022 onwards) and associated socio-politico-economic crises situations.

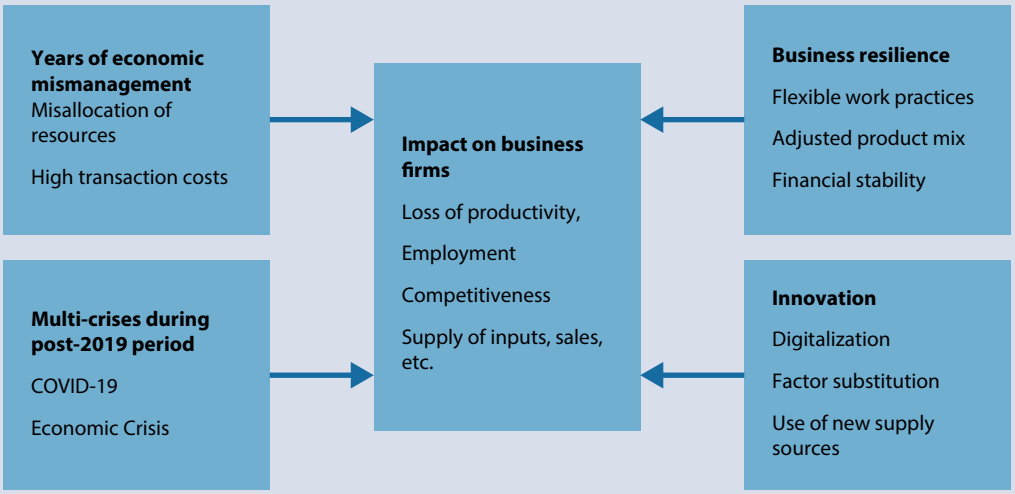
(1) identify the emerging needs for productivity enhancement in selected firms by analyzing firms' success points during and post the crises periods; and

(2) examine how to connect successful business practices with the productivity of participating firms with business recovery priorities.

To achieve the study's objectives, a two-stage survey methodology was employed to gather information on business survival and productivity enhancement in firms operating within a negative growth economy. First, a structured questionnaire was administered to a sample of 15 firms in the industry and services sectors to examine the risk factors and coping strategies. Second, two case studies were conducted to explore firm-specific details regarding productivity levels, coping strategies, business resilience, innovation, invention, and the digitalization of business operations. Additionally, a brief note was prepared on the impact of multiple crises on business enterprises in Sri Lanka, providing essential background for the main study, which focuses on the need for productivity enhancement in the crisis-hit island economy.

FIGURE 1

RESEARCH FRAMEWORK.



The analytical framework of this study is based on the research models proposed by the APO and several other studies[5] (see Figure 1). These sources place business resilience and innovation during periods of multiple crises at the center of the analysis. While substantial literature exists on the impact of the pandemic on Sri Lanka's business sector, there is limited information on how the concurrent economic crises have affected businesses and their orientation toward productivity enhancement and modern technological applications. This study aims to address this gap and inform policies designed to revitalize productivity through the use of modern technology.

One major limitation of this research is the small sample size of the field survey and case studies. The study covers the impact of multiple crises from 2020 to September 2023 but does not account for the ongoing economic crises since the fourth quarter of 2023 and the effects of the Israel–

[5] For example, [3, 4, 5].

Palestine conflict on Sri Lankan businesses' operations. However, these limitations do not weaken the study's contribution, as it provides a focused response to the emerging literature on the impact of COVID-19 and firm-level productivity performance within the context of a crisis-stricken developing economy.

This study is organized as follows: The introduction concludes with a brief review of the macroeconomy, followed by the objectives and methodology outlined in section 2. Section 3 provides a brief account of the impact of the COVID-19 pandemic and the economic crisis. In section 4, a cross-sectional sample survey and case study analysis are presented. Finally, section 5 summarizes the findings and conclusions.

Impact of Multiple Crisis on Business-sector Enterprises

In terms of value added, the severe impact of the economic crisis is evident in 2022 and the first quarter of 2023 (see Table 2). Table 3 provides an analysis of labor productivity and productive efficiency across economic sub-sectors. The evidence highlights low productivity and efficiency levels in two key subsectors: agriculture and manufacturing. These two sectors account for roughly 45% of the workforce, yet their contribution to GDP is only around 35%.[6] Thus, low productivity in both the primary and secondary sectors presents a significant challenge to the recovery of the national economy. Even within the services sector, high-growth industries such as accommodation and food services (e.g., tourism) operate with low productivity and efficiency. Notably, sectors with high productivity account for less than 25% of the overall economy.[7]

TABLE 1

IMPACT OF MULTIPLE CRISES ON EMPLOYMENT IN SRI LANKA RELATIVE TO 2019.

Sector	2020	2021	2022	2023Q1
Agriculture	97,739	141,075	186,536	115,623
Industry	–105,675	–148,939	–312,069	–168,390
Services	–173,664	–59,321	–40,154	71,866
Total	–181,600	–67,185	–165,687	19,099
Overall impact relative to 2019, in %	–2	–1	–2	+0.2

Source: [6]

TABLE 2

IMPACT OF MULTIPLE CRISES ON GDP IN SRI LANKA RELATIVE TO 2019 IN LKR MILLION.

	2020	2021	2022	2023Q2
Agriculture	–152	–17,795	–16,041	–28,409
Industry	15,958	17,285	–258,908	–196,896
Services	20,513	103,871	26,338	–338,247
Total	–15,688	30,428	–382,923	–703,204
Overall impact relative to 2019, in %	–0.5	1	–11.6	–21.3

Source: [7]

[6] 8.8%, 18.5% and 8.6% by agriculture, manufacturing, and other industry sectors, respectively. 2023Q2 data.
[7] 23.4%.

TABLE 3

LABOR PRODUCTIVITY[8], PRODUCTIVE EFFICIENCY, AND EMPLOYMENT BY INDUSTRY SUB-SECTOR, 2022.

	Labor Productivity	Efficiency	Employment share %
Agriculture	107.0	0.29	28.2
Mining and quarrying	804.2	2.21	0.5
Manufacturing	289.7	0.80	16.4
Construction, electricity, gas, water supply, etc.	382.0	1.05	7.4
Wholesale and retail trade, repair of motor vehicles, etc.	380.6	1.05	13.3
Transport and storage	856.3	2.35	5.7
Accommodation and food services activities	162.8	0.45	3.1
Information and communication	1256.3	3.45	1.0
Financial and insurance activities	1198.9	3.29	2.7
Professional, scientific, and technical activities	998.3	2.74	1.1
Administrative and support service activities	0.0	0.00	1.9
Public administration & defense, social security	377.8	1.04	5.9
Education	169.5	0.47	5.6
Human health and social work activities	385.9	1.06	2.1
Others	736.1	2.02	5.2
Overall	364.0	1.00	100.0

Efficiency = Sector productivity/average productivity.
Sources: [6, 7].

Analysis of Survey Results

This section presents the evidence from a cross-sectional survey of 15 firms and two case studies. In addition to assessing the impact of multiple crises on business sector enterprises, it examines the research and development (R&D) orientation of the firms, their technological adoption, and the use of ICT applications in business operations. The section also highlights the positive responses of these enterprises, as well as the major constraints affecting their recovery during the crisis period. At a global level, several cross-country studies offer insights into how businesses can enhance their productivity and resilience.[9]

Results of Cross-sectional Sample Survey

The cross-sectional sample covers seven provinces out of a total 9 and includes MSMEs.[10] In terms of economic activities, the sample captures the subsectors manufacturing (46%), tourism (27%), wholesale and retail trade (13%), construction (7%), and transport (7%). Most of the sample firms were owned by a single proprietor, with the share of female-owned enterprises being 13%. Over 50% of principal proprietors were below 50 years of age and over 60% had qualifications of General Certification of Education (GCE) advanced level or above.[11] The majority of sample firms (60%) were labor intensive and 13% were capital intensive while the

[8] Defined as value added per worker at constant factor cost.
[9] See ILO [3] and references cited therein.
[10] Based on employment levels e.g., micro (1–9), small (10–49), medium (50–299) and large (300+) scale enterprises.
[11] Undergraduate, Higher National Diploma, Master's, etc.

remaining could not indicated factor intensity of their enterprises. Over 45% of business owners of the sample firms had previous business experience. Most of them (80%) were using internet facilities in their business operations. The sample accounted for 1,119 employees during pre-COVID period, of which 42 percent were women.

Impact of the Crises

According to the survey results, over 85% of the sample firms were severely affected by both the COVID-19 pandemic and the economic crisis. The impact on sales turnover and employment levels is shown in Table 4, and it aligns with findings from other studies.[12] Additionally, over 73% of the sample firms invested their own funds or funds from family and friends as a strategy to reduce capital costs. As of the end of 2022, the total financial obligations per enterprise amounted to approximately LKR2.7 million, or 7% of the total turnover (see Table 5). Of the six major types of unsettled payments, loans and payments to business suppliers accounted for 87% of total financial obligations.

TABLE 4

IMPACT OF MULTIPLE CRISES ON ENTERPRISE PERFORMANCE, WITH RECOVERY RATE IN %.

	2022 Q3	2021	2020	2019
Impact on turnover relative to 2019	60	81	85	100
Impact on employment relative to 2019	94	89	86	100

Source: Sample Survey (2023).

TABLE 5

FINANCIAL OBLIGATIONS OF SAMPLE FIRMS AS AT THE END OF 2022 PER ENTERPRISE.

Type of unsettled payments	Amount in LKR	%
Rent (outstanding)	63,200	2.3
Repayment of loans and interest	1,610,000	58.7
Electricity, water, and telephone bills	90,333	3.3
Payments to business suppliers	793,333	28.9
Employee salaries, EPF, and ETF	78,000	2.8
Other transactions	106,667	3.9
Total	2,741,534	100

Source: Sample Survey (2023).

Productivity

The productivity levels of the sample firms were analyzed using partial productivity measures and sub-sector-specific proxy measures. Productivity is defined as value added per worker at constant factor cost prices. The findings reveal a significant drop in labor productivity in the construction and manufacturing sectors compared with other subsectors (see Table 6). The decline in manufacturing productivity has been noted by many researchers and attributed to several factors,

[12] For example, work by Chandrasiri and Gunatilaka [8] reported that over 50% of small- and medium-scale enterprises reported decrease in sales while another 13% and 30% reported increased and same levels of sales during the crises period.

including a deteriorating investment climate, inward-oriented trade policies, a revenue-based tariff regime,[13] a rent-seeking regulatory system, and weak macroeconomic management.

Manufacturing, which accounts for 16% of employment and 89% of total exports, plays a crucial role in the economy. Key subsectors in agriculture and services are closely linked to the manufacturing sector, and its poor productivity performance hampers the national economy's business recovery. This decline also impacts job creation, access to R&D, digital applications in production systems, and new product development. The construction sector, an investment-led industry, contributes 7% to the GDP and 1.6% to total employment.

The upward trend in tourism productivity since 2021 aligns with the strong growth in tourist arrivals and value added at the national level. Tourism has been the only economic sector to sustain high growth since the fourth quarter of 2021 and is the third-largest foreign exchange earner for the economy. In contrast, the economic activities in the transport sector have been severely constrained by a control-oriented trade regime implemented after 2019, largely due to a severe foreign exchange shortage. As a result, the import of motor vehicles and spare parts has been prohibited since 2020, leading to devastating consequences for the transport sector. Additionally, the decline in national output, shortages of auto fuel, and the soaring prices of spare parts have further reduced demand for transport sector activities.

TABLE 6

LABOR PRODUCTIVITY BY SUBSECTOR IN LKR AT CONSTANT PRICES.

Sub-sector	2022	2021	2020	2019
Manufacturing	114,132	329,139	393,414	394,118
Construction	106,440	159,621	464,130	497,937
Wholesale and retail trade	129,929	34,826	55,521	60,487
Tourism	167,844	140,731	162,031	267,198
Transport	117,612	157,850	179,988	177,870
Total	117,539	282,524	348,215	353,437

Source: Sample Survey (2023).

The survey results on labor productivity by enterprise size highlight two key findings: (1) micro and small-scale enterprises show signs of business recovery; and (2) medium-scale enterprises continue to struggle with the impact of multiple crises, which are yet to be fully addressed by policymakers. Micro and small-scale enterprises have demonstrated greater resilience and agility in handling multi-crisis situations compared with medium and large-scale firms. The rate of productivity recovery among micro and small-scale enterprises is higher than that of medium-scale firms (see Table 7). These smaller enterprises have successfully responded to the challenges posed by multiple crises through changes in their product or service offerings and by implementing cost-cutting measures, outperforming medium and large-scale enterprises in these areas.

In crisis situations, small firms are often better positioned due to their flexibility, agility, and their experience in working with uncertainty, as well as the strong mutual understanding between owners and employees. Thus, the "liability of smallness" becomes an asset during crises such as the current multi-crisis scenario in Sri Lanka.

[13] Refers to layers of para-tariffs introduced by the government for revenue generation purposes.

TABLE 7

LABOR PRODUCTIVITY BY ENTERPRISE SIZE IN LKR AT CONSTANT PRICES.

Enterprise type	2022	2021	2020	2019
Micro	179,544	102,291	127,718	219,695
Small	215,189	184,358	293,684	364,755
Medium	143,215	328,850	380,355	388,487

Source: Sample Survey (2023).

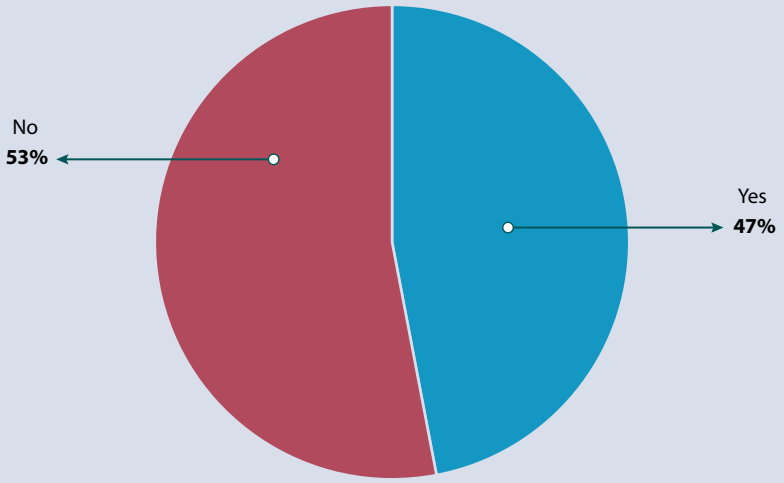
Success Points

Despite the severe negative impact of multiple crises, most of the sample firms appear to have adopted several productive transformation strategies during the crisis period. When asked whether there was a risk that their business would permanently shut down due to the current crisis, over 50% believed otherwise (see Figure 2). This aspect was further examined by analyzing the coping strategies adopted by respondent firms. The findings indicate that out of 16 different coping strategies, the use of ICT for business operations and sourcing from new suppliers received the highest ratings (57% during the COVID-19 period and 50% during the economic crisis). These were followed by online sales and the use of social media to market products (43%) (see Figure 3).

FIGURE 2

LIKELY RISK OF BUSINESSES SHUTTING DOWN DUE TO THE CRISIS.

Q: Do you think there is a risk that your business will permanently shut down because of the present crisis?

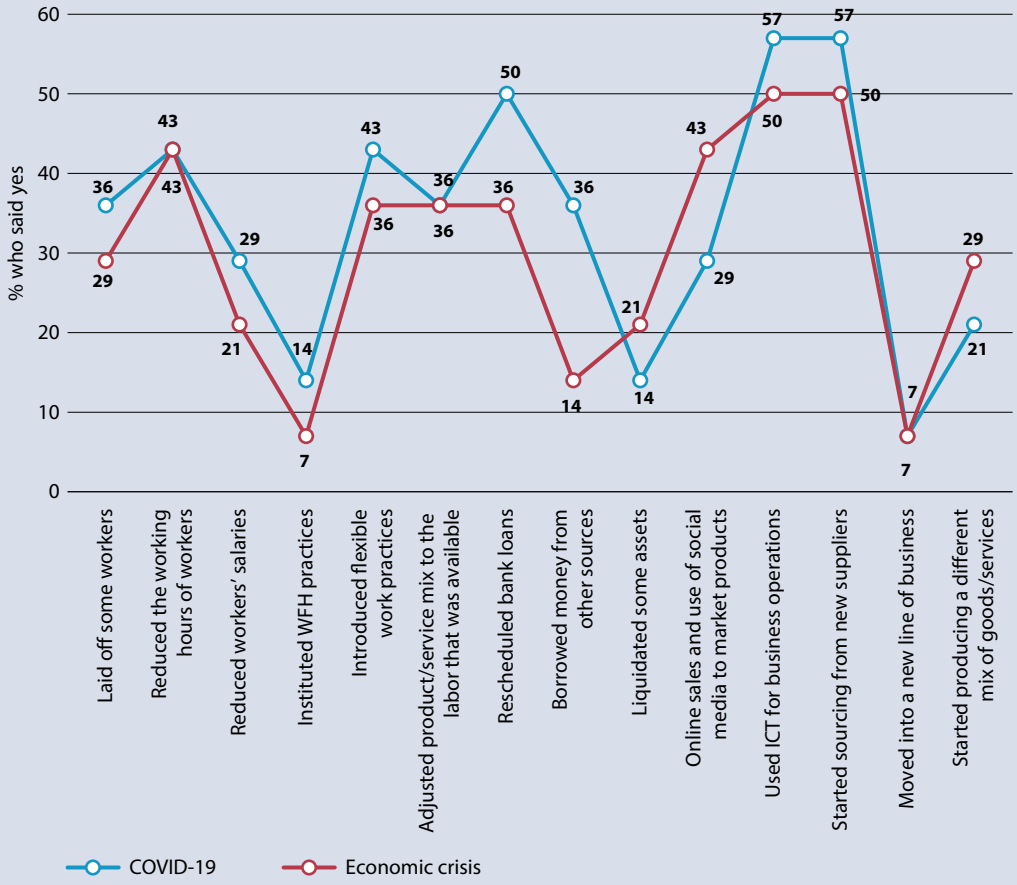


Source: Sample Survey (2023).

The adoption of ICT solutions by the sample firms highlights their agility and dynamic behavior during crisis periods. As Eggers [9] argued, crisis situations often create opportunities for business development, and it appears that these firms used modern technology as a strategy to improve productivity during the crisis periods. The shift toward new supply sources (57% during COVID-19 and 50% during the economic crisis) is another positive indicator, as it reflects the business sector's response to the collapse of supply-side operations in both local and foreign markets, alongside the government's strict import control regime. Some firms successfully implemented factor substitution,

FIGURE 3

COPING STRATEGIES DURING COVID-19 AND ECONOMIC CRISIS PERIODS.



Source: Sample Survey (2023).

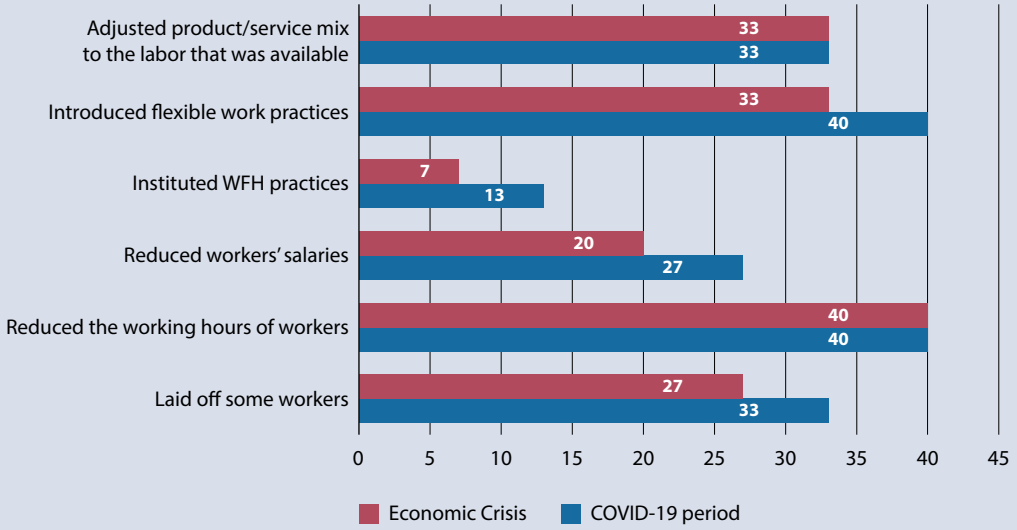
using local raw materials as alternatives to foreign sources. This approach has strengthened backward economic linkages, leading to job creation and technological development.

Another positive step toward productivity improvement was adjusting the product/service mix to align with the available labor force. The introduction of flexible work practices, which were virtually nonexistent in Sri Lanka before COVID-19, was another innovative approach in human resource management. Lastly, a high proportion of firms opted to reschedule bank loans during the crisis periods (50% during COVID-19 and 36% during the economic crisis), demonstrating a proactive step toward building business resilience.

Cost minimization was a common strategic option for businesses during periods of multiple crises. Since labor costs are a significant expense for enterprises, reducing worker salaries or laying off staff is a typical cost-cutting measure. However, in the context of Sri Lanka, this is considered a less preferred option due to the absence of a comprehensive social security system. Among the sample firms, less than one-third of them reduced staff salaries or laid off workers (see Figure 4). Approximately 40% opted to reduce working hours, while one-third adjusted their product or service mix to align with the available workforce. Additionally, increasing on-the-job training (OJT) during the crisis period was viewed as a positive step toward improving productivity (see Figure 5).

FIGURE 4

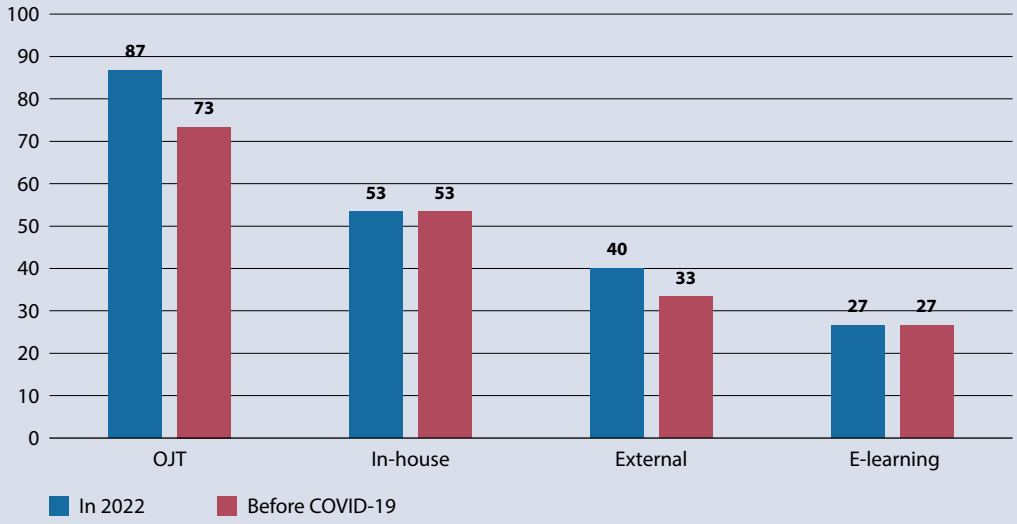
EMPLOYMENT STRATEGIES ADOPTED BY FIRMS DURING CRISIS PERIODS.



Source: Sample Survey (2023).

FIGURE 5

SKILL DEVELOPMENT MODEL USED BY FIRMS.



Source: Sample Survey (2023).

Use of Modern Technology and Digitalization

Sri Lanka ranks at the lower end of the Global Index of Digital Entrepreneurship Systems (GIDES), reflecting the poor quality of its ICT infrastructure and business environment for digital entrepreneurship development (see Table 8). This issue is further analyzed in Table 9, where the use of social media for business promotion emerges as the most popular form of ICT application among firms (53%), followed by online marketing (47%), computerized business operations

(47%), and online safety procedures (47%). Given the overall low level of digital entrepreneurship development at the national level, this shift toward ICT applications in business operations can be seen as a significant transformation for many firms.

However, the low percentage of online sales (27%) is unsatisfactory, especially considering the importance of online sales during and after the pandemic. Recent research by USAID [11] indicates that strengthening Sri Lanka's digital ecosystem will improve outcomes for SMEs and benefit the national economy. Sri Lanka has great potential to transform its economy into a digital one, and the rapid adoption of global digital advancements is essential for enhancing productivity.

TABLE 8

SRI LANKA IN THE GLOBAL INDEX OF DIGITAL ENTREPRENEURSHIP SYSTEMS, 2021.

	Stand-up system		Start-up system		Scale-up system		GIDE out of 113 countries	
	Score	Rank	Score	Rank	Score	Rank	Score	Rank
Sri Lanka	17.9	8	16.7	83	17.9	82	17.5	82
Average	32.0		31.9		32.0		31.9	

Note: Overall, GIDES scores range from 0 to 100. Stand-up, start-up, and scale-up refer to the three different stages of an entrepreneurial journey. Stand-up is the early stage, start-up is the middle stage, and scale-up is the later stage.
Source: Autio E., Fu K. [12].

TABLE 9

STATUS OF USING DIGITAL TECHNOLOGIES IN BUSINESS OPERATIONS (%).

	Online marketing and communication	Online safety	Computerized operating systems	Online sales	Use of social media
Yes	47	47	47	27	53
No	40	40	40	60	40
Not required	13	13	13	13	7
	100	100	100	100	100

Source: Sample Survey (2023).

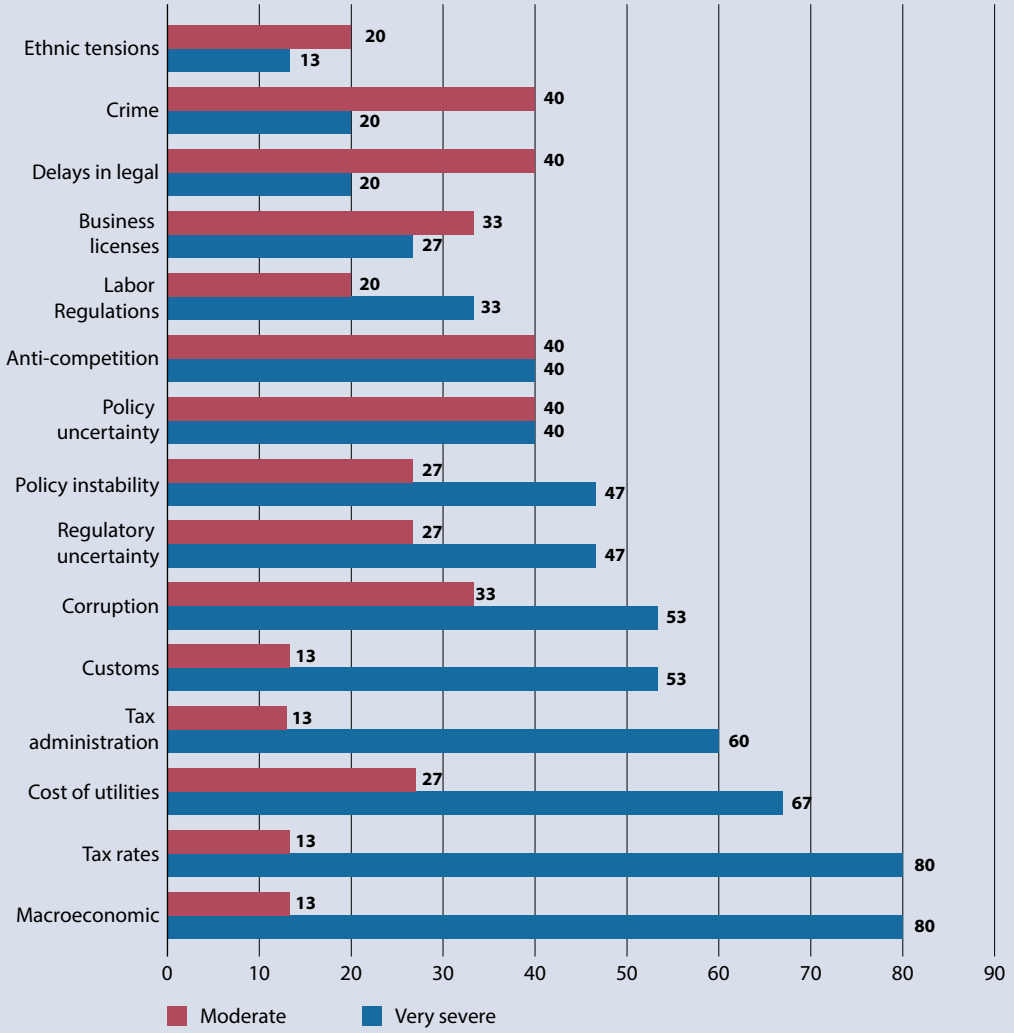
Constraints

As mentioned in section 2 of this chapter, Sri Lanka is experiencing a deep macroeconomic crisis, and macroeconomic variables have a direct impact on business sector performance. In this study, we examined how both macro and meso factors influenced businesses during the crises and their aftermath by assessing 15 different factors that respondents believed had impeded their business recovery. Among these factors, macroeconomic uncertainty and tax rates were identified as very severe constraints, affecting 80% of the sample firms' recovery (see Figure 6). More than 50% of respondents also cited customs and trade regulations (53%) and corruption (53%) as significant constraints for business performance.

Among the meso factors, tax administration (60%) and the cost of utility services, e.g., electricity and water (67%), were recognized as major obstacles to business recovery. The supply of water and electricity, managed by public sector institutions, has imposed significant inefficiency costs on both households and businesses. These institutions also resist policy reforms aimed at improving efficiency. As a result, the inefficiency of utility services remains a major constraint on the productivity and competitiveness of business enterprises.

FIGURE 6

CONSTRAINTS THAT IMPEDED FIRMS' RECOVERY.



Source: Sample Survey (2023).

Case Studies

Introduction

This section presents case study evidence on productivity from two business enterprises: one is engaged in the manufacture of macaroni, noodles, couscous, and similar farinaceous products (ISIC 1074); while the other manufactures medical and dental instruments and supplies (ISIC 3250). The industry structure for both groups includes small, medium, and large-scale firms. In terms of employment and value-added contributions, firms in the ISIC 1074 category are larger compared to those in the ISIC 3250 category.

When it comes to productivity, large-scale firms outperform small and medium-scale firms in both industry groups (see Table 10). This is primarily due to economies of scale and the significant market power held by large firms. These firms typically control over 50% of their product market, leading to higher returns in terms of turnover, profitability, and productivity.

TABLE 10

CHARACTERISTICS OF CASE-STUDY FIRMS BY THEIR INDUSTRY SECTORS, 2023–14.

	Establishments	Employment	Value added	Labor productivity		
ISIC Code	Nos.	Nos.	LKR million	Entire group	Small scale *	Large scale **
1074	21,093	49,502	19,042	385	363	1,045
3250	32	241	100	414	352	452

* Less than 25 persons employed; ** more than 25 persons employed.
Source: DCS [13] and [14].

Case Study 1: Helarasa Trading Pvt. Ltd.[14]

Helarasa Trading Pvt. Ltd. (HPT) is a small-scale enterprise located in the Anuradhapura district, 200 miles from Colombo, which has been engaged in the manufacture and distribution of processed food items since 2015. Its product line includes noodles, *koththu* (with chicken, prawn, and spice-flavored varieties), mixture bites, and chili paste. As a family-owned business, HPT employs 18 people and plans to expand its workforce by an additional 15 employees in the coming years. The company primarily hires low-income and low-skilled women from adjoining villages.

The noodles industry in Sri Lanka is composed of small, medium, and large-scale enterprises. The large-scale sector is dominated by Ceylon Agro Industries (CAI)–Prima, which invests heavily in product development, market expansion, promotion, and control of the retail network. Small and medium-scale firms, including HPT, are also involved in producing noodles, mixture bites, chili paste, jams, chutneys, and more. These smaller firms tend to focus on different regions of the country and are working to expand their presence in both local and foreign markets.

The production technology in this industry is relatively simple, incorporating both capital- and labor-intensive methods. Machinery and equipment are a mix of power-driven and hand-operated tools. In the noodles market, business competitiveness is a key determinant of survival.

New product development at HPT is led by the female partner of the enterprise (the owner's wife), while the owner himself focuses on overall management and distribution of products to retail shops within a 50-mile radius of the factory. According to the owner, retail business owners provide valuable market information on consumer preferences, price sensitivity, preferred tastes, packaging sizes, and other socio-demographic factors. As explained by the HPT owners, retail shop owners play a crucial role in providing insights into customer demand, competitive conditions, and retail margins. For example, the price margins requested by small-scale retail shop owners were reasonable, and they made payments without delay, thus making the business transactions mutually beneficial. However, the HPT owners' efforts to enter leading supermarket chains were unsuccessful due to the high retail margins (around 30%) demanded by such chains.

The factory was built on their own land, and investment in machinery and equipment was funded through personal means. Instead of taking bank loans, they pawned jewelry to finance the purchase of new machinery from PR China, as similar machinery manufactured in Sri Lanka was significantly more expensive. Despite aggressive brand advertising by leading manufacturers, HPT continues to operate without any product promotion through media channels. They reach their customer base without even using social media, and their website is underdeveloped, lacking essential product details. HPT has not adopted online sales, despite the model's growing popularity as a sales strategy for many companies.

[14] Reg No. PV00232767, Amane, Srawasthipura, Anuradhapura, Sri Lanka.

The digital visibility of the firm is minimal, and the owners appear unaware of the potential benefits of digital tools for business promotion. Even the company's accounting and record-keeping are done manually, using a single-entry system. HPT owners do not expect subsidies or grants from the government and are keen on expanding into foreign markets.

First, the cost minimization strategy focused on reducing production costs, particularly in the areas of energy and labor. During the economic crisis, the shortage of foreign exchange led to a severe scarcity of cooking gas, forcing many businesses in several subsectors, including food processing, to cease operations. However, HPT viewed this as an opportunity to innovate and sought alternative energy sources. Electricity was ruled out due to its high cost and frequent supply interruptions. Similarly, solar energy required significant investment, which HPT could not secure due to collateral issues and other approval hurdles.

HPT opted to use firewood as an alternative energy source, which proved to be much more affordable. The initial cost of constructing stoves made from metal or bricks was reasonable, and the technology used in the production process was well-developed, ensuring a high level of thermal efficiency. By improving the efficiency of both the heat generation and energy conversion systems, HPT was able to enhance productivity, improve product quality, and reduce firewood consumption.

HPT also employed inclusive employment as a strategy to reduce labor costs and overcome movement restrictions imposed by health authorities during the COVID-19 period. The majority of its workforce consists of women from neighboring villages, who are easily trained for various activities in noodle manufacturing. Labor costs in the local area are relatively low compared with urban-based production centers. This approach also serves as a form of community service, given the limited income-earning opportunities available for women in nearby villages.

The second major strategy to enhance productivity was new product development, based on consumer research conducted by the retail marketing team. This research includes information on customer preferences, consumption patterns, competitive pricing, packaging sizes, product details, and retail margins collected from the retail network. The production team used this data to develop new products, particularly by introducing new flavors, packaging sizes, and additions to the product mix (e.g., fried, dried, steamed, or combinations of these processes). This approach enabled HPT to maintain its market share and expand its regional presence, despite the economic downturn and aggressive marketing efforts by dominant players in the noodles market.

Improving brand visibility and company reputation through retail marketing is another innovative strategy adopted by HPT to strengthen business resilience and boost productivity through sales promotion. HPT's target market includes low- and middle-income earners living in rural and semi-urban areas. These customers typically purchase their daily or weekly necessities from small-scale retail shops in their neighborhoods. These retail shops often maintain close relationships with their customers, offering personalized assistance and recommendations on product selection. They are agile and responsive to customer needs and preferences. HPT has fully leveraged this situation, using its retail network to enhance brand visibility and company reputation.

According to the HPT owners, financing costs are a key factor affecting business performance and could pose a significant challenge to business survival during crisis periods. In Sri Lanka, the cost of financing and access to funds had been identified as major constraints on business growth long before COVID-19. During the multi-crisis period, they became even greater obstacles to business

survival. During this time, monetary authorities maintained a high-interest rate regime, and as a result, interest costs became a major contributor to production expenses. In fact, the repayment of loans and interest (e.g., for land purchases, machinery, equipment, and working capital) accounted for more than 50% of the indebtedness of business enterprises [8]. Aware of the high cost of capital, HPT owners opted for self-funding and borrowing from friends and relatives as a strategy to avoid the high costs associated with formal bank loans. This approach significantly reduced production costs and ensured business survival during the multi-crisis period.

Overall, HPT's business recovery between 2019 and 2022 saw employment and labor productivity increase by 71% and 40%, respectively. The slower recovery in productivity may be attributed to both macro-level and firm-level factors. At the firm level, the following steps are crucial for improving HPT's productivity:

(1) Digitalization of business operations: Improve the digital visibility of the firm by setting up a proper website with comprehensive details on the product range, customer feedback, sales inquiries, and more. Additionally, use ICT applications for record keeping, customer information updates, e-marketing, etc.

(2) Upgrading production technology: Implement improvements in production technology with the help of a technical expert.

(3) Establish a quality control system: Set up a quality control and enhancement system with the assistance of a food technology expert.

(4) Expand into foreign markets: Seek advice and guidance from export promotion agencies or a business coach to enter international markets.

(5) Formalize business operations: Introduce simple business management procedures with support from a business coach to formalize operations.

(6) Provide in-house training: Offer in-house training (in addition to on-the-job training) for workers involved in production, record keeping, and inventory management.

FIGURE 7

HPT PRODUCTS.

Case study 2: Vimana Medical Industries (Pvt) Ltd[15]

Vimana Medial Industries (VMI) is a small-scale firm engaged in the manufacture of blood collection tubes (BCT).[16] It was established in 2010 and is located 100 miles away from Colombo. It is a family-owned business that provides employment for 20 workers including high-, middle-, and low-skilled workers.

The BCT industry in Sri Lanka comprise of two domestic manufacturers and three major importers, namely (1) Ema Pharma (Pvt) Ltd;[17] (2) Kish International (Pvt) Ltd;[18] and (3) SQ Marketing.[19] The domestic manufacturing is represented by Vimana Medical Industries (Pvt) Ltd. and Ceylon Meditech (Pvt) Ltd. The exposure to foreign competition suggests a pro-competitive character of the BCT industry, which is vital in enhancing productivity and competitiveness. The entry to BCT manufacturing is blocked by some regulatory barriers. For example, the National Medicines Regulatory Authority (NMRA) is responsible for issuing licenses for medical devices in Sri Lanka and the approval procedure is very cumbersome, time consuming, and costly.[20] It also involves quality testing by the Industrial Technology Institute (ITI) while product dossier needs to be submitted to the NMRA including samples. The evaluation is done by a panel of experts including end users.

The demand side of the BCT market comprises public- and private-sector hospitals, medical centers, and diagnostic labs, all of which require BCTs for laboratory testing. There are approximately 234 institutional buyers of BCTs, with around 17% of them being public-sector hospitals. As a result, the BCT market is highly institutionalized, and product marketing must be conducted through customer visits by company representatives. The sales strategy relies on building strong relationships with key decision makers at purchasing institutions and BCT end users. This means that market access is largely determined by the customer relations established by existing suppliers, rather than through competitive advertising.

Investment in machinery and equipment represents a significant fixed cost, while key variable costs include raw materials (such as plastic), electricity, and salaries.

The pandemic severely disrupted the BCT supply chain in Sri Lanka, causing delays in shipping and transportation that led to shortages of raw materials and intermediate inputs. More specifically, the lack of foreign exchange for importing raw materials during the COVID-19 period hampered production activities. These supply-side delays also contributed to increased costs for raw materials, transportation, and other services. On the demand side, BCT sales dropped by 46% in 2020 and 50% in 2021. As a result, the company was forced to reduce working hours and staff during those years. Additionally, it had to restructure loans and liquidate some assets. As of August 2023, the company's unsettled financial obligations stood at Rs 20.5 million, but the company is now financially stable. Sales and employment recovered in 2022 by 75% and 71%, respectively. However, value-added recovery (at constant prices) in 2022 was only 40% compared with the pre-pandemic period.

VMI operates as a capital-intensive business, with the value of its machinery and equipment estimated at around Rs 50 million. The company also uses modern ICT applications in both production and office management. The owners are well-trained and experienced professionals

[15] Hospital Road, Kohilagedera, Kurunegala, Sri Lanka.
[16] Blood Collection Tubes are used to transport and process blood for testing serum, plasma or whole blood in the clinical laboratory.
[17] Imports BCT from FL Medical, Italy.
[18] Imports BCT from CML Biotech, India.
[19] Imports BCT from Softacare Brand BCT from PR China.
[20] The regulatory bodies of the health sector in Sri Lanka are well known for their inefficiencies and rent seeking behaviors.

with a solid understanding of production technology and the institutional structure of the BCT market. Since the machinery is imported, the lack of locally available spare parts is a significant challenge. VMI plans to expand its business by 2025 with an additional investment of LKR50 million in new technologies and ICT applications. These investments are justified by the need to expand production capacity, mitigate labor issues, adopt modern technology and automation, reduce costs, and improve quality and productivity.

VMI's labor productivity is higher than the manufacturing sector's average, and its production system is well-integrated with modern technology, including digitalization. The company's resilience and efforts to enhance productivity are evident in four key areas of its business strategy: (1) digitalization of business operations; (2) Business-to-Business (B2B) marketing; (3) skills development; and (4) cost minimization.

First, digital applications in business operations involve the use of ICT for office management and product promotion. VMI computerized its production operations and internal information systems, including accounting and record-keeping, which resulted in significant cost savings and up-to-date operational details. This approach also helped the company minimize labor issues and avoid disruptions caused by movement restrictions during the COVID-19 crisis.

Additionally, VMI effectively leveraged social media to market its products. In Sri Lanka, social media marketing became a powerful tool for businesses of all sizes to reach customers during crisis periods. It strengthened the connection between brands and buyers, while fostering buyer-centered interactions. Social media marketing is cost-effective and allows for personalized communication, providing valuable insights into brand reputation. It also enhances targeting capabilities, regardless of the business size, at a lower cost than other marketing channels. According to VMI's owner, social media has been a major communication channel with buyers. By actively monitoring social media channels and responding to customer concerns promptly, VMI has built strong relationships with its buyers.

Second, personal selling is another strategy VMI uses to enhance productivity. As a B2B company, VMI sells BCTs to other businesses rather than directly to end users. This involves larger purchase volumes and longer sales cycles, requiring suppliers to have a deep understanding of the industry and the ability to build long-term, trust-based relationships. In the BCT market, products are closely tied to the healthcare system, so the salesperson must serve as a trusted advisor, developing relationships built on trust and reliability. VMI has been highly successful in promoting sales through B2B marketing, which has significantly contributed to its business recovery.

Third, human capital development is widely recognized as a key strategy for enhancing productivity. At VMI, training and development efforts include both on-the-job training (OJT) and external training. External training is provided to production staff by service providers familiar with the company's machinery and equipment. This training equips workers with hands-on experience and expertise in operating machinery, troubleshooting, and performing regular maintenance. According to the VMI owners, OJT is a continuous process aimed at the ongoing development of skills for all workers in the organization.

The fourth strategy, cost minimization, involved three key actions: (1) adjusting the labor force to match a manageable product mix; (2) rescheduling bank loans; and (3) liquidating assets. As noted earlier, VMI's sales income dropped significantly in 2020 and 2021, prompting the company to implement cost-cutting measures. Labor costs were a major expense, and reducing staff became

an option after initially reducing working hours. During the crisis period, VMI reduced its workforce by 28%, affecting high-, middle-, and low-skilled worker categories. However, this decision was difficult for VMI's owners, as it was challenging for unemployed workers to find alternative jobs during the crisis.

Interest costs were another significant expense for VMI, and after consulting with its bankers, the company opted for loan restructuring. This included liquidating assets to reduce bank loan commitments. By following this advice, VMI was able to bring loan costs down to a manageable level.

Overall, VMI appears to be progressing well in adopting modern technology and ICT applications in its business operations. The company remains competitive in the BCT market and plans to expand production over the next few years. With Sri Lanka facing a severe foreign exchange crisis, expanding domestic manufacturing of MDIs would not only help the country save foreign exchange but also create employment opportunities for high-, middle-, and low-skilled workers.

Summary and Conclusions

The main objective of the present study is to examine the emerging needs for productivity enhancement by analyzing the success factors of business enterprises during the multi-crisis period in Sri Lanka. To achieve this, a firm-level survey was conducted using a structured questionnaire, covering key subsectors of the economy. This was followed by two case studies focusing on enterprises in the food products and medical instruments industries.

The firm-level findings revealed a significant drop in sales, value added, employment, and labor productivity between 2019 and 2022. However, when asked whether they believed their business was at risk of permanently shutting down due to the current crisis, 53% said no. In terms of coping strategies, 50% of firms reported using ICT applications and sourcing from new suppliers as measures for business survival. Additionally, 43% adopted online sales and used social media to market their products during the crisis period.

Business owners also expressed strong concerns about the investment climate, citing the negative impact of macroeconomic factors on business progress and productivity improvement across different subsectors of the economy.

The two case studies presented contrasting evidence on the potential benefits of using technology and non-technology solutions to enhance business resilience and productivity during the post-pandemic recovery period. One case study highlighted the positive impact of modern technology and digital applications in business operations, while the other illustrated the role of non-technology solutions during the crisis. Both case studies revealed a willingness to invest in modern technology. However, the key constraints for adopting modern technology and digitalization, especially among MSMEs, seem to be a lack of awareness and access to low-cost financing.

Business coaching appears to be a valuable intervention to encourage the adoption of modern technology and digital applications in business operations. Overall, a favorable macroeconomic environment is essential, with monetary and fiscal policies aimed at stabilizing interest and exchange rates in line with macroeconomic reforms. High tax rates, weak tax administration, and the high cost of capital remain significant challenges for the business sector, particularly for MSMEs seeking to survive and improve productivity.

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MONGOLIA

PAKISTAN

SRI LANKA

LIST OF ABBREVIATIONS

3Rs	Recycle, reuse, reduce
5S	Sort, set in order, shine, standardize, and sustain
ADB	Asian Development Bank
ADR	Advance deposit ratio
AI	Artificial intelligence
APO	Asian Productivity Organization
ARDB	Agricultural and Rural Development Bank
BBS	Bangladesh Bureau of Statistics
BDRC	Business Disaster Resilience Council
BIDA	Bangladesh Investment Development Authority
CGS	Credit Guarantee Scheme
CMSMEs	Cottage, micro, small, and medium enterprises
CRR	Cash reserve ratio
DRR	Disaster risk reduction
EDF	Export Development Fund
EE	Energy efficient
FBDRC	Fiji Business Disaster Resilience Council
FBR	Federal Board of Revenue
FCEF	Fiji Commerce and Employers Federation
FDI	Foreign direct investment
FI	Financing institution
FMCG	Fast Moving Consumer Goods
FRCS	Fiji Revenue and Customs Service
GCE	General Certification of Education
GDP	Gross Domestic Product
GIDES	Global Index of Digital Entrepreneurship Systems
GII	Global Innovation Index
HACCP	Hazard Analysis Critical Control Point
HDI	Human Development Index
HR	Human resources
ICT	Information and communication technology
IDR	Investment deposit ratio

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IH&SMEFD	Infrastructure Housing & SME Finance Department
ILO	International Labour Organization
IMF	International Monetary Fund
IoT	Internet of Things
IPA	Investment Promotion Agency
IR	Industrial Revolution
ISO	International Standard Organization
ITeS	IT-enabled services
ITEX	International Team Excellence Awards
LDC	Least developed countries
LIMS	Land information and management system
LSM	Large-scale manufacturing
MPO	Mongolia Productivity Organization
MSM	Medium-scale manufacturing
NBFI	Non-banking financial institutions
NPO	National Productivity Organisation
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
PPP	Purchasing power parity
PSDI	Pacific Private Sector Development Initiative
QIM	Quantum of Index
R&D	Research and development
RMG	Readymade garments
SBP	State Bank of Pakistan
SECP	Securities and Exchange Commission of Pakistan
SIA	Social Insurance Authority
SIC	Small Industries Corporation
SMEDA	Small and Medium Enterprise Development Authority
SMEs	Small and medium enterprises
SOE	State-owned enterprise
SSM	Small-scale manufacturing
TFP	Total factor productivity
TPM	Total productive maintenance
TQM	Total quality management

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UN	United Nations
UNCTAD	United National Conference on Trade and Development
USD	US Dollars
WB	World Bank
WEF	World Economic Forum
WHO	World Health Organization
WIPO	World Intellectual Property Organization
WTO	World Trade Organization

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