

Rethinking Sarpang Economy Beyond Covid-19

Assessment of Private Sector during and beyond Covid-19:
A Quantitative Survey Study of Impact on Businesses in Sarpang



Bhutan Chamber of Commerce and Industry
Regional Office, Gelephu, Bhutan

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**Bhutan Chamber of Commerce and Industry
Regional Office, Gelephu, Bhutan**

March 2022

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Acknowledgements

This report called “Rethinking Sarpang Economy Beyond Covid-19 - *Assessment of Private Sector during and beyond Covid-19: A Quantitative Survey Study of Impact on Businesses in Sarpang*” has been prepared by the Institute for Excellence and Development (iED) through the Bhutan Chamber of Commerce and Industry (BCCI), Regional Office, Gelephu, Bhutan. The findings from this research study would help improve inclusiveness of businesses in decision making as private sector voice matters in post-COVID-19 economy recovery.

We would like to thank and acknowledge the support of all individuals, officials and agencies involved in the data collection, research, analysis and preparation of this report. Most importantly, we are grateful to the Bhutan Chamber of Commerce and Industry, Regional Office, Gelephu, for the guidance and assistance provided throughout the research study period under the able and dynamic leadership of Regional Secretary, Mr. Kelzang. We are also thankful to the BCCI research data collection team members Mr. Choning Dorji, Ms. Tshoki Wangmo, Ms. Sonam Peldon, and Ms. Kinley Wangmo.

We would like to acknowledge all iED management team, research team and technical team members involved in this research study too including Nima Tshering, Tashi Chonjur, Tshewang Dorji, Tshering Doelkar, Rinchen Peldon, Jigme Wangchuk Lhamo, Jambayang Chogyel, Gesar Gurung and Nima Moktan.

The cooperation and support provided by all individuals, agencies, and businesses as well as the Honorable Dzongdag of Sarpang Dzongkhag and the Honorable President of BCCI through their leaderships are highly appreciated to produce, perhaps, the first scientific research report on the impact of the Covid-19 pandemic on the private sector businesses in Bhutan.

Key Findings

1. **Most businesses in Sarpang economy are small, cottage and informal businesses:** As a snapshot of Bhutanese economy in general and Sarpang economy in particular, 97.4% of businesses are small, cottage and informal/home-based businesses. Medium and large businesses represent only 2.60% of the businesses in terms of numbers.
2. **The impact of Covid-19 on the business community has been economywide:** Overall, 90.91% of the businesses are negatively impacted by the Covid-19 pandemic through lockdowns and business restrictions. However, there is statistically significant evidence ($p < 0.0001$) that the main impact of the pandemic on the businesses is small impact, meaning some difficulties in business operations but overall stability. In particular, the 45.45% majority of the businesses reported that they suffered “Small Impact” due to the pandemic, followed by 24.68% of the businesses reporting “Serious Impact,” meaning leading to serious difficulties in business operations and 20.78% reporting “Big Impact,” meaning operations barely maintained.
3. **Most Sarpang businesses were changed negatively by the pandemic:** There is statistically significant evidence ($p < 0.0001$) that businesses have been changed negatively in the Sarpang economy regarding the impact of the pandemic on the overall businesses. In fact, the 67.27% of the businesses reported that their businesses have been changed negatively.
4. **Most Sarpang businesses are pandemic resilient despite negatively impacted:** On average, there is also statistically significant evidence ($p < 0.0001$) that 72.21% majority of the businesses are operating as usual during the Covid-19 pandemic.
5. **The decline in business revenues has and will continue to impact Sarpang businesses:** There is statistically significant evidence ($p < 0.0001$) that the main impact of the Covid-19 pandemic on the operation of the businesses is “Decreased revenue.” In general, 52.99% of the businesses reported that their business revenue decreased because of the pandemic.
6. **Rent and repayment of loans are two main operating pressures of the businesses:** There are two main operating pressures that businesses are facing due to the pandemic and they are “Rent” and “Repayment of loans.” In particular, 40.50% of the businesses are suffering from rent difficulties and 36.10% are under stress due to worry about repayment of loans. Overall, there is no statistically significant difference between the two ($p = 0.2043$), which means both rent issue and loan issue merit equally attention. They are both main operating pressures.
7. **Difficulty of financing is businesses’ core challenge:** In addition, the other significant problem ($p < 0.0001$) that businesses are facing is “Difficulty of financing.” The 57.40% of the businesses reported that their other problem due to the pandemic is “Difficulty of financing.”

8. **Businesses need short-term capital and express uncertainty surrounding future operations:** In terms of current cashflow, the vast 84.16% majority of businesses will not survive beyond three months if the Covid-19 pandemic restrictions such as lockdowns continue for long. In particular, the 43.38% of the businesses reported that their current cashflow will not be able to maintain their business beyond one month and the 40.78% of the businesses report that their current cashflow will not be able to maintain their business operation beyond three months. There is no statistically significant difference ($p = 0.6171$) between those who say their cashflow will not last beyond one month and those who say their cashflow will not last beyond three months. It is a serious issue when combined with other problem of difficulty of financing.
9. **Not all businesses have access to bank loans and situation is worsened by the pandemic:** Both “Loans by banks” and “Loans by private individuals” are the dominant strategies of the businesses in the Sarpang economy regarding how they managed cashflow during the pandemic. The 40.00% of the businesses reported that they managed cashflow shortage with loans from banks and the 31.43% of the businesses managed their cashflow shortage with loans from private individuals, which are two main strategies. But there is no statistically significant difference ($p = 0.0534$) between the two strategies, meaning both are equally important for the businesses, perhaps because majority of the businesses are informal, cottage and small businesses with barriers to access to banks due to collateral requirements for loans.
10. **Workers shortage is not a problem for the businesses during the pandemic:** Businesses, on average, faced no workers shortage regarding how they managed workers shortage during the pandemic. In fact, the 64.94% of the businesses reported that they have no shortage of workers. This, again, maybe because majority of the businesses are informal, cottage and small businesses with low or no requirement for the workers as most are self-employed businesses.
11. **Materials shortage is a challenge only for some businesses during the pandemic:** Both “No shortage of materials” and “Increasing procurement prices” are the dominant responses of the businesses in the Sarpang economy regarding how they managed materials shortage during the pandemic. The 36.88% of the businesses reported that they have no shortage of materials while the 29.61% of the businesses reported that they managed their materials shortage by increasing procurement prices. However, there is no statistically significant difference ($p = 0.0913$) between the two responses, meaning both are dominant strategies. This, again, maybe because there are sizeable informal businesses in the economy who use local materials and with no requirement for the imported materials.
12. **Transitioning to online commerce is a big challenge for the businesses:** Regarding willingness to transition to online commerce, there is no statistically significant evidence ($p = 0.2041$) that businesses are willing or unwilling to transform to online commerce. The 50.13% marginal majority of the businesses reported that they are somewhat unwilling or very unwilling to transform to online commerce whereas 49.87% of the businesses reported that they are somewhat willing or very willing to transform to online commerce. It is a deadlock situation. However, there is statistically significant difference ($p < 0.0001$)

between businesses in rural areas and those in urban areas that businesses in the urban areas are more likely willing to transition to online commerce than their rural counterparts.

13. **There is no evidence of any significant positive impact of the pandemic on the businesses:** When businesses were asked if there was any positive impact of the pandemic, there is no statistically significant evidence ($p = 0.1222$) of any dominant positive impact, although 37.14% of the businesses reported that one positive impact of the pandemic is that it helped them realize their own shortcomings and 29.87% of the businesses reported that the pandemic enhanced their digital use.
14. **Most Sarpang businesses are prepared to face the changing economy:** On the bright side, there is statistically significant evidence ($p < 0.0001$) that businesses, on average, are prepared to face the changing economy. The 65.20% of the businesses reported that they are somewhat prepared or very prepared to face the changing economy. There is also statistically significant difference ($p = 0.0037$) between businesses in rural areas and those in urban areas on their preparedness to face the changing economy. Interestingly, businesses in rural areas are slightly more likely ($z = 2.897$) to be prepared to face the changing economy than those in urban areas.
15. **Improving business environment is a key to improving Sarpang economy:** Survey participants shared, in their own words, their recommendations for improving Sarpang economy. There were a wide range of suggestions shared but the thematic analysis of businesses' own recommendations show that the top three themes for improving Sarpang economy are: 1) improve business environment (17.47%), improve supply chain (11.79%) and improve market infrastructure (10.48%).

Key Recommendations

1. **Promote entrepreneurial innovation as recovery strategy for businesses in Sarpang economy since most businesses are small, cottage and informal:** As a snapshot of Bhutanese economy in general and Sarpang economy in particular, 97.4% of businesses are small, cottage and informal/home-based businesses. Medium and large businesses represent only 2.60% of the businesses in terms of numbers. Global experiences show that innovation is an important strategy for the ongoing and post-Covid-19 business recovery (Caballero-Morales, 2021). Therefore, it is recommended to focus on innovation as singularly most important strategy that the BCCI must raise enough budget to create Sarpang economywide awareness for promoting, encouraging and facilitating business innovations.
2. **Rethink and build post-Covid-19 Sarpang economy based on Schumpeter's creative destruction economic model or allow first, regulate later strategy:** What economist Joseph Schumpeter observed is that entrepreneurship simultaneously create something new while destroying something old. Usually, it is lot harder to destroy something in the business sector or economy at large to create something new, but the Covid-19 pandemic has naturally disrupted business community economywide (90.91% of the businesses are negatively impacted by the Covid-19 pandemic through lockdowns and business restrictions) that the crisis is an opportunity for changing the course of entrepreneurship process in Sarpang economy. However, to create Schumpeterian entrepreneurship, top-down policies and processes do not work because Schumpeterian entrepreneurship is inherently contrarian, unpredictable and difficult to target from a policy perspective (Henrekson, Kärnä and Sanandaji, 2022). Therefore, the recommendation for the Government and the BCCI to adopt for post-Covid-19 Sarpang economy is **allow first, regulate later** strategy as a new entrepreneurship policy for not just small, cottage, and informal businesses but for all new start-ups, big and small alike, to imagine and execute unconventional innovations.
3. **Loan repayment deferral through Kidu stimulus or loan term extension by the financial institutions to continue:** It is observed that most Sarpang businesses are pandemic resilient despite negatively impacted and this seems to be because of loan deferral and loan interest waiver Kidu stimulus supports so far. On average, there is statistically significant evidence ($p < 0.0001$) that 72.21% majority of the businesses are operating as usual during the Covid-19 pandemic. Therefore, it is recommended that the BCCI work with the Government and the Royal Monetary Authority (RMA) or the financial institutions to request loan deferral or loan restructuring options for extending duration for repayment of loans.
4. **Remove barriers to entry/exit for businesses:** It is observed that there has been decline in business revenues as the statistically significant main impact of the Covid-19 pandemic on the operation of the businesses. In particular, 52.99% of the businesses reported that their business revenue decreased because of the pandemic. Therefore, it is recommended to remove all barriers for businesses to enter the market or to exit from the market. What it means is that it has to be easy for any new business to start and enter the market and it also

has to be easy for any business to stop and exit from the market without any hidden transaction or bureaucratic costs. Also it is recommended to remove requirement for location-based licenses; instead if a business has one license located anywhere in Bhutan, it should be valid to do business everywhere in Bhutan. Moreover, remove the restriction on number of licenses one Bhutanese can hold as there is no predictable guarantee which business will succeed or fail. For example, let one Bhutanese hold any number of cottage licenses anywhere in Bhutan. This will promote business innovation in private sector.

5. **Remove all non-Covid-19 related business restrictions to align business environment with 21st Century Economy Vision of Bhutan:** There is an urgent need for significant regulatory modifications for business recovery from the pandemic and beyond. Since rent and repayment of loans are the main operating pressures of the businesses, to cut down operating cost and innovate, it is recommended to make optional all physical requirements such as physical offices for businesses, physical shops, physical signboards, physical employees and so on. As articulated and highlighted by His Majesty The King (2019), let entrepreneurs and businesses leverage digital technologies for e-commerce through online sales for private sector development using Smartphones and apps such as WhatsApp, YouTube, Telegram, Twitter, Facebook, Instagram, Wechat, Tiktok and so on. In His Majesty's own words, "How are we using these for private sector development and growth?" (His Majesty The King, 2019). Encourage use of digitalized marketing for small, cottage, and informal businesses or micro-enterprises through mobile applications and social media platforms (Fabeil, Pazim and Langgat, 2020). On a bright side, there is statistically significant evidence ($p < 0.0001$) that businesses, on average, are prepared to face the changing economy. The 65.20% of the businesses reported that they are somewhat prepared or very prepared to face the changing economy.
6. **Encourage synchronized distribution approach to shorten supply chain for businesses:** The main recommendations collected from the business respondents themselves to improve Sarpang economy are improve business environment, supply chain and market infrastructure. Therefore it is recommended for the BCCI to encourage and adopt the synchronized distribution as one of the strategies. The synchronized distribution strategy is similar to "omni-channel marketing approach" (Fabeil, Pazim and Langgat, 2020, p.840), which uses all possible channels or multiple channels of distribution of goods to the customers without unnecessary business restrictions. This means the BCCI can work closely with the Government administrations such as Thromde and the Dzongkhag administrations to facilitate synchronized distribution supply chain system in the economy by removing obstructing rules, regulations and restrictions so that, for example, clothing shops can also sell or distribute groceries, groceries shops can also sell or distribute clothes without requiring any separate license because the unnecessary restrictions have been removed for synchronized distribution system in the economy. Also allow business to run from home as well as distributions from home without any restriction or without requiring any extra license including delivery by private runners or private cars. The BCCI can also initiate and create public awareness for such new innovative synchronized distribution system in the economy in our Bhutanese context.

7. **Invite and encourage venture capital investment or shark tank investment:** It is observed that difficulty of financing is businesses' core challenge as the 57.40% of the businesses reported that they have problem of financing. Therefore, it is recommended for the BCCI to explore opportunity to institute venture capital investment or Sarpang shark tank investment platform for the innovative and budding entrepreneurs who need financing.
8. **Facilitate short-term capital for the businesses:** In terms of current cashflow, the vast 84.16% majority of businesses will not survive beyond three months if the Covid-19 pandemic restrictions continue for long. It is a serious issue when combined with other problem of difficulty of financing. From this finding, it is obvious that small, cottage, and informal businesses had very less cash on hand to sustain lockdowns and Covid-19 business restrictions. This is consistent with global study on the impact of the pandemic on small business (Kalogiannidis, 2020), which shows that there is great risk for small, cottage and informal businesses to survive due to financial crisis on the top of Covid-19 crisis. Therefore, it is recommended that the BCCI, the Government, and the RMA come together to facilitate short-term working capital borrowings from the banks or some kind of financial stimulus especially targeted for small, cottage, and informal businesses.
9. **Facilitate and encourage cashflow-based borrowing rather than collateral-based borrowing:** It is observed that not all businesses have access to bank loans and situation is worsened by the pandemic as both "Loans by banks" and "Loans by private individuals" emerged as the dominant strategies of the businesses in the Sarpang economy regarding how they managed cashflow during the pandemic. This may be because majority of the businesses are small, cottage and informal with barriers to access to banks due to collateral requirements for loans. Therefore, it is recommended that the BCCI, the Government and the RMA facilitate and encourage collateral free loans or cashflow-based borrowing since most of the small, cottage, and informal businesses do not have collateral assets.
10. **Accelerate adoption of digitization of businesses:** Our research study shows that transitioning to online commerce is a big challenge for the businesses in Sarpang economy with perceptions divided in deadlock between willingness group and unwillingness group. This challenge gives an opportunity for the BCCI and the Government to fund and promote adoption of digitization of businesses, which will not happen if left to businesses at their own. The Covid-19 pandemic gives an opportunity for sudden acceleration of digitization even for businesses that were not thinking of using technology before the pandemic (Pinzaru, Zbucnea, and Anghel, 2020). Therefore, it is recommended that the BCCI and the Government secure funding to promote and accelerate adoption of digitization of businesses.

Executive Summary

Introduction

1. This research survey study on impact of the pandemic on private sector businesses in Sarpang was commissioned by the Bhutan Chamber of Commerce and Industry (BCCI), Regional Office, Gelephu, with research consultancy support from the Institute for Excellence and Development (iED) to rethink Sarpang economy beyond COVID-19 in particular and to understand the impact of the pandemic on the Bhutanese economy in general. While there are many research studies and reports around the world on the impact of Covid-19 pandemic on the private sector, businesses, and economy (Caballero-Morales, 2021; Fabeil, Pazim, and Langgat, 2020; Fairlie 2020; Kalogiannidis, 2020; Nicola *et al.*, 2020; O'Connor *et al.*, 2020; Pinzaru, Zbucnea, and Anghel, 2020), there is none done in Bhutan. Therefore, perhaps, this is the first scientific research report on the impact of the Covid-19 pandemic on the private sector, businesses, and economy in Bhutan. The main purpose of this research study is that findings from this study would help improve inclusiveness of businesses in decision making by the BCCI and the Royal Government of Bhutan as private sector voice matters in post-COVID-19 economy recovery. This is a Dzongkhag-wide comprehensive study on businesses through perception surveys of informal businesses, cottage businesses, small businesses, medium businesses and large businesses in Gelephu Thromde, Sarpang Town, and 12 Gewogs of Sarpang Dzongkhag. The quantitative survey method was used as main technique for data collection. In total, we got data sample size of 385 businesses of all types from all locations. Data were analyzed using statistical software STATA 17.0.

Research Method

2. Our main research method was quantitative survey. Survey data were collected by the BCCI field team using their trained field enumerators across Sarpang Dzongkhag to collect data on businesses in Sarpang economy. The main target population was businesses in Sarpang Dzongkhag. Data were collected from all 12 Gewogs, Gelephu Thromde and Sarpang Town including new Sarpang Town of Shechamthang. Based on preliminary information from the BCCI Office in Gelephu about existence of couple thousands of businesses in Sarpang economy and using the scientific formula for calculating sample size for a business population of 2,000 with standard confidence interval of 95% or significance level $\alpha = 0.05$, we estimated sample size of 384 businesses. So we planned to get a scientific sample size of 384 representative businesses across Sarpang Dzongkhag and we got sample size of 385 businesses. Our research method has complied with the provisions of the Declaration of Helsinki regarding the research on human participants.

Demographic characteristics of business respondents

3. Among the 385 business respondents, 24.42% were groceries, followed by 18.70% hotels and restaurants, 15.06% retail trades, 14.03% services, 13.51% micro trades and rest others. Overall, there are about 19 business types existing in Sarpang economy. In terms of location of businesses, among the 385 business respondents, 239 (62.08%) are in rural

region and 146 (37.92%) are in urban areas. Among the 385 business respondents, in terms of their specific locations, we got Dzongkhag-wide data representation from all areas, with maximum from Gelephu Thromde (20.78%), followed by Dekidling Gewog (16.62%) where new Sarpang town of Shechamthang is located, Gakiling Gewog (12.99%), Sarpang town (11.43%) and with minimum from Samtenling Gewog (1.04%) and Tareything Gewog (1.04%). In terms of business size, among the 385 business respondents, we got data representation from all sizes of businesses, differentiated by number of employees they employ, with maximum being informal or home-based businesses (65.19%), followed by cottage businesses (16.88%), small businesses (15.32%), medium businesses (2.08%), and large businesses (0.52%). As a snapshot of Bhutanese economy in general and Sarpang economy in particular, 97.4% of our businesses are small, cottage and informal/home-based businesses. Medium and large businesses represent only 2.60% of businesses in our economy.

During Covid-19: Impact of the pandemic on businesses

4. **Operational status of businesses:** The 72.21% of the business respondents rated they are operating as usual. So overall, the businesses are beating the pandemic since most of the businesses are still operating as usual.

Evidence on operational status of the businesses: An exact pairwise Cochran's Q test was statistically significant for "Operating as usual" vs. "Operating with reduced staff", $\chi^2(1, N = 385) = 140.6036, p < 0.0001$ (which is statistically significantly less than $\alpha = 0.05$). Therefore, "Operating as usual" is the dominant response of the businesses in the Sarpang economy.

5. **Impact of the pandemic on business operations:** The 52.99% of the businesses reported that the main operational impact on their businesses is "Decreased revenue." In other words, "Decreased revenue" is the main impact of the Covid-19 pandemic on the operation of the businesses.

Evidence on impact of the pandemic on business operations: An exact pairwise Cochran's Q test was statistically significant for "Decreased revenue" vs. "Increased costs", $\chi^2(1, N = 385) = 73.13422, p < 0.0001$ (which is statistically significantly less than $\alpha = 0.05$). Therefore, "Decreased revenue" is the dominant response of the businesses in the Sarpang economy.

6. **Impact of the pandemic on overall businesses:** The 67.27% of the businesses reported that their businesses have been changed negatively.

Evidence on impact of the pandemic on overall businesses: An exact pairwise Cochran's Q test was statistically significant for "My business changed negatively" vs. "My business has not changed", $\chi^2(1, N = 385) = 58.24538, p < 0.0001$ (which is statistically significantly less than $\alpha = 0.05$). Therefore, "My business changed negatively" is the dominant response of the businesses in the Sarpang economy regarding the impact of the pandemic on the overall businesses.

7. **Main operating pressure on the businesses:** The main operating pressure that businesses are facing is “Rent” (40.50%) followed by “Repayment of loans” (36.10%).

Evidence on main operating pressure on the businesses: An exact pairwise Cochran’s Q test was not statistically significant for “Rent” vs. “Repayment of loans”, $\chi^2(1, N = 385) = 1.81761, p = 0.2043$ (which is statistically significantly greater than $\alpha = 0.05$). Therefore, both “Rent” and “Repayment of loans” are the dominant responses of the businesses in the Sarpang economy regarding the main operating pressures on the businesses due to the pandemic.

8. **Cashflow of the businesses to maintain operations:** The 43.38% of the businesses reported that their current cashflow will not be able to maintain their business beyond one month, followed by 40.78% of the businesses report that their current cashflow will not be able to maintain their business operation beyond three months. In other words, in terms of current cashflow, the vast majority of 84.16% businesses will not survive beyond three months.

Evidence on ability of current cashflow to maintain business operations: An exact pairwise Cochran’s Q test was not statistically significant for “Less than 1 month” vs. “1-3 months”, $\chi^2(1, N = 385) = 0.308643, p = 0.6171$ (which is statistically significantly greater than $\alpha = 0.05$). Therefore, both “Less than 1 month” and “1-3 months” are the dominant responses of the businesses in the Sarpang economy regarding how long their current cashflow can maintain their business operation.

9. **Other problem businesses are facing due to the pandemic:** The 57.40% of the businesses reported that their other problem due to the pandemic is “Difficulty of financing.”

Evidence on other problem businesses are facing: An exact pairwise Cochran’s Q test was statistically significant for “Difficulty of financing” vs. “Reduction of orders”, $\chi^2(1, N = 385) = 61.5377, p < 0.0001$ (which is statistically significantly less than $\alpha = 0.05$). Therefore, “Difficulty of financing” is the dominant response of the businesses in the Sarpang economy regarding the other problem the businesses are facing.

10. **Degree of impact of the pandemic on businesses:** The 45.45% of the businesses reported that they suffered “Small Impact” due to the pandemic, followed by 24.68% of the businesses reporting “Serious Impact,” and 20.78% reporting “Big Impact,” together 90.91% of the businesses reported that they suffered negative impact because of the pandemic. In other words, 90.91% of the businesses are impacted by the Covid-19.

Evidence on degree of impact of the pandemic on businesses: An exact pairwise Cochran’s Q test was statistically significant for “Small Impact” vs. “Serious Impact”, $\chi^2(1, N = 385) = 23.7037, p < 0.0001$ (which is statistically significantly less than $\alpha = 0.05$). Therefore, “Small Impact” is the dominant response of the businesses in the Sarpang economy regarding the degree of Covid-19 impact on the businesses.

During Covid-19: Business Firms' Action Responses on Impact of the Pandemic

11. **Business firms' responses on managing cashflow shortage:** The 40.00% of the businesses reported that they managed cashflow shortage with loans from banks, followed by 31.43% of the businesses managed their cashflow shortage with loans from private individuals, which are two main strategies.

Evidence on how businesses managed cashflow shortage: An exact pairwise Cochran's Q test was not statistically significant for "Loans by banks" vs. "Loans by private individuals", $\chi^2(1, N = 385) = 3.96, p = 0.0534$ (which is statistically significantly greater than $\alpha = 0.05$). Therefore, both "Loans by banks" and "Loans by private individuals" are the dominant strategies of the businesses in the Sarpang economy regarding how they managed cashflow during the pandemic.

12. **Business firms' responses on managing workers shortage:** The 64.94% of the businesses reported that they have no shortage of workers.

Evidence on how businesses managed workers shortage during the pandemic: An exact pairwise Cochran's Q test was statistically significant for "No shortage of workers" vs. "Wage increases", $\chi^2(1, N = 385) = 118.0615, p < 0.0001$ (which is statistically significantly less than $\alpha = 0.05$). Therefore, "No shortage of workers" is the dominant response of the businesses in the Sarpang economy regarding how businesses managed workers shortage during the pandemic.

13. **Business firms' responses on managing materials shortage:** The 36.88% of the businesses reported that they have no shortage of materials, followed by 29.61% of the businesses responding that they managed their materials shortage by increasing procurement prices.

Evidence on how businesses managed materials shortage during the pandemic: An exact pairwise Cochran's Q test was not statistically significant for "No shortage of materials" vs. "Increasing procurement prices", $\chi^2(1, N = 385) = 3.0625, p = 0.0913$ (which is statistically significantly greater than $\alpha = 0.05$). Therefore, both "No shortage of materials" and "Increasing procurement prices" are the dominant responses of the businesses in the Sarpang economy regarding how businesses managed materials shortage during the pandemic.

Beyond Covid-19: Business Firms' Perceptions for the Future Way Forward

14. **Business firms' willingness to transform to online commerce:** The 50.13% marginal majority of the businesses reported that they are somewhat unwilling or very unwilling to transform to online commerce.

Evidence on businesses' perceptions on willingness to transform to online commerce: There is no statistically significant evidence ($p = 0.2041$) that the 50.13% marginal majority

of businesses in the population are unwilling to transform to online commerce. In particular, our one-sample Wilcoxon signed rank test indicated that there is no evidence that the population median was significantly different from 2.5, $Z = -1.275$, $p = 0.2041$. However, there is statistically significant difference between businesses in rural areas and those in urban areas on their willingness to transform to online commerce ($z = -4.520$, $p\text{-value} < 0.0001$ which is less than $\alpha = 0.05$). The negative z-score shows that businesses in rural areas are less likely to transform to online commerce than those in urban areas.

15. **Businesses' perceptions on any positive impact of the pandemic:** The 37.14% of the businesses reported that main positive impact of the pandemic is that it helped them realize their own shortcomings, followed equally by "Enhance digital use of firms" (29.87%) and "No any positive impact" (29.87%).

Evidence on businesses' perceptions on any positive impact of the pandemic: Cochran's Q test indicated that there is no evidence of statistically significant differences among the proportions among the three options, $\chi^2(2, N = 385) = 4.203753$, $p = 0.1222$. Therefore, there is no clear dominant choice among the businesses regarding any positive impact of the pandemic. However, three equal choices are "Help realize shortcomings," "Enhance digital use of firms," and "No any positive impact" regarding if any positive impact of the pandemic.

16. **Business firms' perceptions on preparedness to changing economy:** The total of 65.20% of the businesses reported that they are somewhat prepared or very prepared to face the changing economy.

Evidence on businesses' perceptions on preparedness to changing economy: There is statistically significant evidence ($p < 0.0001$) that the 65.20% majority of businesses in the population are prepared to face the changing economy. In particular, our one-sample Wilcoxon signed rank test indicated that the population median was significantly different from 2.5, $Z = 4.119$, $p < 0.0001$. There is also statistically significant difference between businesses in rural areas and those in urban areas on their preparedness to face the changing economy ($z = 2.897$, $p\text{-value} = 0.0037$ which is less than $\alpha = 0.05$). The positive z-score shows that businesses in rural areas are more likely to be prepared to face the changing economy than those in urban areas.

17. **Businesses' own recommendations to improve Sarpang economy:** The thematic analysis of businesses' own recommendations show that the top three themes for improving Sarpang economy are: 1) improve business environment (17.47%), improve supply chain (11.79%) and improve market infrastructure (10.48%).

Introduction

This research survey study on impact of the pandemic on private sector businesses in Sarpang was commissioned by the Bhutan Chamber of Commerce and Industry (BCCI), Regional Office, Gelephu, with research consultancy support from the Institute for Excellence and Development (iED) to rethink Sarpang economy beyond COVID-19 in particular and to understand the impact of the pandemic on the Bhutanese economy in general. While there are many research studies and reports around the world on the impact of Covid-19 pandemic on the private sector, businesses, and economy (Caballero-Morales, 2021; Fabeil, Pazim, and Langgat, 2020; Fairlie 2020; Kalogiannidis, 2020; Nicola *et al.*, 2020; O'Connor *et al.*, 2020; Pinzaru, Zbucnea, and Anghel, 2020), there is none done in Bhutan. Therefore, perhaps, this is the first scientific research report on the impact of the Covid-19 pandemic on the private sector, businesses, and economy in Bhutan.

Moreover, this is taking into context the emerging vision of Sarpang, especially Gelephu Thromde, as an economic hub and innovative city with political security, economic security and social security. This is also considering that Gelephu is the economic gateway to 8 of the 20 Dzongkhags of Bhutan, namely Sarpang, Tsirang, Dagana, Wangduephodrang, Punakha, Trongsa, Bumthang and Zhemgang. The main purpose of this research study is that findings from this study would help improve inclusiveness of businesses in decision making by the BCCI and the Royal Government of Bhutan as private sector voice matters in post-COVID-19 economy recovery. This is a Dzongkhag-wide comprehensive study on businesses through perception surveys of informal businesses, cottage businesses, small businesses, medium businesses and large businesses in Gelephu Thromde, Sarpang Town, and 12 Gewogs of Sarpang Dzongkhag. The quantitative survey method was used as main technique for data collection. In total, we got data sample size of 385 businesses of all types, from all locations, and so on. Data were collected from all 12 Gewogs, Sarpang Town and Gelephu Thromde by the BCCI field data collection team of the BCCI Regional Office in Gelephu over two weeks from 10-23 January 2022. For data honesty, integrity and quality, all respondents were informed about the objectives of the study and they agreed to voluntarily participate. Moreover, data were collected anonymously with no individual or business identifying information collected. In other words, participation in this survey was voluntary and anonymous. The study questionnaires (Cao *et al.*, 2020) were approved by the Bhutan Chamber of Commerce and Industry. For data sampling technique, clustered random sampling strategy for representation from all Gewogs, Gelephu Thromde and Sarpang Town as well as for representation across all business types to include all kinds of business, for Sarpang economywide representation, external validity and generalizability. Before the main data collection, questionnaires were pre-tested for any technical problems as well as for any ethical sensitivity. Based on the feedbacks from pre-testing, technical adjustments were made as well as suggestions were incorporated to reflect ground reality. Similarly, once data were collected, data cleaning and data coding works were carried out carefully including spotting data outliers before data were analyzed using statistical software STATA 17.0 for evidence findings. We used scientific test statistics such as Wilcoxon signed rank test, Mann-Whitney test, Cochran Q test, and so on. These tests helped us find evidence and draw conclusion from our primary survey data in the Sarpang economy. We performed descriptive statistics to find central tendency. We also looked at measure of dispersion, consensus, frequency distribution, percentages and significance testing.

Research Method

Our main research method was quantitative survey. Survey data were collected by the BCCI field team using their trained field enumerators across Sarpang Dzongkhag to collect data on businesses in Sarpang economy.

Data collection techniques: Online anonymous survey questionnaires, moderated by the BCCI field enumerators.

Target population: The main target population was businesses in Sarpang Dzongkhag from informal businesses to large businesses and everything in between. In cluster based random sampling method, data were collected from all 12 Gewogs, Gelephu Thromde and Sarpang Town including new Sarpang Town of Shechamthang. Data were also segregated by rural/urban region, business type, business age, business size by number of employees, business size by investment size and so on.

Survey instrument: The survey questionnaires were developed on businesses in Sarpang economy based on the BCCI's expectations for research-based findings, which will be used as reference to rethink Sarpang economy beyond COVID-19.

Sample size: Based on preliminary information from the BCCI Office in Gelephu about existence of couple thousands of businesses in Sarpang economy and using the scientific formula for calculating sample size for a business population of 2,000 with standard confidence interval of 95% or significance level $\alpha = 0.05$, we estimated sample size of 384 businesses. So we planned to get a scientific sample size of 384 representative businesses across Sarpang Dzongkhag and we did get a representative scientific sample size of 385 businesses. Therefore, our sample of 385 representative businesses is a scientific sample size to have external validity and generalizability power for rigorous and robust empirical evidence findings.

Sampling strategy: We used cluster random sampling for representation of all businesses in Sarpang economy while minimizing selection bias through anonymity.

Data integrity technique: For independence and data integrity, we collected our data voluntarily and anonymously using online questionnaires without any identifying information for the respondent. This is because the BCCI is interested in knowing what an average business in Sarpang perceives about the impact of the COVID-19 pandemic on businesses rather than what any particular individual business thinks about the pandemic. Therefore, survey questionnaires were designed such a way that no individual or business identifying information was collected. By doing with this methodology, we achieved the following:

- individual's and individual business' privacy and data confidentiality were maintained and protected in line with standard research ethics, complying with the provisions of the Declaration of Helsinki regarding the research on human participants.
- since we were doing research on businesses at the Sarpang economy level and not looking at individual business, we were interested in aggregate and average, not individual data points.
- we had good chance to get honest and truthful responses with no repercussions to respondents.

This brought independence and credibility to the BCCI for non-interference in the research process to allow a scientific research report to come out on its own scientific merit. In addition, we took informed consent at the start of survey questions so that responses were voluntary.

Pre-testing the questionnaires: The main goal of pre-testing questionnaires was to make sure our participants understood questions or participants were willingly comfortable with questions. We made technical adjustments or rephrased our question where there were ambiguities before we did actual data collection.

Confidence interval: We adopted the standard confidence interval of 95% or significance level of $\alpha = 0.05$.

STATA 17.0 software: We used STATA 17.0 program as our main statistical software to analyze our business research data collected. Survey data were cleaned, coded and transformed into datasets for data analysis.

Demographic Characteristics of Business Respondents

Among the 385 business respondents, 24.42% were groceries, followed by 18.70% hotels and restaurants, 15.06% retail trades, 14.03% services, 13.51% micro trades and rest others as shown in Figure 1. Overall, there are about 19 business types existing in Sarpang economy.

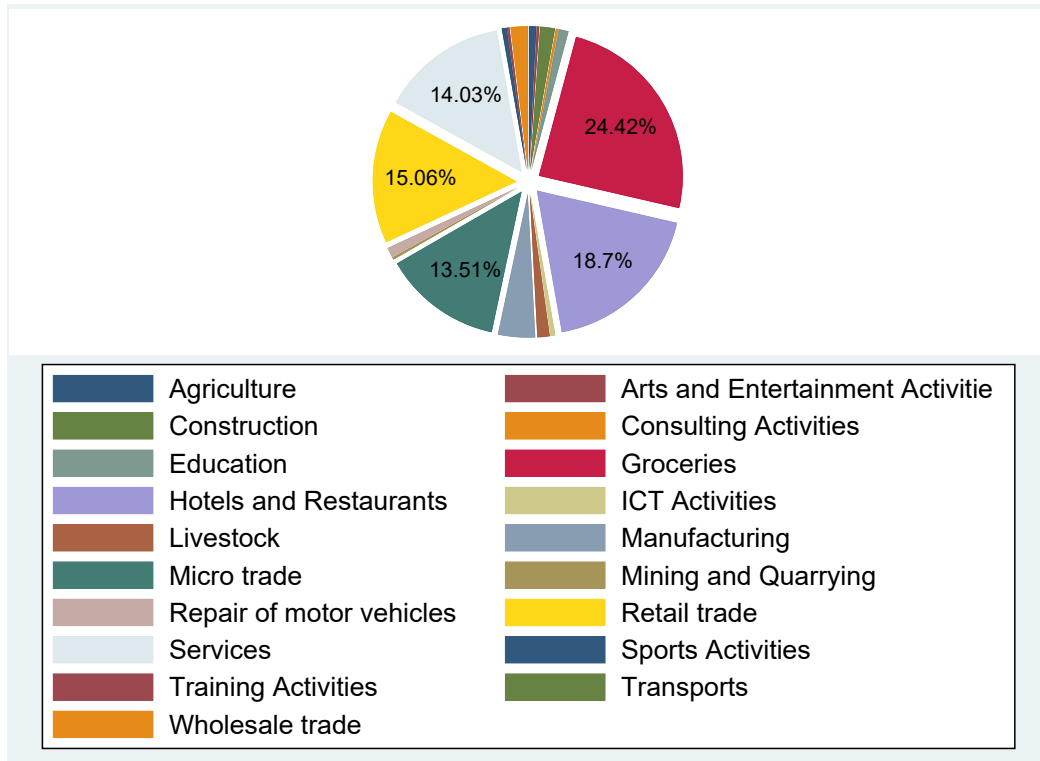


Figure 1. Business type characteristics of survey respondents.

In terms of location of businesses, among the 385 business respondents, 239 (62.08%) are in rural region and 146 (37.92%) are in urban areas as shown in Figure 2.

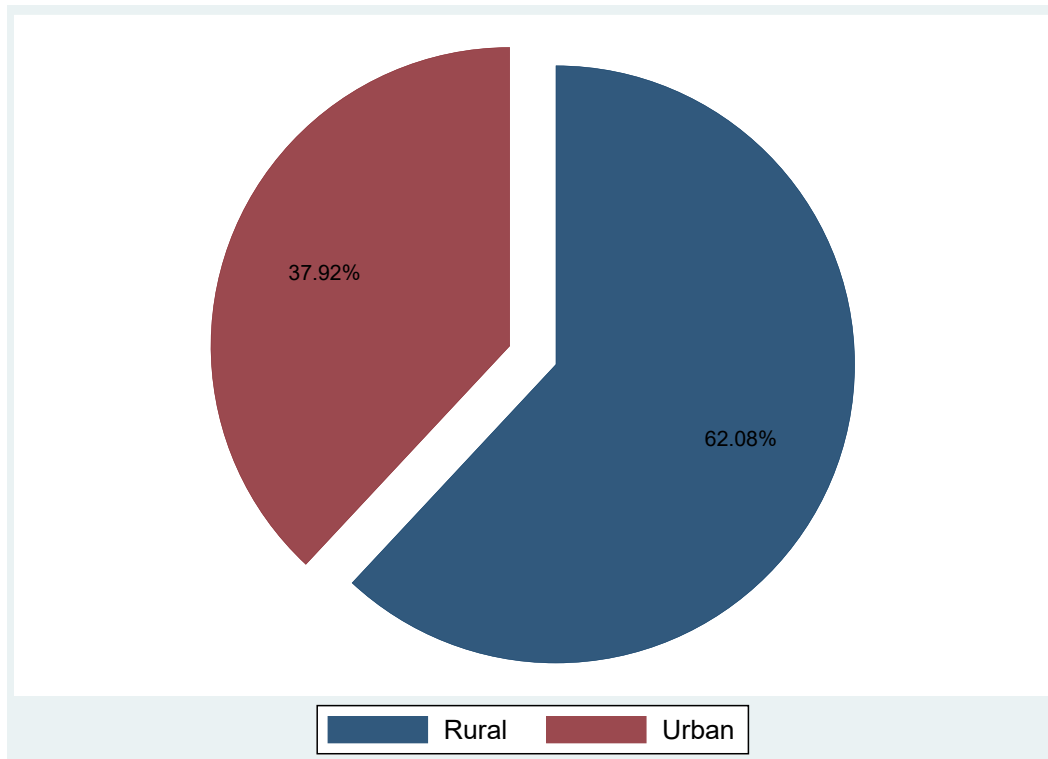


Figure 2. Location of business respondents by region.

Among the 385 business respondents, in terms of their specific locations, we got Dzongkhag-wide data representation from all areas as shown in Figure 3, with maximum from Gelephu Thomde (20.78%), followed by Dekidling Gewog (16.62%) where new Sarpang town of Shechamthang is located, Gakiling Gewog (12.99%), Sarpang town (11.43%) and with minimum from Samtenling Gewog (1.04%) and Tareythang Gewog (1.04%). The data we got reflected the spread of businesses in Sarpang Dzongkhag.

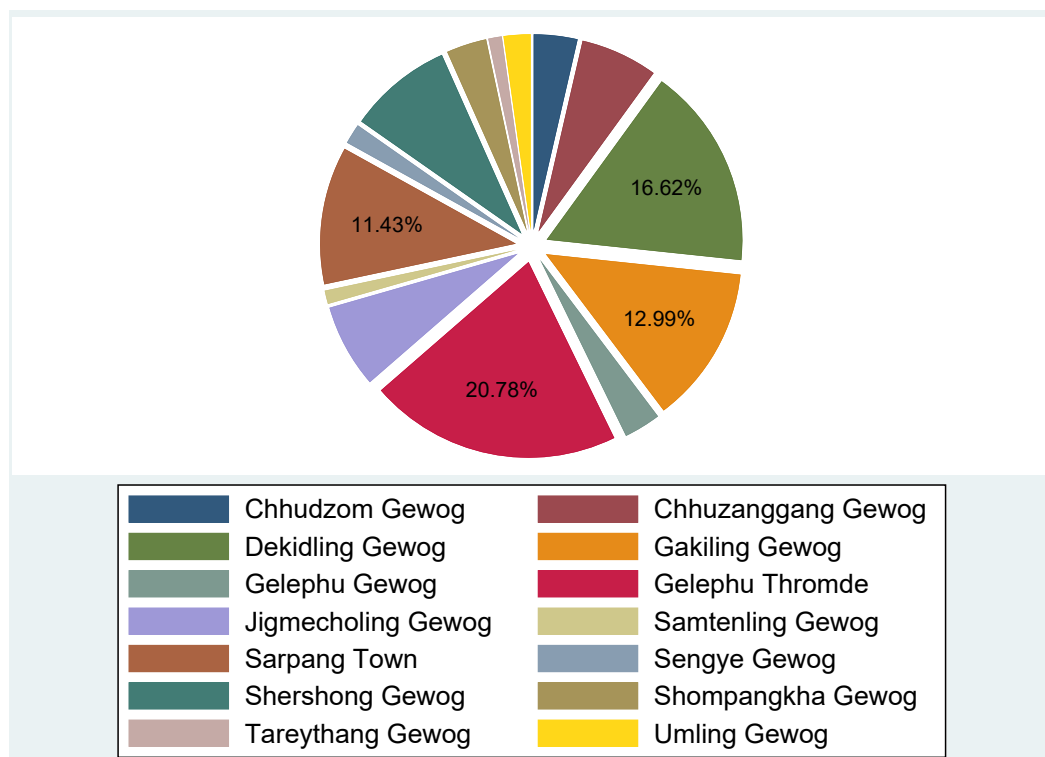


Figure 3: Location of business respondents by Thromdes and Gewogs.

Among the 385 business respondents, we got data representation from all sizes of businesses, differentiated by number of employees they employ as shown in Figure 4, with maximum being informal or home-based businesses (65.19%), followed by cottage businesses (16.88%), small businesses (15.32%), medium businesses (2.08%), and large businesses (0.52%).

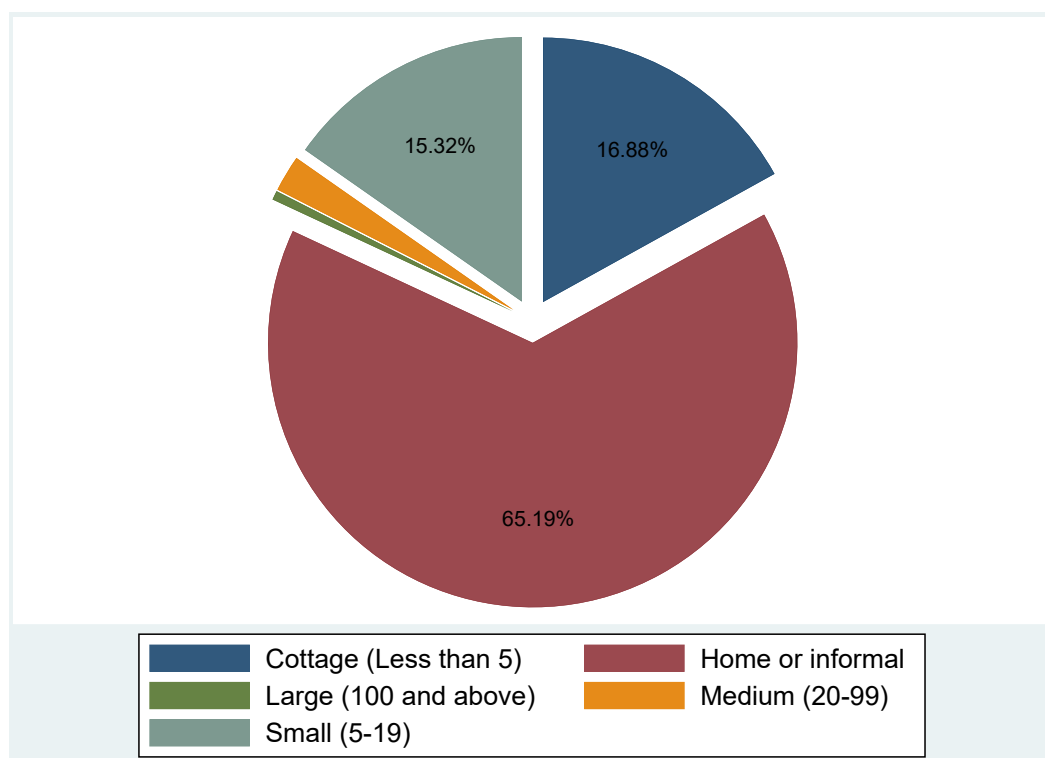


Figure 4. Business size of business respondents differentiated by number of employees.

As a snapshot of Bhutanese economy in general and Sarpang economy in particular, 97.4% of our businesses are small, cottage and informal/home-based businesses. Medium and large businesses represent only 2.60% of businesses in our economy.

Similarly, among the 385 business respondents, we got data representation from all sizes of businesses, differentiated by investment size as shown in Figure 5, with maximum cottage businesses (34.29%), followed by small businesses (31.43%), informal/home-based businesses (27.01%), medium businesses (5.45%), and large businesses (1.82%).

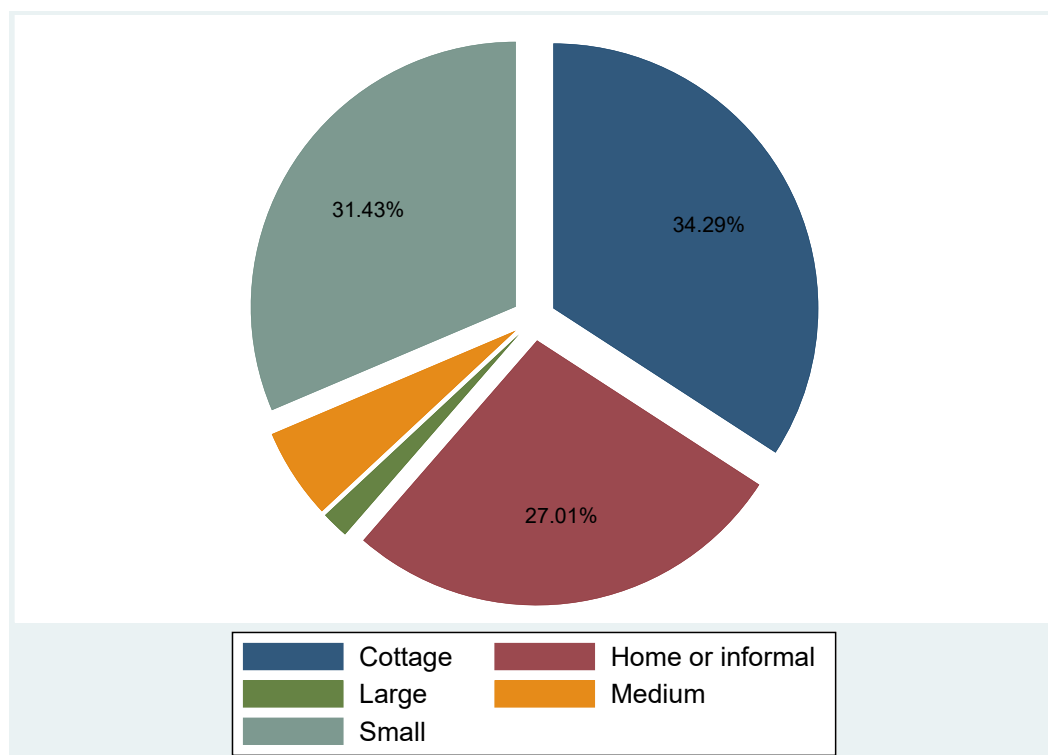


Figure 5. Business size of business respondents differentiated by investment size.

As a snapshot of Bhutanese economy in general and Sarpang economy in particular, differentiating the businesses by their investment size, we have 92.73% of our businesses as small, cottage and informal/home-based businesses. Medium and large businesses represent only 7.27% of businesses in our economy.

In terms of age of businesses, among the 385 business respondents, 121 (31.43%) are more than 5 years old, 95 (24.68%) are 1 to 2 years old, 67 (17.40%) are 3 to 4 years old, 60 (15.58%) are less than 1 year old, and 42 (10.91%) are 4 to 5 years old as shown in Figure 6.

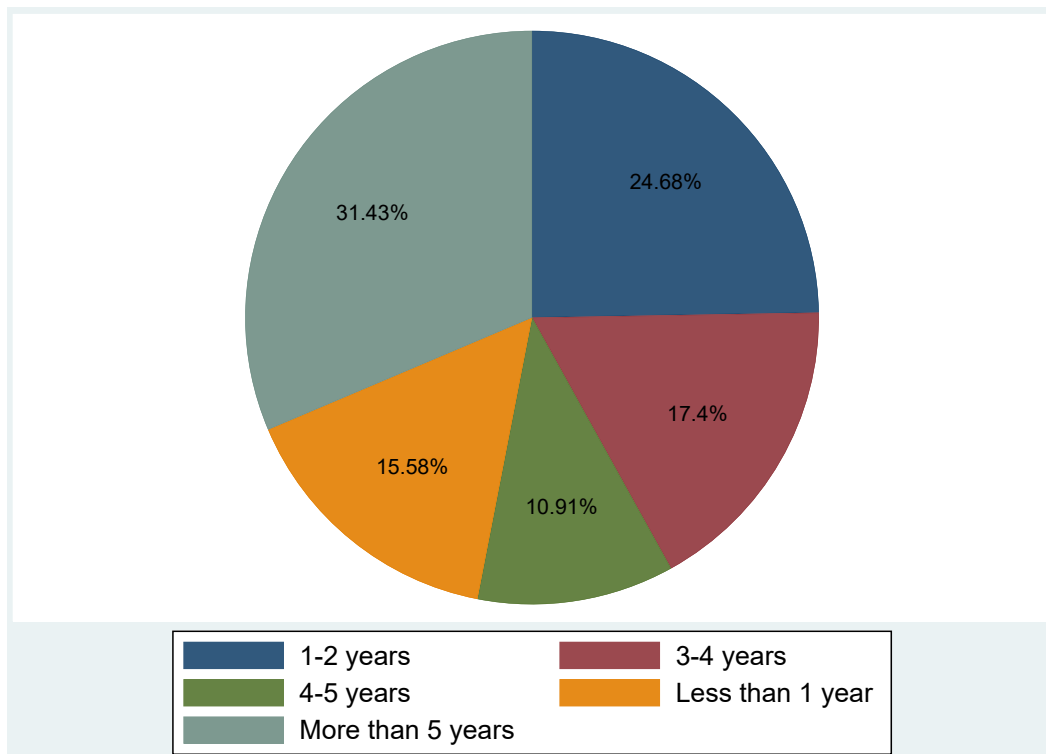


Figure 6. Business age of business respondents.

It shows that we have collected representative data across all age categories of businesses from new start-ups to old businesses to assess the impact of Covid-19 on businesses.

During Covid-19: Impact of the Pandemic on Businesses

Analyzing Operational Status of Businesses

The Bhutan Chamber of Commerce and Industry was interested to know the operational status of businesses in Sarpang economy. To investigate this, Figure 7, which is visualization of survey data, shows the results of business respondents' opinions from the survey.

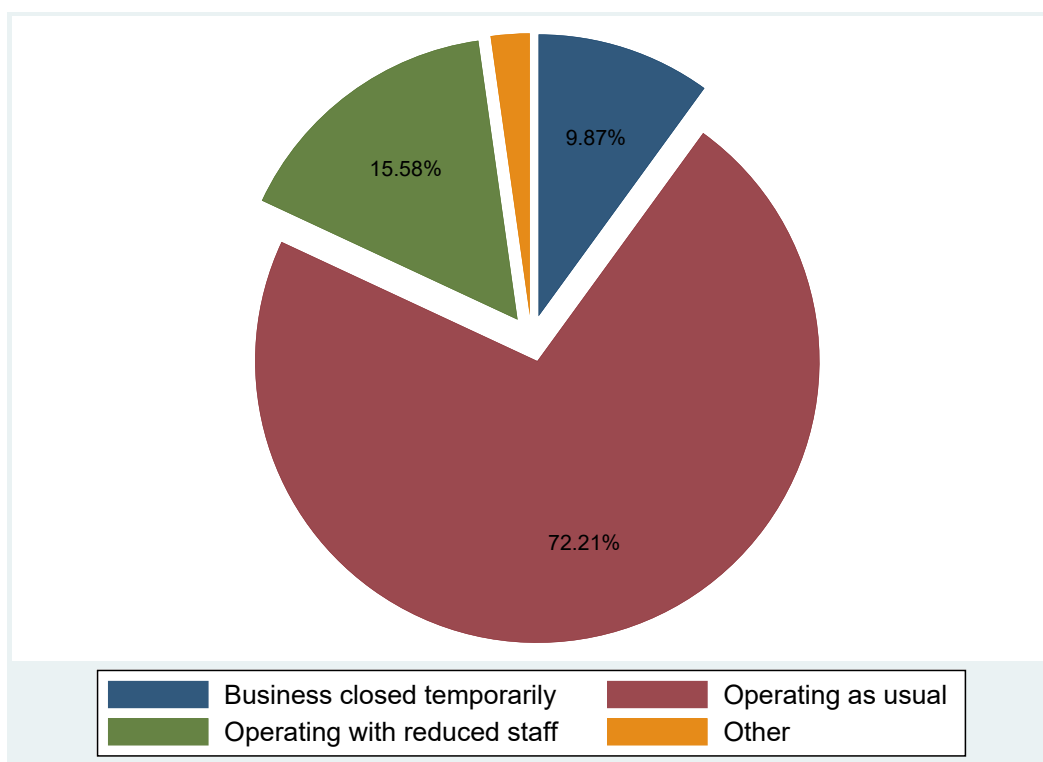


Figure 7. Results of “Currently, what is the operational status of your business?”

As can be seen in Figure 7, the majority 72.21% of the businesses are operating as usual, while 15.58% of the businesses are operating with reduced staff and 9.87% of the businesses have closed temporarily. . So overall, the businesses are beating the pandemic since most of the businesses are still operating as usual.

Descriptive Analysis – Measure of Central Tendency

business_current_status	Freq.	Percent	Cum.
Business closed temporarily	38	9.87	9.87
Operating as usual	278	72.21	82.08
Operating with reduced staff	60	15.58	97.66
Other	9	2.34	100.00
Total	385	100.00	

Table 1. Results of operational status of businesses in Sarpang.

From the frequency Table 1 above, it shows that mode choice is “Operating as usual.” The total business respondents of 72.21% chose “Operating as usual.”

Inferential Analysis – Statistical Significance Testing

In the survey sample, the main choice selected was “Operating as usual” (72.21%) followed far behind by “Operating with reduced staff” (15.58%). However, this was based on our sample from the business survey. We need to test whether this would be true in the Sarpang economy.

Ho: Our null hypothesis is that there is no difference between the proportions of “Operating as usual” and “Operating with reduced staff” options.

Ha: Our alternative hypothesis is that there is statistically significant differences between the two proportions.

Test for equality of proportions of nonzero outcomes in matched samples (Cochran's Q) :

Variable	Proportion	Count
q6a	.7220779	278
q6b	.1558442	60

Number of obs = 385
 Cochran's chi2(1) = 140.6036
 Prob > chi2 = 0.0000
 Exact p = 0.0000

Table 2. Cochran’s Q test between “Operating as usual” and “Operating with reduced staff.”

Cochran’s Q test would show us how likely to have result as in our survey sample or even higher, if in the population there would be no difference. Since our p-value is < 0.0001 as shown in Table 2, which is significantly less than $\alpha = 0.05$, we can conclude that most likely in the population two options are not chosen equally often. In particular, an exact pairwise Cochran’s Q test was statistically significant for “Operating as usual” vs. “Operating with reduced staff”, $\chi^2(1, N = 385)$

= 140.6036, $p < 0.0001$ (which is statistically significantly less than $\alpha = 0.05$). Therefore, “Operating as usual” is the dominant response of the businesses in the Sarpang economy.

Evidence on operational status of the businesses

An exact pairwise Cochran’s Q test was statistically significant for “Operating as usual” vs. “Operating with reduced staff”, $\chi^2(1, N = 385) = 140.6036, p < 0.0001$ (which is statistically significantly less than $\alpha = 0.05$). Therefore, “Operating as usual” is the dominant response of the businesses in the Sarpang economy.

Analyzing Impact of the Pandemic on Business Operations

The Bhutan Chamber of Commerce and Industry was interested to know what has been the most operational impact on businesses in Sarpang since the start of the coronavirus crisis in the country. To investigate this, Figure 8, which is visualization of survey data, shows the results of business respondents' opinions from the survey.

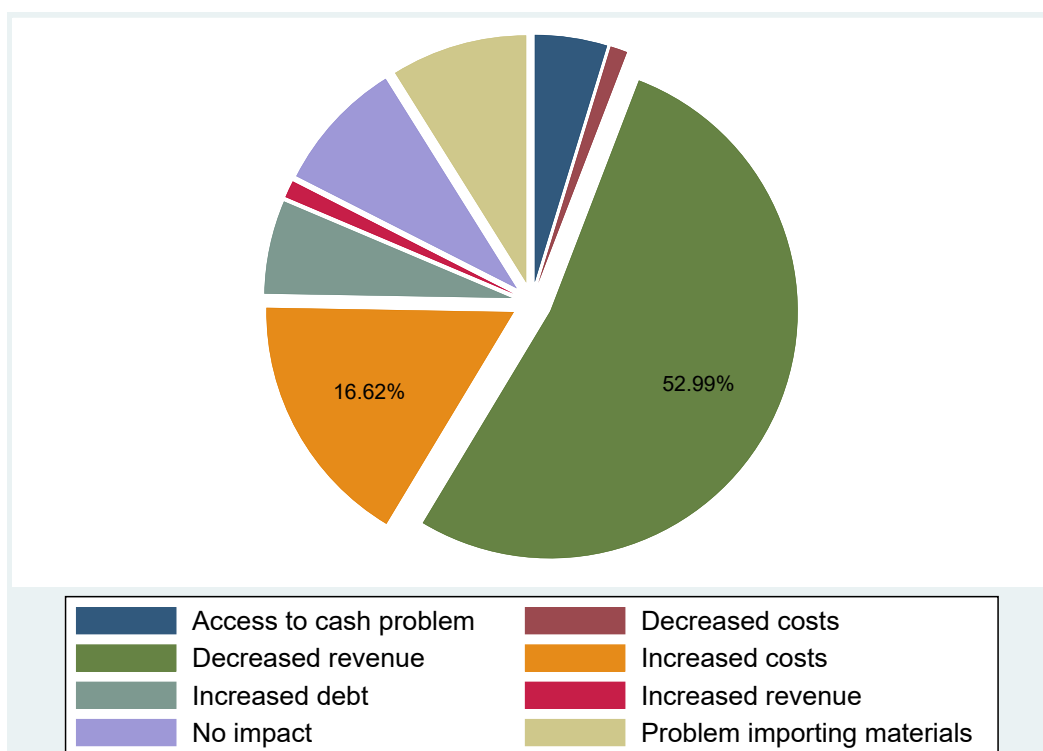


Figure 8. Results of “So far since the onset of the coronavirus crisis in the country, what has been the most impact on your business?”

As can be seen in Figure 8, the majority 52.99% of the businesses reported that the main operational impact on their businesses is “Decreased revenue,” followed far by “Increased costs” (16.62%).

Descriptive Analysis – Measure of Central Tendency

covid19_impact_on_business	Freq.	Percent	Cum.
Access to cash problem	18	4.68	4.68
Decreased costs	4	1.04	5.71
Decreased revenue	204	52.99	58.70
Increased costs	64	16.62	75.32
Increased debt	23	5.97	81.30
Increased revenue	5	1.30	82.60
No impact	33	8.57	91.17
Problem importing materials	34	8.83	100.00
Total	385	100.00	

Table 3. Results of impact of the pandemic on operation of the businesses in Sarpang.

From the frequency Table 3 above, it shows that mode choice is “Decreased revenue.” The total business respondents of 52.99% chose “Decreased revenue” as the main impact of the Covid-19 pandemic on the operation of their businesses.

Inferential Analysis – Statistical Significance Testing

In the survey sample, the main choice selected was “Decreased revenue” (52.99%) followed far behind by “Increased costs” (16.62%). However, this was based on our sample from the business survey. We need to test whether this would be true in the Sarpang economy.

Ho: Our null hypothesis is that there is no difference between the proportions of “Decreased revenue” and “Increased costs” options.

Ha: Our alternative hypothesis is that there is statistically significant differences between the two proportions.

Test for equality of proportions of nonzero outcomes in matched samples (Cochran's Q) :

Variable	Proportion	Count
q7a	.5298701	204
q7b	.1662338	64

```

Number of obs      =      385
Cochran's chi2(1)  =   73.13433
Prob > chi2        =    0.0000
Exact p            =    0.0000

```

Table 4. Cochran’s Q test between “Decreased revenue” and “Increased costs.”

Cochran's Q test would show us how likely to have result as in our survey sample or even higher, if in the population there would be no difference. Since our p-value is < 0.0001 as shown in Table 4, which is significantly less than $\alpha = 0.05$, we can conclude that most likely in the population two options are not chosen equally often. In particular, an exact pairwise Cochran's Q test was statistically significant for "Decreased revenue" vs. "Increased costs", $\chi^2(1, N = 385) = 73.13422, p < 0.0001$ (which is statistically significantly less than $\alpha = 0.05$). Therefore, "Decreased revenue" is the dominant response of the businesses in the Sarpang economy.

Evidence on impact of the pandemic on operation of the businesses

An exact pairwise Cochran's Q test was statistically significant for "Decreased revenue" vs. "Increased costs", $\chi^2(1, N = 385) = 73.13422, p < 0.0001$ (which is statistically significantly less than $\alpha = 0.05$). Therefore, "Decreased revenue" is the dominant response of the businesses in the Sarpang economy.

Analyzing Impact of the Pandemic on Overall Business Operations

The Bhutan Chamber of Commerce and Industry was interested to know how the Covid-19 pandemic impacted the overall operation of businesses in Sarpang. To investigate this, Figure 9, which is visualization of survey data, shows the results of business respondents' opinions from the survey.

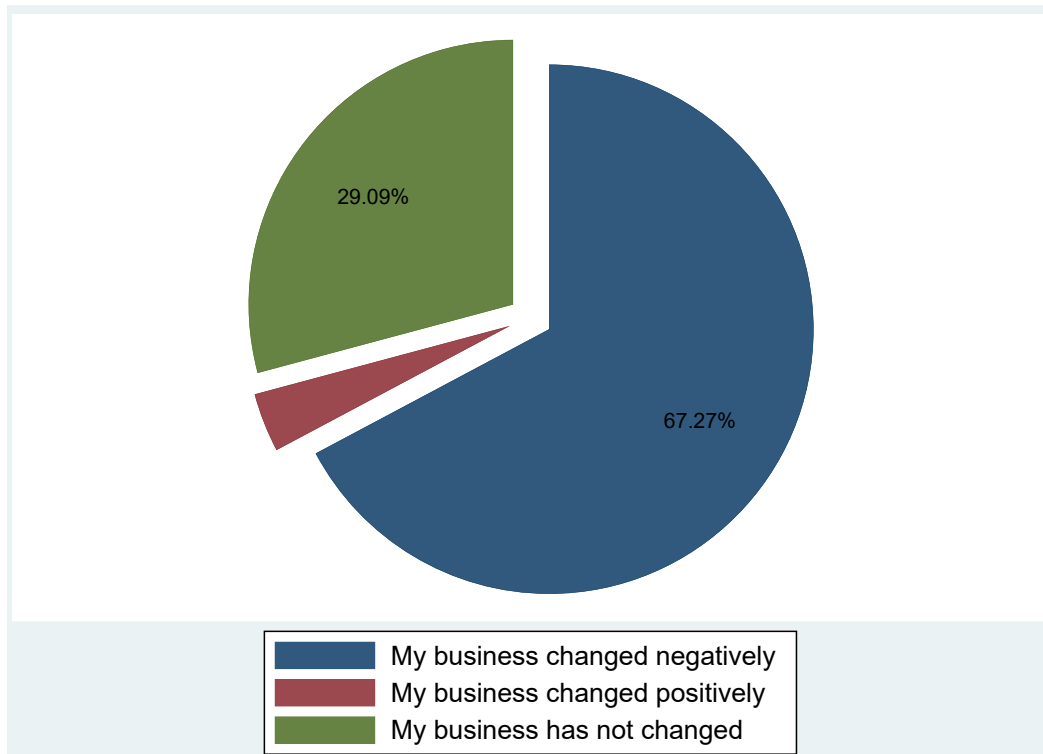


Figure 9. Results of “Please select the description that best fits your situation.”

As can be seen in Figure 9, the majority 67.27% of the businesses reported that their businesses have been changed negatively, followed far by “My business has not changed” (29.09%).

Descriptive Analysis – Measure of Central Tendency

business_operations	Freq.	Percent	Cum.
My business changed negatively	259	67.27	67.27
My business changed positively	14	3.64	70.91
My business has not changed	112	29.09	100.00
Total	385	100.00	

Table 5. Results of impact of the pandemic on overall operation of the businesses in Sarpang.

From the frequency Table 5 above, it shows that mode choice is “My business changed negatively.” The total business respondents of 67.27% chose “My business changed negatively” as the main impact of the Covid-19 pandemic on the overall operation of their businesses.

Inferential Analysis – Statistical Significance Testing

In the survey sample, the main choice selected was “My business changed negatively” (67.27%) followed far behind by “My business has not changed” (29.09%). However, this was based on our sample from the business survey. We need to test whether this would be true in the Sarpang economy.

Ho: Our null hypothesis is that there is no difference between the proportions of “My business changed negatively” and “My business has not changed” options.

Ha: Our alternative hypothesis is that there is statistically significant differences between the two proportions.

Test for equality of proportions of nonzero outcomes in matched samples (Cochran's Q):

Variable	Proportion	Count
q8a	.6727273	259
q8b	.2909091	112

```

Number of obs      =      385
Cochran's chi2(1)  =    58.24528
Prob > chi2         =     0.0000
Exact p            =     0.0000

```

Table 6. Cochran’s Q test between “My business changed negatively” and “My business has not changed.”

Cochran’s Q test would show us how likely to have result as in our survey sample or even higher, if in the population there would be no difference. Since our p-value is < 0.0001 as shown in Table 6, which is significantly less than $\alpha = 0.05$, we can conclude that most likely in the population

two options are not chosen equally often. In particular, an exact pairwise Cochran's Q test was statistically significant for "My business changed negatively" vs. "My business has not changed", $\chi^2(1, N = 385) = 58.24538, p < 0.0001$ (which is statistically significantly less than $\alpha = 0.05$). Therefore, "My business changed negatively" is the dominant response of the businesses in the Sarpang economy regarding the impact of the pandemic on the overall operation of their businesses.

Evidence on impact of the pandemic on overall operation of the businesses

An exact pairwise Cochran's Q test was statistically significant for "My business changed negatively" vs. "My business has not changed", $\chi^2(1, N = 385) = 58.24538, p < 0.0001$ (which is statistically significantly less than $\alpha = 0.05$). Therefore, "My business changed negatively" is the dominant response of the businesses in the Sarpang economy regarding the impact of the pandemic on the overall operation of their businesses.

Analyzing Main Operation Pressures on the Businesses

The Bhutan Chamber of Commerce and Industry was interested to what are the main operating pressures on the businesses in Sarpang. To investigate this, Figure 10, which is visualization of survey data, shows the results of business respondents' opinions from the survey.

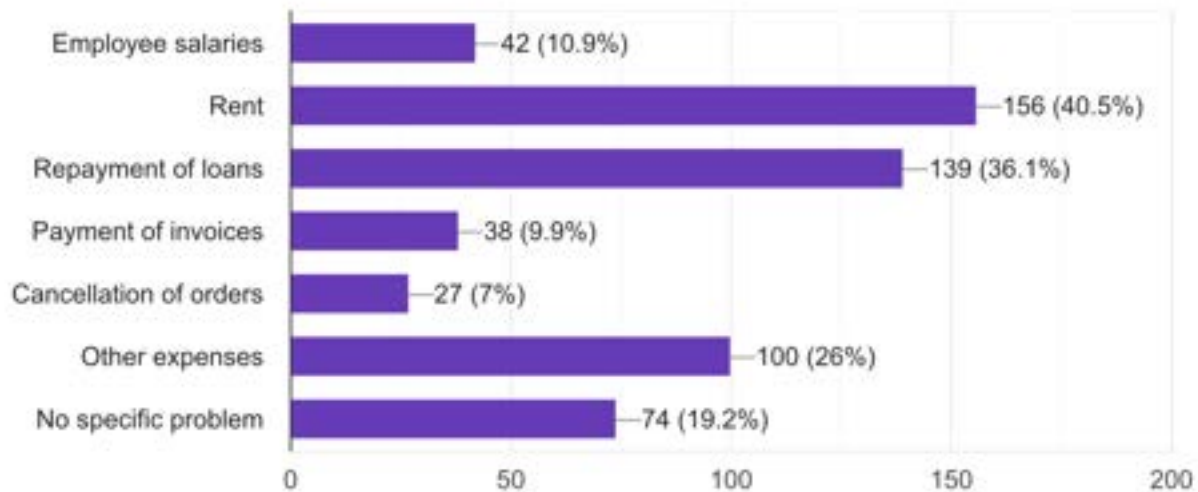


Figure 10. Results of “What are the main operating pressures that your business is currently facing?”

As can be seen in Figure 10, the main operating pressure that businesses are facing is “Rent” (40.50%) followed by “Repayment of loans” (36.10%).

Inferential Analysis – Statistical Significance Testing

In the survey sample, the main choice selected was “Rent” (40.50%) followed closely by “Repayment of loans” (36.10%). However, this was based on our sample from the business survey. We need to test whether this would be true in the Sarpang economy.

Ho: Our null hypothesis is that there is no difference between the proportions of “Rent” and “Repayment of loans” options.

Ha: Our alternative hypothesis is that there is statistically significant differences between the two proportions.

Test for equality of proportions of nonzero outcomes in matched samples (Cochran's Q) :

Variable	Proportion	Count
q9a	.4051948	156
q9b	.361039	139

Number of obs	=	385
Cochran's chi2 (1)	=	1.81761
Prob > chi2	=	0.1776
Exact p	=	0.2043

Table 7. Cochran’s Q test between “Rent” and “Repayment of loans.”

Cochran’s Q test would show us how likely to have result as in our survey sample or even higher, if in the population there would be no difference. Since our p-value is 0.2043 as shown in Table 7, which is significantly greater than $\alpha = 0.05$, we can conclude that there is no evidence that most likely in the population two options are not chosen equally often. In particular, an exact pairwise Cochran’s Q test was not statistically significant for “Rent” vs. “Repayment of loans”, $\chi^2(1, N = 385) = 1.81761, p = 0.2043$ (which is statistically significantly greater than $\alpha = 0.05$). Therefore, both “Rent” and “Repayment of loans” are the dominant responses of the businesses in the Sarpang economy regarding the main operating pressures the businesses are facing due to the pandemic.

Evidence on main operating pressures businesses are facing due to the pandemic

An exact pairwise Cochran’s Q test was not statistically significant for “Rent” vs. “Repayment of loans”, $\chi^2(1, N = 385) = 1.81761, p = 0.2043$ (which is statistically significantly greater than $\alpha = 0.05$). Therefore, both “Rent” and “Repayment of loans” are the dominant responses of the businesses in the Sarpang economy regarding the main operating pressures the businesses are facing due to the pandemic.

Analyzing Cashflow of the Businesses to Maintain Operations

The Bhutan Chamber of Commerce and Industry was interested to know how long current cashflow of the businesses can maintain their operations. To investigate this, Figure 11, which is visualization of survey data, shows the results of business respondents' opinions from the survey.

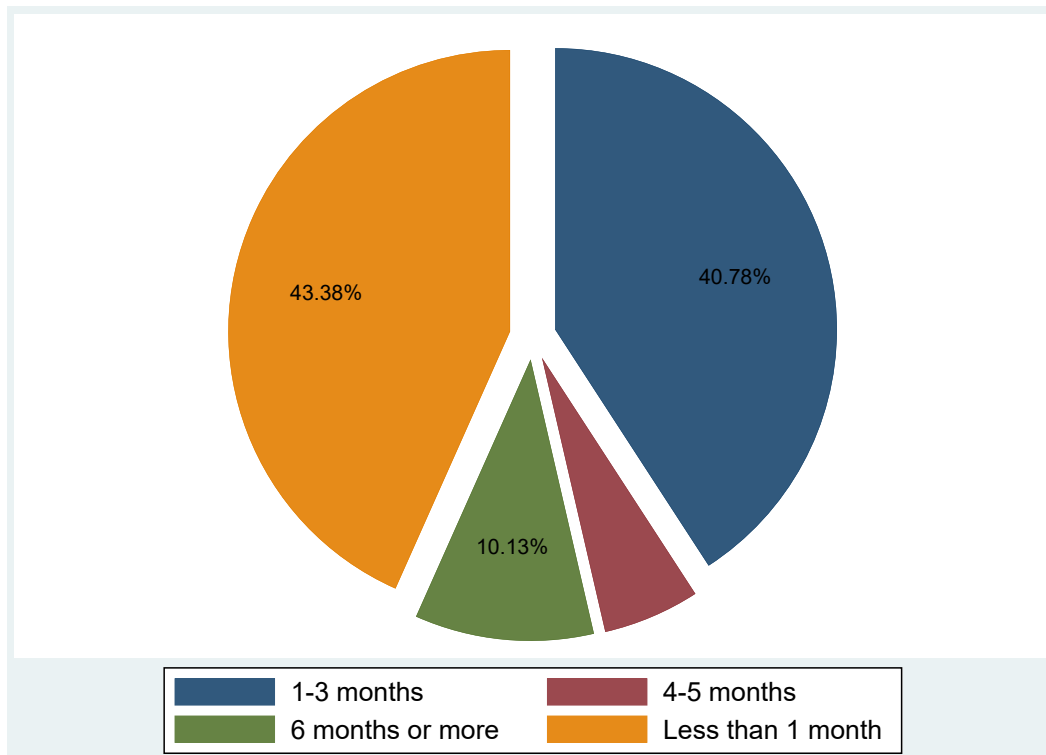


Figure 11. Results of “How long can your business' current cash flow maintain the business' operation?”

As can be seen in Figure 11, the 43.38% of the businesses reported that their current cashflow will not be able to maintain their business beyond one month, followed by 40.78% of the businesses report that their current cashflow will not be able to maintain their business operation beyond three months. In other words, in terms of current cashflow, the vast majority of 84.16% businesses will not survive beyond three months.

Descriptive Analysis – Measure of Central Tendency

cashflow	Freq.	Percent	Cum.
1-3 months	157	40.78	40.78
4-5 months	22	5.71	46.49
6 months or more	39	10.13	56.62
Less than 1 month	167	43.38	100.00
Total	385	100.00	

Table 8. Results of assessment of current cashflow of the businesses to maintain operation.

From the frequency Table 8 above, it shows that mode choice is “Less than 1 month.” The total business respondents of 43.38% chose “Less than 1 month” as the main response for extend how long their current cashflow can maintain their business operation, closely followed by “1-3 months” (40.78%) and then “6 months or more” (10.13%) and “4-5 months” (5.71%) as the least choice.

Inferential Analysis – Statistical Significance Testing

In the survey sample, the main choice selected was “Less than 1 month” (43.38%), followed closely by “1-3 months” (40.78%). However, this was based on our sample from the business survey. We need to test whether this would be true in the Sarpang economy.

Ho: Our null hypothesis is that there is no difference between the proportions of “Less than 1 month” and “1-3 months” options.

Ha: Our alternative hypothesis is that there is statistically significant differences between the two proportions.

Test for equality of proportions of nonzero outcomes in matched samples (Cochran's Q) :

Variable	Proportion	Count
q10a	.4337662	167
q10b	.4077922	157

```

Number of obs      =      385
Cochran's chi2(1)  =      .308642
Prob > chi2        =      0.5785
Exact p            =      0.6171

```

Table 9. Cochran’s Q test between “Less than 1 month” and “1-3 months.”

Cochran's Q test would show us how likely to have result as in our survey sample or even higher, if in the population there would be no difference. Since our p-value is 0.6171 as shown in Table 9, which is significantly greater than $\alpha = 0.05$, we can conclude that there is no evidence that most likely in the population two options are not chosen equally often. In particular, an exact pairwise Cochran's Q test was not statistically significant for "Less than 1 month" vs. "1-3 months", $\chi^2(1, N = 385) = 0.308643, p = 0.6171$ (which is statistically significantly greater than $\alpha = 0.05$). Therefore, both "Less than 1 month" and "1-3 months" are the dominant responses of the businesses in the Sarpang economy regarding how long their current cashflow can maintain their business operation.

Evidence on how long their current cashflow can maintain their business operation

An exact pairwise Cochran's Q test was not statistically significant for "Less than 1 month" vs. "1-3 months", $\chi^2(1, N = 385) = 0.308643, p = 0.6171$ (which is statistically significantly greater than $\alpha = 0.05$). Therefore, both "Less than 1 month" and "1-3 months" are the dominant responses of the businesses in the Sarpang economy regarding how long their current cashflow can maintain their business operation.

Analyzing Other Problems Businesses are Facing due to the Pandemic

The Bhutan Chamber of Commerce and Industry was interested to know what other problems businesses are facing due to the pandemic. To investigate this, Figure 12, which is visualization of survey data, shows the results of business respondents' opinions from the survey.

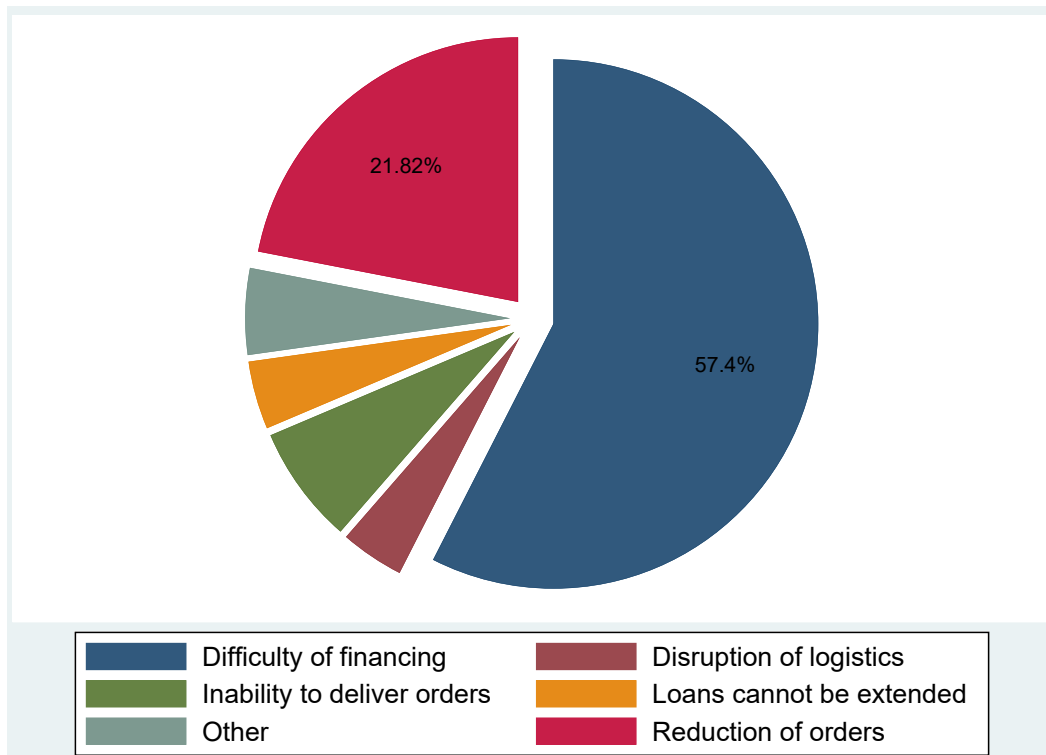


Figure 12. Results of “Are there any other business problems you are facing due to the pandemic?”

As can be seen in Figure 12, the majority 57.40% of the businesses reported that their main other problem due to the pandemic is “Difficulty of financing,” followed far behind by “Reduction of orders” (21.82%).

Descriptive Analysis – Measure of Central Tendency

business_other_problem	Freq.	Percent	Cum.
Difficulty of financing	221	57.40	57.40
Disruption of logistics	15	3.90	61.30
Inability to deliver orders	28	7.27	68.57
Loans cannot be extended	16	4.16	72.73
Other	21	5.45	78.18
Reduction of orders	84	21.82	100.00
Total	385	100.00	

Table 10. Results of assessment of other problems businesses are facing due to the pandemic.

From the frequency Table 10 above, it shows that mode choice is “Difficulty of financing.” The total business respondents of 57.40% chose “Difficulty of financing” as the main other problem, followed far behind by “Reduction of orders” (21.82%), “Inability to deliver orders” (7.27%), “Other” (5.45%), “Loans cannot be extended” (4.16%), and “Disruption of logistics” (3.90%).

Inferential Analysis – Statistical Significance Testing

In the survey sample, the main choice selected was “Difficulty of financing” (57.40%), followed far behind by “Reduction of orders” (21.82%). However, this was based on our sample from the business survey. We need to test whether this would be true in the Sarpang economy.

Ho: Our null hypothesis is that there is no difference between the proportions of “Difficulty of financing” and “Reduction of orders” options.

Ha: Our alternative hypothesis is that there is statistically significant differences between the two proportions.

Test for equality of proportions of nonzero outcomes in matched samples (Cochran's Q) :

Variable	Proportion	Count
q11a	.574026	221
q11b	.2181818	84

Number of obs	=	385
Cochran's chi2 (1)	=	61.5377
Prob > chi2	=	0.0000
Exact p	=	0.0000

Table 11. Cochran’s Q test between “Difficulty of financing” and “Reduction of orders.”

Cochran's Q test would show us how likely to have result as in our survey sample or even higher, if in the population there would be no difference. Since our p-value is < 0.0001 as shown in Table 11, which is significantly less than $\alpha = 0.05$, we can conclude that most likely in the population two options are not chosen equally often. In particular, an exact pairwise Cochran's Q test was statistically significant for "Difficulty of financing" vs. "Reduction of orders", $\chi^2(1, N = 385) = 61.5377, p < 0.0001$ (which is statistically significantly less than $\alpha = 0.05$). Therefore, "Difficulty of financing" is the dominant response of the businesses in the Sarpang economy regarding the other problem the businesses are facing.

Evidence on other problem(s) the businesses are facing due to the pandemic

An exact pairwise Cochran's Q test was statistically significant for "Difficulty of financing" vs. "Reduction of orders", $\chi^2(1, N = 385) = 61.5377, p < 0.0001$ (which is statistically significantly less than $\alpha = 0.05$). Therefore, "Difficulty of financing" is the dominant response of the businesses in the Sarpang economy regarding the other problem the businesses are facing.

Analyzing Degree of Impact of the Covid-19 Pandemic on the Businesses

The Bhutan Chamber of Commerce and Industry was interested to know degree of impact of the Covid-19 pandemic on the businesses in Sarpang. To investigate this, Figure 13, which is visualization of survey data, shows the results of business respondents' opinions from the survey.

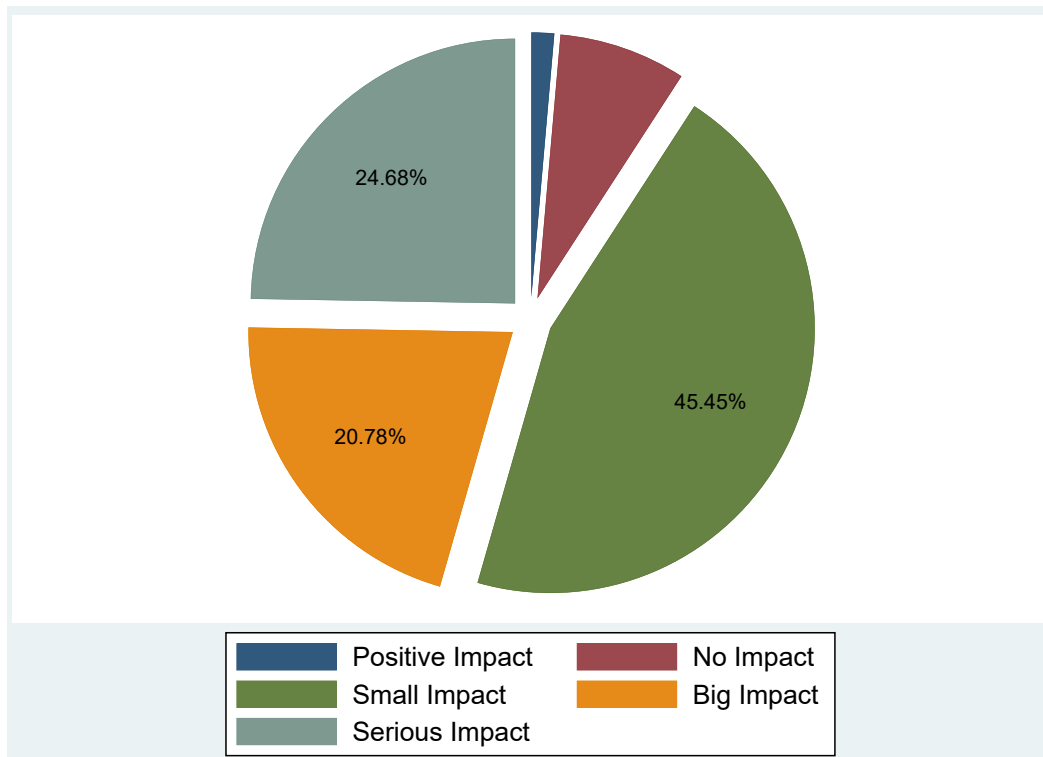


Figure 13. Results of “To what extent has operation of your business been affected by the pandemic?”

As can be seen in Figure 13, the 45.45% of the businesses reported that they suffered “Small Impact” due to the pandemic, followed by 24.68% of the businesses reporting “Serious Impact,” and 20.78% reporting “Big Impact,” together 90.91% of the businesses reported that they suffered negative impact because of the pandemic.

Descriptive Analysis – Measure of Central Tendency

COVID-19 Impact	Freq.	Percent	Cum.
Positive Impact	5	1.30	1.30
No Impact	30	7.79	9.09
Small Impact	175	45.45	54.55
Big Impact	80	20.78	75.32
Serious Impact	95	24.68	100.00
Total	385	100.00	

Table 12. Results of assessment of extent of impact of the covid-19 on businesses.

From the frequency Table 12 above, it shows that mode choice is “Small Impact.” The total business respondents of 45.45% chose “Small Impact,” followed by 24.68% as “Serious Impact,” 20.78% as “Big Impact,” 7.79% as “No Impact,” and 1.30% as “Positive Impact.” On average, 90.91% of the businesses are impacted by the Covid-19.

Inferential Analysis – Statistical Significance Testing

In the survey sample, the main choice selected was “Small Impact” (45.45%), followed by “Serious Impact” (24.68%). However, this was based on our sample from the business survey. We need to test whether this would be true in the Sarpang economy.

Ho: Our null hypothesis is that there is no difference between the proportions of “Small Impact” and “Serious Impact” options.

Ha: Our alternative hypothesis is that there is statistically significant differences between the two proportions.

Test for equality of proportions of nonzero outcomes in matched samples (Cochran's Q) :

Variable	Proportion	Count
q12a	.4545455	175
q12b	.2467532	95

```

Number of obs      =      385
Cochran's chi2(1)  =    23.7037
Prob > chi2         =    0.0000
Exact p            =    0.0000

```

Table 13. Cochran’s Q test between “Small Impact” and “Serious Impact.”

Cochran’s Q test would show us how likely to have result as in our survey sample or even higher, if in the population there would be no difference. Since our p-value is < 0.0001 as shown in Table

13, which is significantly less than $\alpha = 0.05$, we can conclude that most likely in the population two options are not chosen equally often. In particular, an exact pairwise Cochran's Q test was statistically significant for "Small Impact" vs. "Serious Impact", $\chi^2(1, N = 385) = 23.7037, p < 0.0001$ (which is statistically significantly less than $\alpha = 0.05$). Therefore, "Small Impact" is the dominant response of the businesses in the Sarpang economy regarding the extent of Covid-19 impact on the businesses.

Evidence on the degree of Covid-19 impact on the businesses

An exact pairwise Cochran's Q test was statistically significant for "Small Impact" vs. "Serious Impact", $\chi^2(1, N = 385) = 23.7037, p < 0.0001$ (which is statistically significantly less than $\alpha = 0.05$). Therefore, "Small Impact" is the dominant response of the businesses in the Sarpang economy regarding the degree of Covid-19 impact on the businesses.

During Covid-19: Business Firms' Action Responses on Impact of the Pandemic

Analyzing Business Firms' Responses on Managing Cashflow Shortage

The Bhutan Chamber of Commerce and Industry was interested to know how businesses manage cashflow shortage during the pandemic. To investigate this, Figure 14, which is visualization of survey data, shows the results of business respondents' opinions from the survey.

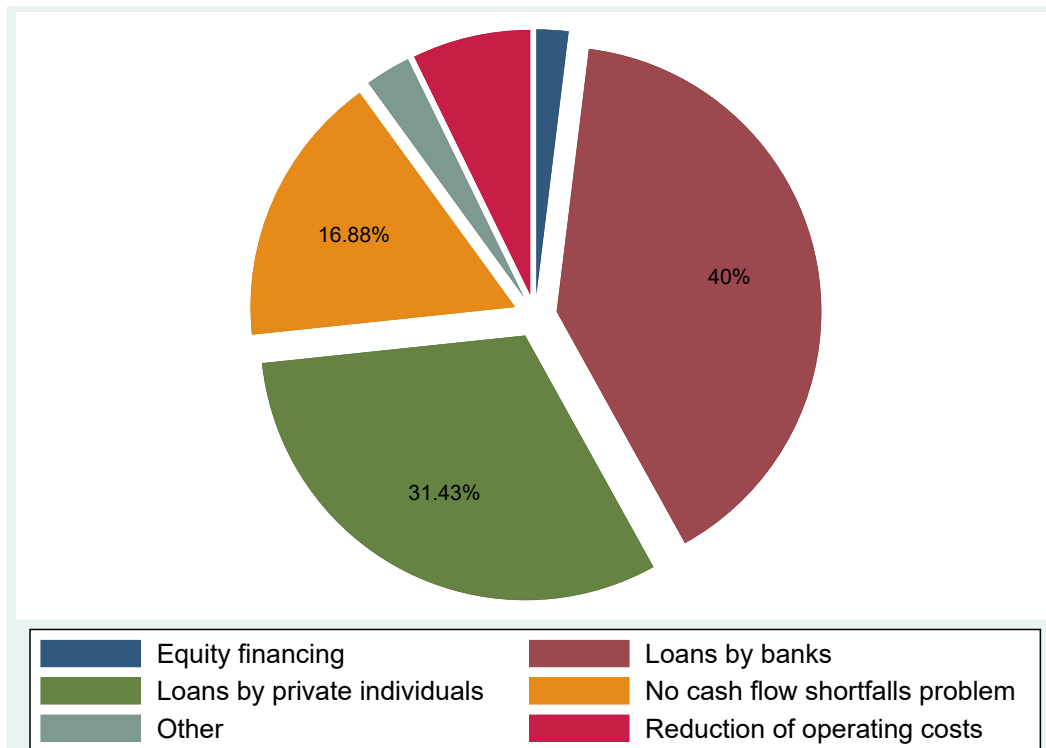


Figure 14. Results of “What is the main means you are considering to deal with the cashflow shortage?”

As can be seen in Figure 14, the 40.00% of the businesses reported that they managed cashflow shortage with loans from banks, followed by 31.43% of the businesses managed their cashflow shortage with loans from private individuals, which are two main strategies.

Descriptive Analysis – Measure of Central Tendency

cashflow_strategy	Freq.	Percent	Cum.
-----+-----			
Equity financing	7	1.82	1.82
Loans by banks	154	40.00	41.82
Loans by private individuals	121	31.43	73.25
No cash flow shortfalls problem	65	16.88	90.13
Other	10	2.60	92.73
Reduction of operating costs	28	7.27	100.00
-----+-----			
Total	385	100.00	

Table 15. Results of assessment of businesses' action responses to cashflow shortage.

From the frequency Table 15 above, it shows that mode choice is “Loans by banks.” The total business respondents of 40.00% chose “Loans by banks,” followed by 31.43% for “Loans by private individuals,” 16.88% said they have “No cashflow shortfalls problem,” 7.27% managed their cashflow problem by reducing their operating costs, 2.60% managed with other sources and 1.82% did with equity financing.

Inferential Analysis – Statistical Significance Testing

In the survey sample, the main choice selected was “Loans by banks” (40.00%), followed by “Loans by private individuals” (31.43%). However, this was based on our sample from the business survey. We need to test whether this would be true in the Sarpang economy.

Ho: Our null hypothesis is that there is no difference between the proportions of “Loans by banks” and “Loans by private individuals” options.

Ha: Our alternative hypothesis is that there is statistically significant differences between the two proportions.

Test for equality of proportions of nonzero outcomes in matched samples (Cochran's Q) :

Variable	Proportion	Count
-----+-----		
q13a	.4	154
q13b	.3142857	121
-----+-----		

```

Number of obs      =      385
Cochran's chi2(1)  =      3.96
Prob > chi2        =     0.0466
Exact p            =     0.0534

```

Table 16. Cochran's Q test between “Loans by banks” and “Loans by private individuals.”

Cochran's Q test would show us how likely to have result as in our survey sample or even higher, if in the population there would be no difference. Since our p-value is 0.0534 as shown in Table 16, which is significantly greater than $\alpha = 0.05$, we can conclude that there is no evidence that most likely in the population two options are not chosen equally often. In particular, an exact pairwise Cochran's Q test was not statistically significant for "Loans by banks" vs. "Loans by private individuals", $\chi^2(1, N = 385) = 3.96, p = 0.0534$ (which is statistically significantly greater than $\alpha = 0.05$). Therefore, both "Loans by banks" and "Loans by private individuals" are the dominant strategies of the businesses in the Sarpang economy regarding how they managed cashflow during the pandemic.

Evidence on how businesses managed cashflow shortage during the pandemic

An exact pairwise Cochran's Q test was not statistically significant for "Loans by banks" vs. "Loans by private individuals", $\chi^2(1, N = 385) = 3.96, p = 0.0534$ (which is statistically significantly greater than $\alpha = 0.05$). Therefore, both "Loans by banks" and "Loans by private individuals" are the dominant strategies of the businesses in the Sarpang economy regarding how they managed cashflow during the pandemic.

Analyzing Business Firms' Responses on Managing Workers Shortage

The Bhutan Chamber of Commerce and Industry was interested to know how businesses manage workers shortage during the pandemic. To investigate this, Figure 15, which is visualization of survey data, shows the results of business respondents' opinions from the survey.

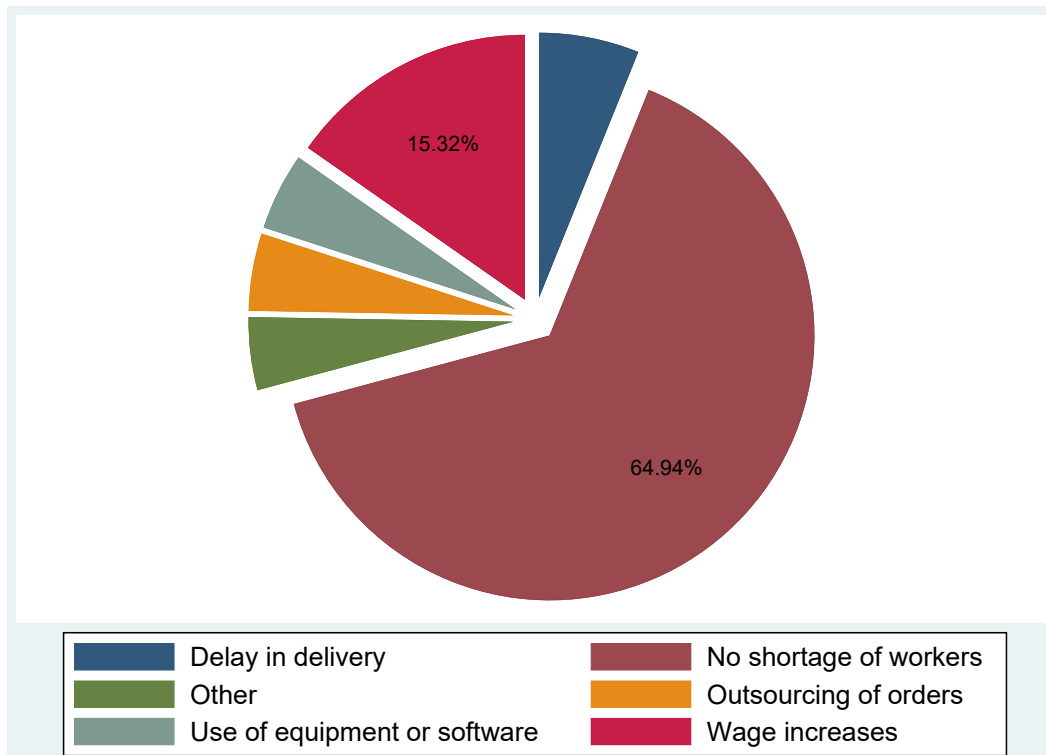


Figure 15. Results of “What is the main means you are considering to deal with the shortage of workers?”

As can be seen in Figure 15, the majority 64.94% of the businesses reported that they have no shortage of workers, followed far behind by 15.32% of the businesses responding that they managed their workers shortage by increasing wages to attract workers.

Descriptive Analysis – Measure of Central Tendency

workers_shortage_strategy	Freq.	Percent	Cum.
Delay in delivery	23	5.97	5.97
No shortage of workers	250	64.94	70.91
Other	17	4.42	75.32
Outsourcing of orders	18	4.68	80.00
Use of equipment or software	18	4.68	84.68
Wage increases	59	15.32	100.00
Total	385	100.00	

Table 17. Results of assessment of businesses' action responses to workers shortage.

From the frequency Table 17 above, it shows that mode choice is “No shortage of workers.” The total business respondents of 64.94% chose “No shortage of workers,” followed far behind by “Wage increases” (15.32%), “Delay in delivery” (5.97%), “Outsourcing of orders” (4.68%), “Use of equipment or software” (4.68%), and other strategies (4.42%).

Inferential Analysis – Statistical Significance Testing

In the survey sample, the main choice selected was “No shortage of workers” (64.94%%), followed far behind by “Wage increases” (15.32%). However, this was based on our sample from the business survey. We need to test whether this would be true in the Sarpang economy.

Ho: Our null hypothesis is that there is no difference between the proportions of “No shortage of workers” and “Wage increases” options.

Ha: Our alternative hypothesis is that there is statistically significant differences between the two proportions.

Test for equality of proportions of nonzero outcomes in matched samples (Cochran's Q) :

Variable	Proportion	Count
q14a	.6493506	250
q14b	.1532468	59

```

Number of obs      =      385
Cochran's chi2(1)  =   118.0615
Prob > chi2        =    0.0000
Exact p            =    0.0000

```

Table 18. Cochran's Q test between “No shortage of workers ” and “Wage increases.”

Cochran's Q test would show us how likely to have result as in our survey sample or even higher, if in the population there would be no difference. Since our p-value is < 0.0001 as shown in Table 18, which is significantly less than $\alpha = 0.05$, we can conclude that most likely in the population two options are not chosen equally often. In particular, an exact pairwise Cochran's Q test was statistically significant for "No shortage of workers" vs. "Wage increases", $\chi^2(1, N = 385) = 118.0615, p < 0.0001$ (which is statistically significantly less than $\alpha = 0.05$). Therefore, "No shortage of workers" is the dominant response of the businesses in the Sarpang economy regarding how businesses managed workers shortage during the pandemic.

Evidence on how businesses managed workers shortage during the pandemic

An exact pairwise Cochran's Q test was statistically significant for "No shortage of workers" vs. "Wage increases", $\chi^2(1, N = 385) = 118.0615, p < 0.0001$ (which is statistically significantly less than $\alpha = 0.05$). Therefore, "No shortage of workers" is the dominant response of the businesses in the Sarpang economy regarding how businesses managed workers shortage during the pandemic.

Analyzing Business Firms' Responses on Managing Materials Shortage

The Bhutan Chamber of Commerce and Industry was interested to know how businesses manage materials shortage during the pandemic. To investigate this, Figure 16, which is visualization of survey data, shows the results of business respondents' opinions from the survey.

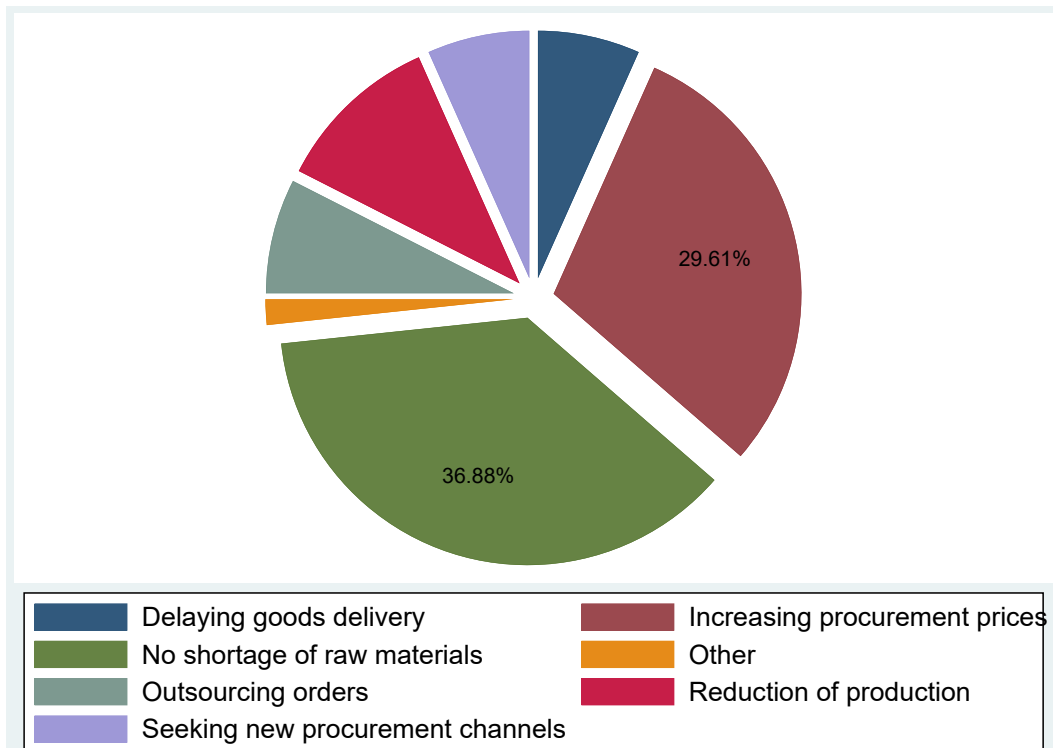


Figure 16. Results of “What is the main means you are considering to deal with the shortage of materials?”

As can be seen in Figure 16, the 36.88% of the businesses reported that they have no shortage of materials, followed by 29.61% of the businesses responding that they managed their materials shortage by increasing procurement prices.

Descriptive Analysis – Measure of Central Tendency

materials_shortage_strategy	Freq.	Percent	Cum.
-----+-----			
Delaying goods delivery	26	6.75	6.75
Increasing procurement prices	114	29.61	36.36
No shortage of raw materials	142	36.88	73.25
Other	7	1.82	75.06
Outsourcing orders	29	7.53	82.60
Reduction of production	41	10.65	93.25
Seeking new procurement channels	26	6.75	100.00
-----+-----			
Total	385	100.00	

Table 19. Results of assessment of businesses' action responses to materials shortage.

From the frequency Table 19 above, it shows that mode choice is “No shortage of materials.” The total business respondents of 36.88% chose “No shortage of materials,” followed by “Increasing procurement prices” (29.61%), “Reduction of production” (10.65%), “Outsourcing orders” (7.53%), “Delaying goods delivery” (6.75%), “Seeking new procurement channels” (6.75%) and other strategies (1.82%).

Inferential Analysis – Statistical Significance Testing

In the survey sample, the main choice selected was “No shortage of materials” (36.88%), followed by “Increasing procurement prices” (29.61%). However, this was based on our sample from the business survey. We need to test whether this would be true in the Sarpang economy.

Ho: Our null hypothesis is that there is no difference between the proportions of “No shortage of materials” and “Increasing procurement prices” options.

Ha: Our alternative hypothesis is that there is statistically significant differences between the two proportions.

Test for equality of proportions of nonzero outcomes in matched samples (Cochran's Q) :

Variable	Proportion	Count
-----+-----		
q15a	.3688312	142
q15b	.2961039	114
-----+-----		

Number of obs	=	385
Cochran's chi2 (1)	=	3.0625
Prob > chi2	=	0.0801
Exact p	=	0.0913

Table 20. Cochran's Q test between “No shortage of materials” and “Increasing procurement prices.”

Cochran's Q test would show us how likely to have result as in our survey sample or even higher, if in the population there would be no difference. Since our p-value is 0.0913 as shown in Table 20, which is significantly greater than $\alpha = 0.05$, we can conclude that there is no evidence that most likely in the population two options are not chosen equally often. In particular, an exact pairwise Cochran's Q test was not statistically significant for "No shortage of materials" vs. "Increasing procurement prices", $\chi^2(1, N = 385) = 3.0625, p = 0.0913$ (which is statistically significantly greater than $\alpha = 0.05$). Therefore, both "No shortage of materials" and "Increasing procurement prices" are the dominant responses of the businesses in the Sarpang economy regarding how businesses managed materials shortage during the pandemic.

Evidence on how businesses managed materials shortage during the pandemic

An exact pairwise Cochran's Q test was not statistically significant for "No shortage of materials" vs. "Increasing procurement prices", $\chi^2(1, N = 385) = 3.0625, p = 0.0913$ (which is statistically significantly greater than $\alpha = 0.05$). Therefore, both "No shortage of materials" and "Increasing procurement prices" are the dominant responses of the businesses in the Sarpang economy regarding how businesses managed materials shortage during the pandemic.

Beyond Covid-19: Business Firms' Perceptions for the Future Way Forward

Analyzing Business Firms' Perceptions on Willingness to Transform to Online Commerce

The Bhutan Chamber of Commerce and Industry was interested to know how willing businesses are to transform to online commerce as a way forward for the future. To investigate this, Figure 17, which is visualization of survey data, shows the results of business respondents' opinions from the survey.

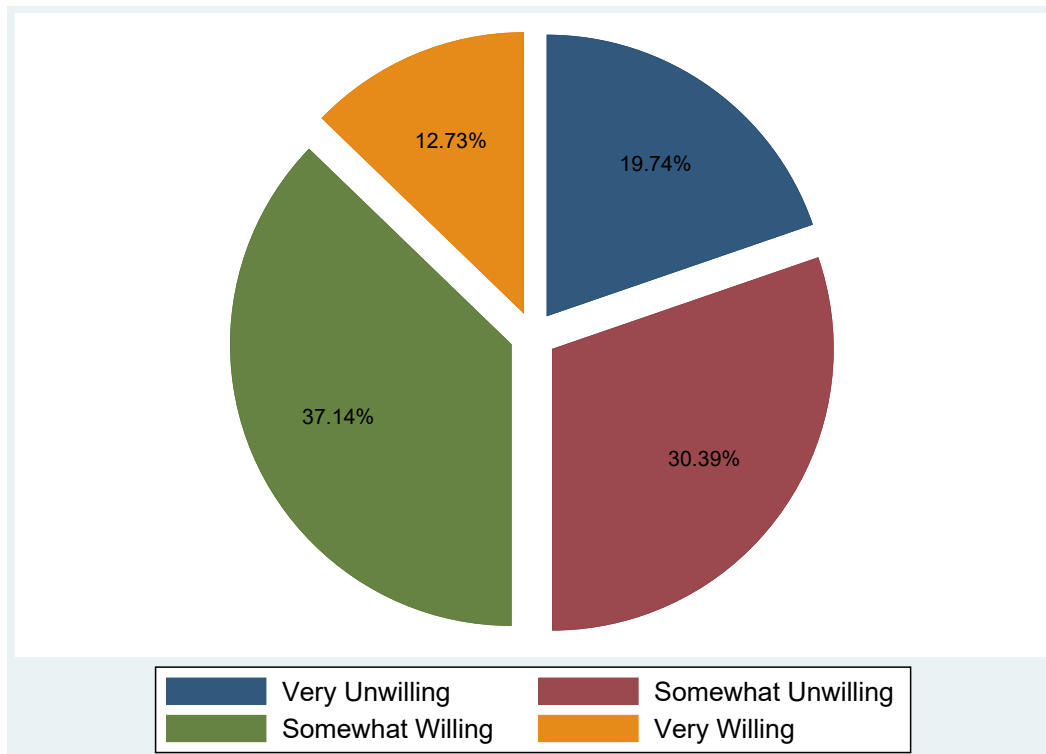


Figure 17. Results of “Are you willing to transform to online commerce?”

As can be seen in Figure 17, the 37.14% of the businesses reported that they are somewhat willing to transform to online commerce, followed by 30.39% of the businesses who said that they are somewhat unwilling.

Descriptive Analysis – Measure of Central Tendency

Online Willingness	Freq.	Percent	Cum.
Very Unwilling	76	19.74	19.74
Somewhat Unwilling	117	30.39	50.13
Somewhat Willing	143	37.14	87.27
Very Willing	49	12.73	100.00
Total	385	100.00	

Table 21. Results of assessment of businesses' willingness to transform to online commerce.

From the frequency Table 21 above, it shows that mode choice is "Somewhat Willing." The total business respondents of 37.14% chose "Somewhat willing," followed by "Somewhat Unwilling" (30.39%), "Very Unwilling" (19.74%), and "Very Willing" (12.73%).

Variable	N	p50	Min	Max
online	385	2	1	4

Table 22. Result of businesses' perceptions on willingness to transform to online commerce.

The calculated sample median = 2, which is "Somewhat Unwilling." This means at least 50% of the business respondents chose "Somewhat Unwilling" or "Very Unwilling" as the median score rating is 2.

Descriptive Analysis - Measure of Dispersion

```
. cns online , min(1) max(4)
```

```
Consensus Measure for online
Cns(X) = .49879867
```

Table 23. Result of measure of consensus on businesses' perceptions on willingness to transform to online commerce.

The measure of consensus (Tastle and Wierman, 2007), which ranges from 0 to 1 where 0 is complete lack of consensus and 1 is complete consensus of opinion, shows that for the businesses' perceptions on their willingness to transform to online commerce, it is 0.4988 which is a weak consensus. It means there is no clear separation between proportion of willing and unwilling.

Inferential Analysis – Statistical Significance Testing

Wilcoxon signed-rank test

Sign	Obs	Sum ranks	Expected
-----+-----			
Positive	192	34488.5	37152.5
Negative	193	39816.5	37152.5
Zero	0	0	0
-----+-----			
All	385	74305	74305

```

Unadjusted variance  4774096.25
Adjustment for ties  -406848.75
Adjustment for zeros           0.00
-----
Adjusted variance    4367247.50

```

```

H0: online = 2.5
    z = -1.275
Prob > |z| = 0.2024
Exact prob = 0.2041

```

Table 23. Results of One-Sample Wilcoxon Signed Rank Test

We have seen that the marginal majority 50.13% of business respondents surveyed said that they are somewhat unwilling or very unwilling to transform to online commerce as a way forward for the future. However, that was just based on our sample from the business survey. We need to test whether this would be the case in the business population in Sarpang too. In other words, we have to test whether the true median score in the population would be statistically significantly different from 2.5 since 2 = “Somewhat Unwilling” and 3 = “Somewhat Willing.”

H₀: Our null hypothesis is that business population’s true median is 2.5.

H_a: Our alternative hypothesis is that business population’s true median is significantly different from 2.5.

One-sample Wilcoxon signed rank test would show us how likely to have result as in our survey sample or even more extreme if the true median in the population is 2.5. Since our p-value is 0.2041, which is significantly greater than $\alpha = 0.05$, we can conclude that there is no evidence that the true population median is statistically significantly different from 2.5. In short, our one-sample Wilcoxon signed rank test indicated that there is no evidence that the population median was significantly different from 2.5, $Z = -1.275$, $p = 0.2041$.

Region difference in perceptions on willingness to transform to online commerce

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

region	Obs	Rank sum	Expected
-----+-----			
Rural	239	41556.5	46127
Urban	146	32748.5	28178
-----+-----			
Combined	385	74305	74305

Unadjusted variance 1122423.67

Adjustment for ties -99957.95

Adjusted variance 1022465.72

H0: online(region==Rural) = online(region==Urban)

z = -4.520

Prob > |z| = 0.0000

Exact prob = 0.0000

Table 25. Results of Two-Sample Wilcoxon Rank-sum (Mann-Whitney) Test.

There is statistically significant difference between businesses in rural areas and those in urban areas on their willingness to transform to online commerce ($z = -4.520$, $p\text{-value} < 0.0001$ which is less than $\alpha = 0.05$). The negative z -score shows that businesses in rural areas are less likely to transform to online commerce than those in urban areas.

Evidence on businesses' perceptions on willingness to transform to online commerce

There is no statistically significant evidence ($p = 0.2041$) that the 50.13% marginal majority of businesses in the population are unwilling to transform to online commerce. In particular, our one-sample Wilcoxon signed rank test indicated that there is no evidence that the population median was significantly different from 2.5, $Z = -1.275$, $p = 0.2041$. However, there is statistically significant difference between businesses in rural areas and those in urban areas on their willingness to transform to online commerce ($z = -4.520$, $p\text{-value} < 0.0001$ which is less than $\alpha = 0.05$). The negative z -score shows that businesses in rural areas are less likely to transform to online commerce than those in urban areas.

Analyzing Businesses' Perceptions on any Positive Impact of the Pandemic

The Bhutan Chamber of Commerce and Industry was interested to know whether businesses perceived potentially any positive impacts of the pandemic. To investigate this, Figure 18, which is visualization of survey data, shows the results of business respondents' opinions from the survey.

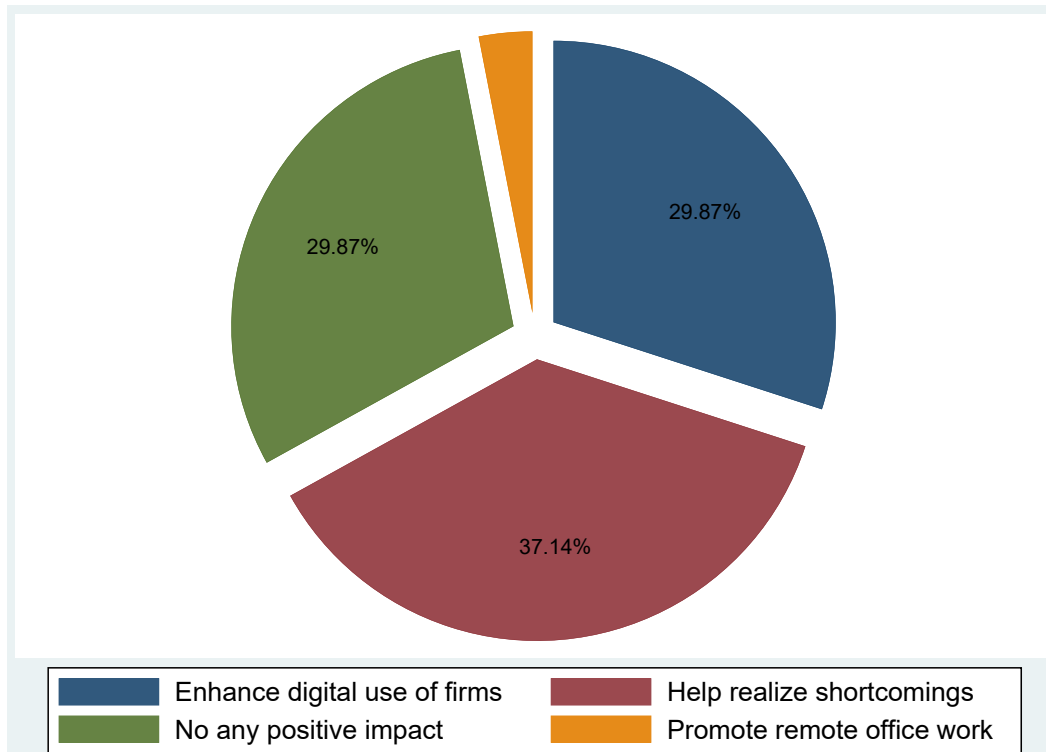


Figure 18. Results of “What are the potentially positive impacts of the pandemic in your view?”

As can be seen in Figure 18, the 37.14% of the businesses reported that main positive impact of the pandemic is that it helped them realize their own shortcomings, followed equally by “Enhance digital use of firms” (29.87%) and “No any positive impact” (29.87%).

Descriptive Analysis – Measure of Central Tendency

any_positive_impact	Freq.	Percent	Cum.
Enhance digital use of firms	115	29.87	29.87
Help realize shortcomings	143	37.14	67.01
No any positive impact	115	29.87	96.88
Promote remote office work	12	3.12	100.00
Total	385	100.00	

Table 26. Results of assessment of businesses' perceptions on positive impacts of the pandemic.

From the frequency Table 26 above, it shows that mode choice is “Help realize shortcomings.” The total business respondents of 37.14% chose “Help realize shortcomings,” followed by “Enhance digital use of firms” (29.87%) and “No any positive impact” (29.87%), while a tiny 3.12% of the businesses said that the pandemic helped them to promote use of remote office.

Inferential Analysis – Statistical Significance Testing

In the survey sample, the main choice selected was “Help realize shortcomings” (37.14%), followed equally by “Enhance digital use of firms” (29.87%) and “No any positive impact” (29.87%). However, this was based on our sample from the business survey. We need to test whether this would be true in the Sarpang economy.

Ho: Our null hypothesis is that there are no differences among the proportions of “Help realize shortcomings,” “Enhance digital use of firms,” and “No any positive impact” options.

Ha: Our alternative hypothesis is that there are statistically significant differences among the proportions among the three options.

Test for equality of proportions of nonzero outcomes in matched samples (Cochran's Q) :

Variable	Proportion	Count
q17a	.3714286	143
q17b	.2987013	115
q17c	.2987013	115

Number of obs = 385
 Cochran's chi2 (2) = 4.203753
 Prob > chi2 = 0.1222

Table 27. Cochran's Q test among “Help realize shortcomings,” “Enhance digital use of firms,” and “No any positive impact.”

Cochran's Q test would show us how likely to have result as in our survey sample or even higher, if in the population there would be no difference. Since our p-value is 0.1222 as shown in Table 27, which is significantly greater than $\alpha = 0.05$, we can conclude that there is no evidence that most likely in the population three options are not chosen equally often. In particular, Cochran's Q test indicated that there is no evidence of statistically significant differences among the proportions among the three options, $\chi^2(2, N = 385) = 4.203753, p = 0.1222$. Therefore, there is no clear dominant choice among the businesses regarding any positive impact of the pandemic. However, three equal choices are "Help realize shortcomings," "Enhance digital use of firms," and "No any positive impact" regarding if any positive impact of the pandemic.

Evidence on businesses' perceptions on any positive impact of the pandemic

Cochran's Q test indicated that there is no evidence of statistically significant differences among the proportions among the three options, $\chi^2(2, N = 385) = 4.203753, p = 0.1222$. Therefore, there is no clear dominant choice among the businesses regarding any positive impact of the pandemic. However, three equal choices are "Help realize shortcomings," "Enhance digital use of firms," and "No any positive impact" regarding if any positive impact of the pandemic.

Analyzing Business Firms' Perceptions on Preparedness to Changing Economy

The Bhutan Chamber of Commerce and Industry was interested to know how prepared businesses are to face the changing economy due to the Covid-19. To investigate this, Figure 19, which is visualization of survey data, shows the results of business respondents' opinions from the survey.

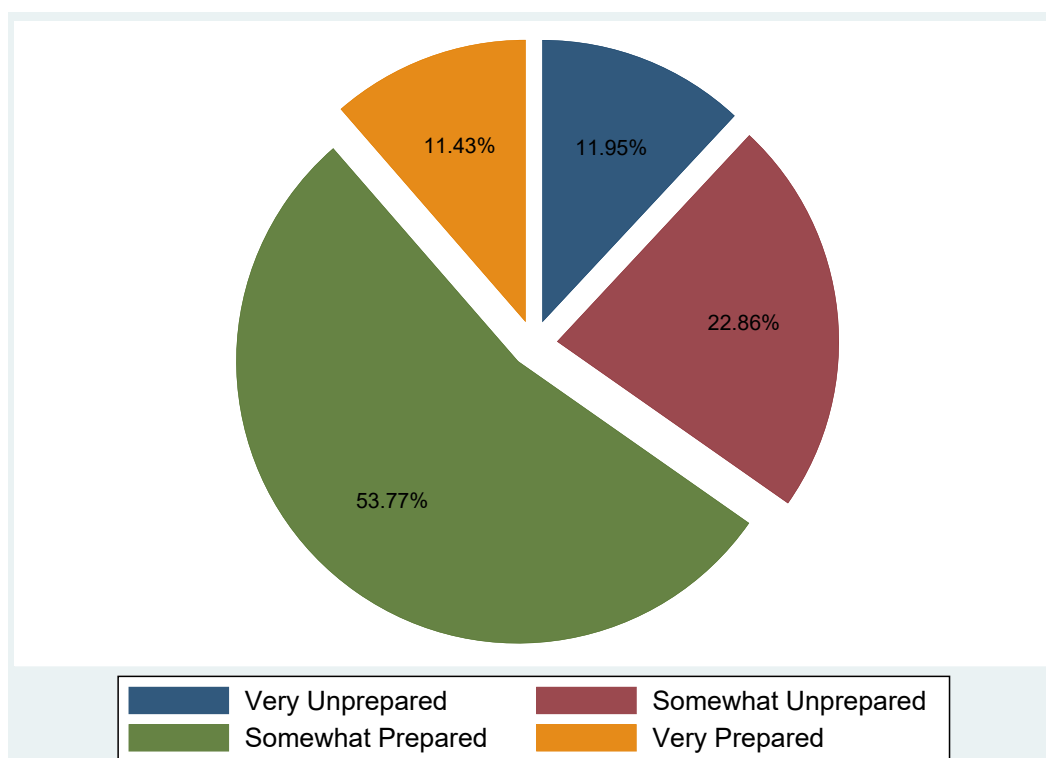


Figure 19. Results of “How prepared do you think your business is to meet the needs of the changing economy as a result of COVID-19?”

As can be seen in Figure 19, the majority 53.77% of the businesses reported that they are somewhat prepared to face the changing economy, followed far behind by 22.86% of the businesses who said that they are somewhat unprepared.

Descriptive Analysis – Measure of Central Tendency

Way Forward Preparedness	Freq.	Percent	Cum.
Very Unprepared	46	11.95	11.95
Somewhat Unprepared	88	22.86	34.81
Somewhat Prepared	207	53.77	88.57
Very Prepared	44	11.43	100.00
Total	385	100.00	

Table 28. Results of assessment of businesses' preparedness to face the changing economy.

From the frequency Table 28 above, it shows that mode choice is "Somewhat Prepared." The total business respondents of 53.77% chose "Somewhat Prepared," followed by "Somewhat Unprepared" (22.86%), "Very Unprepared" (11.95%), and "Very Prepared" (11.43%).

Variable	N	p50	Min	Max
coping	385	3	1	4

Table 29. Result of businesses' perceptions on preparedness to changing economy.

The calculated sample median = 3, which is "Somewhat Prepared." This means at least 50% of the business respondents chose "Somewhat Prepared" or "Very Prepared" as the median score rating is 3.

Descriptive Analysis - Measure of Dispersion

```
. cns coping , min(1) max(4)
```

```
Consensus Measure for coping  
Cns(X) = .58662909
```

Table 30. Result of measure of consensus on perceptions on preparedness to changing economy.

The measure of consensus (Tastle and Wierman, 2007), which ranges from 0 to 1 where 0 is complete lack of consensus and 1 is complete consensus of opinion, shows that for the businesses' perceptions on their prepared to face changing economy, it is 0.5866 which is a strong consensus. It means there is a clear separation between proportion of prepared and unprepared.

Inferential Analysis – Statistical Significance Testing

Wilcoxon signed-rank test

Sign	Obs	Sum ranks	Expected
-----+-----			
Positive	251	45618	37152.5
Negative	134	28687	37152.5
Zero	0	0	0
-----+-----			
All	385	74305	74305

Unadjusted variance 4774096.25
 Adjustment for ties -550020.63
 Adjustment for zeros 0.00

 Adjusted variance 4224075.63

H0: coping = 2.5
 z = 4.119
 Prob > |z| = 0.0000
 Exact prob = 0.0000

Table 31. Results of One-Sample Wilcoxon Signed Rank Test

We have seen that the majority 65.20% of business respondents surveyed said that they are somewhat prepared or very prepared to face the changing economy. However, that was just based on our sample from the business survey. We need to test whether this would be the case in the business population in Sarpang too. In other words, we have to test whether the true median score in the population would be statistically significantly different from 2.5 since 2 = “Somewhat Unprepared” and 3 = “Somewhat Prepared.”

Ho: Our null hypothesis is that business population’s true median is 2.5.

Ha: Our alternative hypothesis is that business population’s true median is significantly different from 2.5.

One-sample Wilcoxon signed rank test would show us how likely to have result as in our survey sample or even more extreme if the true median in the population is 2.5. Since our p-value <0.0001, which is significantly less than alpha = 0.05, we can conclude that the true population median is statistically significantly different from 2.5. In short, our one-sample Wilcoxon signed rank test indicated that the population median was significantly different from 2.5, $Z = 4.119$, $p < 0.0001$.

Region difference in perceptions on preparedness to changing economy

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

region	Obs	Rank sum	Expected
-----+-----			
Rural	239	48922.5	46127
Urban	146	25382.5	28178
-----+-----			
Combined	385	74305	74305

Unadjusted variance 1122423.67

Adjustment for ties -191443.18

Adjusted variance 930980.49

H0: coping(region==Rural) = coping(region==Urban)

z = 2.897

Prob > |z| = 0.0038

Exact prob = 0.0037

Table 32. Results of Two-Sample Wilcoxon Rank-sum (Mann-Whitney) Test.

There is statistically significant difference between businesses in rural areas and those in urban areas on their preparedness to face the changing economy ($z = 2.897$, $p\text{-value} = 0.0037$ which is less than $\alpha = 0.05$). The positive z -score shows that businesses in rural areas are more likely to be prepared to face the changing economy than those in urban areas.

Evidence on businesses' perceptions on preparedness to changing economy

There is statistically significant evidence ($p < 0.0001$) that the 65.20% majority of businesses in the population are prepared to face the changing economy. In particular, our one-sample Wilcoxon signed rank test indicated that the population median was significantly different from 2.5, $Z = 4.119$, $p < 0.0001$. There is also statistically significant difference between businesses in rural areas and those in urban areas on their preparedness to face the changing economy ($z = 2.897$, $p\text{-value} = 0.0037$ which is less than $\alpha = 0.05$). The positive z -score shows that businesses in rural areas are more likely to be prepared to face the changing economy than those in urban areas.

Analyzing Businesses' Own Recommendations to Improve Sarpang Economy

The Bhutan Chamber of Commerce and Industry was interested to know about businesses' own suggestions and recommendations to improve Sarpang economy. To investigate this, Figure 20 shows visualization of qualitative data in thematic analysis.

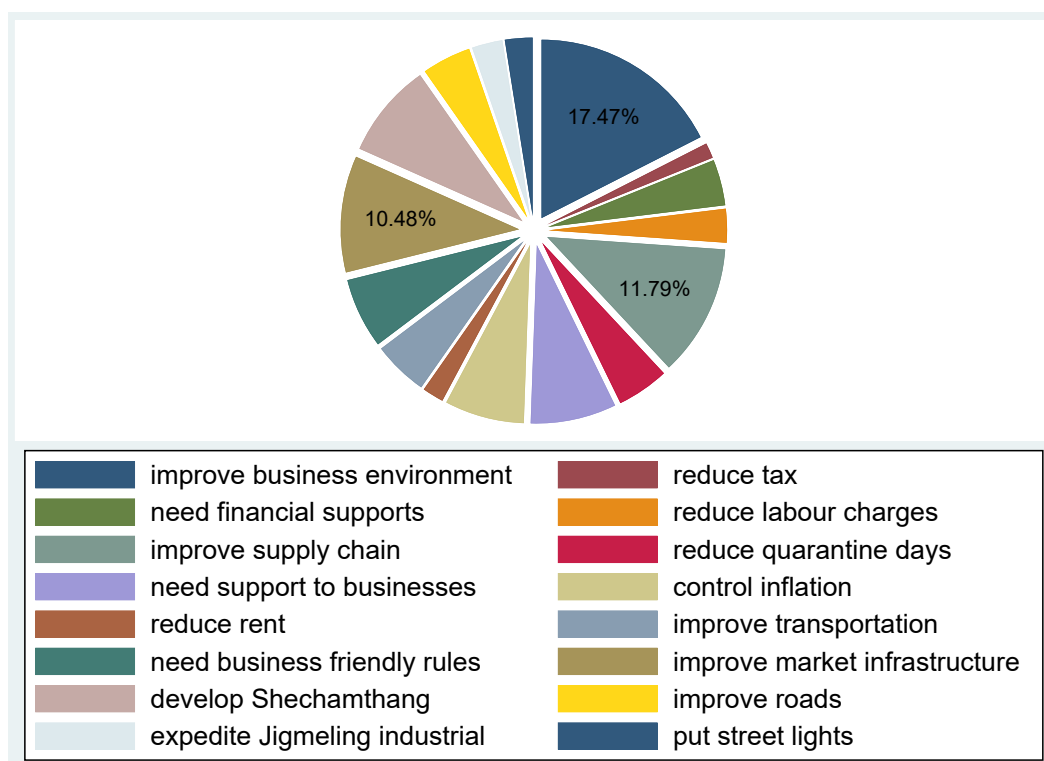


Figure 20. Results of “What would you recommend to improve Sarpang economy?”

As can be seen in Figure 20, the thematic analysis of businesses' own recommendations show that the top three themes for improving Sarpang economy are: 1) improve business environment (17.47%), improve supply chain (11.79%) and improve market infrastructure (10.48%). In total, there are about 16 themes recommended for improving Sarpang economy as shown in Table 33.

BCCI_Qualitative_Themes	Freq.	Percent	Cum.
improve business environment	40	17.47	17.47
reduce tax	3	1.31	18.78
need financial supports	10	4.37	23.14
reduce labour charges	7	3.06	26.20
improve supply chain	27	11.79	37.99
reduce quarantine days	11	4.80	42.79
need support to businesses	18	7.86	50.66
control inflation	16	6.99	57.64
reduce rent	5	2.18	59.83
improve transportation	11	4.80	64.63
need business friendly rules	15	6.55	71.18
improve market infrastructure	24	10.48	81.66
develop Shechamthang	20	8.73	90.39
improve roads	10	4.37	94.76
expedite Jigmeling industrial	6	2.62	97.38
put street lights	6	2.62	100.00
Total	229	100.00	

Table 33. Results of thematic analysis of businesses' own recommendations to improve economy.

Conclusion

This quantitative research survey study on impact of the Covid-19 pandemic on private sector businesses in Sarpang, commissioned by the Bhutan Chamber of Commerce and Industry (BCCI), Regional Office, Gelephu, to rethink Sarpang economy beyond COVID-19 is the first scientific research report on the impact of the pandemic on the private sector, businesses, and economy in Bhutan. The following are findings from the research study and way forward recommendations:

Findings from the Research Study

- ◇ **Most businesses in Sarpang economy are small, cottage and informal businesses:** As a snapshot of Bhutanese economy in general and Sarpang economy in particular, 97.4% of businesses are small, cottage and informal/home-based businesses. Medium and large businesses represent only 2.60% of the businesses in terms of numbers.
- ◇ **The impact of Covid-19 on the business community has been economywide:** Overall, 90.91% of the businesses are negatively impacted by the Covid-19 pandemic through lockdowns and business restrictions. However, there is statistically significant evidence ($p < 0.0001$) that the main impact of the pandemic on the businesses is small impact, meaning some difficulties in business operations but overall stability. In particular, the 45.45% majority of the businesses reported that they suffered “Small Impact” due to the pandemic, followed by 24.68% of the businesses reporting “Serious Impact,” meaning leading to serious difficulties in business operations and 20.78% reporting “Big Impact,” meaning operations barely maintained.
- ◇ **Most Sarpang businesses were changed negatively by the pandemic:** There is statistically significant evidence ($p < 0.0001$) that businesses have been changed negatively in the Sarpang economy regarding the impact of the pandemic on the overall businesses. In fact, the 67.27% of the businesses reported that their businesses have been changed negatively.
- ◇ **Most Sarpang businesses are pandemic resilient despite negatively impacted:** On average, there is also statistically significant evidence ($p < 0.0001$) that 72.21% majority of the businesses are operating as usual during the Covid-19 pandemic.
- ◇ **The decline in business revenues has and will continue to impact Sarpang businesses:** There is statistically significant evidence ($p < 0.0001$) that the main impact of the Covid-19 pandemic on the operation of the businesses is “Decreased revenue.” In general, 52.99% of the businesses reported that their business revenue decreased because of the pandemic.
- ◇ **Rent and repayment of loans are two main operating pressures of the businesses:** There are two main operating pressures that businesses are facing due to the pandemic and they are “Rent” and “Repayment of loans.” In particular, 40.50% of the businesses are suffering from rent difficulties and 36.10% are under stress due to worry about repayment of loans. Overall, there is no statistically significant difference between the two ($p =$

0.2043), which means both rent issue and loan issue merit equally attention. They are both main operating pressures.

- ◇ **Difficulty of financing is businesses' core challenge:** In addition, the other significant problem ($p < 0.0001$) that businesses are facing is "Difficulty of financing." The 57.40% of the businesses reported that their other problem due to the pandemic is "Difficulty of financing."
- ◇ **Businesses need short-term capital and express uncertainty surrounding future operations:** In terms of current cashflow, the vast 84.16% majority of businesses will not survive beyond three months if the Covid-19 pandemic restrictions such as lockdowns continue for long. In particular, the 43.38% of the businesses reported that their current cashflow will not be able to maintain their business beyond one month and the 40.78% of the businesses report that their current cashflow will not be able to maintain their business operation beyond three months. There is no statistically significant difference ($p = 0.6171$) between those who say their cashflow will not last beyond one month and those who say their cashflow will not last beyond three months. It is a serious issue when combined with other problem of difficulty of financing.
- ◇ **Not all businesses have access to bank loans and situation is worsened by the pandemic:** Both "Loans by banks" and "Loans by private individuals" are the dominant strategies of the businesses in the Sarpang economy regarding how they managed cashflow during the pandemic. The 40.00% of the businesses reported that they managed cashflow shortage with loans from banks and the 31.43% of the businesses managed their cashflow shortage with loans from private individuals, which are two main strategies. But there is no statistically significant difference ($p = 0.0534$) between the two strategies, meaning both are equally important for the businesses, perhaps because majority of the businesses are informal, cottage and small businesses with barriers to access to banks due to collateral requirements for loans.
- ◇ **Workers shortage is not a problem for the businesses during the pandemic:** Businesses, on average, faced no workers shortage regarding how they managed workers shortage during the pandemic. In fact, the 64.94% of the businesses reported that they have no shortage of workers. This, again, maybe because majority of the businesses are informal, cottage and small businesses with low or no requirement for the workers as most are self-employed businesses.
- ◇ **Materials shortage is a challenge only for some businesses during the pandemic:** Both "No shortage of materials" and "Increasing procurement prices" are the dominant responses of the businesses in the Sarpang economy regarding how they managed materials shortage during the pandemic. The 36.88% of the businesses reported that they have no shortage of materials while the 29.61% of the businesses reported that they managed their materials shortage by increasing procurement prices. However, there is no statistically significant difference ($p = 0.0913$) between the two responses, meaning both are dominant strategies. This, again, maybe because there are sizeable informal businesses in the economy who use local materials and with no requirement for the imported materials.

- ◇ **Transitioning to online commerce is a big challenge for the businesses:** Regarding willingness to transition to online commerce, there is no statistically significant evidence ($p = 0.2041$) that businesses are willing or unwilling to transform to online commerce. The 50.13% marginal majority of the businesses reported that they are somewhat unwilling or very unwilling to transform to online commerce whereas 49.87% of the businesses reported that they are somewhat willing or very willing to transform to online commerce. It is a deadlock situation. However, there is statistically significant difference ($p < 0.0001$) between businesses in rural areas and those in urban areas that businesses in the urban areas are more likely willing to transition to online commerce than their rural counterparts.
- ◇ **There is no evidence of any significant positive impact of the pandemic on the businesses:** When businesses were asked if there was any positive impact of the pandemic, there is no statistically significant evidence ($p = 0.1222$) of any dominant positive impact, although 37.14% of the businesses reported that one positive impact of the pandemic is that it helped them realize their own shortcomings and 29.87% of the businesses reported that the pandemic enhanced their digital use.
- ◇ **Most Sarpang businesses are prepared to face the changing economy:** On the bright side, there is statistically significant evidence ($p < 0.0001$) that businesses, on average, are prepared to face the changing economy. The 65.20% of the businesses reported that they are somewhat prepared or very prepared to face the changing economy. There is also statistically significant difference ($p = 0.0037$) between businesses in rural areas and those in urban areas on their preparedness to face the changing economy. Interestingly, businesses in rural areas are slightly more likely ($z = 2.897$) to be prepared to face the changing economy than those in urban areas.
- ◇ **Improving business environment is a key to improving Sarpang economy:** Survey participants shared, in their own words, their recommendations for improving Sarpang economy. There were a wide range of suggestions shared but the thematic analysis of businesses' own recommendations show that the top three themes for improving Sarpang economy are: 1) improve business environment (17.47%), improve supply chain (11.79%) and improve market infrastructure (10.48%).

Way Forward Recommendations

- ◆ **Promote entrepreneurial innovation as recovery strategy for businesses in Sarpang economy since most businesses are small, cottage and informal:** As a snapshot of Bhutanese economy in general and Sarpang economy in particular, 97.4% of businesses are small, cottage and informal/home-based businesses. Medium and large businesses represent only 2.60% of the businesses in terms of numbers. Global experiences show that innovation is an important strategy for the ongoing and post-Covid-19 business recovery (Caballero-Morales, 2021). Therefore, it is recommended to focus on innovation as singularly most important strategy that the BCCI must raise enough budget to create Sarpang economywide awareness for promoting, encouraging and facilitating business innovations.

- ◆ **Rethink and build post-Covid-19 Sarpang economy based on Schumpeter's creative destruction economic model or allow first, regulate later strategy:** What economist Joseph Schumpeter observed is that entrepreneurship simultaneously create something new while destroying something old. Usually, it is lot harder to destroy something in the business sector or economy at large to create something new, but the Covid-19 pandemic has naturally disrupted business community economywide (90.91% of the businesses are negatively impacted by the Covid-19 pandemic through lockdowns and business restrictions) that the crisis is an opportunity for changing the course of entrepreneurship process in Sarpang economy. However, to create Schumpeterian entrepreneurship, top-down policies and processes do not work because Schumpeterian entrepreneurship is inherently contrarian, unpredictable and difficult to target from a policy perspective (Henrekson, Kärnä and Sanandaji, 2022). Therefore, the recommendation for the Government and the BCCI to adopt for post-Covid-19 Sarpang economy is **allow first, regulate later** strategy as a new entrepreneurship policy for not just small, cottage, and informal businesses but for all new start-ups, big and small alike, to imagine and execute unconventional innovations.

- ◆ **Loan repayment deferral through Kidu stimulus or loan term extension by the financial institutions to continue:** It is observed that most Sarpang businesses are pandemic resilient despite negatively impacted and this seems to be because of loan deferral and loan interest waiver Kidu stimulus supports so far. On average, there is statistically significant evidence ($p < 0.0001$) that 72.21% majority of the businesses are operating as usual during the Covid-19 pandemic. Therefore, it is recommended that the BCCI work with the Government and the Royal Monetary Authority (RMA) or the financial institutions to request loan deferral or loan restructuring options for extending duration for repayment of loans.

- ◆ **Remove barriers to entry/exit for businesses:** It is observed that there has been decline in business revenues as the statistically significant main impact of the Covid-19 pandemic on the operation of the businesses. In particular, 52.99% of the businesses reported that their business revenue decreased because of the pandemic. Therefore, it is recommended to remove all barriers for businesses to enter the market or to exit from the market. What it means is that it has to be easy for any new business to start and enter the market and it also has to be easy for any business to stop and exit from the market without any hidden transaction or bureaucratic costs. Also it is recommended to remove requirement for location-based licenses; instead if a business has one license located anywhere in Bhutan, it should be valid to do business everywhere in Bhutan. Moreover, remove the restriction on number of licenses one Bhutanese can hold as there is no predictable guarantee which business will succeed or fail. For example, let one Bhutanese hold any number of cottage licenses anywhere in Bhutan. This will promote business innovation in private sector.

- ◆ **Remove all non-Covid-19 related business restrictions to align business environment with 21st Century Economy Vision of Bhutan:** There is an urgent need for significant regulatory modifications for business recovery from the pandemic and beyond. Since rent and repayment of loans are the main operating pressures of the businesses, to cut down

operating cost and innovate, it is recommended to make optional all physical requirements such as physical offices for businesses, physical shops, physical signboards, physical employees and so on. As articulated and highlighted by His Majesty The King (2019), let entrepreneurs and businesses leverage digital technologies for e-commerce through online sales for private sector development using Smartphones and apps such as WhatsApp, YouTube, Telegram, Twitter, Facebook, Instagram, Wechat, Tiktok and so on. In His Majesty's own words, "How are we using these for private sector development and growth?" (His Majesty The King, 2019). Encourage use of digitalized marketing for small, cottage, and informal businesses or micro-enterprises through mobile applications and social media platforms (Fabeil, Pazim and Langgat, 2020). On a bright side, there is statistically significant evidence ($p < 0.0001$) that businesses, on average, are prepared to face the changing economy. The 65.20% of the businesses reported that they are somewhat prepared or very prepared to face the changing economy.

- ◆ **Encourage synchronized distribution approach to shorten supply chain for businesses:** The main recommendations collected from the business respondents themselves to improve Sarpang economy are improve business environment, supply chain and market infrastructure. Therefore it is recommended for the BCCI to encourage and adopt the synchronized distribution as one of the strategies. The synchronized distribution strategy is similar to "omni-channel marketing approach" (Fabeil, Pazim and Langgat, 2020, p.840), which uses all possible channels or multiple channels of distribution of goods to the customers without unnecessary business restrictions. This means the BCCI can work closely with the Government administrations such as Thromde and the Dzongkhag administrations to facilitate synchronized distribution supply chain system in the economy by removing obstructing rules, regulations and restrictions so that, for example, clothing shops can also sell or distribute groceries, groceries shops can also sell or distribute clothes without requiring any separate license because the unnecessary restrictions have been removed for synchronized distribution system in the economy. Also allow business to run from home as well as distributions from home without any restriction or without requiring any extra license including delivery by private runners or private cars. The BCCI can also initiate and create public awareness for such new innovative synchronized distribution system in the economy in our Bhutanese context.
- ◆ **Invite and encourage venture capital investment or shark tank investment:** It is observed that difficulty of financing is businesses' core challenge as the 57.40% of the businesses reported that they have problem of financing. Therefore, it is recommended for the BCCI to explore opportunity to institute venture capital investment or Sarpang shark tank investment platform for the innovative and budding entrepreneurs who need financing.
- ◆ **Facilitate short-term capital for the businesses:** In terms of current cashflow, the vast 84.16% majority of businesses will not survive beyond three months if the Covid-19 pandemic restrictions continue for long. It is a serious issue when combined with other problem of difficulty of financing. From this finding, it is obvious that small, cottage, and informal businesses had very less cash on hand to sustain lockdowns and Covid-19 business restrictions. This is consistent with global study on the impact of the pandemic on

small business (Kalogiannidis, 2020), which shows that there is great risk for small, cottage and informal businesses to survive due to financial crisis on the top of Covid-19 crisis. Therefore, it is recommended that the BCCI, the Government, and the RMA come together to facilitate short-term working capital borrowings from the banks or some kind of financial stimulus especially targeted for small, cottage, and informal businesses.

- ◆ **Facilitate and encourage cashflow-based borrowing rather than collateral-based borrowing:** It is observed that not all businesses have access to bank loans and situation is worsened by the pandemic as both “Loans by banks” and “Loans by private individuals” emerged as the dominant strategies of the businesses in the Sarpang economy regarding how they managed cashflow during the pandemic. This may be because majority of the businesses are small, cottage and informal with barriers to access to banks due to collateral requirements for loans. Therefore, it is recommended that the BCCI, the Government and the RMA facilitate and encourage collateral free loans or cashflow-based borrowing since most of the small, cottage, and informal businesses do not have collateral assets.
- ◆ **Accelerate adoption of digitization of businesses:** Our research study shows that transitioning to online commerce is a big challenge for the businesses in Sarpang economy with perceptions divided in deadlock between willingness group and unwillingness group. This challenge gives an opportunity for the BCCI and the Government to fund and promote adoption of digitization of businesses, which will not happen if left to businesses at their own. The Covid-19 pandemic gives an opportunity for sudden acceleration of digitization even for businesses that were not thinking of using technology before the pandemic (Pinzaru, Zbucnea, and Anghel, 2020). Therefore, it is recommended that the BCCI and the Government secure funding to promote and accelerate adoption of digitization of businesses.

In conclusion, may rethinking Sarpang economy beyond Covid-19 and bringing it into Schumpeter’s creative destruction paradigm guides it on the path of His Majesty’s vision of 21st Century Economy for Bhutan.

Annexure: Survey Questionnaires

Rethinking Sarpang Economy Beyond Covid-19: Assessing Impact of Covid-19 on Private Sector Businesses During and Beyond Covid-19

Dear Business Owners/Managers,

This research study survey is commissioned by the Bhutan Chamber of Commerce and Industry (Gelephu Office) in technical collaboration with the Institute for Excellence and Development. The Coronavirus (COVID-19) pandemic and the measures that Government is taking to curb the spread of the virus are having severe impacts on private sector businesses across Bhutan as well as in Sarpang. To help mitigate the impact and seek support from the government and its development partners, the Bhutan Chamber of Commerce and Industry needs to know how businesses are impacted. Therefore, the goal of this survey is to gather information and opinions about the business environment in Sarpang. The information gathered here will help us understand impact on private sector during and beyond Covid-19 as well as help us rethink Sarpang economy beyond Covid-19.

Hence, we kindly ask you to support these efforts by helping us fill out this survey. All your responses will be kept confidential and will only be used for research purposes. The information and opinions you provide will be anonymized. Neither your name nor the name of your business will be used in any document based on this survey. Participation in this survey is voluntary and anonymous.

Please indicate that you agree to participate in this study.

I agree to participate in this study. I was informed that participation in this study is voluntary (*Tick if you agree*).

I. Basic Business Profile

1. What kind of business, service or activity is carried out by your business? (*Select only one*)
 - i. Wholesale trade
 - ii. Retail trade
 - iii. Manufacturing
 - iv. Groceries
 - v. Services
 - vi. Agriculture
 - vii. Livestock
 - viii. Forestry and Fishing
 - ix. Mining and Quarrying
 - x. Construction
 - xi. Repair of motor vehicles
 - xii. Transports

- xiii. Hotels and Restaurants
- xiv. Financial and Insurance Activities
- xv. Real Estate Activities
- xvi. ICT Activities
- xvii. Education
- xviii. Consulting Activities
- xix. Training Activities
- xx. Sports Activities
- xxi. Arts and Entertainment Activities
- xxii. Tourism
- xxiii. Informal Activities
- xxiv. Other

2. For how long has your business existed? *(Select only one)*

- i. Less than 1 year
- ii. 1-2 years
- iii. 3-4 years
- iv. 4-5 years
- v. More than 5 years

3. Where is your business mainly operating in Sarpang?

- i. Gelephu Thromde
- ii. Sarpang Town
- iii. Sengye Gewog
- iv. Gakiling Gewog
- v. Shompangkha Gewog
- vi. Dekidling Gewog
- vii. Samtenling Gewog
- viii. Gelephu Gewog
- ix. Chhudzom Gewog
- x. Jigmecholing Gewog
- xi. Shershong Gewog
- xii. Chhuzanggang Gewog
- xiii. Tareythang Gewog
- xiv. Umling Gewog

4. What is the size of your business measured by the number of employees? *(Select only one)*

- i. Home-based or informal business (no employee)
- ii. Cottage (Less than 5)
- iii. Small (5-19)
- iv. Medium (20-99)
- v. Large (100 and above)

5. What is the size of your business by investment size classification on license? (*Select only one*)
- i. Home-based or informal business (no license)
 - ii. Cottage
 - iii. Small
 - iv. Medium
 - v. Large

During Covid-19: Impact of the Pandemic on Business

6. Currently, what is the operational status of your business? (*Select only one*)
- i. Operating as usual
 - ii. Operating with reduced staff
 - iii. Business closed temporarily
 - iv. Business closed permanently
 - v. Other
7. So far since the onset of the coronavirus crisis in the country, what has been the most impact on your business? (*Select only one*)
- i. Decreased revenue
 - ii. Increased revenue
 - iii. Increased costs
 - iv. Decreased costs
 - v. Access to cash problem
 - vi. Problem importing materials
 - vii. Increased debt
 - viii. No impact
 - ix. Other (Please specify)
8. Please select the description that best fits your situation.
- (a) My business operations have changed negatively
 - (b) My business operations have not changed
 - (c) My business operations have changed positively
9. What are the main operating pressures that your business is currently facing? (*Select all that apply*)
- (a) Employee salaries
 - (b) Rent
 - (c) Repayment of loans
 - (d) Payment of invoices
 - (e) Cancellation of orders

- (f) Other expenses
- (g) No specific problem

10. How long can your business' current cash flow maintain the business' operation?

- (a) Less than 1 month
- (b) 1-3 months
- (c) 4-5 months
- (d) 6 months or more

11. Are there any other business problems you are facing due to the pandemic?

- (a) Reduction of orders
- (b) Inability to deliver existing orders
- (c) Increased difficulty of financing
- (d) Existing loans cannot be extended
- (e) Disruption of logistics
- (f) Other _____

12. To what extent has operation of your business been affected by the pandemic? (*select only one*)

- (a) Very serious impact, leading to serious difficulties in business operations
- (b) Big impact, operations barely maintained
- (c) Small impact, some difficulties in business operations, but overall stability
- (d) No significant impact
- (e) Positive impact, providing new opportunities for development

During Covid-19: Business Firm's Action Responses on Impact of the Pandemic

13. What is the main means you are considering to deal with the cash flow shortage?

- (a) Loans by banks
- (c) Loans by private individuals
- (e) Equity financing (adding new shareholders or capital increase of current shareholders)
- (f) Reduction of operating costs (e.g. layoffs and salary reductions)
- (g) No cash flow shortfalls problem
- (h) Other (specify) _____

14. What is the main means you are considering to deal with the shortage of cashflow?

- (a) Wage increases
- (b) Use of advanced equipment or software to reduce the amount of work
- (c) Outsourcing of orders
- (d) Delay in delivery

- (e) No shortage of cashflow
- (h) Other _____

15. What is the main means you are currently considering to deal with the shortage of raw materials?

- (a) Reduction of production
- (b) Outsourcing orders
- (c) Increasing the procurement prices
- (d) Seeking new procurement channels
- (e) Delaying goods delivery
- (f) No shortage of raw materials
- (g) Other _____

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16. Are you willing to transform to online commerce?

- (a) Very unwilling
- (b) Unwilling
- (c) Willing
- (d) Very willing

17. What are the potentially positive impacts of the pandemic in your view? (*Select all that apply*)

- (a) Promote the establishment of remote office work
- (b) Enhance information and digital use of firms
- (c) Help to better realize firm's shortcomings and solve existing problems
- (d) No any positive impact

18. How prepared do you think your business is to meet the needs of the changing economy as a result of COVID-19?

- (a) Very unprepared
- (b) Somewhat unprepared
- (c) Somewhat prepared
- (d) Very prepared

19. What would you recommend to improve Sarpang economy?

20. Any other comments?

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