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FIRM PERFORMANCE IN CAMBODIA KEY DRIVERS AND STRATEGIES FROM SURVEY DATA

VEUNG NARON AND SEAN CHANMONY



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Firm Performance in Cambodia: Key Drivers and Strategies from Survey Data

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Acronyms and abbreviations

GDP	Gross domestic product
CSPro	Census and Survey Processing System
ICT	Information and communication technology
IPR	Intellectual property rights
IT	Information technology
ITC	International Trade Centre
MEF	Ministry of Economy and Finance
MNEs	Multinational enterprises
NGO	Non-governmental organisation
PFI	Participating Financial Institutions
R&D	Research and development
Sida	Swedish International Development Cooperation Agency
SMEs	Small and medium-sized enterprises
TVET	Technical and vocational education and training
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNIDO	United Nations Industrial Development Organisation
VAT	Value-added tax

Executive summary

In early 2020, Covid-19 caused a global health crisis which drastically limited human interactions and economic activities both within and across borders, disrupted global supply chains, and resulted in economic slowdowns in countries around the world. Cambodia is no exception in this pandemic era. Cambodia registered a negative economic growth rate of -3.1% in 2020 as its service and industry sectors experienced severe declines (-6.7% and -1.2%, respectively). As a small, export-dependent economy, Cambodia is susceptible to external environment conditions. Moreover, most businesses in Cambodia are small and medium enterprises (SMEs), and they are also encountering major challenges including a high proportion of informality, limited access to finance, and inadequate human resources, technology and innovation capabilities. In this respect, Cambodia needs to develop its capacity to absorb such shock and boost the country's economic development. Building a solid economic foundation through promoting local businesses and private sector development is a must to diversify the country's economic activities during these uncertain times. In this regard, the study aimed to describe the internal and external factors affecting Cambodian firms' recent growth and performance in a period of high instability, resulting from the Covid-19 pandemic and other risky global conditions. This study used original data from a firm-level survey with 361 business enterprises in two macro-sectors, namely industry and services, conducted between July and August 2022.

The following highlights the findings of the study along with policy recommendations for consideration and further discussion.

- Our results revealed that most surveyed firms recorded rising total expenditures concurrent with low sales and reduced profits. Specifically, more businesses in Phnom Penh than in other provinces reported profit contractions, and small businesses in both the industrial and service sectors were more likely to see larger declines in revenue. While employment expanded significantly in the industry sector and marginally in the service sector in the capital city, it decreased significantly in provinces. The differential experiences of firms inside and outside of Phnom Penh calls for a geographical approach to business support – also relevant outside of the pandemic – with more emphasis on the specificities of the economic structure and composition across the different provinces.
- The results also pointed out that for all firms, regardless of sector or size, expenditure was highest for raw materials and intermediate goods and labour, with expenditure on utilities being the fourth highest contributor. Most firms spent very little on employee training, which is likely to be a driving factor behind losses in productivity and firm performance. Generic skills like marketing, customer relations, sales, foreign language, and ICT skills were the most urgently needed, with industry firms requiring more technical (hard) skills. Despite the lack of investment in training, most surveyed firms preferred to address skills

gaps internally or reskilling their employees instead of hiring new employees or shifting employees to new roles. In the long run, it is imperative to devise a skills development policy scheme adequately addressing the challenges of upgrading skills, reskilling, and developing human capital in both soft and hard skills in the business sector more broadly.

- The study found that only a small number of surveyed firms had introduced or developed new products, services, or processes between 2019 and 2021. Among the firms that had reported such activities, small firms represented the largest percentage, but in general, not many firms invested in research and development. Instead, the majority of firms invested in new advanced machinery or equipment, market research, marketing methods, and advertising. This reflects the weak capacity for innovation across sectors, sizes, and locations, as well as the scarce attention to upgrading and renewing employees' skills and capabilities.
- Firms in both the industry and service sectors are most likely to manage data in local computers and paper-based formats, with more firms in Phnom Penh using local computers, servers, and cloud-based solutions than those in other provinces. This indicates that the adoption of highly advanced data management solutions is low outside of the capital city. It suggests that investment in soft infrastructure is required and could be met by applying different strategies on the various subnational regions.
- Planning for crises is essential, but preparation of alternative worksites and/or technological resources is low across sectors, locations, and sizes. Of the methods employed, saving financial resources for crisis management is the most common option, followed by reserving personnel and acquiring additional facilities. More than half of firms have financial resilience plans, especially among small and large sized enterprises. Regarding diversification strategies, the study found that most respondents did not have them. Firms in the capital showed a slightly lower propensity to engage in diversification plans, but the sample stratification in two macro-sectors does not allow further exploration of this crucial dimension. Future research should focus on how businesses adopt these strategies.
- The use of the government's online platform for business registration is limited and a large proportion of firms in Phnom Penh perceived that the system was not transparent. More firms in the capital, particularly those operating in the service sector, perceived that the infringement of intellectual property rights (IPR) was a major obstacle to their operations. It is important to encourage the use of this platform through increased advertising and technical support, and to strengthen IPR regulations and increase public awareness against counterfeiting.
- A large percentage of respondents perceived telecommunication and internet networks as significant obstacles to their activities. This finding is in line with the

2022 notification from the Ministry of Post and Telecommunications indicating that some areas of telecommunication in the country have not significantly improved. Public investments for the development of soft infrastructure are urgently needed.

- Firms in the industry sector were more engaged in formal business networks/ industry associations than service firms, gaining an advantage through information, collaboration, and training. However, inter-firm connections are still sparse, highlighting the weaknesses of both the national and regional systems of innovation. Strengthening and creating industry and region-based actors is key to encouraging firms to engage with each other and generate positive externalities.
- Access to finance is essential for firms to enhance their productivity, innovation, and research and development. Despite the weaknesses of the ICT system and infrastructure, firms were not commonly using it in their operations, particularly in provinces outside Phnom Penh. Trust, awareness, high-quality service, and security are key factors that need to be improved to increase adoption.
- Last, SMEs outside of the capital are more likely to perceive lending procedures as complicated and credit conditions as unfavourable, which could be seen as a challenge to SMEs. To ensure financial inclusion, a business financial inclusion strategy needs to be implemented throughout the country, while further strengthening the ICT infrastructure.

1. Introduction

In 2020, the world witnessed the global health crisis resulting from Covid-19, which led countries around the world to take seriously measures such as lockdowns, cross-border restrictions, and strict health protocols in order to contain the spread of the virus. These measures have drastically limited human interactions and economic activities both within and across borders, disrupted global supply chains, and have resulted in economic slowdowns in countries around the globe (MEF 2021b).

Cambodia is no exception in this pandemic era. Despite its high annual GDP growth rate of about 7% for more than two decades, Cambodia registered a negative economic growth rate of -3.1% for the first time in 2020. The service and industry sectors experienced severe declines (-6.7% and -1.2%, respectively), and the agriculture sector recorded a very modest growth rate of 0.5% (MEF 2021a). The economic contraction in tourism, construction, and the fall in manufacturing exports – all key economic drivers – caused a great loss of employment and incomes amongst Cambodians, especially those who are working in the informal economy (Ivan, Vinh, and Khoun 2022). After experiencing a severe economic recession at a -3.1% rate in 2020, the government managed to contain the pandemic with stringent measures and initiatives, including financial and fiscal policies, and vaccination campaigns and coverage, that enabled Cambodia to recover its economic growth with a 3% rate in 2021 (MEF 2022).

Sluggish global economic growth is expected to continue for a variety of reasons including: the spread of Covid-19 variants and other viruses; the ongoing Russia-Ukraine war; escalation of the China-US trade war; widespread economic sanctions; and other chronic conflicts around the globe. These factors contribute to the general economic slowdown and have also had an indirect impact on the Cambodian economy due to supply chain disruptions, oil price explosion, and reduced investment inflows. Thus, the Cambodian economy is estimated to grow at a 5.4% rate. However, this growth rate highly depends on regional and global stability and conditions (MEF 2022). In this respect, building and consolidating economic foundations based on competitive and sustainable local production and business enterprises is key to strengthening and promoting socioeconomic development. A favourable business environment may also further support and boost local and foreign capital investments both in the country as a whole and on a provincial level. Small and medium enterprises (SMEs) play a particularly significant role in private sector development since more than 90% of businesses in Cambodia are SMEs. Thus, they predominantly contribute to the national economy through employment and income generation, poverty reduction, and GDP growth (Thy 2021; Baily 2008).

Notwithstanding their crucial role, SMEs have encountered severe economic obstacles to sustain and expand their business operations both before and during the Covid-19 pandemic, particularly when compared to larger firms and multinational enterprises (MNEs) (Thy 2021; ITC 2022). The major challenges include the high weight of

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informality, limited access to financing, inadequate human resources, and the lack of technology and innovation capabilities (Thy 2021; UNIDO 2020). These challenges have purportedly prevented many SMEs from confronting competition, expanding their business model, and accessing wider markets domestically and internationally – both within the macro-region and in the global market – as their goods and/or services development frequently lacks both product and/or process innovation.

As in other developing, and even developed, economies, many Cambodian SMEs operating in tourism and other service sectors were hard-hit during the pandemic, leading many businesses to suspend operations and eventually close down in 2020 (UNIDO 2020; Ivan, Vinh, and Khoun 2022). On average, businesses in manufacturing industries started to recover their activities beginning in 2021, following government intervention to maintain macroeconomic stability and to support local firms' performance (MEF 2022; 2021b).

Relying on original empirical data, this paper aims to look at different drivers and strategies operating both internally and externally to each firm that have been behind Cambodian businesses' heterogeneous performance. The study intends to contribute to further our understanding of two critical areas. First, it will illuminate the internal factors that promote or hinder firm growth, both in terms of profits and employment, by looking at the association of firm performance with key indicators of business aspects (e.g., expenditure, investment, skills development, managerial and innovation strategies). Second, the paper considers external enabling conditions of the business environment, such as regulatory and legislative elements, infrastructure, business networks, and access to financing, that are critical in determining firm performance. Finally, the paper concludes by proposing some preliminary directions for policy design and further areas for future inquiry.

2. Literature background

This section offers insights from the literature on the internal and external factors behind firm performance and growth. The first subsection considers the various elements inside individual firms that determine their different behaviour and choice of strategies in pursuit of success. The second subsection will summarise key findings from the literature regarding how external factors, particularly global and local business environment conditions, impact firm performance and growth.

2.1. Internal factors

A huge theoretical and empirical literature in economics and related disciplines has studied firm-specific characteristics that are linked to firm performance. While it is not within the scope of this study to report on such an expansive literature, some illustrative and relevant references will be reported in what follows.

Economic and business theories on firm growth spanning from neoclassical to transaction costs, to competence-based and evolutionary theories all emphasise the relevance of innovation as the engine behind firm competitiveness and resilience. In these models, innovation implies adapting the firm's existing resources, expertise, and skills to continual change. In this paper, the relevant main dimensions of firm change include the following: strategies, which are a set of general commitments made by a firm in defining its objectives in the short and long term; structure, which delineates how a firm is organised, managed, and governed; product(s), which are what the firm actually does or produces, such as goods and/or services, given the broad strategies; and lastly, capabilities, which describes what a firm can do well. Changes in strategy and products as well as the more difficult and slower changes in structure are both aimed at modifying what the firm is able to do well. Innovative and organisational capabilities have life of their own. Inevitably, firms pursue somewhat different paths, as their technological competence, dynamic capabilities and learning are the cornerstone of firm identity. Innovation is also closely linked with external factors, such as geographical location and outer business environment which we discuss in more detail in the following section. For example, the capability and the opportunity to engage in business and other networks, local and extra-local, and in clustering, are what distinguish the performance of firms even in the same place and industry, thus attracting external resources and MNEs to invest in certain businesses and regions (Iammarino and McCann 2006; 2013).

Within economics, international business, and innovation literatures, the age and size of firms are generally seen as crucial characteristics behind firm behaviour and performance. However, it is important to also take into account the Schumpeterian literature on technological regimes (e.g. Audretsch 1997; Malerba and Orsenigo 1997). The Schumpeterian literature suggests that although larger and older firms produce and sell goods and services more efficiently than smaller and younger firms due to economies of scale, scope, and knowledge, it is misleading to assert that smaller and younger firms are less competitive. Firm economic performance and growth, which are strongly related to innovation propensity, depend strictly on three aspects. They depend on the industry in which firms operate, on the variable within the technological environment that explain both market structure and size distribution, and, finally, on the overall rate of innovation across industries. More generally, empirical evidence has shown that the size distribution of innovative activity is U-shaped, and innovation in SMEs and that in large firms operating in the same sector are positively linked to one another. More recent literature has focused on entrepreneurs' characteristics, such as age, gender, experience, and education level, as additional factors explaining firm performance (e.g. Scott 2006; Acs and Virgill 2010; Bardasi, Sabarwal, and Terrell 2011; Fatoki and Chindoga 2011; Blackburn, Hart, and Wainwright 2013).

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Following Edith Penrose's seminal 1959 book, *The Theory of the Growth of the Firm*, the firm is to be seen as a "whole organisation" and a "bundle of productive resources" that include both tangible and intangible human resources (Penrose and Pitelis 2009, 21; see also Nelson 1991). Thus, firms' internal resources, including managerial and labour capabilities, financial, and technical resources, are also crucial in determining firms competitiveness (Barney 1991). For example, liquidity and solvency strongly impact firm growth (Elston 2002) wherein firms with high liquidity and solvency are perceived to be more financially resilient as they may be better positioned to reconfigure and re-allocate their resources in advance or in the early stage of possible disruptions because of their stronger planning capacity (Parker and Ameen 2018).

In alignment with the Penrosean tradition of the firm as a "bundle of resources", the literature on innovation, technological change, and human capital stresses the importance of skills, knowledge, competencies, and other attributes of the employees and the firm human component (e.g. Schultz 1960, 1961; Mincer 1974; Becker 1992, 1994) for technology adoption and creation, product innovation, and new ideas that could lead to firm growth. Skills development is surely a gateway to firms' success. Indeed, on-the-job training – a main aspect of human capital formation – enables workers to learn about new machines and tools and about new ways to perform and organise their tasks and activities (e.g. Kruss et al. 2015; Oke and Fernandes 2020). Recent research has also shown a strong relationship between training and firm productivity. Increased investment in training may not only increase employees' skills and knowledge but also lead to firm growth (see Liu, Qiu and Yu 2017). Some research has also pointed to the relative effectiveness of training, as reflected in its effect on the probability of securing continued employment during economic and financial crisis (Filippetti, Guy, and Iammarino 2019). Moreover, the effect appears to be particularly intense in less advantaged regions, such as Cambodia, where a large proportion of the low-skilled and unskilled workforce have attained low (or no) education or training working in agriculture, manufacturing, construction, and informal sectors, in particular. Thus, equipping workers with necessary skills and competencies for the labour market is urgently needed during the pandemic and beyond.

2.2. External factors

Here we briefly present some insights drawn from the literature on the external factors, particularly global and local business environment conditions, that impact firm diversity and performance. As with the prior subsection, there is an expansive literature in economics, economics geography and business and management examined external factors influencing business growth across countries and regions. As seen above, internal factors focus on firm characteristics, such as management and human, financial, and technological capabilities and resources. The focus of this subsection is the external factors that provide opportunities or threats to an individual organisation. The dynamics within which businesses operate are constantly changing, which means

that external forces can positively or negatively affect the company. Understandably, businesses cannot control all of these external factors, and each firm's response to changes in external factors creates heterogeneous performances.

Over the last three decades, both academic literature and policy have addressed national and regional innovation systems that emphasise the relationships with sources external to the firm as major drivers of performance (see Lundvall 1992; Iammarino 2005; Lundvall, Vang, and Joseph 2009). Relationships between firms and external sources are established among categories of microeconomic and social actors, such as: business firms and other types of firms (SMEs, large, MNEs, etc.), firms and education and research institutions, producers and users, various organisations and institutional agents, such as government bodies at various levels, development agencies, industry associations, local communities, NGOs, etc. The relationships between firms and external sources are strongly influenced by spatial proximity mechanisms that favour processes of polarisation, cumulativeness, and path dependency. The complexity of innovation systems' relationships – although fundamental to understand economic growth and resilience – cannot be easily captured. A few elements of the external business environments are highlighted below.

First, firms are strongly affected by global and local financial trends. To reduce uncertainties occurring due to financial fluctuations, it is vital to understand capital markets' trends, and even more importantly for SMEs, to access external financing, which very much depends on the geographical location of the firm. The lack of financing is widely recognised as one of the barriers preventing SMEs' growth. According to Rocha, Arvai, and Farazi (2011), for instance, the lack of financing has been perceived by owners and managers to be the main barrier to SMEs' growth and it even restricts new or young investors from successfully running businesses. Therefore, a sound financial portfolio is crucial for business growth (e.g. Becchetti and Trovato 2002; Elston 2002).

Infrastructure is another crucial local environmental variable influencing firm performance, mainly identified by the quality of roads, railroad system, airport, and electricity supply (Snieška and Bruneckienė 2009). Crescenzi and Rodríguez-Pose (2008) highlighted that good infrastructure endowment and investment are a prerequisite for economic growth. In fact, infrastructure development is a necessary, though not completely sufficient, condition to achieve economic efficiency and regional territorial equity. A modern and good infrastructure is a competitive asset essential for enabling firms and individuals to maximise local economic potential. Furthermore, infrastructure development improves accessibility and contributes to market integration of local firms. Despite the benefits, however, it has been found that after a certain threshold is attained, infrastructure endowment becomes less relevant for economic growth than human capital and innovation endowments. The literature strongly recommends combining investment in infrastructure with human capital development and the innovative potential of particular regions and locales (see Rodríguez-Pose and Fratesi 2004).

Following the innovation systems approach mentioned above, local (and extra-local) business networks are nowadays identified as one of the principal channels for firm growth. These networks provide a platform to build business relationships, overcome obstacles, develop economic and innovation opportunities, share information and new practices, and seek potential business partners. SMEs often lack sufficient resources, knowledge, and skills necessary to remain competitive (Kamnungwut and Guy 2012). Firms' networks can be an important source of knowledge and competitive advantage (Dyer and Singh 1998) often generating positive spill over and thereby fostering local economic development (e.g. Håkansson and Ford 2002; Schoonjans, Van Cauwenberge, and Vander Bauwhede 2013; Abbas et al. 2019).

Finally, regulatory and legislative factors implemented by the government are very important (e.g. Gupta, Guha, and Krishnaswami 2013) since regulation and institutional settings deeply impact how businesses operate. Reducing regulatory barriers to firms' entry and expansion into the market can limit the scope of corruption by public officials and increase the benefits of competition and growth (Djankov et al. 2002; World Bank 2004). For example, a 2009 survey of Cambodian firms by province found that excessive informal charges were the most detrimental factor behind the lack of firm expansion, and was followed by time-consuming costs of regulatory compliance, and burdensome entry procedures (Malesky 2009). Furthermore, strong rule of law – including protection of intellectual property rights (IPR) and impartial contract enforcement – protects entrepreneurs and incentivises investment and innovation (North 1990; North and Weingast 1989; Rodrik 2000).

3. Research methodology

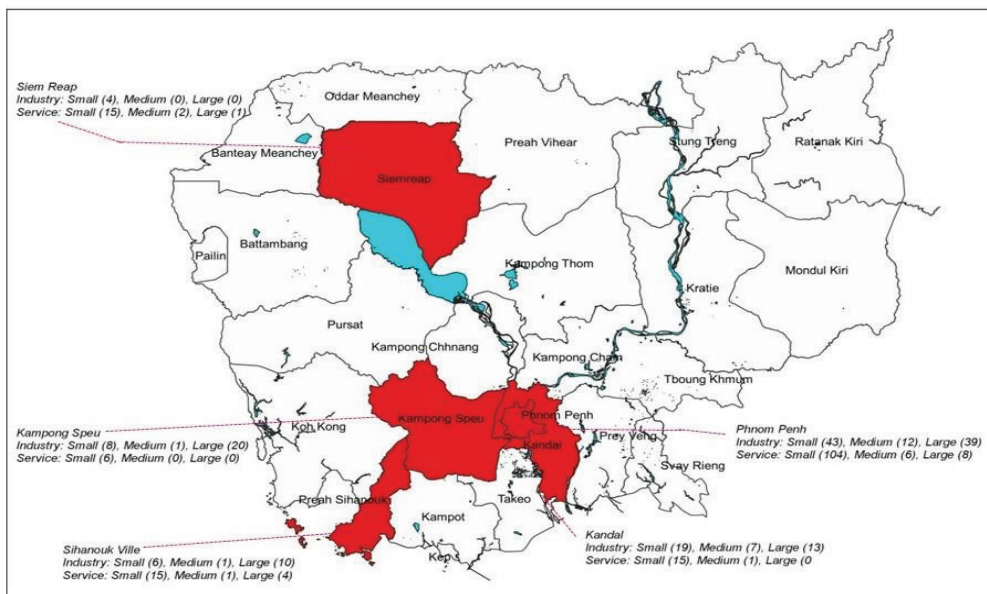
3.1. Data collection methods

This study is based on an original firm-level survey using a CSPro platform on tablet to conduct face-to-face interviews with business owners and/or their representatives. In a few exceptional cases, firm respondents requested and were permitted to fill in hard copies of the questionnaire, and their responses were checked by enumerators at a later stage to clarify unclear points or obtain missing information. The data collection was conducted between July and August 2022.

3.2. Sampling strategy and sample

In this study, small, medium, and large enterprises were identified and defined according to the Sub-committee on SME Secretariat as follows: small enterprises employ 11-50 employees; medium enterprises employ 51-100 employees; and large enterprises employ over 100 employees (Baily 2008, 5–6). The number of employees includes full-time and part-time employees currently hired and working at the business enterprise.

Figure 1: Surveyed firms by location, sector and size



The sampling frame was based on the data set of firms listed in the Economic Census from the Ministry of Planning: it excluded firms that had fewer than 11 employees, those that did not report the number of employees, those whose primary business activities fall outside the scope of the study, and firms not registered with the relevant government bodies.

The sample was stratified along three dimensions: sector, size, and region. The first stratification divided firms into the two main economic macro-sectors: industry and services. The second stratification categorised firm sizes into three strata based on the number of employees using the definitions of small, medium, and large enterprises stated above. The final stratification grouped firms into five regions in which the firm's primary facilities are based: Capital City (Phnom Penh), Central Plain (Kandal), Tonle Sap (Siem Reap), Coastal and Sea (Preah Sihanouk), and Plateau and Mountains (Kampong Speu). This study surveyed 361 firms in total, including 235 small, 31 medium, and 95 large firms in services (178 firms) and industry (183 firms) in the five regions as shown in Figure 1 above.

3.3. Data analysis

This study adopted a variety of descriptive statistics and graphical presentations (e.g., tables, charts) in order to show differences and similarities between firms of different sizes, sectors, and locations. The internal factors were examined to determine internal barriers to and drivers of firm performance in the Cambodian economy. The study also examined how firms perceived external factors, such as regulatory and legislative

elements, infrastructure, business networks, and access to finance, in relation to their operation and performance.

4. Research findings

4.1. General characteristics of the surveyed firms

Figure 2 shows the size and sector of the surveyed firms. Small firms were the largest share of the sample, accounting for 65%, followed by large firms with 27%, while medium-sized firms accounted for only 9% of the total. As Figure 3 indicates, 59% of the firms were based in the capital city, Phnom Penh, which is the heart of the economic activities in Cambodia. The remainder were located in the other four provinces of Kandal (15%), Kampong Speu (10%), Preah Sihanouk (11%), and Siem Reap (6%).

Figure 2: Firm size by sector

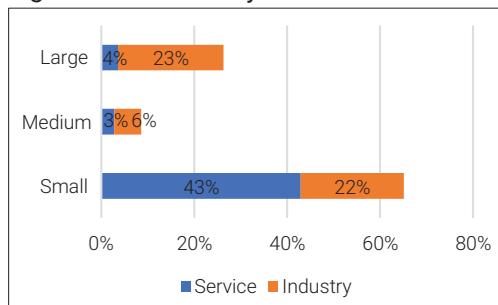


Figure 3: Firm location by sector

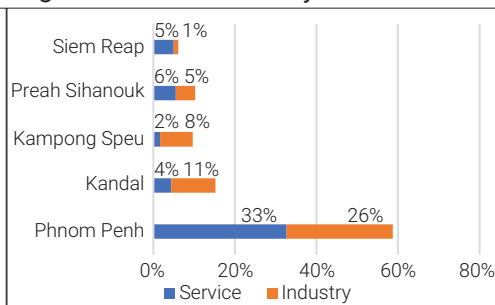


Figure 4: Gender and ownership of firm owners

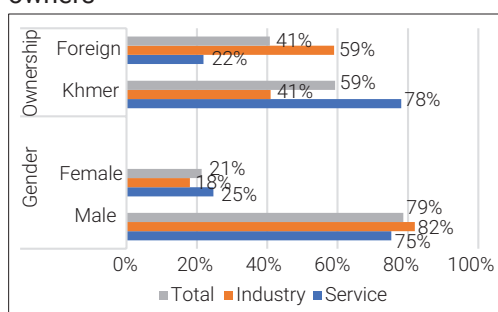
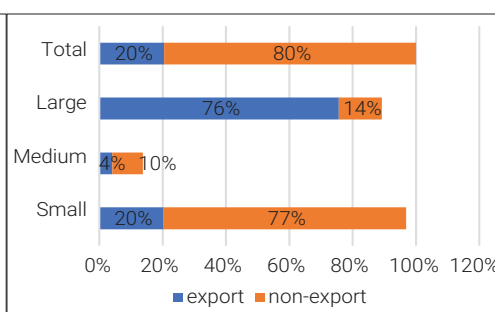


Figure 5: Firm size by firm type



As shown in Figure 4, most firms were reportedly male-owned (79%) in both sectors, while 21% had female-owners. In this study, about 59% of firm owners were Khmer citizens, mainly operating in the service sector, while there was a higher percentage of foreign-owned firms (59%) in the industry sector. Most firms in the sample were non-exporting (Figure 5). Only 20% of the firms were export-oriented, and most of them were in the industry sector. Large firms were the major exporters with only 20% of small firms selling goods and/or services abroad. These large and small firms were

more prone to export than medium-sized firms. Most large foreign-owned firms were export-oriented manufacturers or branches of overseas firms whereas most small service and industry firms mainly provided services or produced products for the local markets.

The majority of firms had been in operation for between 3-5 years. The next greatest number of firms were those who had been in operation for between 6-8 years or 9-11 years. Only about 10% of the firms surveyed had operated for 18 years or more (Figure 6). Small firms were predominant across age groups, particularly for firms which had been in operation for 3-8 years. As shown in Figure 7, most firm owners were aged between 40 and 49 years, and were closely followed with firm owners in their 50s and 30s. The firm owners aged between 50 and 59 years oversaw businesses in the industry sector, while those in their 30s and under were predominantly in the service sector.

Figure 6: Age groups of firms by sector

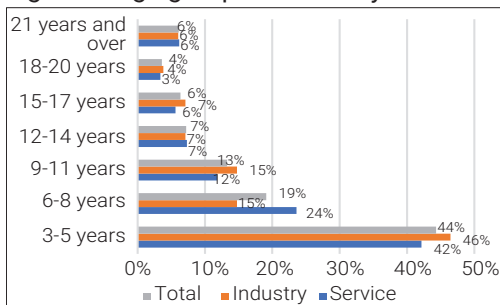
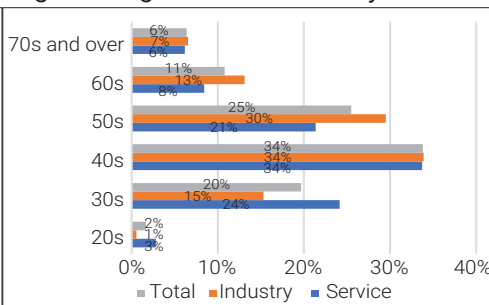


Figure 7: Age of firm owners by sector

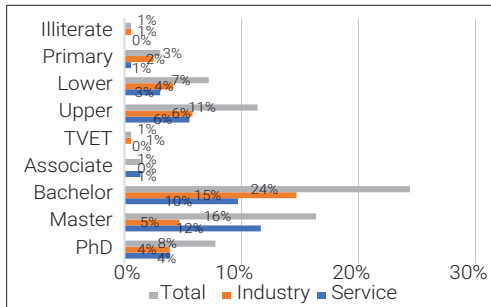


Note: About 3% of firms chose "Don't know".

As Figure 8 shows, the share of firm owners holding a bachelor's degree was the highest (24%), followed by firm owners with a master's degree (16%), and those who had completed high school (11%). In total, 48% of firm owners held at least a bachelor's degree (up to a PhD), and about 10% completed primary and lower secondary education. Only 2% of respondents were reported to have a TVET (C1-3) certificate or an associate's degree. Firm owners in the industry sector had more bachelor's degrees than those in the service sector; however, owners in the latter had a higher share of master's degrees.

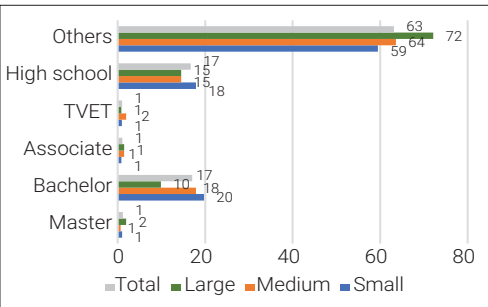
Figure 9 indicates that the largest share of total current employees (63%) in both sectors had not completed high school education and/or were illiterate over by employees with bachelor's degrees (24%) and high school diplomas (11%). Noticeably, large firms were likely to have more employees with lower (or no) education and training, while small firms had more people with high school diplomas and bachelor's degrees. It is certainly true that low-skilled (and unskilled) workers with low (or no) education and training are the majority of the total workforce in the Cambodian labour market.

Figure 8: Share of owners by education level



Note: About 27% of firms chose "Don't know"

Figure 9: Share of employees by education level



Note: Excluding about 2% of firms that did not reply each item of the question.

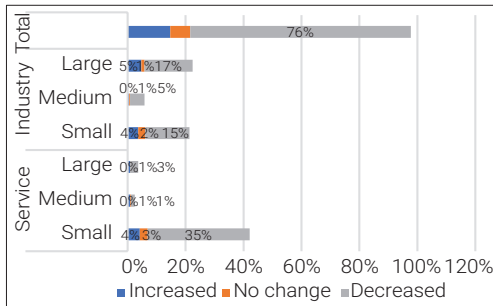
4.2. Exploring how firms performed internally

4.2.1. Firm performance: Profits, revenues, and employment

Figure 10 illustrates a negative change in firms' operating profits in 2021 compared to 2019. Corresponding to results from other studies (see Thy 2021; Asia Vision Institute 2021), more than 75% of firms in both the industry and service sectors reported that their profits decreased in 2021 compared to 2019, while only 15% of firms registered an increase in their profits. Among the firms with negative profit growth, small firms operating in services were more likely to report a loss than those in the industry sector. Although firms reported a negative profits between 2019 and 2021 (as shown in Figure 11), more than half of the respondents expected their profits to increase in 2022, and about 25% signalled an expected decrease in profits between 2021 and 2022. The share of small firms in the service sector expecting an increase in their profit was higher than that of those in the industry sector.

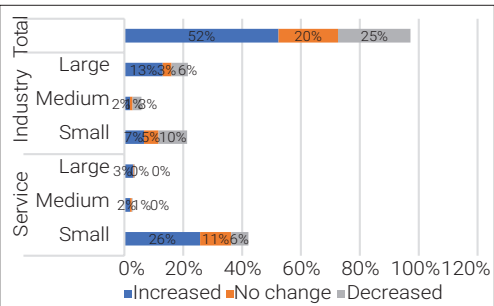
Compared with Figure 10, Figure 11 shows expectations of profit increases in both sectors as the overall economy in 2022 was predicted to have a GDP growth rate of 5.4% (MEF 2022), indicating that most firms in both sectors have started to recover, resume, or expand their business operations and/or activities.

Figure 10: Share of firms reporting change in firms' operating profits by sector and size in 2021 relative to 2019



Note: About 2% of firms chose "Don't know" and "Refuse to answer".

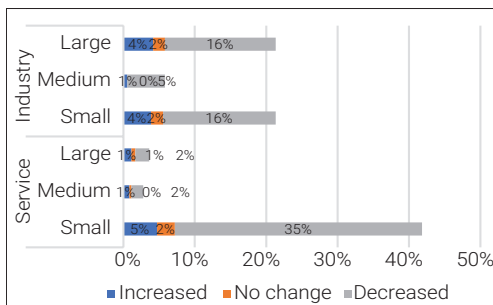
Figure 11: Share of firms reporting expected change in firms' operating profits in 2022 by sector and size relative to 2021



Note: About 3% of firms chose "Don't know" and "Refuse to answer".

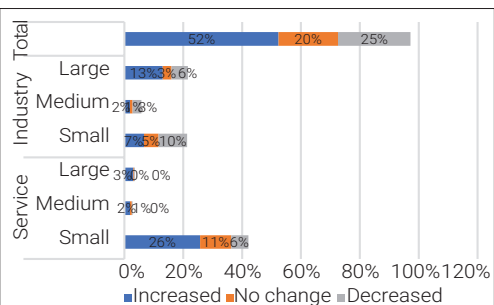
Figure 12 shows the share of firms reporting their revenue change in 2021. Similar to what is shown in Figure 10, about 75% of total firms experienced decreased revenues in 2021, and only 15% reported a rise in revenue. Small service firms were the highest share (35%) of firms reporting a decrease in revenues. Interestingly, 16% of both small and large firms within the industry sector reported decreases in revenue. As illustrated in Figure 13, more than 40% of firms in the capital reported reduced revenues while roughly 32% of firms outside the capital reported revenue decreases. A higher proportion of service firms operating in the capital reported decreases in revenue than those operating in other provinces. Interestingly, the proportion of industry firms in both the capital and other provinces reporting diminished revenues in 2021 was the same (18%), and 4% of the service and industry firms in the capital saw revenue increases.

Figure 12: Share of firms reporting revenue change in 2021 by sector and size



Note: About 3% of total firms chose "Don't know" and "Refuse to answer".

Figure 13: Share of firms reporting revenue change in 2021 by location and sector



Note: About 3% of total firms chose "Don't know" and "Refuse to answer".

12 | Firm Performance in Cambodia: Key Drivers and Strategies from Survey Data

On average, there was an increase (+21%) in revenues for firms in both sectors in 2021 and most firms showed a pronounced drop (-45). In addition, firms located outside the capital had a stronger decline (-47%) and increase (+23%) in their revenues than those in the capital.

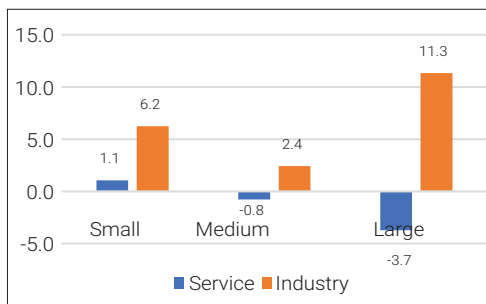
Table 1 shows the total employment of the surveyed firms in 2022. As expected, the number of workers in the industrial sector (74,472 people) was much higher than that in the service sector largely due to the fact that there are more small firms in services and more large firms are in industry. There were also more workers in Phnom Penh than in other provinces as the capital is home to the country's main economic activities. Small and medium firms had about 23 and 67 workers on average, respectively, while large firms hired around 792 workers on average.

Table 1: Total employment in 2022 by sector, size and location (in person)

	Small		Medium		Large		Total
	Phnom Penh	Other provinces	Phnom Penh	Other provinces	Phnom Penh	Other provinces	
Service	2,241	1,184	361	273	2,980	1,296	8,335
Industry	1,160	854	821	633	36,522	34,482	74,472
Total	3,401	2,038	1,182	906	39,502	35,778	82,807

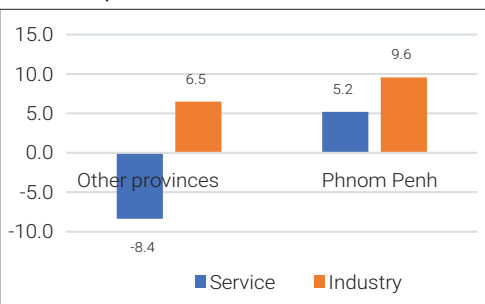
As shown in Figure 14, there was a noticeable rise of approximately 11.3% in the employment rate between 2019 and 2022 in large industry firms. There was also a slight increase of 1.1% in small service firms' employment rate, and a smaller decrease of employment in both medium and large service firms. Overall, total employment in the service sector decreased slightly, while that in the industry sector increased significantly. As Figure 15 reports, industry firms in the capital had a higher increase in employment than those in other provinces, while firms in services outside of Phnom Penh recorded a more pronounced drop. The reason behind the remarkable increase reported in industry employment could be due to the increasing orders from buyers that had faced production disruptions in other countries and so shifted orders to manufacturers in Cambodia. On the other hand, firms in services, especially those in the tourism sector, had been negatively impacted by the pandemic travel restrictions resulting in many firms closing or suspending their business operations in 2020.

Figure 14: Average percentage of change in total employment (2019-2022) by sector



Note: The number of total current employees was collected by the end of August 2022.

Figure 15: Average percentage of change in total employment (2019-2022) by location, size and sector



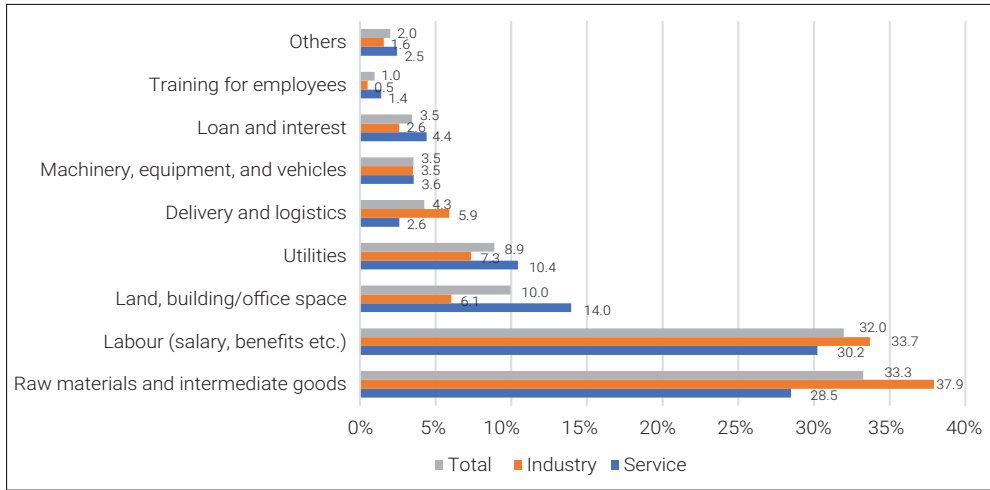
Note: The number of total current employees was collected by the end of August 2022.

4.2.2. Examining key elements of firm expenditure

Figure 16 presents different types of expenditures made by firms relative to their total expenditure in 2021. On average, all firms surveyed spent about 33% of their budget on raw materials as well as intermediate goods and another 32% on employee salaries. The next largest expenditures were land, buildings, and office space leaving only about 1% to be spent on employee training. Furthermore, about 9% of total costs were on utilities, a rather high share compared to both the logistic and delivery and machinery, equipment, and vehicles categories of expenditures. As expected, firms in the industry sector had higher expenses on raw materials than service firms, but the former spent less on employee training than the latter. Noticeably, all firms had similar expenditure shares on machinery, equipment, and vehicles. The results also indicate that small firms spent the highest amount on raw materials, about 35% of their budget, while large companies spent 32% of their budget and medium firms spent 25% of their budget. Instead, large and medium firms had higher labour expenditures. The fourth highest expenditure for all firms was utilities, and, interestingly, large firms had the lowest share of expenditure on employee training.

Industry firms in both the capital and other provinces had higher percentages of expenditure on materials and salaries than those in services (see Figure 17). The costs of utilities and buildings/office space also highly contributed to the total expenditures of service firms across locations. Industry firms had lower expenses on utilities although this percentage increased slightly in the other provinces compared to Phnom Penh. Service firms in the capital spent the highest amount on average on employee training (about 1.6%). Overall, regardless of sector and location, firms spent very little on their employee training compared to other expenditure types.

Figure 16: Average percentage of firms' expenditures in 2021 by sector



Note: Average percentage was calculated based on different expenditure types in relation to the total expenses in 2021.

Figure 17: Average percentage of firms' expenditures in 2021 by sector and location

	Phnom Penh		Other provinces		Total
	Service	Industry	Service	Industry	
Raw materials and intermediate goods	29.2	35.8	27.2	40.4	33.3
Labour (salary, benefits etc.)	31.1	33.8	28.6	33.6	32.0
Land, building/office space	15.2	7.3	11.8	4.7	10.0
Utilities	10.1	6.4	11.1	8.4	8.9
Delivery and logistics	2.9	6.4	2.1	5.4	4.3
Machinery, equipment, and vehicles	3.7	4.5	3.3	2.3	3.5
Loan and interest	2.9	2.3	7.6	2.9	3.5
Training for employees	1.6	0.7	1.1	0.3	1.0
Others	2.2	1.6	2.9	1.6	2.0

Note: Average percentage was calculated based on different expenditure types in relation to the total expenses in 2021.

4.2.3. Understanding firm strategies

Innovation

As indicated in Figure 18, about 20% of surveyed firms introduced or developed new or improved products and/or services that were significantly different from their previous ones, and roughly 22% of firms introduced or implemented new processes. However, most firms did not introduce any innovation in the period considered (2019-2021). Among the 73 firms that had introduced or developed new products and/or services, more than 50% were small service firms, followed by large industry companies (about

25%), as shown in Figure 19. Out of the 81 firms that reported having implemented new processes, small service firms were again the largest share while only 17% of large firms in industry reported doing the same. Overall, service firms were the main innovators in both products and processes.

Figure 18: Share of firms introducing new products and/or implementing new processes (2019-2021)

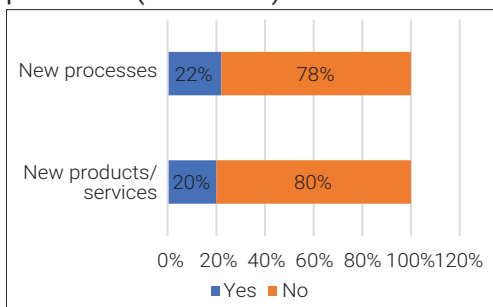
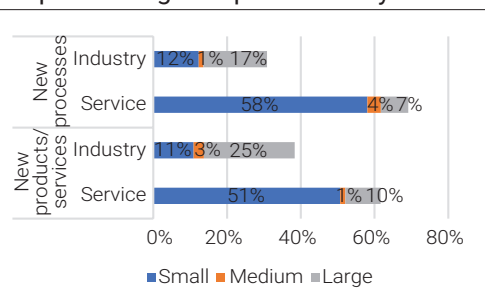


Figure 19: Share of firms introducing new products/services and/or implementing new processes by size



Note: 73 firms reported to have new products and/or services, and 81 firms claimed to have new processes.

As Figure 20 illustrates, not many firms in either macro-sector invested in innovation, and overall, industry firms invested less than those in services. Among the investors, new advanced machinery or equipment represented the largest target. In the service sector, the top three investment choices were new advanced machinery or equipment, market research and changes to marketing methods, and new methods of organising work responsibilities. For the industry sector, beyond new advanced machinery or equipment, more firms invested in purchase of intellectual property right and change to product design. A higher share of service firms invested in R&D and new software and applications.

Figure 20: Types of innovation investment in 2021 by sector

Type of investment	Service		Industry		Total	
	Yes	No	Yes	No	Yes	No
Research and development	12.9%	86.5%	10.9%	88.0%	11.9%	87.2%
New software/application	14.0%	85.4%	6.0%	94.0%	10.0%	89.7%
New advanced machinery or equi	39.3%	60.1%	33.9%	66.1%	36.6%	63.1%
Purchase of intellectual property ri	19.7%	78.7%	22.4%	77.0%	21.0%	77.9%
Changes to product or service des	19.7%	80.3%	12.6%	87.4%	16.1%	83.9%
Market research, changes to mark	37.6%	61.2%	8.2%	89.6%	22.9%	75.4%
New methods of organising work	24.7%	74.7%	12.0%	88.0%	18.4%	81.3%
New methods for accounting or	11.2%	86.5%	2.7%	97.3%	7.0%	91.9%
New methods of logistics, delivery	10.7%	87.1%	4.4%	95.1%	7.5%	91.1%

Note: The total for each item of the question is not 100% as a few firms chose "Don't know".

Figure 21 illustrates patterns of innovation investment by firm size. The shares of small and large firms were the highest for investments in new advanced machinery or equipment, while medium firms spent relatively more on the purchase of intellectual property rights. About 25% of small and medium firms invested in market research, marketing method, or advertising, while the share for large firms in the same category was about 17%.

Figure 21: Types of innovation investment in 2021 by size

Type of investment	Small		Medium		Large		Total
	Yes	No	Yes	No	Yes	No	
Research and development	8.0%	56.5%	0.8%	7.8%	3.0%	23.0%	99.2%
New software/application	6.9%	57.9%	0.3%	8.3%	2.8%	23.5%	99.7%
New advanced machinery or equipment	20.5%	44.3%	2.8%	5.8%	13.3%	13.0%	99.7%
Purchase of intellectual property rights	11.6%	52.6%	3.0%	5.5%	6.4%	19.7%	98.9%
Changes to product or service	11.4%	53.7%	0.8%	7.8%	3.9%	22.4%	100.0%
Market research, changes to marketing method, or advertising	16.1%	48.2%	2.2%	6.4%	4.4%	21.1%	98.3%
New methods of organising	10.5%	54.3%	1.7%	6.9%	6.1%	20.2%	99.7%
New methods for accounting	5.0%	59.0%	0.6%	8.0%	1.4%	24.9%	98.9%
New methods of logistics, distribution	4.4%	59.6%	0.6%	8.0%	2.5%	23.5%	98.6%

Note: The total for each item of the question is not 100% as a few firms chose "Don't know".

Figure 22: Types of innovation investment in 2021 by location

Type of investment	Phnom Penh		Other provinces		Total	
	Yes	No	Yes	No	Yes	No
Research and development	12.7%	86.8%	10.7%	87.9%	11.7%	87.4%
New software/application	12.3%	87.3%	6.7%	93.3%	9.5%	90.3%
New advanced machinery or equipment	38.7%	60.8%	33.6%	66.4%	36.1%	63.6%
Purchase of intellectual property rights	17.0%	81.1%	26.8%	73.2%	21.9%	77.1%
Changes to product or service	20.8%	79.2%	9.4%	90.6%	15.1%	84.9%
Market research, changes to marketing method, or advertising	25.0%	74.1%	19.5%	77.9%	22.2%	76.0%
New methods of organising	22.2%	77.4%	12.8%	87.2%	17.5%	82.3%
New methods for accounting	10.4%	87.7%	2.0%	98.0%	6.2%	92.9%
New methods of logistics, distribution	9.0%	88.7%	5.4%	94.6%	7.2%	91.7%

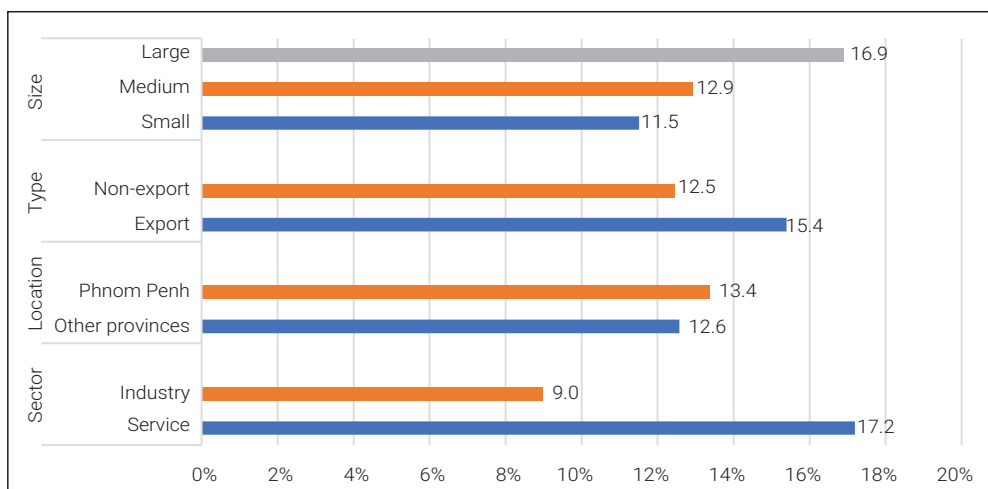
Note: The total for each item of the question is not 100% as a few firms chose "Don't know".

Figure 22 illustrates different types of innovation investment by location. Firms outside the capital invested mainly in new advanced machinery or equipment, purchase of intellectual property rights, and market research, marketing method change, and advertising while firms in the Phnom Penh region prioritised new methods of work organisation. Only about 2% of firms in other provinces invested in new accounting methods and administrative operations.

Skills development

Figure 23 presents average shares of employees participating in internal and/or external training in 2021. From the bottom, service firms had almost double the percentage of employees participating in training than industry firms. There is an insignificant difference between the capital and other provinces regarding the average percentage of employees partaking in training. As expected, when looking at firm type, export-oriented firms reported about 15% of employees in training, greater than that of non-exporters. Large firms had a larger percentage (about 17%) compared to SMEs. Overall, all surveyed firms had about 13% of employees who partook in internal and/or external training in 2021.

Figure 23: Average percentage of employees participating in training in 2021 by sector, location, type and size



Note: Two firms that did not reply the question were excluded from the calculation.

Figure 24 demonstrates the different skills that firms in both sectors indicated as required. The top five skills include marketing/customer relations/sale skills, foreign language skills, basic computer literacy/IT skills, human resource management, and communication skills. As pointed out clearly, service firms required more general skills, while industry firms reported a higher need for technical skills and occupational health and safety skills, as manufacturers are strictly dependent on production technology and technical aspects in the workplace. Language skills were also desired by industry firms as many are foreign-owned and employees are more likely to communicate in a second language. However, more industry firms reported that they had “no need” for particular skills relative to service firms. Overall, the share of firms having no current skills needs was about one third of the total sample size.

Figure 24: Firms' current skills needs by sector

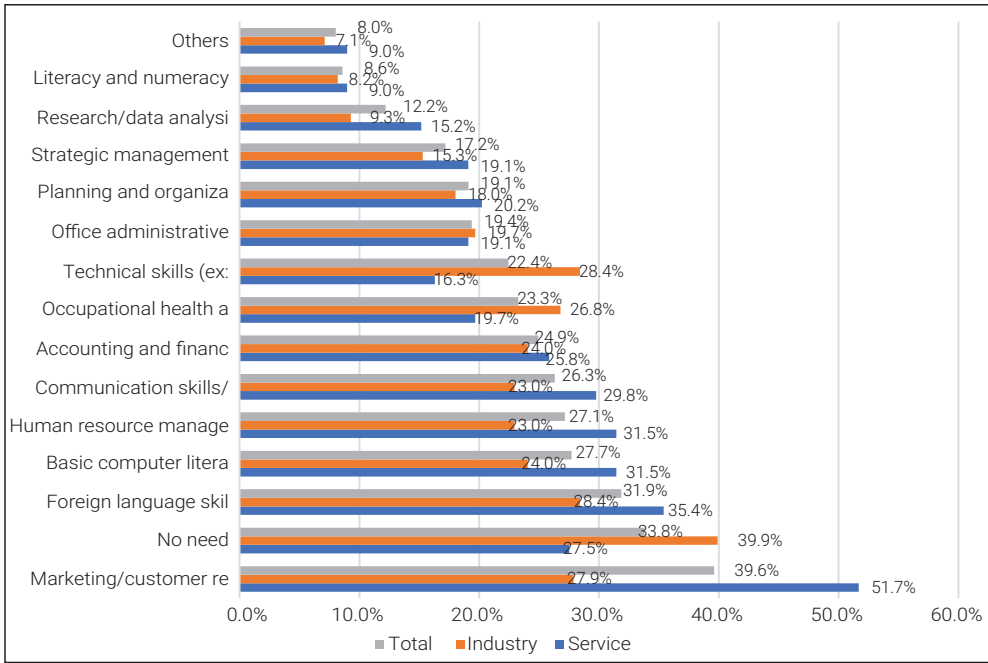
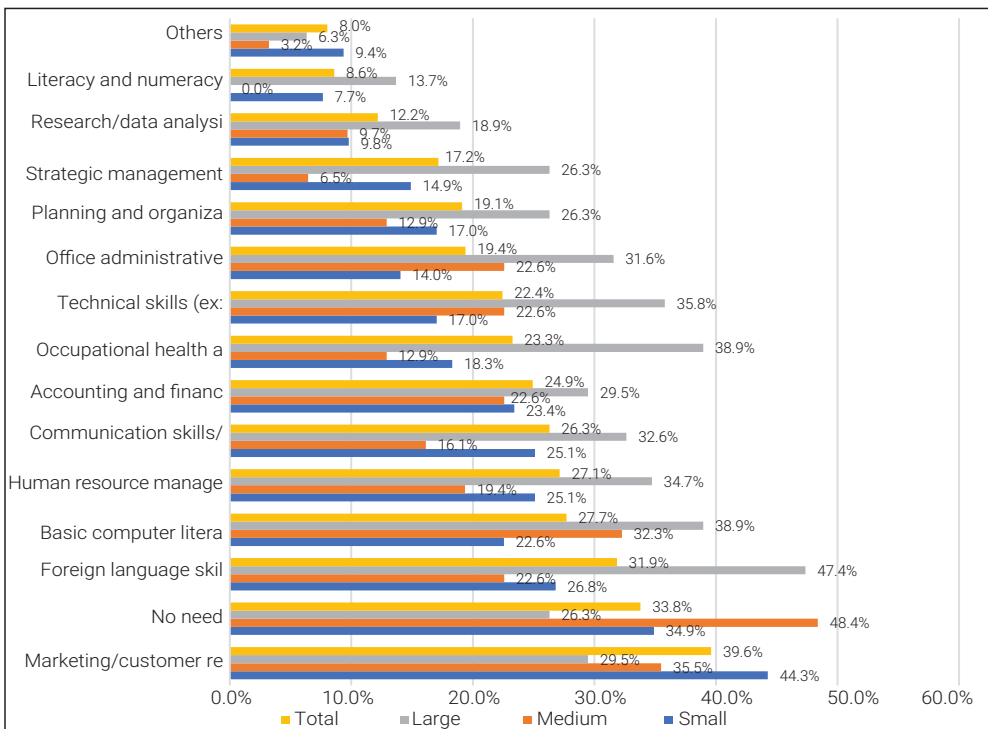
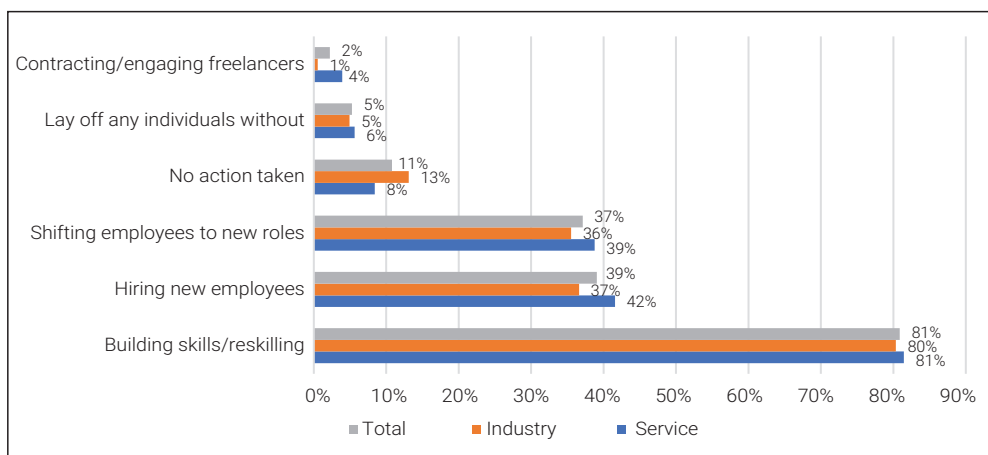


Figure 25: Firms' current skills needs by size



As Figure 25 shows, the top three most needed skills by small firms were marketing, customer relations, and sales skills, foreign language skills, and human resource management. Large firms, on the other hand, required foreign language skills, ICT skills, and occupational health and safety skills. Medium firms reported needing marketing, customer relations, and sales, ICT, and language skills. A shortage of language skills, occupational health and safety skills, and technical skills were more severe for large firms than for SMEs. In general, the latter reported having no current skills shortage more frequently than large firms. In addition, the share of skills needs for marketing, customer relations, and sales remained the highest among firms in both Phnom Penh and other provinces followed by the request for foreign language skills. Literacy and numeracy skills were in less demand by firms, and even less so for firms operating in the capital, possibly denoting a higher rate of literacy and numeracy in Phnom Penh than in the rest of the country. The need for occupational health and safety skills was higher in the provinces, and the demand for technical skills was similar in both locations. Firms reporting no skills needs were slightly more likely to be located outside of the capital.

Figure 26: Strategies/methods for solving potential skills gaps by sector

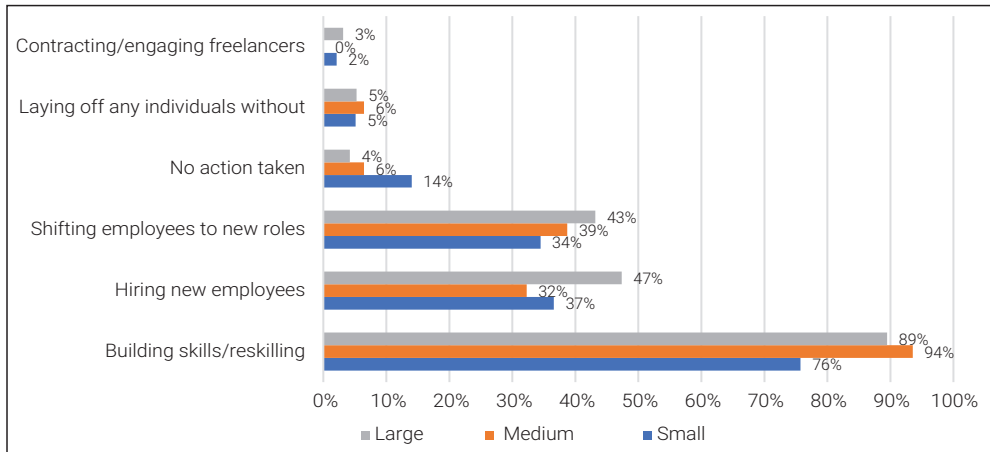


Note: About 1.7% of firms that answered "Others" and "Don't know" were not included in this figure.

As reported in Figure 26, firms used different strategies to solve their potential skills gaps. However, the most adopted strategy in both sectors was building skills or reskilling their employees. There were also two other popular methods to tackle skills gaps: hiring new employees and shifting employees to new roles. The adoption of these methods was similar in both service and industry firms. Very few firms opted for solving skills gaps by laying off individuals without the necessary skills, using freelancers, or outsourcing. This indicates that employing freelancers or outsourcing was not a popular form of dealing with a skills shortage. However, more informal, on-the-job, unstructured training and peer learning could be dominant, as indicated by the literature (Veung 2021; Veung and Ven 2021).

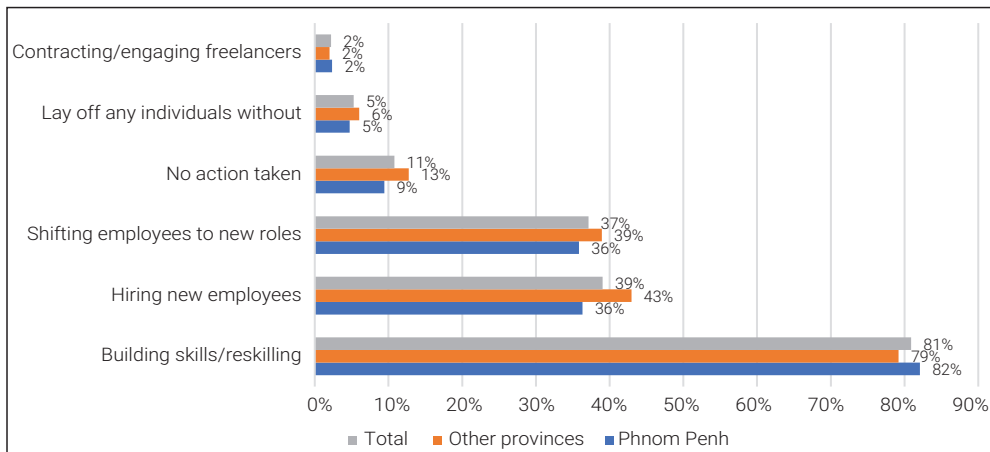
In Figure 27, medium-sized firms largely adopted building skills or reskilling employees compared to small and large firms. Large firms were more likely to hire new employees. Firms of all sizes had a similar pattern of shifting employees to new roles when facing potential skills gaps. As previously stated, all types and sizes of firms are less likely to lay off individuals without necessary skills.

Figure 27: Strategies/methods for solving potential skills gaps by size



Note: About 1.7% of firms that answered "Others" and "Don't know" were not included in this figure.

Figure 28: Strategies/methods for solving potential skills gaps by location



Note: About 1.7% of firms that answered "Others" and "Don't know" were not included in this figure.

Figure 28 indicates that a higher percentage of firms in other provinces would recruit new employees and shift employees to new roles for solving skills gaps. While similar percentages of firms would lay off employees without any skills or outsource work can be seen across geographical locations, building skills or reskilling employees was utilised by a higher percentage of firms in the capital.

Resilience under crisis contexts

Figure 29 indicates how firms managed their data under crisis. Using local computers to manage or store data was the most common method in both sectors followed by paper-based methods. Nonetheless, fewer firms in services than in industry used both data management methods. Cloud-based solutions of data storage and management were less preferred, and using multiple data centres was insignificant. In the capital, a larger percentage of firms were more likely to use local computers for data management than in the provinces while more firms in the provinces used paper-based forms of data management (Figure 30). The percentages of firms using local servers and cloud-based options for data management across locations were similar. Both figures demonstrate a low level of adopting advanced data storage and management methods across all types of firms and locations.

Figure 29: Data management by sector

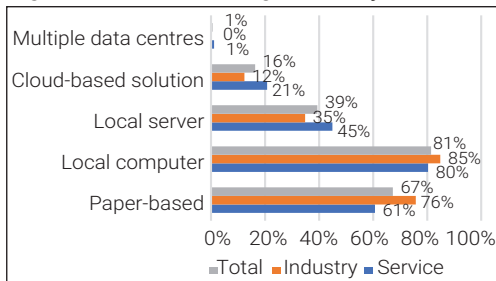


Figure 30: Data management by location

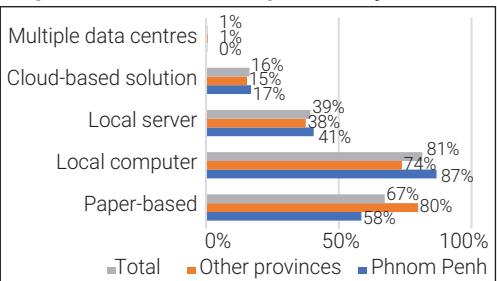
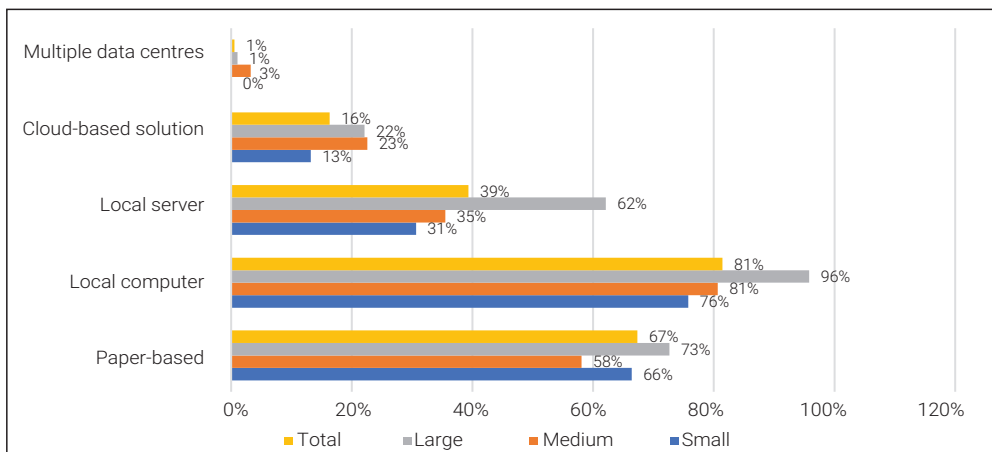


Figure 31: Data management by size



As further indicated by Figure 31, using local computers for data management was the most commonly used method for firms of all sizes, and large firms managed data more through a paper-based format than compared to SMEs. Local servers were also the most popular form of data management for large firms. Regardless of sector,

location, and size of firm, multiple data centres were the least used method of data management, followed by cloud-based solutions. From this data, it would seem that highly advanced methods of data management may not be needed by firms due to their current type of activities and technical features.

Figure 32: Alternative worksite for employees by sector, location and size

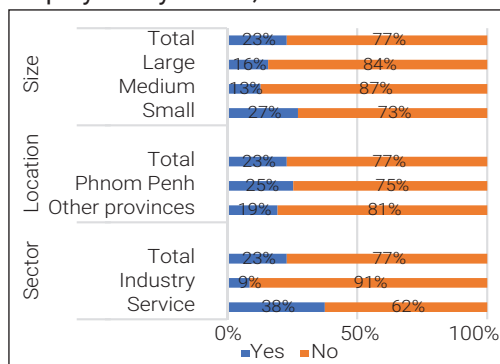


Figure 33: Availability of technology resources by sector, location and size

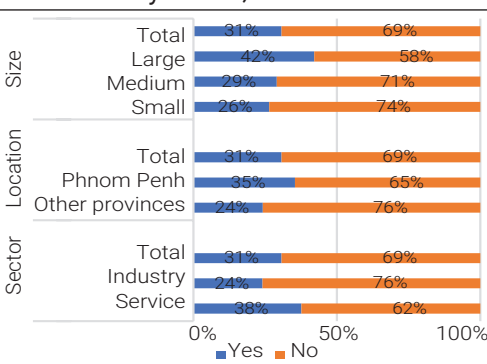
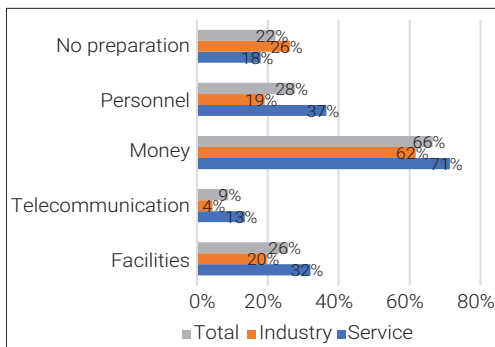


Figure 32 shows the share of firms that had an alternative worksite for employees when the current workplace could not be accessed. Only about 23% of firms in both sectors reported to have such alternative worksites; with a smaller share (9%) in industry relative to services, and with firms in the capital having relatively more alternative worksites. As illustrated by Figure 32, small firms had the largest percentage of firms reporting access to alternative worksites. Regardless of sector, location, and size, most firms in the sample were not in a position to prepare or had access to alternative worksites for employees in case employees could not access the main workplace.

Figure 33 indicates that about 31% of firms reported having technologic resources available for employees to work remotely with a higher percentage of firms in services reporting to provide these services. As anticipated, more firms in the capital reported having such resources than firms in other provinces, and the biggest percentage was held by large firms.

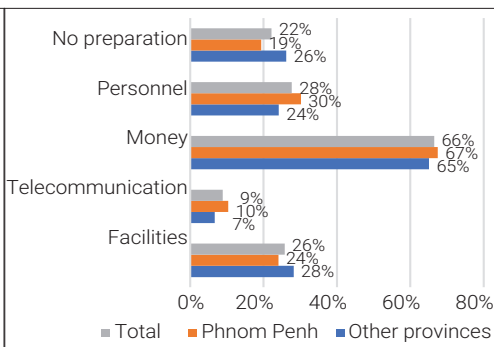
Figure 34 illustrates what firms did to prepare for crises. Most preferred to reserve money and prepare personnel, but not many of them had a defined plan. A larger percentage of service firms had strategies to prepare personnel and facilities for crises, and a significant percentage of large firms were reserving financial resources. Firms in the capital and in the other provinces reported at similar levels that they allocated money as a plan for a crisis (see Figure 35), while more firms in the capital reported to have prepared personnel. As Figure 36 shows, large firms had the largest percentage of firms that prepared for crises through money, personnel, and facilities. The majority of surveyed firms did not focus on preparing telecommunication for crises (see also Figure 34 and Figure 35).

Figure 34: Preparation plan for crisis by sector



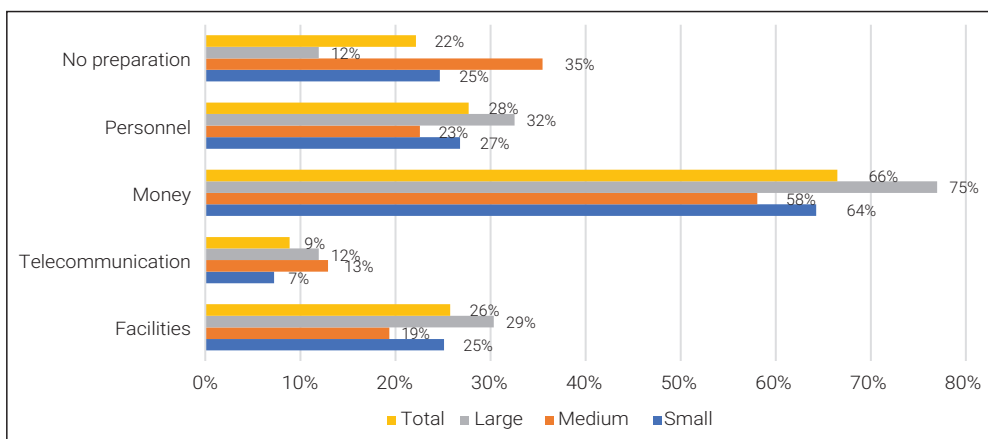
Note: 31 firms that chose "Don't know" and "Others" were excluded from the figure. Multiple answers were allowed.

Figure 35: Preparation plan for crisis by location



Note: 31 firms that chose "Don't know" and "Others" were excluded from the figure. Multiple answers were allowed.

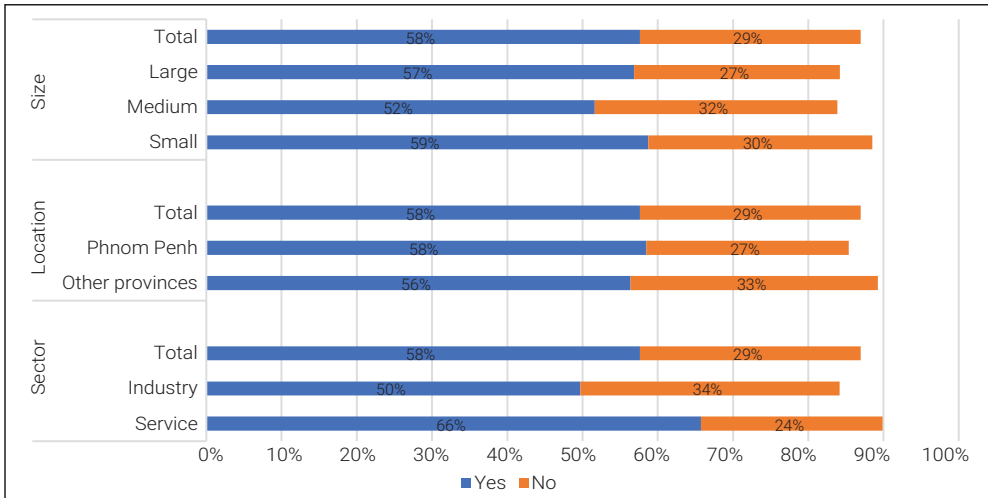
Figure 36: Preparation for crisis by size



Note: 31 firms that chose "Don't know" and "Others" were excluded from the figure. Multiple answers were allowed.

As Figure 37 illustrates, more than half of the surveyed firms in both macro-sectors planned for financial resilience for future crises. In this regard, there were more service firms that had such plans than industry firms. Financial resilience did not show significant difference with respect to location; small firms showed the largest share reporting to have financial resilience plans, followed by the large firms.

Figure 37: Share of firms having plans for financial resilience for future crises by sector, location and size

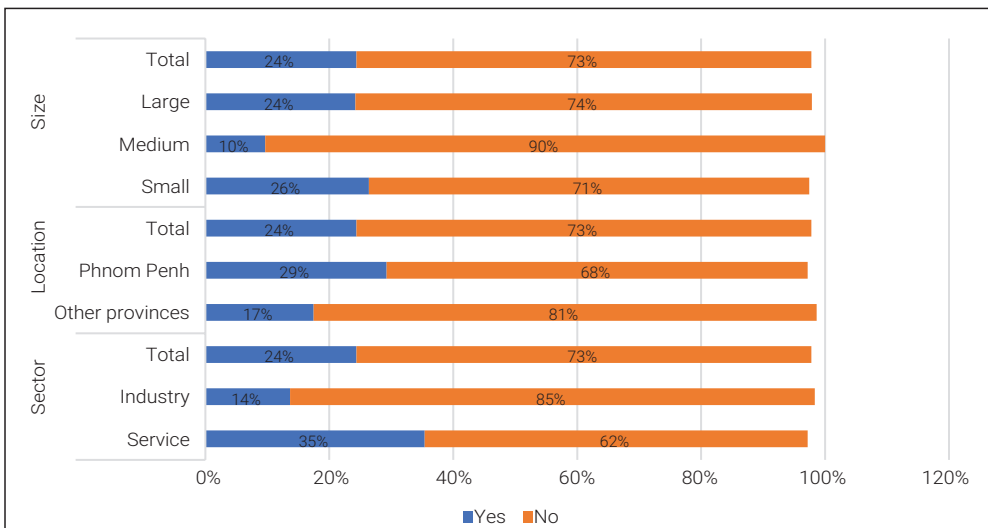


Note: 47 firms that answered "Don't know" were not included in this figure.

Diversification strategies for crisis times

Figure 38 shows the distribution of firms that reported to have diversification strategies for times of crisis. Most firms had no such diversification plans. Only about 24% of firms responded positively to whether they had diversification plans with a larger proportion in services and in the capital city. Medium firms were less likely to report to have such strategies for crises compared to large and especially small firms.

Figure 38: Share of firms having diversification strategies for crisis times by sector, location and size

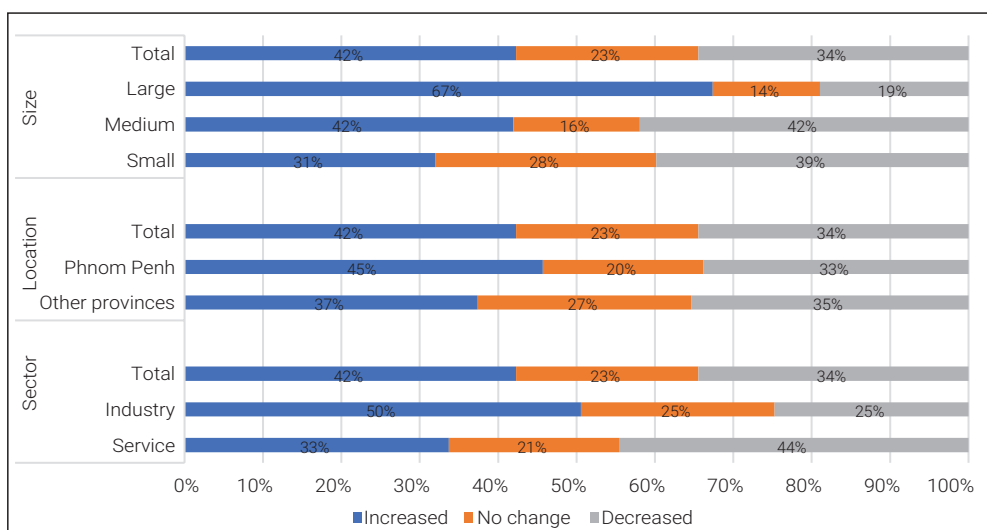


Note: 8 firms that reported "Don't know" were excluded from this figure.

4.3. Investigating the impact of Covid-19 on firm performance

Figure 39 presents the perceived change in firms' total costs due to the Covid-19 outbreak. About 42% of the total number of firms felt their costs increased while 34% of firms reported decreased expenses and 23% of firms reported no cost change. Among the firms that reported increased costs, large manufacturers were the highest percentage, followed by small service firms. For firms declaring decreased costs, small service firms had the highest percentage in relation to other firms. About 45% of firms in the capital reported increased costs during Covid-19, and roughly 37% of firms operating in other provinces reported the same. Overall, the pandemic had disrupted many business operations and transactions, so maintaining normal business was generally perceived as costly.

Figure 39: Share of firms reporting change in their total costs due to the Covid-19 outbreak by sector, location and size



Note: 8 firms that answered "Don't know" and "Refuse to answer" were not included in this figure.

Unsurprisingly, most firms reported negative impacts of Covid-19 pandemic on their businesses (Figure 40). In Phnom Penh, more firms operating in industry negatively experienced the impacts (19% completely negative and 70% mostly negative), while firms in services were slightly less affected (17% completely negative and 64% mostly negative). By contrast, a larger proportion of firms in the service sector in other provinces faced the disruptive impact (22% completely negative and 65% mostly negative) than those in the industrial sector (10% completely negative and 72% mostly negative). In terms of firm size, more large manufacturers were negatively affected by Covid-19 than other firm sizes in the same sector (Figure 41). However, a greater percentage of service SMEs experienced disruption since the service sector, especially tourism, was strongly impacted by Covid-19 due to travel restrictions, lockdowns, and other public health measures.

Figure 40: Covid-19 impacts on businesses by sector and location

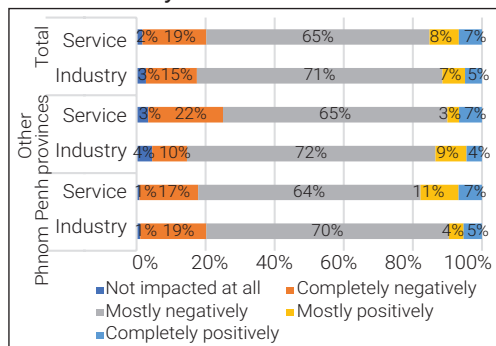


Figure 41: Covid-19 impacts on businesses by sector and firm size

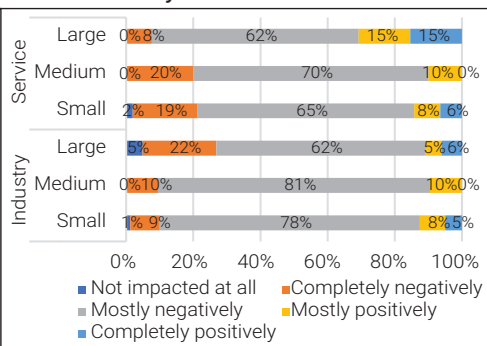
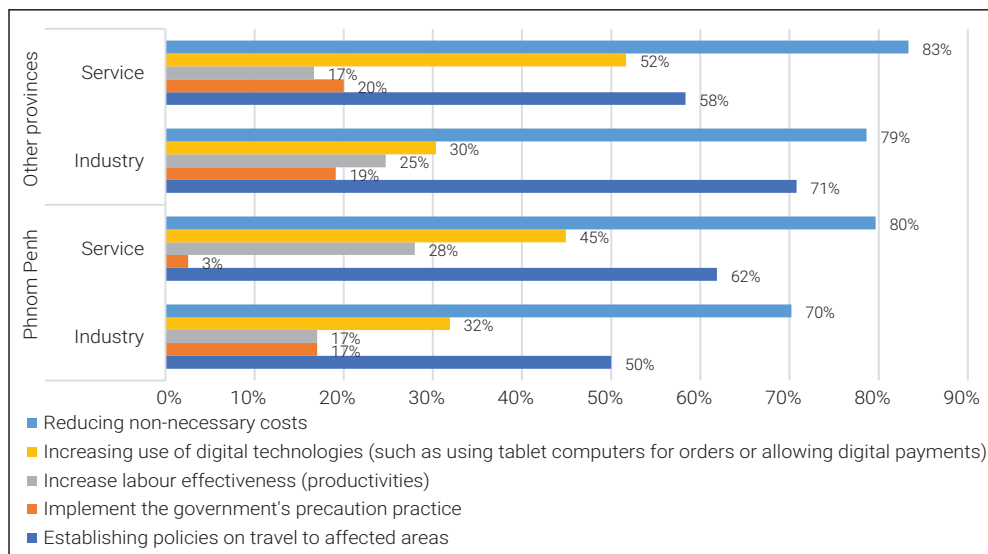


Figure 42: Coping strategies in response to Covid-19 adopted by firms



Across sectors and regions, reducing unnecessary costs, establishing policies on travelling to affected areas, and increasing the use of digital technologies were among the top three actions implemented by firms to cope with Covid-19 (Figure 42). Interestingly, a larger proportion of firms in the service sector (45% in Phnom Penh and 52% in the rest of the country) than in the industry sector (32% and 30% respectively) adopted digital technologies to maintain their business operations during the pandemic.

4.4. Examining external factors influencing firm performance

4.4.1. Regulatory factors: legislation, regulation, and transparency

According to the 2005 Law on Commercial Enterprises, most surveyed firms needed to obtain business-related certificates in the last two years (Figure 43). The patent tax certificate was obtained by more than 90% of firms in the sample. The proportion of firms obtaining this kind of certificate was relatively similar across all regions. Firms were asked how they obtained the documents with most of them having processed the certificates by themselves or through agency (Figure 44). The online platform for form submission did not appear popular in either the capital or the rest of the country. In fact, only 6.7% of total firms declared using the online portal to apply for a patent tax certificate while only 2.7% of surveyed firms reported asking for a certificate of incorporation online. The top three reasons given for not using the online business registration system were: applying for documents in person is easier (52%), not being aware of the portal (26%), and not being sure whether the system is for their businesses (19%).

Figure 43: Share of firms obtaining business related documents in the last 2 years

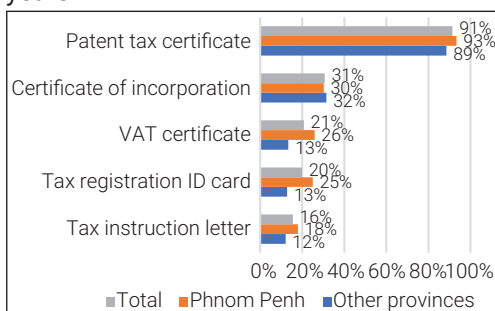
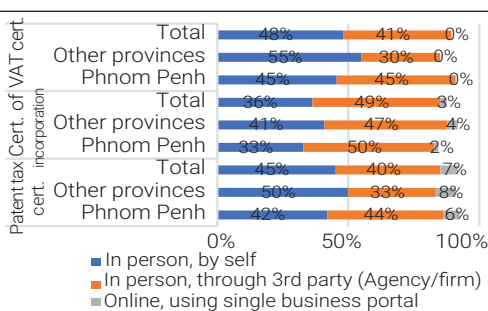


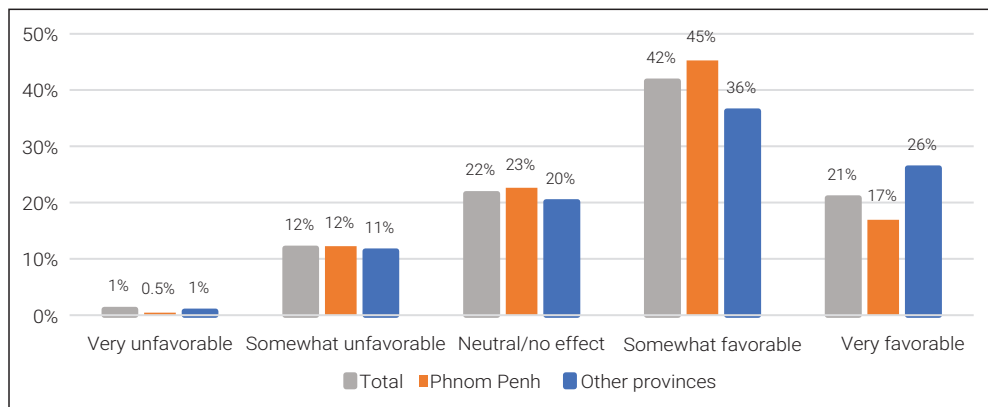
Figure 44: Channels firms experienced obtaining certificates



Note: Some firm respondents chose "Don't know" (26/330 firms for Patent tax certificate, 14/113 firms for Certificate of incorporation, and 8/75 firms for VAT certificate).

Regulations have greatly affected business operations and performance in positive and negative ways. The surveyed firms were asked to rate to what extent they think the current legal framework and regulations are or are not favourable to their business (Figure 45). Taking into account the small sample size and some geographical differences in the perceptions, more than 60% of firms reported that current frameworks and regulations were favourable or somewhat favourable, and roughly 12% of firms said that the regulations were somewhat unfavourable to them.

Figure 45: Firms’ perceptions of current legal framework in Cambodia



Firms were further asked about the level of transparency in the regulatory system. Overall, more than 60% of firms asserted that the system was somewhat transparent, and around 20% of firms indicated that the regulatory system was very transparent. In contrast, about 10% of firms think that the system was not transparent. Geographically, a larger proportion of firms in Phnom Penh (13%) perceived that the system was not transparent compared to firms in other provinces (9%). Firms were further asked to which extent the infringement of intellectual property rights (IPR) was an obstacle to their operations and performance (Figure 46). More firms in Phnom Penh perceived that the infringement of IPR was a major obstacle compared to the rest of the country. Interestingly, more service firms, regardless of their size, perceived IPR infringement as a major obstacle for them than industry firms (Figure 47).

Figure 46: Perception of firms of infringement of IPR by location

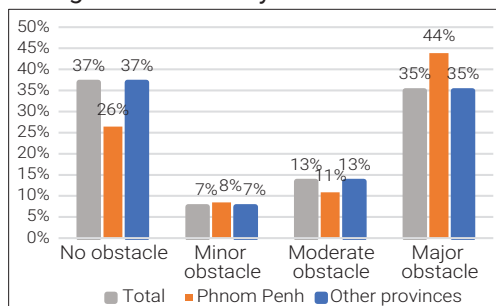
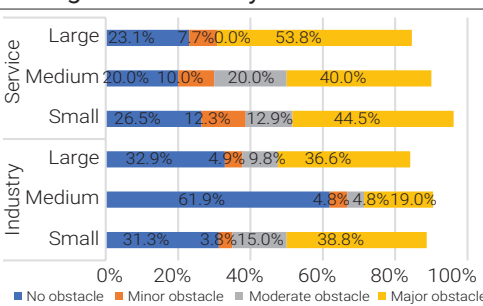


Figure 47: Perception of firms of infringement of IPR by sector and firm size



Note: The total for each item of the question is not 100% as some firms chose "Not applicable".

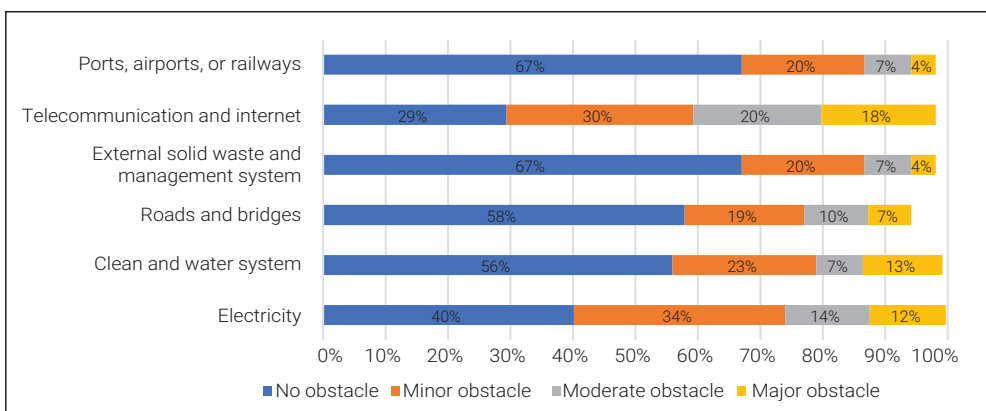
The surveyed firms also showed positive perceptions on the Cambodian regulatory system and the work of government both at national and sub-national levels in support of their business. The regulation framework and procedures relevant to business registration were also seen favourably, as about 80% of firms reported

that the regulations were implemented consistently and predictably and that the business registration procedure was simple. Overall, trust was vital amidst critical events such as Covid-19 and it plays a key role in inducing businesses to adopt policy recommendations and initiatives.

4.4.2. Infrastructure

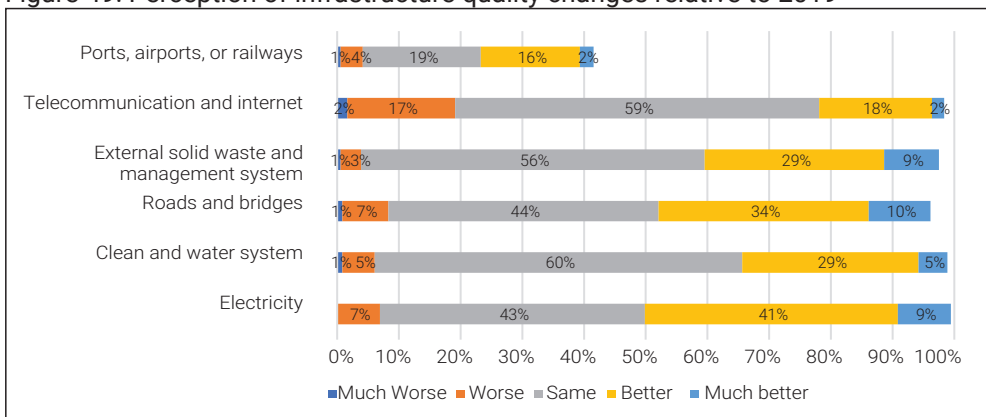
Although most firms indicated that there were no obstacles or minor obstacles to their current operations due to basic infrastructure, there is clearly room for improvements to different types of infrastructure (Figure 48). Almost 70% of the total firms perceived that telecommunication and internet access represented an obstacle (either minor or major), and around 60% and 43% of firms indicated the same for electricity and clean water system, respectively. Other infrastructure, such as roads and bridges, external solid waste and management systems, and ports, airports, or railways, was also identified as obstacles to some extent.

Figure 48: Firms' perceptions of obstacles to the current operations



Note: The total for each item of the question is not 100% as some firms chose "Don't know".

Figure 49: Perception of infrastructure quality changes relative to 2019



Note: The total for each item of the question is not 100% as some firms chose "Not applicable".

The questionnaire also asked firms to compare the quality of infrastructure today with that of 2019 (Figure 49). For most infrastructural areas (particularly, but not exclusively, telecommunication and internet) the quality is perceived to have remained the same or to have worsened.

4.4.3. Business networks

About 30% of total firms were members of a business network or association (Figure 50). In general, firms in the industry sector had more extensive business networks than firms operating in services. As expected, industry firms gained advantages from their networks or associations (Figure 51). They mainly received information about changes in government policies and legislation as well as benefitting from working together to solve common problems and receiving training or technical support. This reflects the fact that, in line with the literature, business associations play a very important role in the private sector to establish linkages for production, innovation, and technology while also providing guidance on government legislation and policy.

Figure 50: Share of firms being a member of business network/association

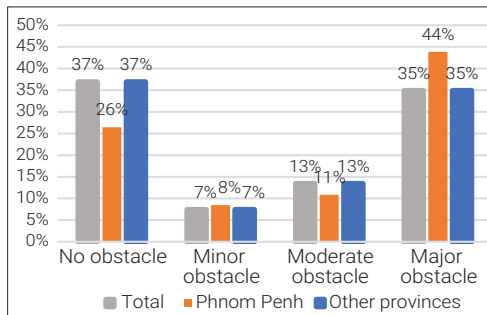
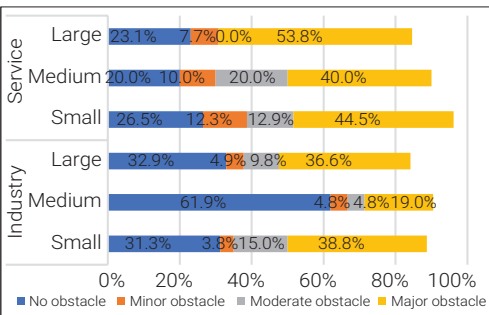
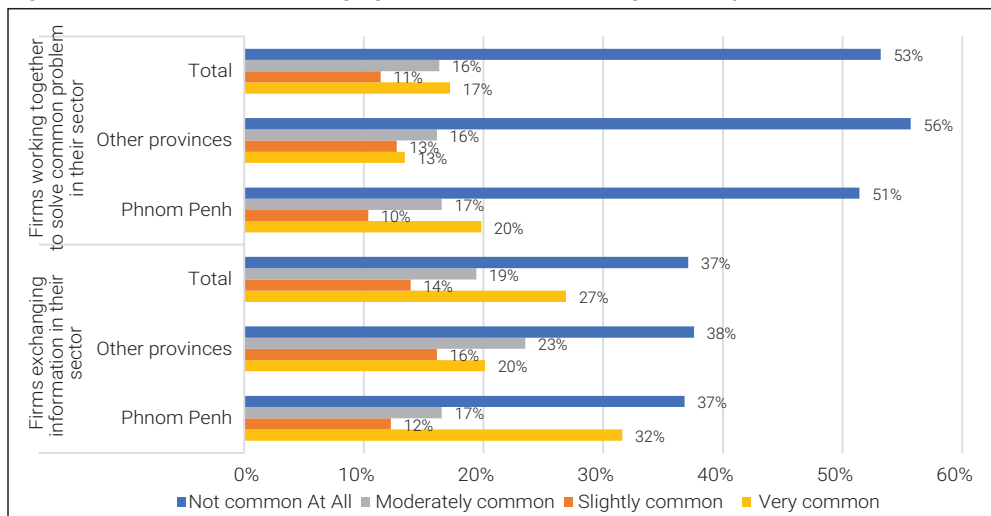


Figure 51: Benefits receiving from business network/association



Note: Only 111 firms replied this question.

Figure 52: Share of firms exchanging information and working to solve problems in their sector



Beyond formal business networks, firms were also found to use other channels to exchange information and address common problems in their sectors (Figure 52). Notably, it is not common for all firms to exchange market information and to work together to solve problems in their sectors. Geographically, firms in Phnom Penh seem to be more inclined to establish links and use their networks to exchange information and work collectively to solve bottlenecks than firms in other provinces.

4.4.4. Access to finance

The findings reveal that about 49% of firms were using e-banking tools. Again, the proportion of users of e-banking in Phnom Penh was larger than in other provinces (55% of firms in Phnom Penh versus 42% of firms in other provinces shown in Figure 53). Looking at firm size, larger firms across both regions used the online banking system for their transactions (Figure 54). Less than 40% of SMEs in other provinces utilised e-banking indicating the need for improvement in the digitalisation of the banking sector and how it can benefit smaller companies.

Figure 53: Share of firms using e-banking by sector

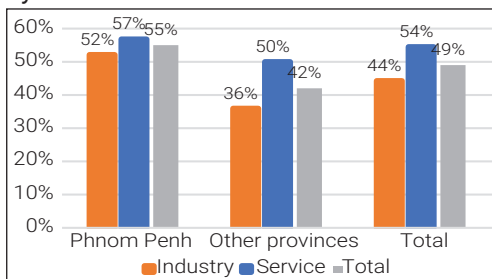


Figure 54: Share of firms using e-banking by firm size

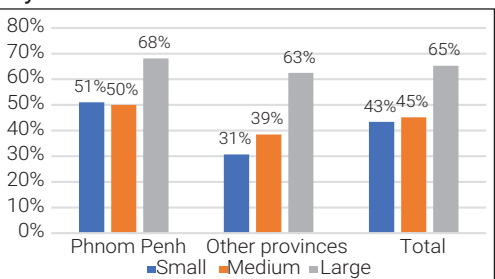


Figure 55: Share of firms having loan with banks/financial institutions by sector and location

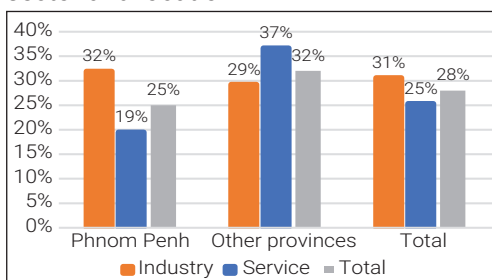
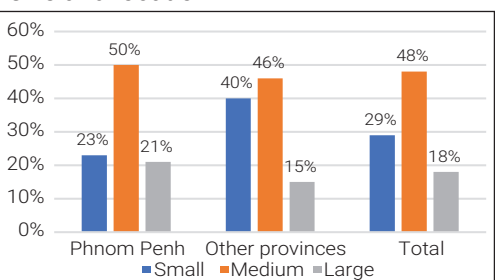


Figure 56: Share of firms having a loan with banks/financial institutions by firm size and location

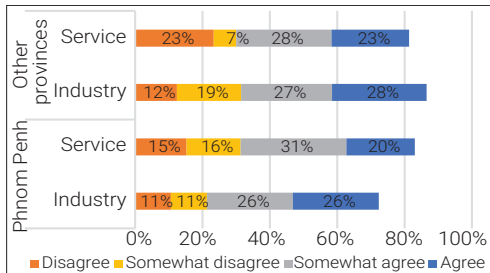


At the time of the survey, about 28% of the total firms had a loan from a bank or financial institute, as shown in Figure 55. At the aggregated level, more firms in the industry sector took loans than those operating in the service sector. Interestingly, firms in other provinces (32%) took more loans than firms based in Phnom Penh (25%),

particularly in services, and slightly more firms in the industrial sector in the capital took loans. In terms of firm size, approximately 48% of medium firms took loans, which was the highest share of all firms (Figure 56).

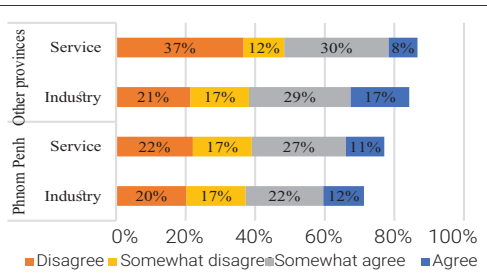
The perceptions of access to financing through banks and credit institutions are presented in Figure 57 and Figure 58. Compared to firms in Phnom Penh (51%), a slightly larger proportion of those in other provinces (54%) thought that lending procedures were complicated. Furthermore, 36% of firms in Phnom Penh, compared to 43% of firms in other provinces addressed that credit conditions are unfavourable to their businesses. Notwithstanding location, 50% of firms in both sectors reported complicated lending procedures as a barrier to accessing financing through banks and credit institutions. In services, both within and outside of Phnom Penh have a similar percentage (38%) reporting to face unfavourable credit conditions. Notably, a larger share of industrial firms operating outside the capital also agreed or somewhat agreed to facing unfavourable credit conditions (46% in other provinces and 34% in Phnom enh).

Figure 57: Lending procedures are very complicated



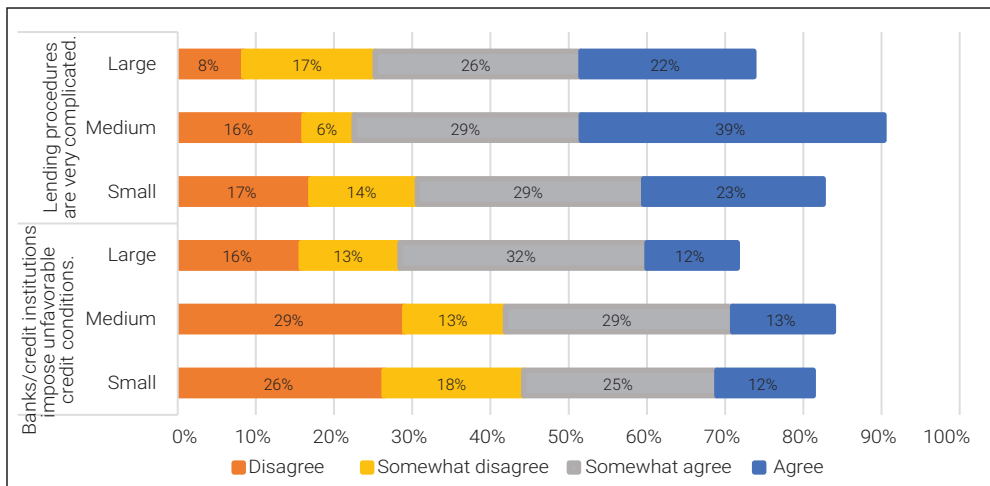
Note: 69 firms said they don't know about this statement.

Figure 58: Banks and credit institutions impose unfavourable credit conditions to businesses



Note: 76 firms said they don't know about this statement.

Figure 59: Perception of firms regarding access to finance by firm size



Note: 69 firms said they don't know about the first statement and other 76 firms said they don't know about the second statement.

Compared to large firms (48%), a much larger percentage of medium (68%) and small firms (52%) reported cumbersome lending procedures as barriers (Figure 59). Furthermore, similar percentages of firms of all three sizes included in this study thought that the credit remain unfavourable to their businesses.

Firms identified some alternative sources of financing if they could not access a loan from banks or financial institutions (see Figure 60) with a large percentage of firms that chose this route (about 43%) stated they could borrow money from their relatives or friends. Industrial firms chose to take loans from their relatives or friends as their first choice (51% in Phnom Penh and 46% in other provinces), while a smaller percentage of firms in the service sector reported taking this option (36% in Phnom Penh and 38% in other provinces). Besides taking loans from relatives or friends, firms in the service sector in other provinces were also likely to sell their assets to gain financing.

Figure 60: Expected alternative loan sources by location and sector

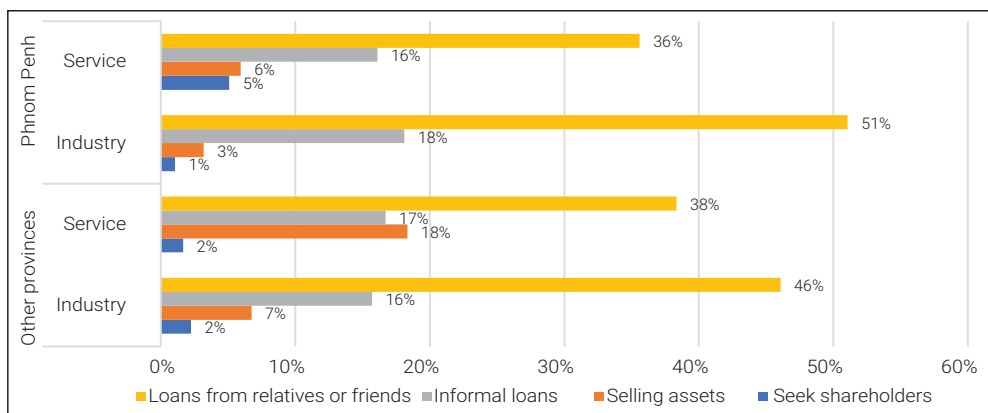
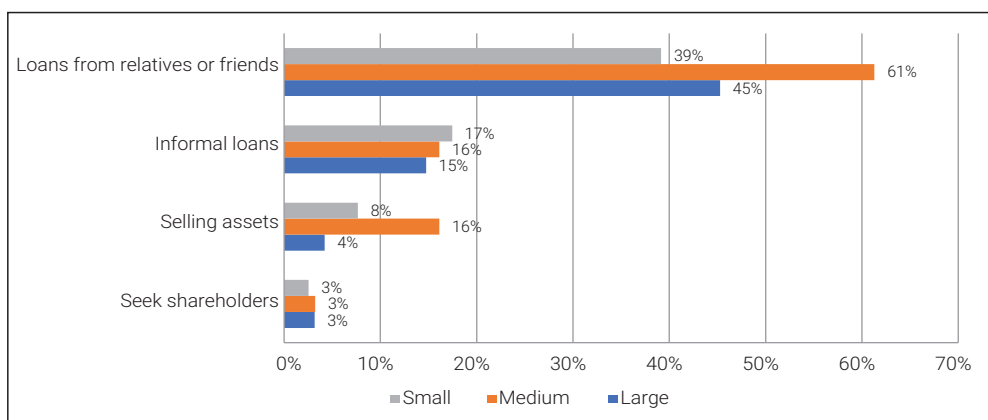


Figure 61: Alternative loan sources by firm size



As shown in Figure 61, more medium and large firms borrowed money from their relatives or friends than small firms. Taking loans from informal lenders is among the top three choices for firms of all sizes, and a small proportion of firms would sell assets and seek shareholders to increase their capital.

5. Concluding summary and recommendations

This study aimed at describing the internal and external factors affecting Cambodian firms' recent growth and performance in a period of high instability due to the Covid-19 pandemic and other risky global conditions. This study utilised original data collected from a firm survey in order to consider firms' recent performance in terms of profits, revenues, expenditures, and employment to give a sense of the disruptions brought about by the Covid-19 pandemic. Unsurprisingly, most surveyed firms, and especially firms in the service sector, reported low profits and revenues while recording an increase in total expenditures. Small firms in both industry and service sectors were especially likely to have higher decreases in profits and revenues, and more firms in the capital declared contractions in their profits. While in the capital, employment increased slightly in the service sector and increased sharply in the industry sector, employment dropped dramatically in provinces outside of Phnom Penh. The differential experiences of firm inside and outside of Phnom Penh call for a territorial approach to business support – also relevant outside of the pandemic crisis – with more emphasis on the specificities of the economic structure and composition across the different provinces.

Expenditures on raw materials and intermediate goods and labour were found to be the highest in firms across all sectors and sizes. Although expenditure on utilities was the fourth highest contributor to total expenses, high prices and instability of the electricity supply for production were a common point of complaints across firms. Notably, most firms spent very little on employee training across sectors, locations, and sizes, which contrasts with the fact that the firms indicated most of their employees did not finish grade 12 or were illiterate. The low level of investment in employee training is likely to be behind losses of productivity and firm performance. In the long run, it is imperative to devise a policy scheme adequately addressing the challenges of upgrading skills, reskilling, and developing human capital in the business sector more broadly. Regarding skills indicated by firms as required for employees, generic skills like marketing, customer relations, sales, foreign language, and ICT skills were the most urgent. As expected, some differences in skills needs were found between sectors with industry firms requiring relatively more technical (hard) skills along with occupational health and safety skills. The study also found that, despite the lack of investment in training, most surveyed firms stated that they prefer to deal with skills gaps by building capacities internally or reskilling their employees instead of exercising options like hiring new employees or shifting employees to new roles. Almost no respondents reported contracting freelancers or outsourcing work to external workers.

Regarding the level of innovation and investment, which is the main engine of socio-economic development and business growth, only a small number of surveyed firms had introduced or developed new products and services or had introduced new processes between 2019 and 2021. However, among the firms that had reported such activities, small firms represented the largest percentage. Relatedly, not many firms invested in research and development. Instead, the majority invested more in new advanced machinery or equipment (particularly in industry) and market research, marketing methods, and advertising (especially in the service sector). Overall, the small percentage of firms investing in innovative activities across sectors, sizes, and locations reflects the fact that the capacity for innovation is rather weak across the business sector more generally, which corresponds with the scarce attention to upgrading and renewing employees' skills and capabilities.

As business enterprises enter the digital era around the world, they need to adopt different methods of data management. Respondent firms in both sectors were most likely to manage data in their local computers as well as in paper-based formats. Few firms stated that they had local servers or cloud-based solutions for data management. Additionally, more firms in the capital used local computers, servers, and cloud-based solutions than those in other provinces. This indicates that the adoption of highly advanced data management solutions is generally low, particularly outside of Phnom Penh, suggesting that investment in soft infrastructure is needed and, as also argued below, needs to be met by applying different strategies on the various subnational regions.

In a changing world characterised by high uncertainty, preparation or planning for crises is of critical importance. However, among the surveyed firms, preparation of alternative worksites and/or technological resources for unexpected events were relatively low across sectors, locations, and sizes. Service firms, small firms, or firms in the capital demonstrated more planning. Saving financial resources for crisis management was the most common option followed by developing personnel and acquiring additional facilities. In fact, regarding planning for financial resilience, the study found that more than half of firms reported to have such plans, especially among small and large firms.

Diversification strategies are very common among firms not only during crises but also as general tools for growth and competitiveness. Yet, the study found that most respondents did not have such strategies. Firms in the capital showed a slightly lower propensity to engage in diversification plans for the management of crises. However, the sample stratification in only two macro-sectors implemented in the survey does not allow further exploration of this crucial dimension. Considering how businesses adopt these strategies would be a fruitful area of future research.

As seen in the literature discussed above, the enabling conditions of the external business environment can significantly affect firms' performance and growth. The business environment in this study is captured by four key dimensions, including

regulatory factors, infrastructure, business networking, and access to financing. Firms' perception of each of the four key areas was investigated in this study.

The study highlighted that the use of online platforms for business registration is still very limited. Interestingly, a larger proportion of firms in Phnom Penh perceived that the system was not transparent. It is worth noting that the Online Business Registration System was introduced in June 2020 by the Cambodian government in order to reduce bureaucratic bottlenecks and to make the registration process easier and faster. It is thus very important for the government and other stakeholders, particularly business and industry groups, to encourage the use of this platform more widely through increased advertising and providing technical support. Furthermore, infringement of IPR is considered a major obstacle for a large percentage of respondent firms. IPR enforcement is an essential asset for innovative businesses helping to distinguish firms' new products and protecting their research and innovation investment in the long run. More firms in the capital, particularly those operating in services, perceived that the infringement of IPR was a major obstacle to their operations. It is thus very important to strengthen IPR regulations and align them with international standards while simultaneously increasing public awareness against counterfeiting.

Regarding infrastructure, a large percentage of respondents perceived that telecommunication and internet networks were a particularly significant obstacle to their activities, which was felt even more outside the capital. Notably, this finding is in line with the 2022 notification from the Ministry of Post and Telecommunications indicating that some areas of telecommunication in the country have not significantly improved, particularly with regard to the quality of mobile and internet services. In a context of rapid digitalisation of the global economy, public (or private-public) investments for the development of soft infrastructure – especially in provinces outside Phnom Penh – are urgently needed. On the other hand, electricity and water supply systems have been significantly improved over the last decade. According to the World Bank enterprise survey in 2016, electricity was becoming increasingly reliable compared to 2013, and the country performed better than average among lower-middle-income countries.

Regardless of location, firms in the industrial sector were more engaged in formal business networks than service firms. Industry firms gained the most advantage through their networks by obtaining information about changes in government policies or legislation, collaborating to solve common problems, and sharing training or technical support. Not surprisingly, firms located in Phnom Penh seemed to be more prone to establishing links and using their networks to exchange information, cooperate to solve bottlenecks, and use services such as e-banking likely due to agglomeration economies and externalities. Overall, however, inter-firm connections are still rather sparse demonstrating the weakness of both the national and the regional systems of innovation. Strengthening and creating industry and region-based actors – such as regional development agencies, industry associations, and intermediary brokers, like

technology transfer offices – are paramount to encouraging firms to engage with each other and to generate positive externalities.

Finally, access to finance is a critical pre-condition for firms to be able to enhance their productivity, innovation, and research and development. In line with the Cambodian governmental policy aimed at promoting electronic and digital banking through the Financial Inclusion Strategy 2019-2025, firms were also asked whether they used e-banking for their operations and transactions. Consistent with the findings showing the weaknesses of the ICT system and infrastructure, firms were not commonly using e-banking in their operations, particularly in provinces outside Phnom Penh. Trust, awareness, high-quality service, and security are among the critical factors that need to be improved in order to increase e-banking adoption.

Furthermore, a relatively high percentage of surveyed firms outside of the capital, particularly SMEs, was more inclined to assess lending procedures as complicated and credit conditions as unfavourable to their businesses. Most firms would borrow money from relatives and friends if they could not access financing from banks and/or credit institutions. These findings are consistent with the UNESCAP (2022) study showing that 66% of SMEs identified access to financing as a challenge. The challenges observed included an absence of collateral, like land and buildings, high interest rates, and a lack of information on sources of financing. Therefore, a business financial inclusion strategy needs to be extensively implemented throughout the country, particularly in peripheral areas, while simultaneously strengthening the ICT infrastructure. It is worth noting that the government recently established short-term solutions to help SMEs lacking collateral amidst the Covid-19 pandemic through the 'Credit Guarantee Schemes' and the Participating Financial Institutions (PFIs). Moving forward, such tools should be assessed for efficiency and be considered for long-term and nation-wide expansion of their scope to ensure financial inclusion of businesses operating in all Cambodian regions.

References

- Abbas, Jaffar, Saqlain Raza, Mohammad Nurunnabi, Mohd Sobri Minai, and Shaher Bano. 2019. "The Impact of Entrepreneurial Business Networks on Firms' Performance through a Mediating Role of Dynamic Capabilities." *Sustainability* 11 (11): 3006.
- Acs, Zoltan J., and Nicola Virgill. 2010. "Entrepreneurship in Developing Countries." In *Handbook of Entrepreneurship Research: An Interdisciplinary Survey and Introduction*, edited by Zoltan J. Acs and David B. Audretsch, 485–515. International Handbook Series on Entrepreneurship. New York, NY: Springer. https://doi.org/10.1007/978-1-4419-1191-9_18.
- Asia Vision Institute. 2021. "An Assessment of Impacts of COVID-19 on Micro, Small, and Medium Enterprises and Employees in the Tourism Sector in Cambodia." Phnom Penh, Cambodia: Asia Vision Institute. <https://drive.google.com/file/d/134PjhllsJ8QkuaVbchEKBqi5iDhPEJOf/view>.
- Audretsch, David B. 1997. "Technological Regimes, Industrial Demography and the Evolution of Industrial Structures." *Industrial and Corporate Change* 6 (1): 49–82. <https://doi.org/10.1093/icc/6.1.49>.
- Baily, Peter. 2008. "Cambodian Small and Medium Sized: Enterprises: Constraints, Policies and Proposals for Their Development." In *SME in Asia and Globalization*, edited by H Lim, 1–36. ERIA. <http://www.eria.org/Cambodian%20Small%20and%20Medium%20sized%20Enterprise%20Constraints%20Policies%20and%20Proposals%20for%20their%20Development.pdf>.
- Bardasi, Elena, Shwetlena Sabarwal, and Katherine Terrell. 2011. "How Do Female Entrepreneurs Perform? Evidence from Three Developing Regions." *Small Business Economics* 37 (4): 417. <https://doi.org/10.1007/s11187-011-9374-z>.
- Barney, Jay. 1991. "Firm Resources and Sustained Competitive Advantage." *Journal of Management* 17 (1): 99–120. <https://doi.org/10.1177/014920639101700108>.
- Becchetti, Leonardo, and Giovanni Trovato. 2002. "The Determinants of Growth for Small and Medium Sized Firms. The Role of the Availability of External Finance." *Small Business Economics* 19 (4): 291–306. <https://doi.org/10.1023/A:1019678429111>.
- Becker, Gary S. 1992. "Human Capital and the Economy." *Proceedings of the American Philosophical Society* 136 (1): 85–92.
- . 1994. "Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education." Chicago: The University of Chicago Press. <https://www.nber.org/books-and-chapters/human-capital-theoretical-and-empirical-analysis-special-reference-education-third-edition>.
- Blackburn, Robert A., Mark Hart, and Thomas Wainwright. 2013. "Small Business Performance: Business, Strategy and Owner-manager Characteristics." *Journal of Small Business and Enterprise Development* 20 (1): 8–27. <https://doi.org/10.1108/14626001311298394>.
- Crescenzi, Riccardo, and Andrés Rodríguez-Pose. 2008. "Infrastructure Endowment and Investment as Determinants of Regional Growth in the European Union." *Eib Papers* 13 (2): 62–101.
- Djankov, Simeon, Rafael La Porta, Florencio Lopez-de-Silanes, and Andrei Shleifer. 2002. "The Regulation of Entry." *The Quarterly Journal of Economics* 117 (1): 1–37.

- Dyer, Jeffrey H., and Harbir Singh. 1998. "The Relational View: Cooperative Strategy and Sources of Interorganizational Competitive Advantage." *Academy of Management Review* 23 (4): 660–79.
- Elston, Julie Ann. 2002. "An Examination of the Relationship between Firm Size, Growth and Liquidity in the Neuer Markt." SSRN Scholarly Paper ID 2785151. Rochester, NY: Social Science Research Network. <https://doi.org/10.2139/ssrn.2785151>.
- Fatoki, Olawale, and Lynety Chindoga. 2011. "An Investigation into the Obstacles to Youth Entrepreneurship in South Africa." *International Business Research* 4 (2): 161–69.
- Filippetti, Andrea, Frederick Guy, and Simona Iammarino. 2019. "Regional Disparities in the Effect of Training on Employment." *Regional Studies* 53 (2): 217–30. <https://doi.org/10.1080/00343404.2018.1455177>.
- Gupta, Priya Dhamija, Samapti Guha, and Shiva Subramanian Krishnaswami. 2013. "Firm Growth and Its Determinants." *Journal of Innovation and Entrepreneurship* 2 (1): 1–14.
- Håkansson, Håkan, and David Ford. 2002. "How Should Companies Interact in Business Networks?" *Journal of Business Research* 55 (2): 133–39.
- Heshmati, Almas. 2001. "On the Growth of Micro and Small Firms: Evidence from Sweden." *Small Business Economics* 17 (3): 213–28. <https://doi.org/10.1023/A:1011886128912>.
- Iammarino, Simona. 2005. "An Evolutionary Integrated View of Regional Systems of Innovation: Concepts, Measures and Historical Perspectives." *European Planning Studies* 13 (4): 497–519.
- Iammarino, Simona, and Philip McCann. 2006. "The Structure and Evolution of Industrial Clusters: Transactions, Technology and Knowledge Spillovers." *Research Policy* 35 (7): 1018–36. <https://doi.org/10.1016/j.respol.2006.05.004>.
- ITC. 2022. "Promoting SME Competitiveness in Cambodia: Enhanced Resiliency through Inclusiveness." Geneva: International Trade Centre. <https://intracen.org/media/file/5702>.
- Ivan, Gonzalez de Alba, Dany Vinh, and Theara Khoun. 2022. "Tracking Surveys on the Impacts of COVID-19 on Formal and Informal MSMEs in Cambodia." In *Macro-Conference*. Phnom Penh, Cambodia: National Bank of Cambodia. https://www.nbc.org.kh/download_files/macro_conference/english/Understanding_the_Impacts_of_COVID_19_on_MSMEs_in_Cambodia_AFedit.pdf.
- Kamnungwut, Weeranan, and Frederick Guy. 2012. "Knowledge in the Air and Cooperation among Firms: Traditions of Secrecy and the Reluctant Emergence of Specialization in the Ceramic Manufacturing District of Lampang, Thailand." *Environment and Planning a* 44 (7): 1679–95.
- Kruss, Glenda, Simon McGrath, Il-haam Petersen, and Michael Gastrow. 2015. "Higher Education and Economic Development: The Importance of Building Technological Capabilities." *International Journal of Educational Development* 43 (July): 22–31. <https://doi.org/10.1016/j.ijedudev.2015.04.011>.
- Lesakova, Lubica. 2009. "Innovations in Small and Medium Enterprises in Slovakia." *Acta Polytechnica Hungarica* 6 (3): 23–34.

- Liu, Qing, Larry Qiu, and Miaojie Yu. 2017. "Worker Training, Firm Productivity, and Trade Liberalization: Evidence from Chinese Firms." *The Developing Economies* 55 (3): 189–209. <https://doi.org/10.1111/deve.12136>.
- Lundvall, Bengt-Ake. 1992. "National Systems of Innovation: Towards a Theory of Innovation and Interactive Learning."
- Lundvall, Bengt-Åke, Jan Vang, and K. J. Joseph. 2009. "Innovation System Research and Developing Countries." In *Handbook of Innovation Systems and Developing Countries*. Edward Elgar Publishing.
- Malerba, Franco, and Luigi Orsenigo. 1997. "Technological Regimes and Sectoral Patterns of Innovative Activities." *Industrial and Corporate Change* 6 (1): 83–118. <https://doi.org/10.1093/icc/6.1.83>.
- Malesky, Edmund J. 2009. "The Provincial Business Environment Scorecard in Cambodia 2009." *The Asia Foundation*.
- Markovics, Klára. 2005. "Competitiveness of Domestic Small and Medium Enterprises in the European Union." *European Integration Studies* IV (1): 13–24.
- MEF. 2021a. "Macroeconomic policy framework and public financial policy for the preparation of the draft financial law for management 2022." Ministry of Economy and Finance. <https://mef.gov.kh/documents/សេចក្តីព្រាងក្របខ័ណ្ឌ-3/>.
- . 2021b. "Strategic Framework and Programs for Rehabilitation and Promotion of Cambodia's Economic Growth 2021-2023." Ministry of Economy and Finance. https://mef.gov.kh/documents/strategic-framework_-and-programs-for-rehabilitation-and-promotion-of-cambodias-economic-growth/.
- . 2022. "Macroeconomic Policy Framework and Public Financial Policy for the Preparation of the Draft Financial Law for Management 2023." Ministry of Economy and Finance. <https://mef.gov.kh/documents/ក្របខ័ណ្ឌគោលនយោបាយ-2/>.
- Mincer, Jacob A. 1974. *Schooling, Experience, and Earnings*. New York, NY: NBER. <https://www.nber.org/books/minc74-1>.
- Nelson, Richard R. 1991. "Why Do Firms Differ, and How Does It Matter?" *Strategic Management Journal* 12 (S2): 61–74. <https://doi.org/10.1002/smj.4250121006>.
- North, Douglass C. 1990. *Institutions, Institutional Change and Economic Performance*. Cambridge university press.
- North, Douglass C., and Barry R. Weingast. 1989. "Constitutions and Commitment: The Evolution of Institutions Governing Public Choice in Seventeenth-Century England." *The Journal of Economic History* 49 (4): 803–32.
- Oke, Adekunle, and Fatima Araujo Pereira Fernandes. 2020. "Innovations in Teaching and Learning: Exploring the Perceptions of the Education Sector on the 4th Industrial Revolution (4IR)." *Journal of Open Innovation: Technology, Market, and Complexity* 6 (2): 31. <https://doi.org/10.3390/joitmc6020031>.
- Parker, Hamieda, and Khadija Ameen. 2018. "The Role of Resilience Capabilities in Shaping How Firms Respond to Disruptions." *Journal of Business Research* 88 (July): 535–41. <https://doi.org/10.1016/j.jbusres.2017.12.022>.
- Penrose, Edith, and Christos N. Pitelis. 2009. *The Theory of the Growth of the Firm*. 4th ed. Oxford: Oxford University Press.

- Pervan, Maja, Ivica Pervan, and Marijana Ćurak. 2017. "The Influence of Age on Firm Performance: Evidence from the Croatian Food Industry." *Journal of Eastern Europe Research in Business and Economics* 2017 (1): 1–10.
- Rocha, Roberto R., Zsofia Arvai, and Subika Farazi. 2011. *Financial Access and Stability: A Road Map for the Middle East and North Africa*. World Bank.
- Rodríguez-Pose, Andrés, and Ugo Fratesi. 2004. "Between Development and Social Policies: The Impact of European Structural Funds in Objective 1 Regions." *Regional Studies* 38 (1): 97–113. <https://doi.org/10.1080/00343400310001632226>.
- Rodrik, Dani. 2000. "Participatory Politics, Social Cooperation, and Economic Stability." *American Economic Review* 90 (2): 140–44.
- Schoonjans, Bilitis, Philippe Van Cauwenberge, and Heidi Vander Bauwhede. 2013. "Formal Business Networking and SME Growth." *Small Business Economics* 41 (1): 169–81.
- Schultz, Theodore W. 1960. "Capital Formation by Education." *Journal of Political Economy* 68 (6): 571–83. <https://doi.org/10.1086/258393>.
- . 1961. "Investment in Human Capital." *The American Economic Review* 51 (1): 1–17.
- Scott, Allen J. 2006. "Entrepreneurship, Innovation and Industrial Development: Geography and the Creative Field Revisited." *Small Business Economics* 26 (1): 1–24. <https://doi.org/10.1007/s11187-004-6493-9>.
- Snieska, Vytautas, and Jurgita Bruneckienė. 2009. "Measurement of Lithuanian Regions by Regional Competitiveness Index." *Inžinerinė Ekonomika*, no. 1: 45–57.
- Thy, Sambath. 2021. "Roles of SMEs in Cambodian Economic Development and Their Challenges." In *National Bank of Cambodia 8th Macroconference 2021*. Phnom Penh, Cambodia: National Bank of Cambodia. https://www.nbc.org.kh/download_files/macro_conference/english/Roles_of_SMEs_in_Cambodian_Economic_Development_and_Their_Challenges.pdf.
- UNESCAP. 2022. "Micro, Small and Medium-Sized Enterprises' Access to Finance in Cambodia."
- UNIDO. 2020. "Impact Assessment of Covid-19 on Cambodia's Manufacturing Firms - Survey Results May-June." UNIDO Cambodia. https://www.unido.org/sites/default/files/files/2021-03/UNIDO%20COVID19%20Assessment_Cambodia_FINAL.pdf.
- Veung, Naron. 2021. "Cambodia's Manufacturing Industry: Skills Formation Systems in the Workplace." *Cambodia Development Review* 25 (2).
- Veung, Naron, and Seyhah Ven. 2021. "Exploring Insights into Vocational Skills Development and Industrial Transformation in Cambodia." Working Paper. Phnom Penh, Cambodia: Cambodia Development Resource Institute. https://cdri.org.kh/storage/pdf/WP131%20Exploring_Insights_1637129221.pdf.
- World Bank. 2004. *World Development Report 2005: A Better Investment Climate for Everyone*. The World Bank.

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