



# Socio-Economic Impact Assessment Results

For the Development of a Medium-Term MSME National Strategy for Belize





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MSME National Strategy for Belize



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## FOREWORD

### BELIZE'S SOCIO-ECONOMIC IMPACT ASSESSMENT (SEIA) RESULTS REPORT FOREWORD

The United Nations Development Programme (UNDP) in Belize is pleased to present the Micro, Small and Medium Enterprises (MSME) Socio-Economic Impact Assessment (SEIA) Results Report outcome. The survey was designed to explore the business characteristics, revenues, and financial literacy of MSMEs in Belize and provides a snapshot of the effects of the ongoing health crisis and how MSMEs are coping with this new reality. In such a time when crises such as the COVID-19 pandemic continue to have devastating impacts on health, economic, and environmental systems, decision-makers require flexible, rapid, and evidence-based diagnostic tools that can inform interventions and policy decisions. Conducted in Q4 of 2021, the Digital SEIA provides governments with comprehensive and timely information to effectively respond to the needs of those most affected.

Digital SEIA is an end-to-end rapid digital toolkit based on an open-source primary data collection software that enables governments to embrace digital transformation for evidence-based policymaking and digital governance solutions. The toolkit harnesses the power of KoBo Toolbox and MS Power BI among other systems to empower policymakers in addressing the needs of the most vulnerable groups in a timely and accurate manner. It focuses on the concept of leaving no one behind and reaching the furthest behind first.

Digital SEIA is a UNDP Tool applied globally and has achieved noteworthy recognition after being selected for the 2020 Paris

Peace Forum as a project that offers concrete solutions to some of the enormous challenges posed by the COVID-19 pandemic with regard to global governance, economic resilience, and digital solutions.

The SEIA was made possible through the partnership and engagement, of the Belize Trade & Investment Development Service (Beltraide) team which provided guidance and ownership of the process. Financial resources was provided by UNDP's Regional Bureau for Latin America and the Caribbean via the UNDP Rapid Financing Facility.

Technical support was provided by UNDP Crisis Bureau SURGE Data Hub in New York in developing the survey instrument, creating the KoBo form, training the enumerators, and conducting the Multidimensional Vulnerability Index (MVI) analysis. The MVI is a powerful policy and prioritization tool for informing targeted assistance to the most vulnerable businesses with the aim of helping them recover from the negative impact of COVID-19 and sustain their business operations.

The consultants, PPF Capital have demonstrated the innovation, commitment, and expertise along with the necessary knowledge of the local context to translate the digital toolkit to the Belizean reality. Lastly, thanks to my team in the UNDP Belize Country Office who were fully committed to this initiative, recognising that this has the potential to be a transformational process for the country as it continues to navigate in the COVID-19 reality.

## ACKNOWLEDGEMENTS

A word of gratitude to PPF Capital in Belize who conducted this assessment under the leadership of the United Nations Development Programme (UNDP) and the Belize Trade and Investment Development Service (BELTRAIDE).

Technical support was provided by SURGE Data Hub at UNDP Crisis Bureau in New York for developing the survey instrument, creating the KoBo form, training the enumerators, and conducting the Multidimensional Vulnerability Index (MVI) analysis. Great appreciation is also extended Ms. Alexia Peralta, Director of E-Governance and Digitalization Unit at the Ministry of E-Governance; Dr. Leroy Almendarez, Executive Director at BELTRAIDE; Ms. Marilyn Pinelo-Lee, Project Officer, Governance Rule of Law and Gender at UNDP, and Ms. Yorshabell Cattouse, Manager of Member Relations at the Belize Chamber of Commerce (BCCI), for providing significant support in preparing the SEIA assessment.

Appreciation is also extended the Resident Coordinator Office for its support throughout this entire process, and the entire UNDP Belize Team for providing overall guidance and support. In addition, we thank the BELTRAIDE staff for their valuable contribution in enhancing the analysis and findings of this report.

Finally, we would also like to thank the various Micro, Small, and Medium Enterprises that participated and provided their responses which were vital to this process.

# CONTENTS

- iv Foreword
- v Acknowledgements
- 1 Introduction
  - Overview
- 2 Methodology
- 4 Demographics
  - Owner Characteristics
- 6 Business Profile
  - Location
  - Legal Status
  - Tax Status
  - Industries
- 10 Labor
  - Employees
- 12 Financial Literacy
  - Bank Access
  - Financial Awareness
- 14 Management and Planning
- 16 Covid-19
- 21 Gender
  - Gender Demographics
  - Business Profile by Gender
  - Labor by Gender
  - Financial Products by Gender
  - Management And Planning by Gender
  - Pandemic Response by Gender
  - Gender Inclusivity Indicator
- 27 Multidimensional Vulnerability Index
  - Methodological note
  - Business vulnerability
  - Vulnerability by business characteristics
  - Vulnerability and cross-tabulations of business characteristics
  - Decomposition of MVI by business characteristics
- 40 Conclusion
- 41 References
- 42 Appendix
- 50 Annex 1: Industry Listing by Sector

## LIST OF FIGURES

- 4 Figure 1: Survey Distribution by Gender (%)
- 4 Figure 2: Survey Distribution by Age Range (%)
- 5 Figure 3: Survey Distribution by Ethnicity (%)
- 5 Figure 4: Survey Distribution by Level of Education (%)
- 6 Figure 5: Enterprise Type Breakdown (%)
- 6 Figure 6: Survey Distribution by Business District Location compared to 2016 BES (%)
- 7 Figure 7: Geographic Location According to Enterprise Type (%)
- 7 Figure 8: Business Name Registration by Region (%)
- 8 Figure 9: Tax Registration by Region (%)
- 8 Figure 10: Activity Breakdown (%)
- 9 Figure 11: Sector Breakdown (%)
- 9 Figure 12: Entrepreneur Education by Sector (%)
- 9 Figure 13: 2020 Annual Revenue (%)
- 9 Figure 14: 2020 Annual Assets (%)
- 10 Figure 15: Number of Employees (%)
- 10 Figure 16: Youth Staff (%)
- 10 Figure 17: Youth Staff by Enterprise Type (%)
- 11 Figure 18: Staff Cut (%)
- 11 Figure 19: Staff Cut among Sectors (%)
- 11 Figure 20: Staff Resigned due to Childcare (%)
- 11 Figure 21: Remote Work Allowed (%)
- 11 Figure 22: Remote Work Allowed by Sector (%)
- 12 Figure 23: Access to Bank Account (%)
- 12 Figure 24: Urban vs Rural Access to Bank Account (%)
- 12 Figure 25: Access to Bank Account by Enterprise Type (%)
- 13 Figure 26: Shared vs Separate Bank Accounts (%)
- 13 Figure 27: Shared vs Separate Bank Accounts by Enterprise Type (%)
- 13 Figure 28: Familiarity with Business Credit Facilities or Services (%)
- 13 Figure 29: Familiarity with Business Credit Facilities or Services by Education Level (%)
- 14 Figure 30: Received Training (%)
- 14 Figure 31: Financial Training by Enterprise Type (%)
- 14 Figure 32: Financial Training by Sector (%)
- 14 Figure 33: Financial Records (%)
- 15 Figure 34: Financial Records by Enterprise Type (%)
- 15 Figure 35: Financial Approach (%)
- 15 Figure 36: Confidence and Preference of Management Approach (%)
- 16 Figure 37: Performance Before Pandemic (%)
- 16 Figure 38: Current Status (%)
- 16 Figure 39: Decrease in Business Activity by Enterprise Type (%)
- 16 Figure 40: Pandemic Responses (%)
- 17 Figure 41: Pandemic Response by Enterprise Type (%)
- 17 Figure 42: Loan Application (%)
- 17 Figure 43: Loan Application by Enterprise Type (%)
- 17 Figure 44: Loan Application by Sector (%)
- 17 Figure 45: Outcome of Loan (%)
- 18 Figure 46: Loan Applicants Profile by Enterprise Type (%)
- 18 Figure 47: Government Measures Accessed (%)
- 18 Figure 48: Respondent Support Program Selection (%)
- 18 Figure 49: Government Measures Accessed by Enterprise Type (%)
- 19 Figure 50: Government Measures Accessed by District Location (%)
- 19 Figure 51: Most Helpful Assistive Measures (%)
- 19 Figure 52: Period Length of Business Closure (%)
- 19 Figure 53: Business Operation Status by Enterprise Type (%)
- 20 Figure 54: Number of Days Business has to Pay Costs (%)
- 20 Figure 55: Number of Days Business expect to Remain Open Under Current Circumstances (%)
- 20 Figure 56: Measures Done Since the Pandemic (%)
- 20 Figure 57: Measures Done Since Pandemic by Enterprise Type (%)
- 21 Figure 58: Ethnicity by Gender (%)
- 21 Figure 59: Level of Education by Gender (%)
- 21 Figure 60: Breakdown of Main Business Activity by Gender (%)
- 22 Figure 61: 2020 Annual Revenue by Gender (%)
- 22 Figure 62: 2020 Annual Assets by Gender (%)
- 22 Figure 63: Male vs Female Staff Employed (%)
- 22 Figure 64: Enterprise Type by Gender (%)
- 23 Figure 65: Staff Cut by Gender (%)
- 23 Figure 66: Youth Staff by Gender (%)
- 23 Figure 67: Remote Work Allowed by Gender (%)
- 23 Figure 68: Staff Resigned due to Childcare by Gender (%)
- 23 Figure 69: Access to Bank Account by Gender (%)
- 24 Figure 70: Shared vs Separate Bank Accounts by Gender (%)
- 24 Figure 71: Familiarity with Business Credit Facilities or Services by Gender (%)
- 24 Figure 72: Training Received by Gender (%)
- 24 Figure 73: Financial Records by Gender (%)
- 24 Figure 74: Pandemic Response by Gender (%)
- 25 Figure 75: Loan Application by Gender (%)
- 25 Figure 76: Outcome of Loan by Gender (%)
- 25 Figure 77: Government Measures Accessed by Gender (%)
- 25 Figure 78: Measures Done Since Pandemic by Gender (%)
- 27 Figure 79: Composition of the MVI – Dimensions and indicators
- 30 Figure 80: MVI by deprivations (n=303)
- 31 Figure 81: Censored headcount ratios of each indicator to overall MVI
- 31 Figure 82: Contribution of each indicator to overall MVI
- 32 Figure 83: Vulnerability by business location
- 32 Figure 84: Figure 6: Vulnerability by business sector
- 33 Figure 85: Vulnerability by type of registration
- 33 Figure 86: Vulnerability by business age
- 34 Figure 87: Vulnerability of business size (number of employees)
- 34 Figure 88: Vulnerability by gender of the business owner/ manager
- 34 Figure 89: Differences in MVI by business age and location

35	Figure 90: Differences in MVI by share of female-staff and business location
35	Figure 91: Differences in MVI by gender of the owner/manager and business location
35	Figure 92: Censored headcount ratios by business area
35	Figure 93: Contribution of each indicator to the MVI by business area
36	Figure 94: Censored headcount ratios by business age
36	Figure 95: Contribution of each indicator to the MVI by business age
37	Figure 96: Censored headcount ratios by business size (employees)
37	Figure 97: Contribution of each indicator to the MVI by business size (employees)
38	Figure 98: Censored headcount ratios by business revenues
38	Figure 99: Contribution of each indicator to the MVI by business revenues
38	Figure 100: Censored headcount ratios by share of female-staff
39	Figure 101: Contribution of each indicator to the MVI by share of female-staff
39	Figure 102: Censored headcount ratios by gender of the owner/manager
39	Figure 103: Contribution of each indicator to the MVI by gender of the owner/manager

## LIST OF TABLES

2	Table 1: MSME Categories
3	Table 2: Research Design
4	Table 3: Survey Breakdown by District, Sex and Age (% of total respondents)
6	Table 4: Enterprise Type Breakdown by Entrepreneur Age
6	Table 5: Survey Distribution by Region of Business Location (%)
7	Table 6: Business Name Registration among MSMEs
8	Table 7: Tax Registration among MSMEs (%)
26	Table 8: Macro-environmental Factors
26	Table 9: Gender Inclusivity Index Scores
28	Table 10: Dimensions and indicators of the MVI
29	Table 11: Sample profile
30	Table 12: MVI by deprivations (n=303)
42	Table 13: Incidence, Intensity and MVI by number of deprivations
42	Table 14: Incidence, Intensity and MVI by business location and registration
43	Table 15: Incidence, Intensity and MVI by business age and size
43	Table 16: Incidence, Intensity and MVI by business sector and annual revenue
44	Table 17: Incidence, Intensity and MVI by share of female-staff and gender of the owner/manager
44	Table 18: Censored headcount ratio and contribution to MVI
45	Table 19: Censored headcount ratio by business location
45	Table 20: Contribution to MVI by business location
45	Table 21: Censored headcount ratio by business age
46	Table 22: Contribution to MVI by business age
46	Table 23: Censored headcount ratio by business size (number of employees)
46	Table 24: Contribution to MVI by business size (number of employees)
47	Table 25: Censored headcount ratio by business revenue
47	Table 26: Contribution to MVI by business revenue
48	Table 27: Censored headcount ratio by share of female-staff (%)
48	Table 28: Contribution to MVI by share of female-staff (%)
48	Table 29: Censored headcount ratio by business location
49	Table 30: Contribution to MVI by business location
49	Table 31: MVI by business location and different variables

# INTRODUCTION

This report provides a high-level overview of results from the Socio-Economic Impact Assessment (SEIA) survey conducted as part of the process to develop a national Medium-term Micro, Small and Medium Enterprises (MSME) Strategy Development. The survey was designed to explore the business characteristics, revenues, and financial literacy of MSMEs in Belize. The survey also explores the impact on the MSME sector due to the ongoing health crisis and provides a snapshot on how MSMEs are coping with this new reality. A more detailed analysis and discussion of the survey results and how they fit into the broader entrepreneurial ecosystem is provided in the Strategy.

## OVERVIEW

MSMEs play a major role in the economy as they drive growth and provide employment but they are often the most vulnerable when there are major public crises such as the COVID-19 global pandemic. Between April and May of 2020, the Belize Trade and Investment Services (BELTRAIDE) administered a survey to firms registered under its four (4) main technical units: BelizeINVEST, EXPORTBelize, Small Business Development Center (SBDCBelize) and the Belize Training and Employment Center (BTEC). In light of the economic downturn due to the pandemic, most respondents expressed policy options and support as beneficial for recovery, including financial support for retention of employees, tax reliefs (business, income, GST and fuel), moratoriums on loans and utility bills, as well as government measures to satisfy demand for foreign exchange.

To date, COVID-19 remains a potent economic deterrent and major industries such as tourism remain subdued. As such, BELTRAIDE is developing a Medium-Term MSME Strategy that will provide the roadmap for a way forward for MSMEs to operate despite the effects of COVID-19. The strategy is being informed by a Socio-Economic Assessment (SEIA) which assesses the impact of COVID-19 in order to inform the Strategy. The SEIA has collected primary data to guide the development of national indicators, including gender-responsive indicators on the socio-economic impact of COVID-19, and business transformation and continuity. The SEIA assesses how society values entrepreneurship as a good career choice; if entrepreneurs have a high social status; the ways in which media attention to entrepreneurship contributes (or not) to the development of a national entrepreneurial culture; challenges faced during the pandemic; and challenges ahead. The SEIA also identifies the individual attributes (e.g. gender, age, education, skillset, and geographic location), psychological factors (e.g., perceived capabilities, perceived opportunities, fear of failure), and motivational aspects (e.g., necessity-based vs. opportunity-based venturing, improvement-driven venturing, etc.) that drive entrepreneurship in Belize. Further, the SEIA also helps obtain information from marginalized and elusive groups such as informal merchants, youths, female entrepreneurs, and indigenous communities. PPF Capital (Belize) Limited, as the contracting firm, administered the SEIA with support from BELTRAIDE between September 08, 2021 to October 17, 2021. The results are presented herein this report.

# METHODOLOGY

The SEIA covered a study area of business owners from all six (6) districts in Belize. A wide range of people with different backgrounds, status and preferences were reached through online surveys and telephone interviews in both English and Spanish. This ensured data was objective toward and reflective of the overall Belizean business owners' profiles.

The SEIA was divided into six sections: Business Profile, Demographics, Labor, Financial Products, Management and Planning and COVID-19. In total, respondents were asked up to 41 questions<sup>1</sup>. The questions were structured to collect both qualitative and quantitative data on the impacts of COVID-19 on MSMEs. MSME definitions can vary across countries, with some classification systems relying solely on the number of employees, while others include additional criteria such as annual sales and asset turnover. For the purposes of the SEIA, PPF used the number of full-time employees and annual sales as classifying criteria. In 2016, the Statistical Institute of Belize (SIB) conducted a business establishment survey. The results indicated that roughly 67% of all establishments in Belize were micro-enterprises. Small and medium enterprises accounted for 20% and 6%, respectively. Table 1 below provides a comparison of the proportion of micro, small and medium enterprise respondents of SEIA with the SIB's 2016 results.<sup>2</sup>



**Table 1: MSME Categories<sup>3</sup>**

Type of Enterprise	Employees (Full Time)	Annual Sales (BZ\$)	Percent of total enterprises (SIB 2016)	Percent of total enterprises (SEIA 2021) <sup>4</sup>
Micro	Owner-manager/ <5 employees	<75k	67%	73.96%
Small	5-20 employees	<150k	20%	10.06%
Medium	21-51	<250k	6%	0.89%

The SEIA sample size was modeled based on the total number of MSMEs identified in the SIB's 2016 survey: 7,416. Table 2 below provides key aspects of the SEIA research design.

1 Note. Skip-logic was embedded into the survey instrument via the KoBoToolbox platform. This allowed for an enhanced and streamlined respondent experience. Based on certain responses, respondents were redirected to certain questions.  
 2 Source: Statistical Institute of Belize. 2016. Business Establishment Survey. <https://sib.org.bz/statistics/business-establishment-surveys/business-establishment-survey-2016/>  
 3 MSME categories are based on data from Seepersaud  
 4 Note. 0.59% were large enterprises

**Table 2: Research Design**

Study Method and Design	Online survey questionnaire, phone surveys
Sampling Technique	<ul style="list-style-type: none"> <li>• Respondents were selected from the membership register of the Belize Chamber of Commerce and the client registry of the Small Business Development Center, a functional unit under BELTRAIDE.</li> <li>• Snowball sampling was also used to identify additional respondents. (respondents were asked to identify additional respondents, and so on).</li> <li>• BELTRAIDE also supported the survey through social media campaigns through platforms such as Facebook and Instagram. Additionally, interviews with local morning shows such as Open Your Eyes and Morning Show were hosted to further promote the assessment. This was done to attract national participation from each district.</li> </ul>
Sample Size	<p>Assumptions</p> <p>Std. Deviation (p): 0.5</p> <p>Margin of Error (e): (0.05) 5%</p> <p>Confidence Level (z) : 1.96 (95% C.I.)</p> <p>N: 7,416</p> $\text{Sample Size} = \frac{\frac{z^2 \cdot p(1-p)}{e^2}}{1 + \left(\frac{z^2 \cdot p(1-p)}{e^2 N}\right)}$ <p>Target sample size: 366</p> <p>Total responses: 338 (92% response rate)</p> <p>Final analytical sample: 287<sup>5</sup> (78% response rate)</p>
Data Collection	<ul style="list-style-type: none"> <li>• Data was collected by the selected respondents with the help of web-based questionnaires and phone surveys</li> <li>• The questionnaire took an average of 20 minutes to complete with mostly interval questions</li> <li>• Data collection from relevant ministries and government agencies</li> <li>• Published research/ secondary data</li> </ul>
Limitations	<ul style="list-style-type: none"> <li>• Final analytical sample represents only 78% of target sample size and is heavily skewed to micro-enterprises (micro-enterprise respondents account for 87.5% of total sample)</li> <li>• Very low representation from small and medium enterprises. Small enterprises account for only 11.5% of all respondents while medium enterprises account for only 1% of all respondents.</li> <li>• High levels of non-responses (NAs) due to the voluntary nature of the questions included in the survey</li> <li>• Potential for response bias due to incentive provided for completion of survey (BZ \$1,000 small grant for selected winner)</li> <li>• Primary sector enterprise activity likely understated due to inability to effectively canvas rural populations (only 6.7% of respondents working in the primary sector) - the 2020 Business Establishment Survey conducted by the SIB found that 14.2% of all firms operated in the primary sector.<sup>6</sup> Questionnaires were administered online or over the phone.</li> </ul>

5 Note: After controlling for non-responses, only entries where respondents indicated that they were business owners and where enterprise type was micro, small, or medium were used for analysis.

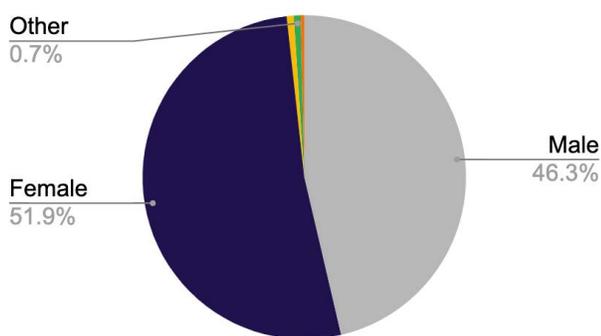
6 Note: The SIB 2020 Business Establishment Survey does not disaggregate data by enterprise size

# DEMOGRAPHICS

## OWNER CHARACTERISTICS

This section covers responses of the demographic section of the survey. Of the 287 SEIA respondents, slightly more than half (51.9%) identify as female. Respondents were also provided with the option to identify alternative genders - less than 1% of respondents identify as an alternative gender. Less than 1% of respondents preferred not to answer this question.

Figure 1: Survey Distribution by Gender (%)



When asked their age, 4.2% of the respondents preferred not

to answer. However, the most common age of business owners is between the ages 35 and 44 (33.8%) and the second most common (28.2%) is between the ages of 25 and 34. Notably, youth representation is low with only 6.4% MSME representation.

Figure 2: Survey Distribution by Age Range (%)

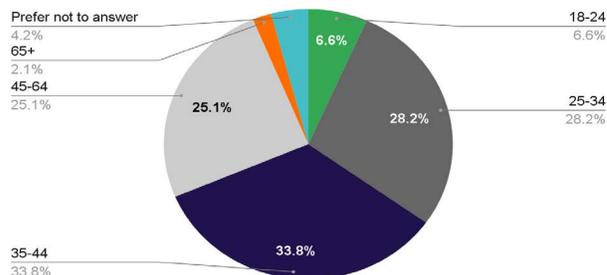


Table 3 presents the survey breakdown of sex and age by district. The majority of male and female respondents are from the Belize district. Cayo has the second highest representation with male and females answering in similar proportions. In terms of age, most respondents are between 30 to 44 years old and from the Belize District. The highest youth representation is in the Cayo district.

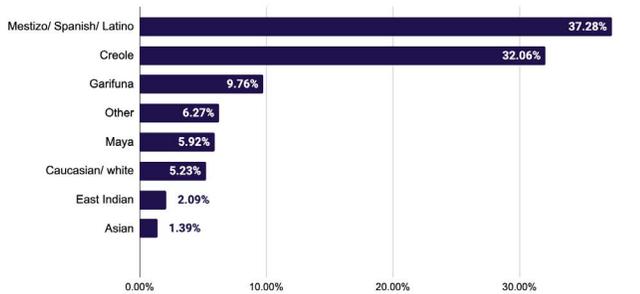
Table 3: Survey Breakdown by District, Sex and Age (% of total respondents)<sup>7</sup>

		Belize	Cayo	Corozal	Orange Walk	Stann Creek	Toledo	No Answer	Total
Gender	Male	13.94%	13.24%	3.83%	4.18%	5.92%	3.83%	1.39%	<b>46.34%</b>
	Female	20.56%	13.24%	5.23%	5.57%	2.44%	2.79%	2.09%	<b>51.92%</b>
	<b>Total</b>	<b>34.49%</b>	<b>26.48%</b>	<b>9.06%</b>	<b>9.76%</b>	<b>8.36%</b>	<b>6.62%</b>	<b>3.48%</b>	<b>98.26%</b>
Age	18 - 29	5.23%	6.97%	2.09%	1.74%	0.70%	1.39%	1.05%	<b>19.16%</b>
	30 - 44	18.12%	13.24%	4.88%	4.53%	4.88%	2.79%	1.05%	<b>49.48%</b>
	45 - 59	8.01%	4.88%	1.74%	3.14%	2.09%	2.44%	1.05%	<b>23.34%</b>
	60+	1.74%	0.70%	0.35%	0.35%	0.70%	0.00%	0.00%	<b>3.83%</b>
	<b>Total</b>	<b>33.10%</b>	<b>25.78%</b>	<b>9.06%</b>	<b>9.76%</b>	<b>8.36%</b>	<b>6.62%</b>	<b>3.14%</b>	<b>95.82%</b>

<sup>7</sup> Note: Totals will not add to 100% due to non-responses for the Gender and Age questions of the survey.

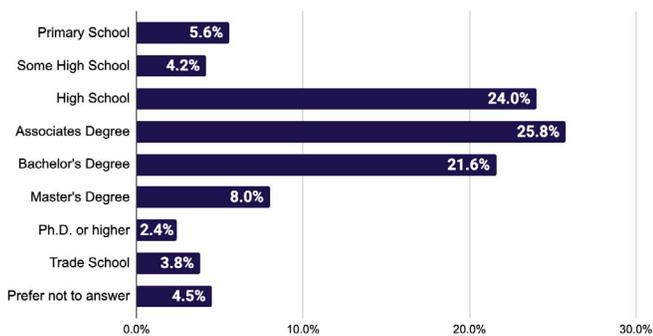
Respondents were also asked to identify their ethnicities. Results show that 37.3% of all respondents identify as Mestizo/ Spanish/ or Latino. Of all the respondents, 32.1% identify as Creole and 9.8% identify as Garifuna.

**Figure 3: Survey Distribution by Ethnicity (%)**



Education levels among entrepreneurs revealed the most commonly obtained degrees are an associate's degree<sup>8</sup> (25.8%) and a high school diploma (24%). Close to 22% have a bachelor's degree and more than 10% of respondents have a master's degree or higher. Only 3.8% of respondents have a trade/ vocational certification.

**Figure 4: Survey Distribution by Level of Education (%)**

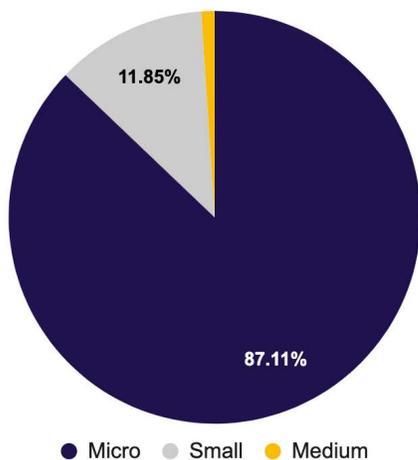


<sup>8</sup> This degree is awarded by junior colleges after successfully completing two years of study. They are post-high school but pre-bachelor's degrees.

# BUSINESS PROFILE

This section covers survey responses to the business profile section of the SEIA. Figure 5 presents the business breakdown by enterprise type. The majority (87%) of the respondents covered in this survey were micro-enterprise owners, small enterprises only accounted for 11.9% of respondents, and medium enterprises accounted for only 1%. The lack of representation at the small and medium enterprise levels is a major limitation of the study. As such, enterprise specific characteristics based on the responses for small and medium enterprises are likely not an accurate representation of the small and medium enterprise population.

**Figure 5: Enterprise Type Breakdown (%)**



Micro enterprises are typically owned by entrepreneurs ages 35 - 44 (33.6%) while the most common ownership age among small enterprises (41.18%) and medium enterprises (66.67%) is between ages 45 - 64.

**Table 4: Enterprise Type Breakdown by Entrepreneur Age**

Age	Micro	Small	Medium
18-24	7.60%	0.00%	0.00%
25-34	30.80%	8.82%	33.33%
35-44	33.60%	38.24%	0.00%
45-64	22.40%	41.18%	66.67%
65+	1.60%	5.88%	0.00%
Prefer Not to Answer	4.00%	5.88%	0.00%
Total	100.00%	100.00%	100.00%

Respondents were asked to identify key characteristics of their businesses including their legal status, geographic location, and financial position.

## LOCATION

The Belize district has the highest number of established MSMEs (35.5%). However, more than a quarter (26.8%) are located in the Cayo district. The district with the smallest share of representation is the Toledo district with 6.62%. When compared to results from the 2016 Business Establishment Survey, representation is likely overstated in the Belize and Cayo districts, and understated in Orange Walk, Corozal, Stann Creek, and Toledo - the relative differences between SEIA and BES results range from -4 percentage points (Stann Creek) to +7 percentage points (Cayo).

**Figure 6: Survey Distribution by Business District Location compared to 2016 BES (%)**

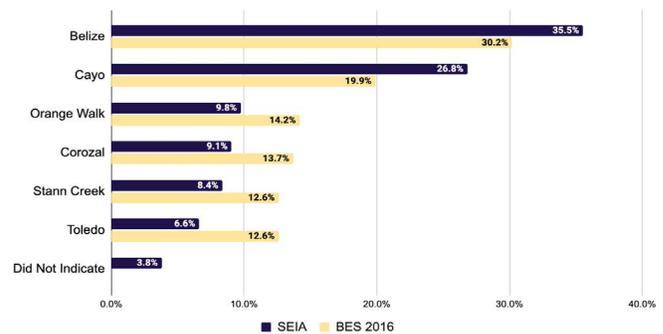


Table 5 presents the survey distribution by region and business location. It shows the majority of MSMEs are located in urban areas with the exception of the Stann Creek district where two thirds of all enterprises were located in rural areas.<sup>9</sup>

**Table 5: Survey Distribution by Region of Business Location (%)**

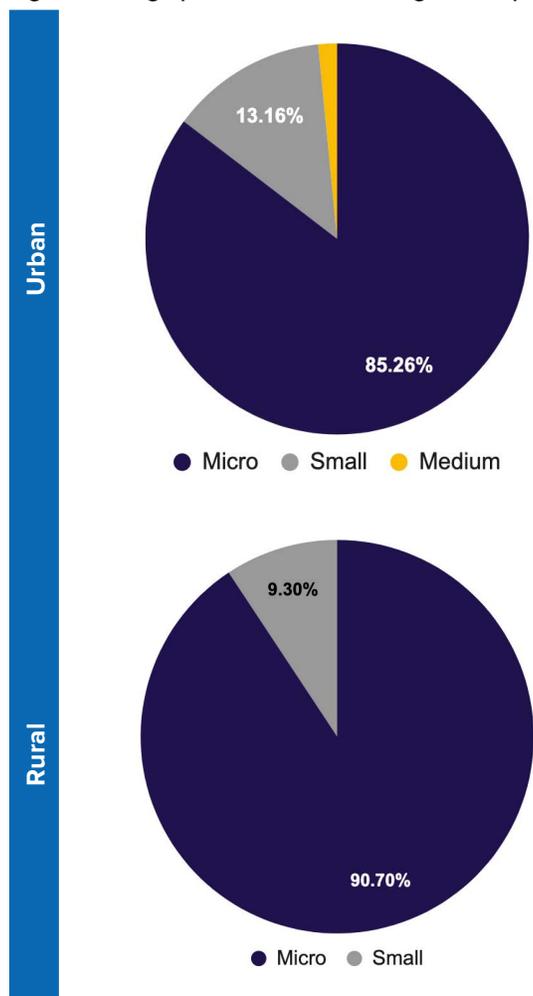
District	Urban	Rural	Total
Belize	71.57%	28.43%	100.00%
Cayo	77.92%	22.08%	100.00%
Corozal	65.38%	34.62%	100.00%
Orange Walk	64.29%	35.71%	100.00%
Stann Creek	33.33%	66.67%	100.00%
Toledo	73.68%	26.32%	100.00%

Micro-enterprises dominate both urban and rural areas

<sup>9</sup> Note: There were no rural medium-enterprise respondents. This is likely an understatement since it is plausible that there are medium sized enterprises (21-50 employees) operating in rural zones, particularly in agriculture.

with a representation of 85% and 90.7%, respectively. Small enterprises make up 13.2% of businesses in urban areas and 9.3% in rural areas. Medium enterprises account for less than 2% of all businesses in urban areas, with no representation in rural areas.

**Figure 7: Geographic Location According to Enterprise Type (%)**



## LEGAL STATUS

Registering the name under which to conduct business is one of the first steps in any company's life-cycle. A company's name plays a crucial role in a brand's growth and perception. For MSMEs, registering helps them differentiate themselves from other enterprises and provides them with a certain level of credibility. Results show that more than 70% of micro-enterprises conduct business under a registered business

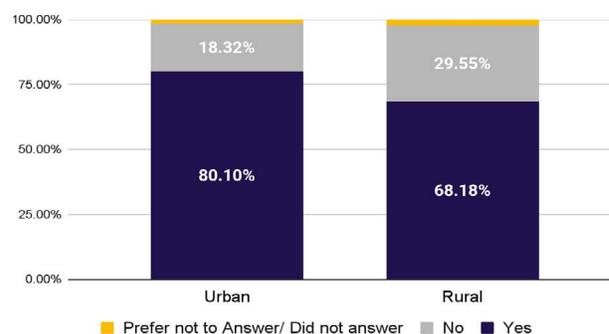
name. The registration rate among small enterprises is greater, with 94% of small-enterprises indicating that their businesses are registered. All medium enterprises were reported doing business under a registered business name.

**Table 6: Business Name Registration among MSMEs**

Registration Status	Micro	Small	Medium
Registered	73.20%	94.12%	100.00%
Not Registered	24.40%	5.88%	0.00%
Prefer not to answer	1.20%	0.00%	0.00%
Did not answer	1.20%	0.00%	0.00%
Total	100.00%	100.00%	100.00%

Further breakdown of business name registration revealed that most urban enterprises are registered (80%). However, although rural enterprises have fairly high registration rates (68.18%), more than a quarter are not registered compared to 18.3% in urban areas. This could signal the need for greater outreach and communication with rural entrepreneurs to transmit the benefits of business incorporation and registration.

**Figure 8: Business Name Registration by Region (%)**



## TAX STATUS

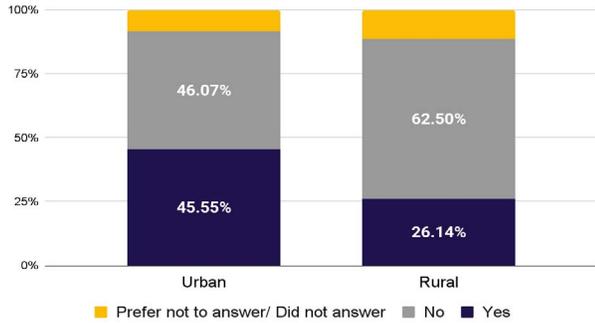
Registering with the national tax authority is an important milestone for MSMEs since it means that they are operating within the law and contributing to national revenue. Obtaining a unique taxpayer identification number (TIN) is also a prerequisite for applying for business loans and several MSME support programs. Among micro-enterprises, the majority (57.2%) of respondents indicated that they are not registered for tax. Results indicate greater compliance among small enterprises, with more than 73.5% registered for tax.

**Table 7: Tax Registration among MSMEs (%)**

Registration Status	Micro	Small	Medium
Registered	33.60%	73.53%	100.00%
Not Registered	57.20%	14.71%	0.00%
Prefer not to answer	8.80%	8.82%	0.00%
Did not answer	0.40%	2.94%	0.00%
Total	100.00%	100.00%	100.00%

Similar to legal status, tax compliance among MSMEs was higher for urban businesses (45.6%) than rural businesses who only had a bit over a quarter (26.14%) registered. The results show that tax compliance is poor across the board, failing to reach 50% even in urban areas.

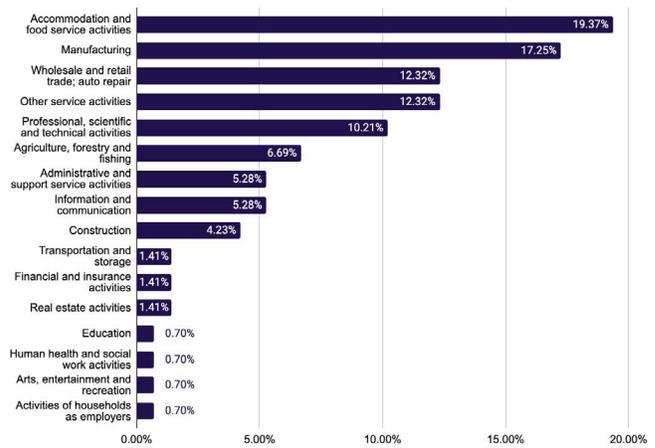
**Figure 9: Tax Registration by Region (%)**



**INDUSTRIES**

The SEIA also sought to cover various types of businesses. Figure 10 below presents the main business activities of the SEIA respondents. The majority of respondents (19.4%) do business in the accommodation and food and beverage industries. This result is not surprising given that tourism is an important industry in Belize and there are systems in place to make it easy for food vendors to be able to operate.<sup>10</sup> More than 12% of total respondents do business in the wholesale and retail industries. Notably, close to 18% of respondents report working in the manufacturing industry. As per the ISIC Revision 4, manufacturing includes the processing of food products which is common among food vendors.<sup>11</sup>

**Figure 10: Activity Breakdown (%)**



When classified according to the economic sector, results reveal that 71.8% do business in the tertiary sector, 6.7% in the primary and 21.5% in the secondary sector.<sup>12</sup>



10 Note: In Belize, food vendors need only to register and obtain a food handler’s permit. Business name and tax registration are not required.  
 11 Note: For example, Conch Fritters are a local favorite. The processing of the conch meat is required to be able to make the fritters. Conch fritters are typically sold across Belizean cities and towns by mobile or stationary food vendors. By definition, these entrepreneurs are classified under the Manufacturing sector.  
 12 See Annex 1 of industry listing by sector

**Figure 11: Sector Breakdown (%)**

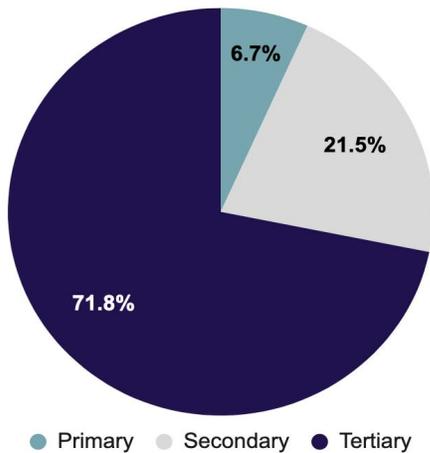
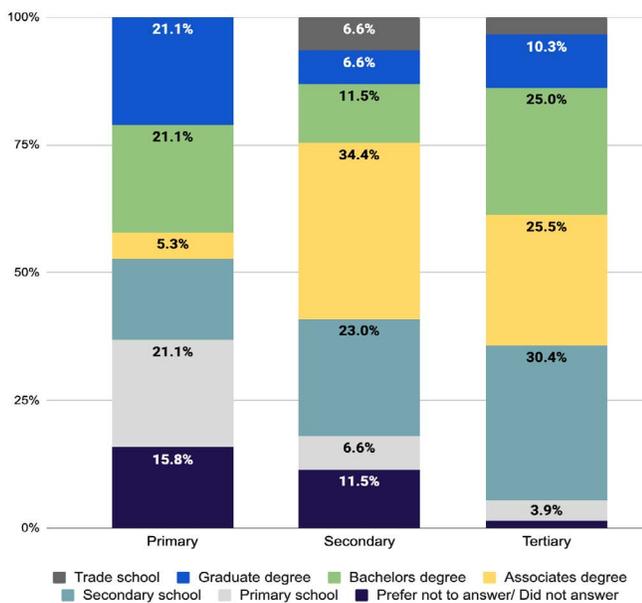


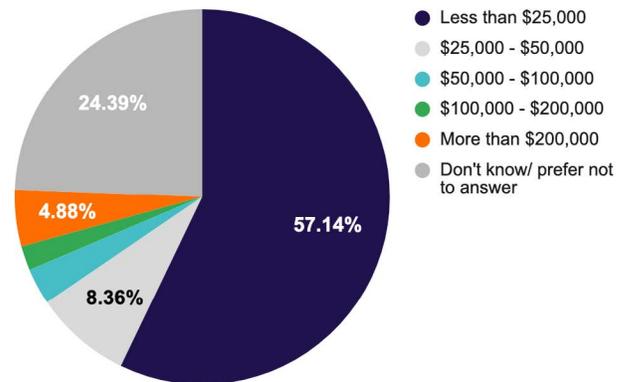
Figure 12 breaks down each education level by sector. It shows that there is generally a high level of educational attainment in the primary sector with 42% of respondents possessing a Bachelor's degree or higher. Among the tertiary sector, the majority have a secondary school diploma (30%).

**Figure 12: Entrepreneur Education by Sector (%)**



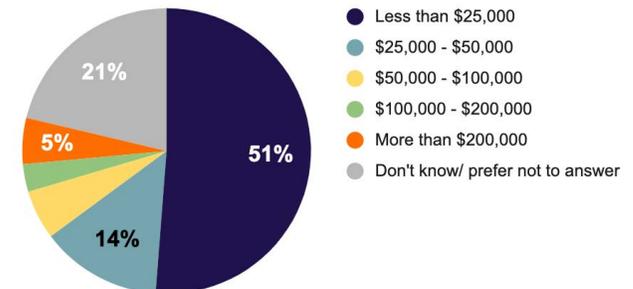
Of the businesses surveyed, more than half (57%) operated with an annual revenue of less than \$25,000 in 2020. It should be noted that 24% of all respondents opted not to disclose their revenue for that year or were unsure of 2020 revenue. Given the high level of non-disclosure, results may be under or overstated.

**Figure 13: 2020 Annual Revenue (%)**



Half of the respondents (50%) revealed that the total value of their physical assets in 2020 was worth less than \$25,000. Notably, 23% either did not know the value of their assets or preferred not to disclose.

**Figure 14: 2020 Annual Assets (%)**

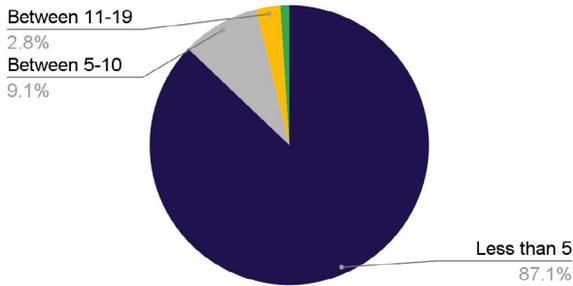


# LABOR

## EMPLOYEES

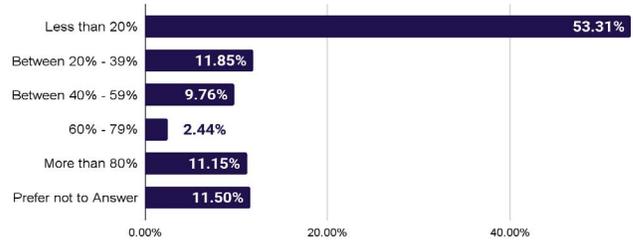
This section covers responses to the labor section of the SEIA. Most countries classify MSMEs according to the number of full-time employees. Respondents were asked to indicate the range of full-time employees. The majority of the respondents (87%) have less than 5 employees, making them micro-enterprises.

Figure 15: Number of Employees (%)



Respondents were also asked to indicate the number of youth staff. Over half (52.3%) of the respondents disclosed they have less than 20% youth among their staff. These results may be an indication of a lack of youth recruitment or a lack of supply of youth employees. The SEIA was not designed to capture supply and/ or demand side issues in terms of employee recruitment. Future studies should focus on identifying the supply and demand side constraints, if any, for youth recruitment.

Figure 16: Youth Staff (%)



Across all enterprise types, youth make up less than 20% of the staff. However, small enterprises have more youth representation compared to micro enterprises.

Figure 17: Youth Staff by Enterprise Type (%)

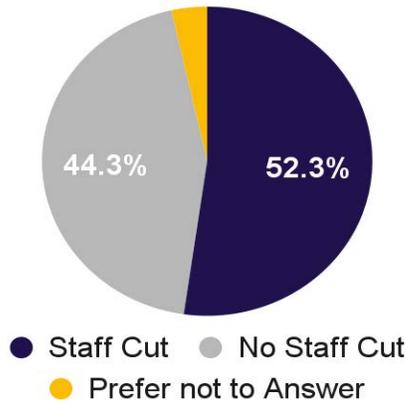


Globally, in an effort to retain business operations, COVID-19 led employers to cut staff. Among those surveyed in Belize, over half (52%) of MSMEs have followed the trend.



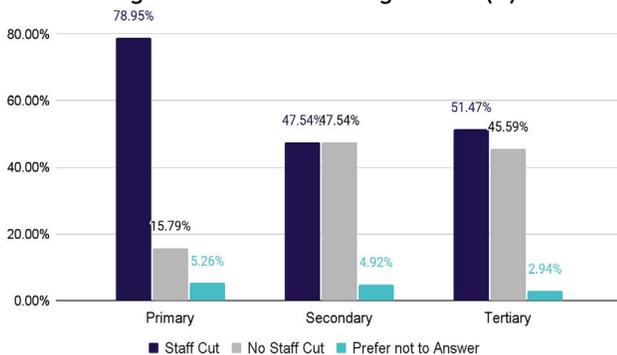


**Figure 18: Staff Cut (%)**



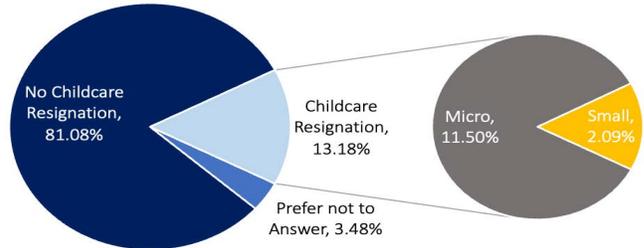
Specifically, the majority of the businesses operating in the primary sector resorted to staff cuts (78.95%). A little over half (51.21%) of businesses in the tertiary sector also cut staff. The results are somewhat counter-intuitive given that the global health crisis particularly affected the retail, tourism and entertainment industries.

**Figure 19: Staff Cut among Sectors (%)**



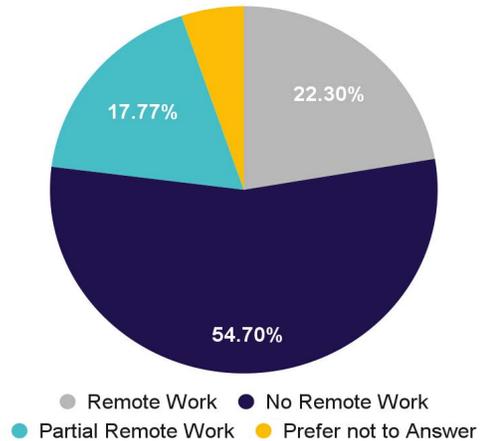
Respondents were also asked to indicate whether staff chose to take time off due to childcare duties. Of the 13.18% of respondents who revealed that staff have resigned due to childcare, the majority were micro sized businesses.

**Figure 20: Staff Resigned due to Childcare (%)**



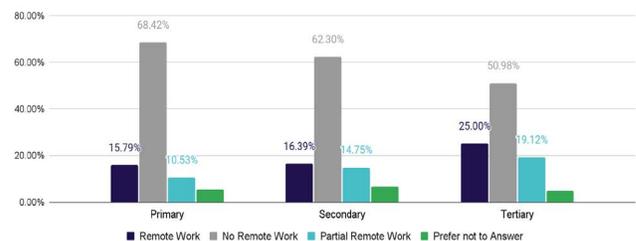
As social distancing and isolation measures were imposed across the globe, organizations opted to allow or continue remote work. In Belize, more than half of MSMEs (54.7%) do not support remote working while 17.8% allow partial.

**Figure 21: Remote Work Allowed (%)**



MSMEs in the tertiary sector employed more remote work compared to businesses operating in the other two sectors. Figure 22 presents a breakdown of the extent each sector allows remote work.

**Figure 22: Remote Work Allowed by Sector (%)**

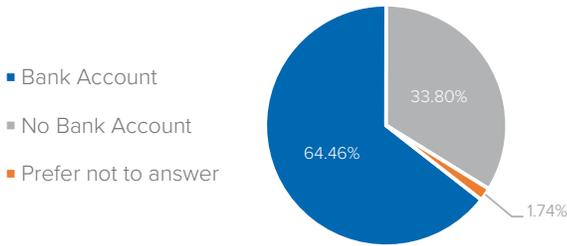


# FINANCIAL LITERACY

## BANK ACCESS

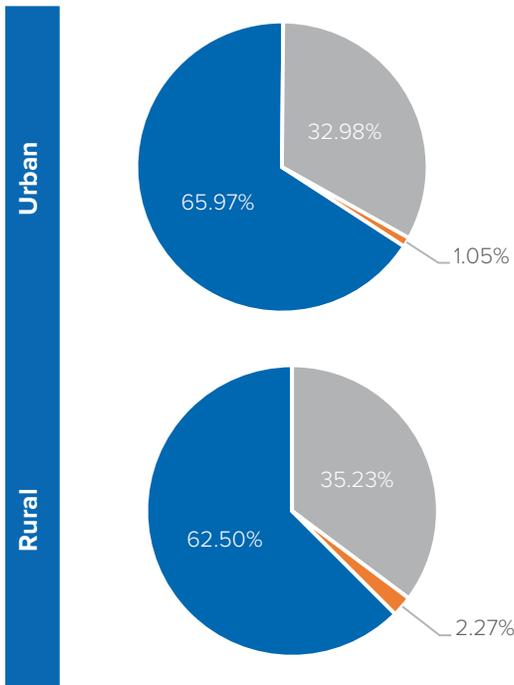
This section covers responses to the financial literacy section of the SEIA. Business owners were asked about their financial stance. Most of the respondents (64.5%) revealed they have a bank or a credit union while 33.8% claimed that they do not.

Figure 23: Access to Bank Account (%)



In both urban and rural areas, the majority of MSMEs claim they have a bank or credit union account. Financial inclusion results from the SEIA are largely in line with results from Belize’s National Financial Inclusion Survey conducted in 2019 which found that 34% of the adult population was unbanked.<sup>13</sup>

Figure 24: Urban vs Rural Access to Bank Account (%)

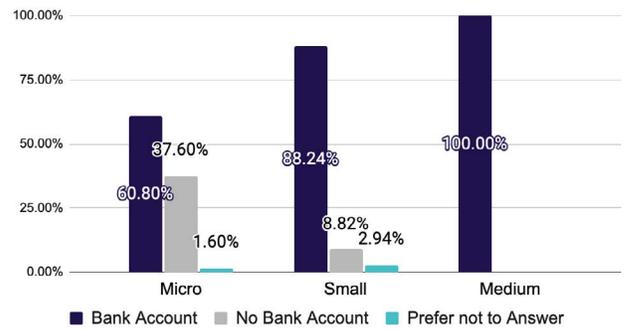


<sup>13</sup> Source: NFIS (2019)



Among small enterprises, the majority (88.24%) claim to have a bank or credit union; however, entrepreneurs of micro enterprises have fewer bank or credit union accounts.

Figure 25: Access to Bank Account by Enterprise Type (%)



Despite having a bank account, separating a personal account from a business account is oftentimes not done. More than half (54.1%) of MSMEs maintain a separate account for business purposes while 45.5% use shared accounts.

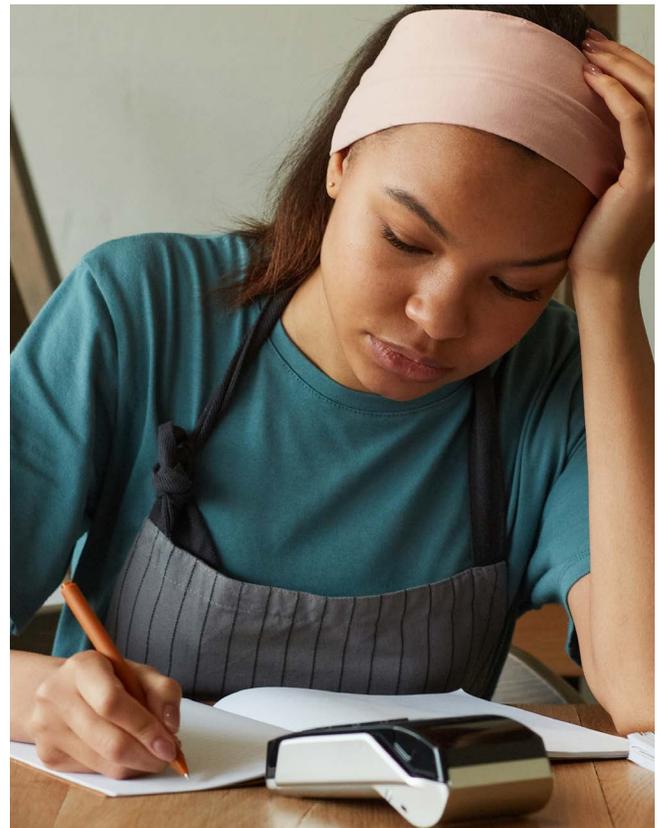
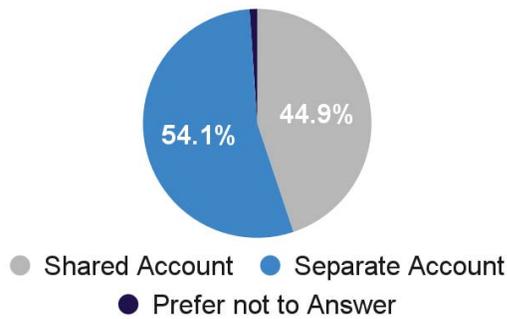
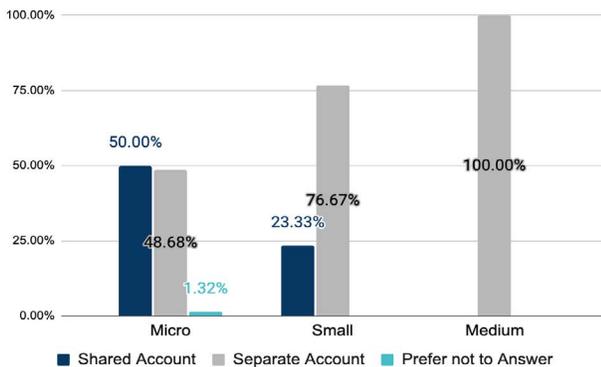


Figure 26: Shared vs Separate Bank Accounts (%)



Micro enterprises are almost evenly distributed between owners who share credit union or bank accounts and owners who separate accounts. In contrast, a significant proportion of small enterprises claim to have separate accounts and, of the few medium enterprises surveyed, all have separate accounts. Notably, as enterprise classifications are linked to the revenues of companies, it can be observed that the volume of revenue generation inclines business owners to separate their accounts.

Figure 27: Shared vs Separate Bank Accounts by Enterprise Type (%)



## FINANCIAL AWARENESS

Respondents were further asked about their familiarity with business credit facilities with business credit facilities or services. Business owners are most familiar with business loans (72.3%), life insurance (43.92%), bank overdraft (43.92%) and property insurance (38.51%). Few are familiar with none of the terms listed (18.24%), sustainable bonds or loans (13.18%) and trade credit (7.43%).

Figure 28: Familiarity with Business Credit Facilities or Services (%)

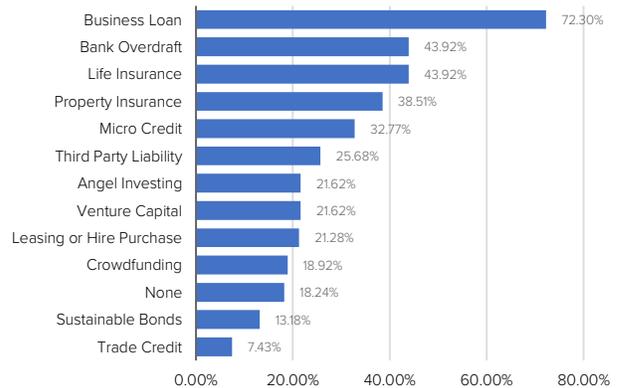
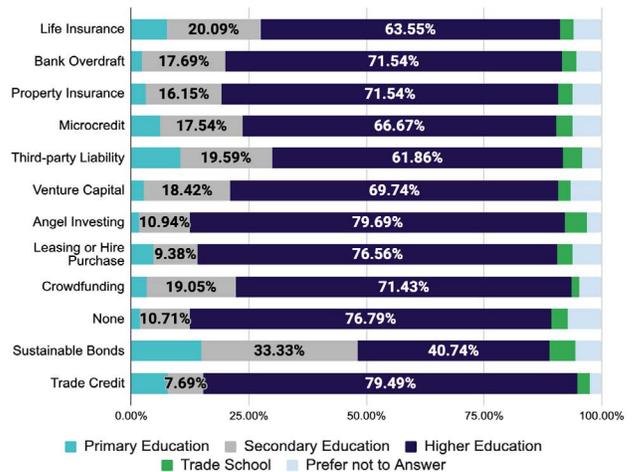


Figure 29 shows familiarity of business terms by education level. As seen, those with higher education are more familiar with business credit terms than those with secondary and primary education.

Figure 29: Familiarity with Business Credit Facilities or Services by Education Level (%)



# MANAGEMENT AND PLANNING

This section covers responses to the management and planning section of the SEIA. Among other things, respondents were asked if they have ever received training on how to manage business finances. A majority (51%) claim that they have received some form of financial management/ business training.

Figure 30: Received Training (%)



Among all respondents, the sector breakdown of respondents who have received financial training shows that all micro and small businesses have received training while no medium-sized businesses have received any. Micro businesses are almost evenly distributed among those who have received training (48.8%) and those who have not (50.0%). Notably, most small businesses (73.53%) and all medium-sized enterprises have received training.

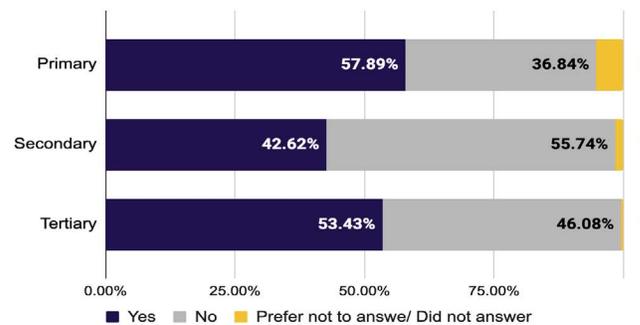
Figure 31: Financial Training by Enterprise Type (%)



When looking at the sectors, it is observed that there is an almost even distribution of financial training among each of the three sectors seen in Figure 32.

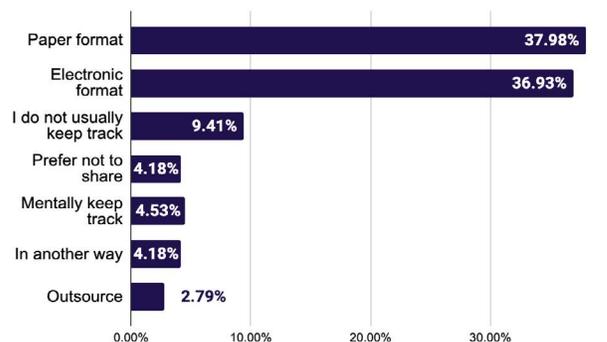


Figure 32: Financial Training by Sector (%)



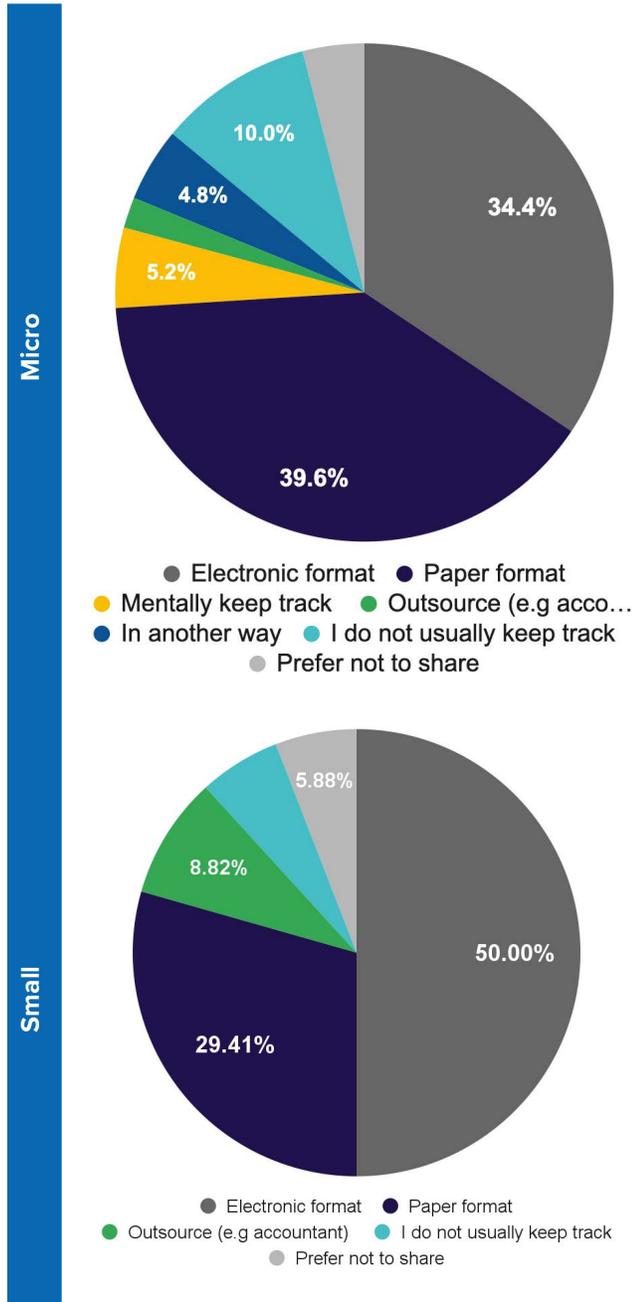
Whether financial training had been obtained or not, respondents indicated that they keep electronic (37.98%) and paper (36.93%) financial records. Only 2.79% of the respondents shared that they outsource financial services.

Figure 33: Financial Records (%)



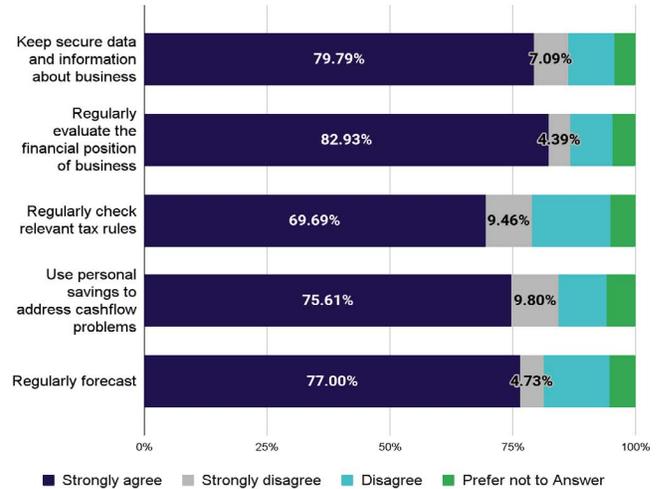
Although the most common method of financial records is electronic and paper formats for both micro and small enterprises, the methods are still influenced by enterprise size. For example, in contrast to small business owners who mostly keep records electronically, more micro enterprises keep records in paper format than electronically.

Figure 34: Financial Records by Enterprise Type (%)



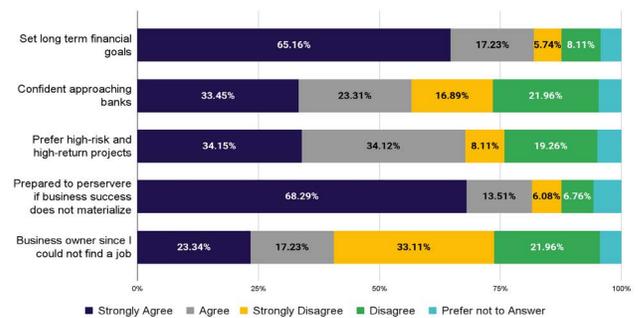
The financial approaches vary among MSMEs; the most commonly used among respondents is evaluating the financial position of their business to make informed decisions and keeping secure data and information about the business.

Figure 35: Financial Approach (%)



In terms of confidence and preference of management approach, the most common responses were grouped with respondents choosing to mostly set long term financial goals; and prepare to persevere if business success does not materialize immediately. Interestingly, 55.07%<sup>14</sup> of the respondents revealed a positive business view by indicating that unemployment is not the reason for having a business.

Figure 36: Confidence and Preference of Management Approach (%)



14 Sum of respondents who strongly disagreed (33.11%) and disagreed (21.96%) "Business owner since I could not find a job"

# COVID-19

The last section of the SEIA involved business owners reflecting on their business performance prior to the pandemic. Their performance was tested in the lines of their self reported revenue, profits, productivity and liquidity. Each category has a majority of respondents performing at an adequate level. Revenue tallied 33.80% adequate scores, profits tallied 36.24% adequate scores, productivity tallied 34.49% adequate scores and liquidity tallied 32.75% adequate scores. Regarding low scores, profit and liquidity are tied for having the lowest score with 24.74% of respondents saying that their businesses are performing at a low level in these categories.

**Figure 37: Performance Before Pandemic (%)**

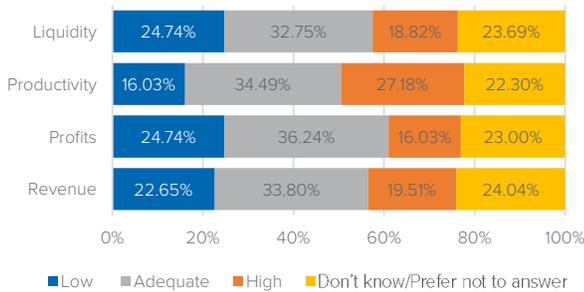


Figure 38 below reflects the current status (during COVID-19) of the respondents in the similar 4 categories of revenue, profit, productivity and liquidity. All categories have over 50% of respondents saying their business has decreased in each. Respondents reported that revenues, profits, productivity, and liquidity all fell due to the pandemic.

**Figure 38: Current Status (%)**

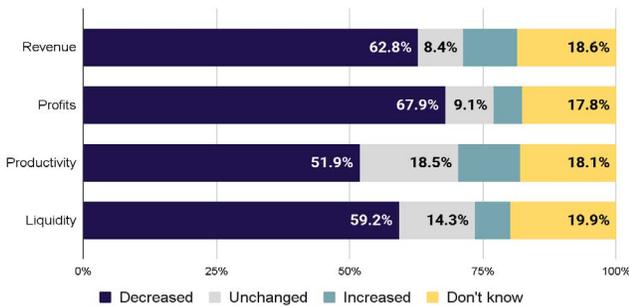
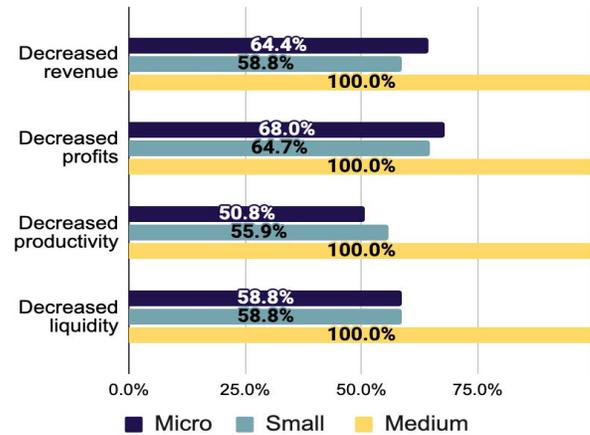


Figure 39 depicts the respondents who said that they decreased in each of the four categories assessed, separated by enterprise size. Of the micro enterprises, 64.4% reported they experienced a decreased revenue while 58.8% small enterprises reported decreased revenue as well. Decreased profits are seen among 68% micro enterprises and 64.7% small

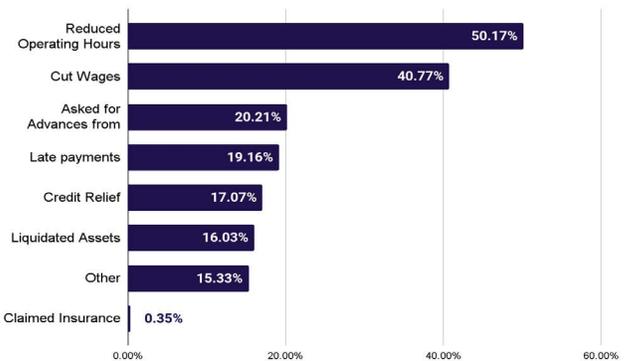
enterprises. Furthermore, decreased productivity is among 50.8% micro enterprises and 55.9% small enterprises. Lastly, decreased liquidity is among 58.8% micro and 58.8% small enterprise respondents. Notably, all the medium enterprises faced a decrease in all business activities.

**Figure 39: Decrease in Business Activity by Enterprise Type (%)**



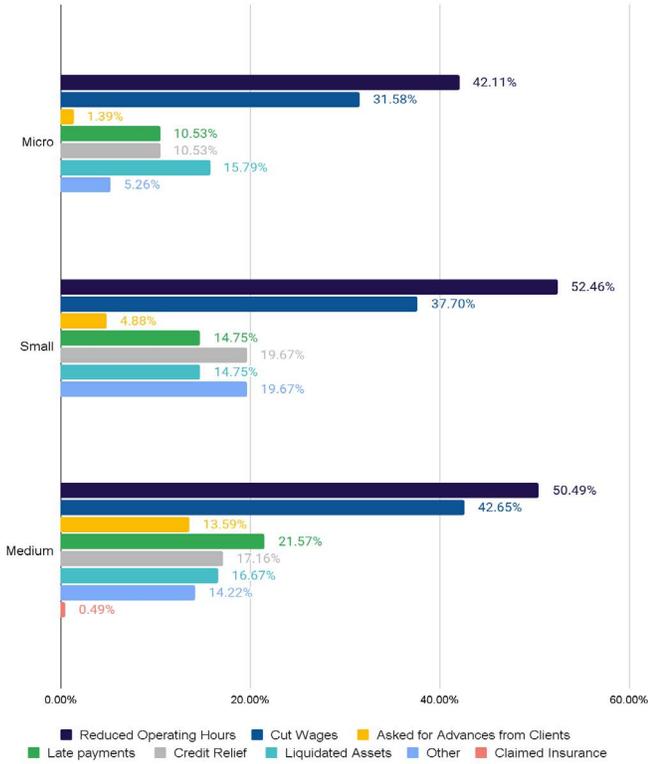
The pandemic caused plenty of businesses to alter their normal method of operation. Some of the changes are observed to be similar for businesses of all sizes throughout the entire country. The most significant response to the pandemic was businesses reducing their operating hours which totals 50.17% of responses. Another major change is the cutting of wages (40.77%).

**Figure 40: Pandemic Responses (%)**



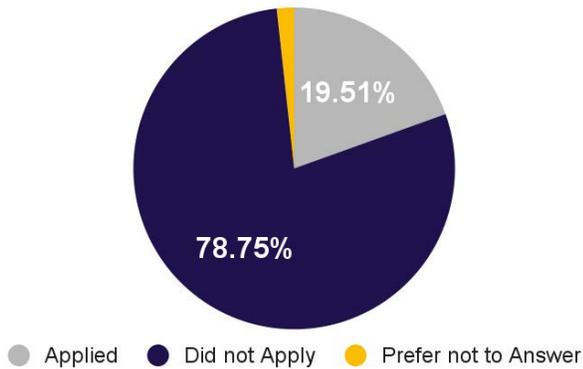
Although the most common pandemic response was reduced operating hours among all enterprise types (see Figure 41), over half of small and medium businesses responded in this way compared to micro businesses who had under 50% survey representation. Interestingly, more small businesses depended on credit relief than the other enterprise types. Small businesses also had higher alternative pandemic responses (19.67%) - indicating the business owners' innovation and ability to adapt.

**Figure 41: Pandemic Response by Enterprise Type (%)**



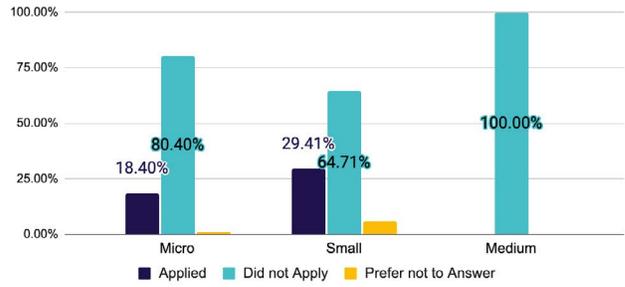
The pandemic brought reasons for businesses to acquire more capital. Loans are the fastest and safest way to secure capital. When asked about acquiring loans, 19.51% respondents have applied for a new business loan during this pandemic period. Over three quarters (78.75%) of respondents did not apply.

**Figure 42: Loan Application (%)**



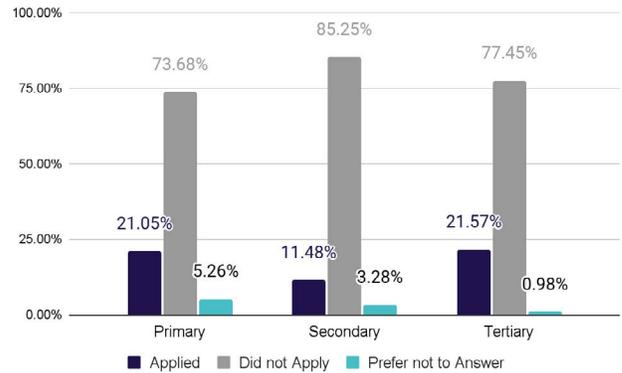
Despite more small businesses keeping separate bank accounts, more micro businesses applied for loans in comparison to small businesses. As previously noted, small businesses applied for more credit relief compared to the other enterprise types and likely opted to apply for credit relief from suppliers rather than go to financial institutions.

**Figure 43: Loan Application by Enterprise Type (%)**



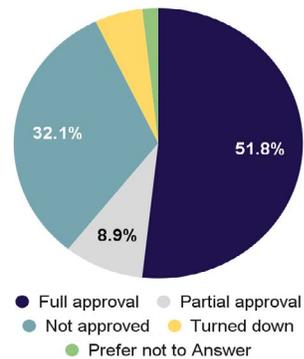
Comparing the percentage of loan applications by sectors led to the identification of an almost equal percentage distribution between the primary and tertiary sector with 21.05% and 21.57%, respectively.

**Figure 44: Loan Application by Sector (%)**



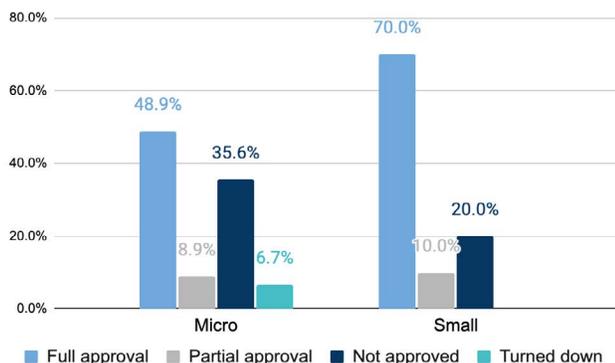
Over half (51.8%) of loan applicants have been successful while only 8.9% have been partially approved.

**Figure 45: Outcome of Loan (%)**



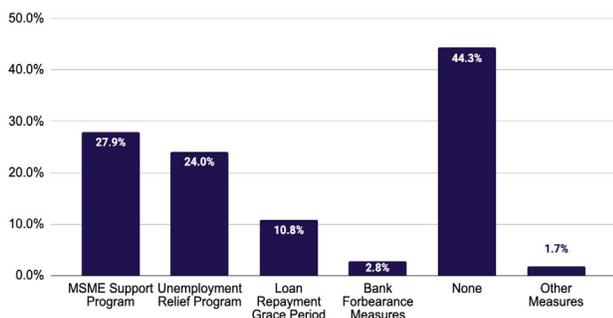
Although small businesses had a lower loan application rate, these enterprises are generally more successful at securing business loans. As seen in Figure 46, micro businesses had a higher disapproval rate (35.6%).

**Figure 46: Loan Applicants Profile by Enterprise Type (%)**



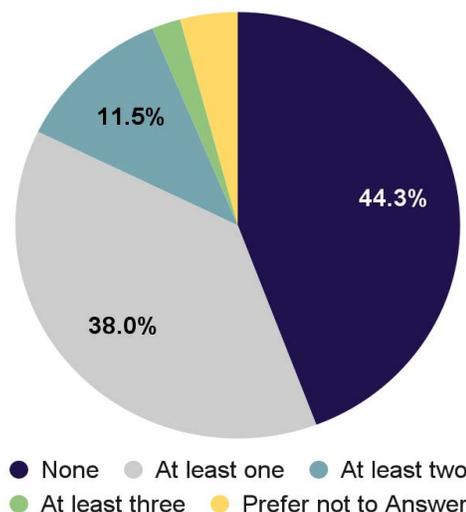
In light of the Covid-19 pandemic, the Government of Belize implemented some support programs to help struggling businesses. Just over 44% of the respondent businesses did not use any of the available relief measures. However, those who did access support programs, primarily accessed the Belize Covid-19 MSME Support Program (27.9%) and the Belize Covid-19 Unemployment Relief Program (24%). Just under 11% of respondent businesses have taken advantage of loan repayment grace periods and 2.8% availed themselves of bank forbearance measures implemented by the government and the Central Bank in response to the economic crisis due to the pandemic.

**Figure 47: Government Measures Accessed (%)<sup>15</sup>**



Although nearly half of MSMEs did not use any support program, 38% of respondents have used at least one support program, 11.5% have taken advantage of two programs and 2.1% have taken advantage of 3 programs.<sup>16</sup>

**Figure 48: Respondent Support Program Selection (%)**



Across all the government measures accessed, micro businesses have had a higher rate of benefitting from the MSME support program and the unemployment relief program whereas small businesses have had a higher rate of benefitting from the unemployment relief program and loan repayment grace period and bank forbearance measures. Where credit is considered, it should be noted small businesses are more eligible.

**Figure 49: Government Measures Accessed by Enterprise Type (%)**

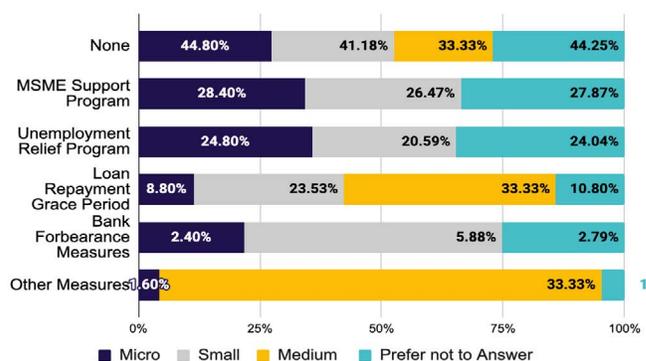
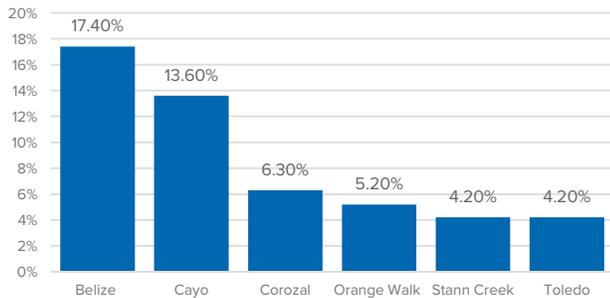


Figure 50 provides a profile of government measures accessed by district location. Among business owners that accessed at least one support program/ initiative, 17.4% are located in the Belize district, 13.6% in the Cayo district and 6.3% in the Corozal district.

<sup>15</sup> Note: Estimates will not add to 100% due to the respondents being able to select multiple categories.

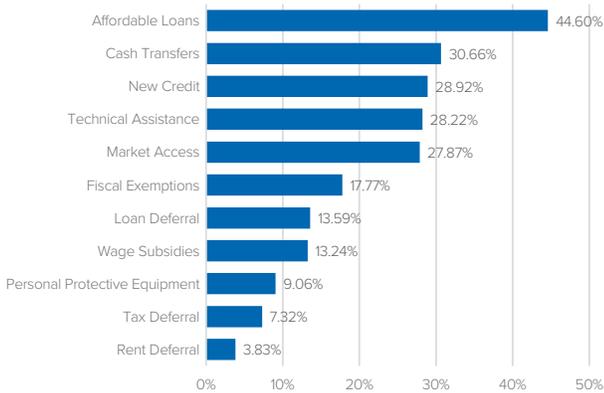
<sup>16</sup> Note: The maximum amount of programs accessed by respondents was three (3).

**Figure 50: Government Measures Accessed by District Location (%)**



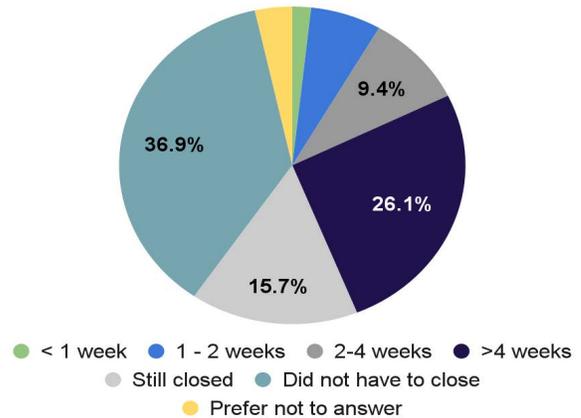
Some measures are more helpful than others especially depending on the nature of the business. A significantly more helpful measure is a loan with lower rates which 44.6% of respondents chose. Cash transfers for businesses is another helpful measure (30.66%). Additionally, there are three measures which have similar percentages: access to new credit (28.92%), technical assistance (28.22%) and access to market access (27.87%).

**Figure 51: Most Helpful Assistive Measures (%)**



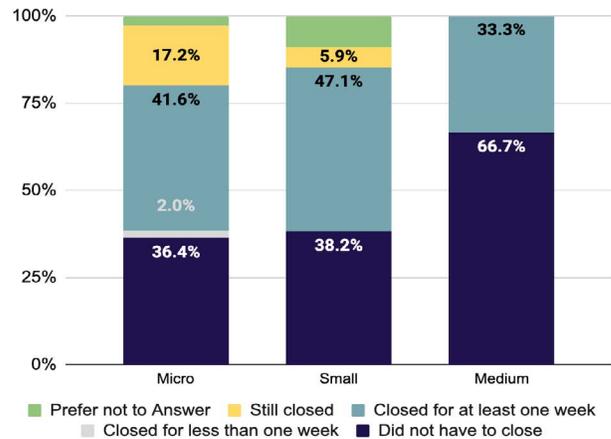
Covid-19 has caused many businesses to close their doors due to state of emergencies and new statutory instruments. Notably, 36.9% of respondents stated that they did not have to close their businesses. However, the results indicate that some businesses have closed with 26.1% of them being closed for 4 weeks or more and 15.7% of them still remaining closed at the time the Assessment was administered <sup>17</sup>.

**Figure 52: Period Length of Business Closure (%)**



Different sizes of businesses had different reactions regarding the closure of their businesses. Although the majority medium size enterprises reported not closing, a high percent of small and micro businesses reported closing for at least a week. It should be noted micro enterprises have the highest closure rate as 17.2% claim to still be closed.

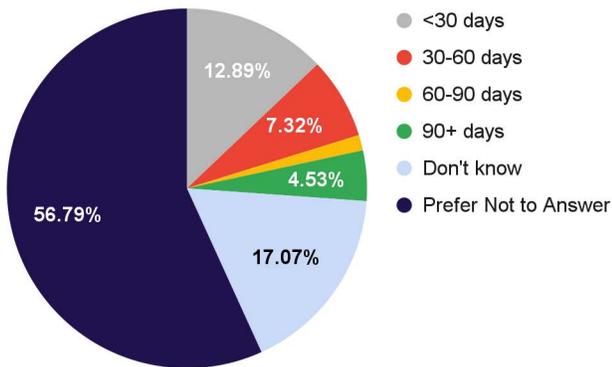
**Figure 53: Business Operation Status by Enterprise Type (%)**



Of the businesses who are opened, 17.07% stated they do not know how long they have to pay costs. The most common response to this question was opting not to answer altogether; however, 13.24% of respondents identify that they have less than 30 days to pay costs.

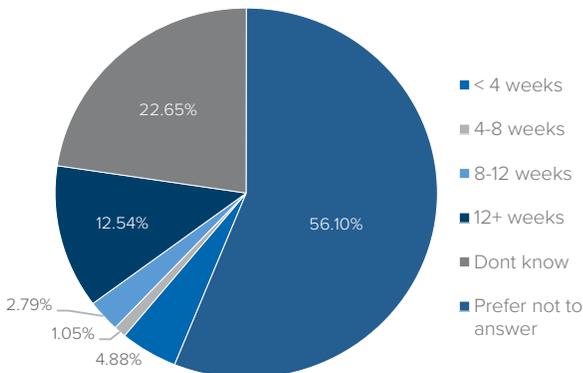
<sup>17</sup> The SEIA was administered between September 08, 2021 to October 17, 2021

**Figure 54: Number of Days Business has to Pay Costs (%)**



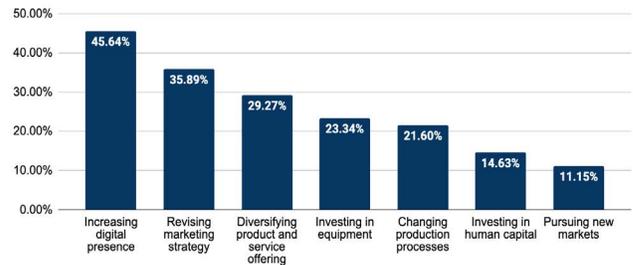
Furthermore, the uncertainty between covering costs led 22.65% of the business owners to admit under the current circumstances, they do not know how long they will remain open. 12.54% of respondents stated that they will only be open for 12 or more weeks. At the time of writing, the country is still operating under a state of emergency where some businesses remain closed or allowed to operate under certain restrictions. The state of Belize is generally uncertain as is reflected among entrepreneurs.

**Figure 55: Number of Days Business expect to Remain Open Under Current Circumstances (%)**



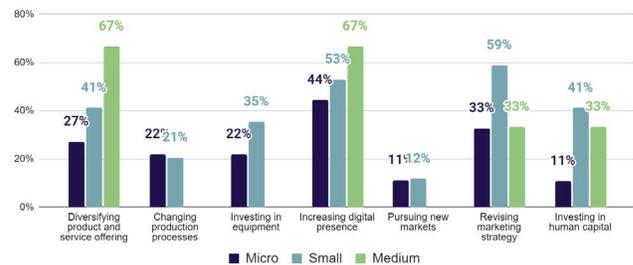
Adapting to the pandemic regulations has been a challenge for plenty of businesses. A number of establishments had to make changes in their business process in order to accommodate consumers. One of the most common changes is the increased usage of digital platforms as identified by 45.27% of respondents. Another 35.14% of respondents stated that they have revised their marketing strategy.

**Figure 56: Measures Done Since the Pandemic (%)**



Medium-sized enterprises have the heaviest presence in diversifying product and service offering and increasing digital presence with 67% each when the data was separated by enterprise type. On the other hand, small businesses have the highest presence in the revising of marketing strategy (59%).

**Figure 57: Measures Done Since Pandemic by Enterprise Type (%)**



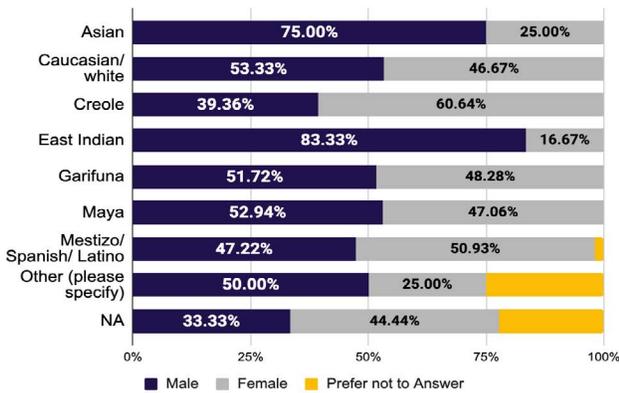
# GENDER

## GENDER DEMOGRAPHICS

As previously established, 51.4% of the respondents were female and 45.3% were male.<sup>18</sup> This section further analyses gender by the six main sections of the SEIA: Demographics, business profile, labor, financial productions, management and planning and Covid-19.

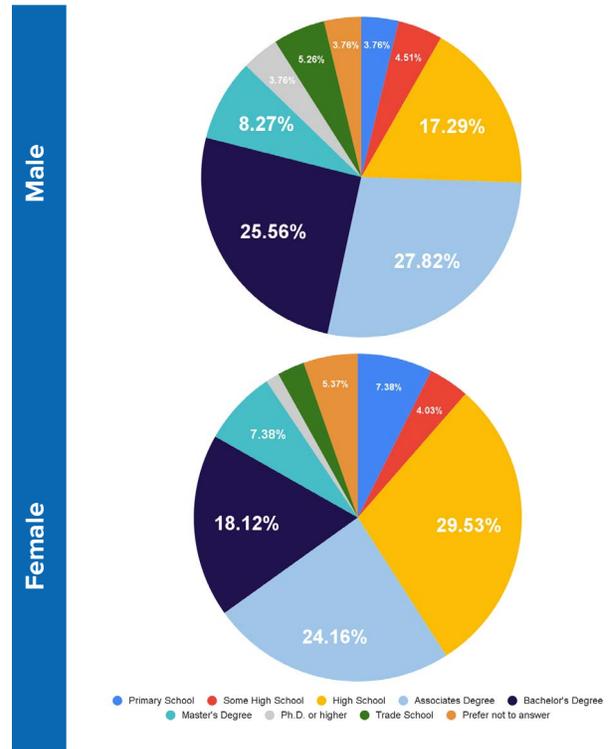
The respondents were asked to classify themselves under an ethnic group where applicable. A graphic representation was created which further classifies those respondents according to gender and ethnicity. Of the respondents who were Asian, 75% of them were of the male gender. Females are seen to be more dominant in the Creole ethnicity with a total of 60.64%. In contrast to the Creole ethnic group, males were dominant in the East Indian ethnic group with 83.33% total respondents. All other ethnic group divisions by gender can be seen in Figure 58.

Figure 58: Ethnicity by Gender (%)



The educational level was also classified according to gender. A general overview of the results leads to the conclusion that males are more educated in the levels of primary school, some high school, trade school and at the associate degree level. Females are dominant at the high school level with a 29.53% representation compared to 17.29% of male respondents. All other educational-levels by gender comparison can be seen in the figure below.

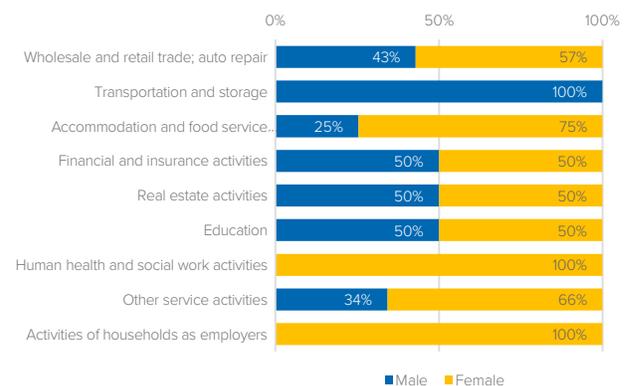
Figure 59: Level of Education by Gender (%)



## BUSINESS PROFILE BY GENDER

The gender disparity among the business activity is presented in Figure 60. Three business activities had equal representation: financial and insurance activities; real estate activities; and education. The largest gender disparity is found among the transportation and storage activity which had no female representation while human health and social work activities and activities of households as employers had no male participation. Notably, heavy female presence is seen in wholesale and retail trade, auto repair; accommodation and food services activities; human health and social work activities; other service activities; and activities of households as employers.

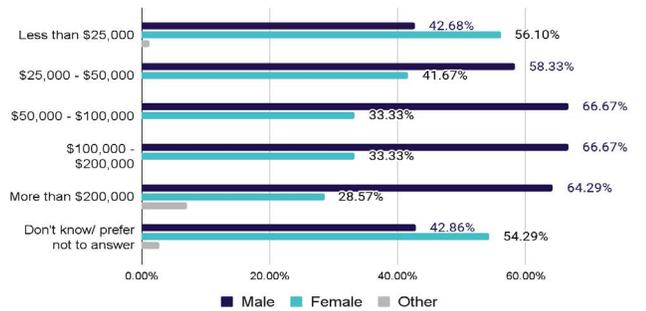
Figure 60: Breakdown of Main Business Activity by Gender (%)



18 Section 3.0 Demographics

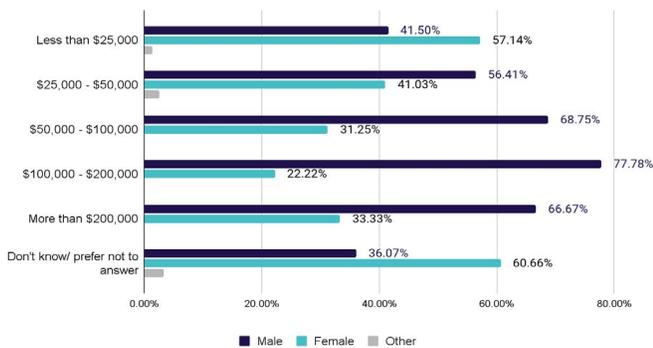
Although the survey has more female respondents and consequently more female dominance in the various business activities, males are seen being dominant in the majority of revenue ranges covered in the survey. More males have a revenue of \$25,000 - \$50,000; \$50,000 - \$100,000; \$100,000 - \$200,000; and more than \$200,000. This pattern emphasizes that there is a revenue gap between male and female led businesses.

**Figure 61: 2020 Annual Revenue by Gender (%)**



Similar to the revenue results, males dominate the majority of the asset ranges. The most significant male dominated range is that of \$100,000 - \$200,000 which has 77.78% of male respondents identifying under this.

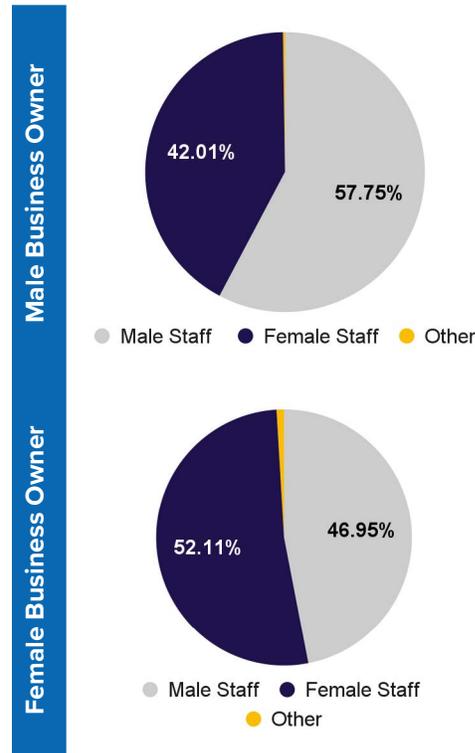
**Figure 62: 2020 Annual Assets by Gender (%)**



## LABOR BY GENDER

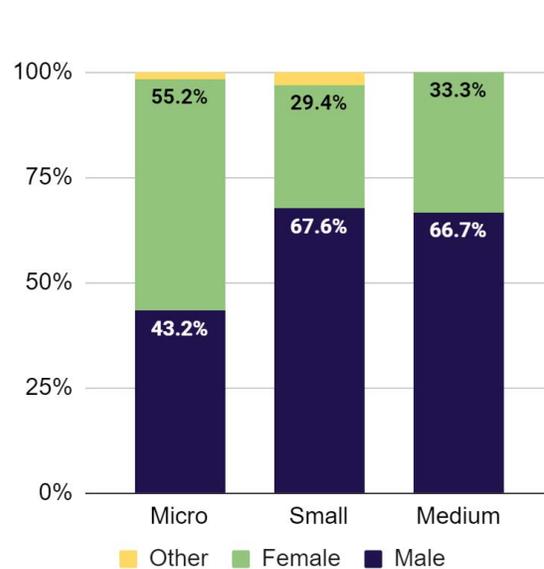
Business owners were asked about the gender distribution of their employees. On average, male business owners employ more male staff (57.75%) than female (42.01%). On the other hand, female business owners hire more female staff (52.11%) than male (46.95%).

**Figure 63: Male vs Female Staff Employed (%)**



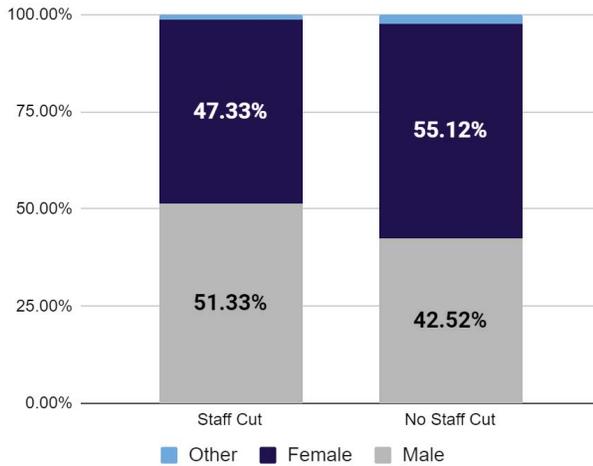
The size of the enterprise is separated by gender in the figure below. Micro enterprises have the highest representation in the results; within micro enterprises itself, females have 55.2% representation. Evidently, females dominated micro enterprises but males dominated small and medium businesses.

**Figure 64: Enterprise Type by Gender (%)**



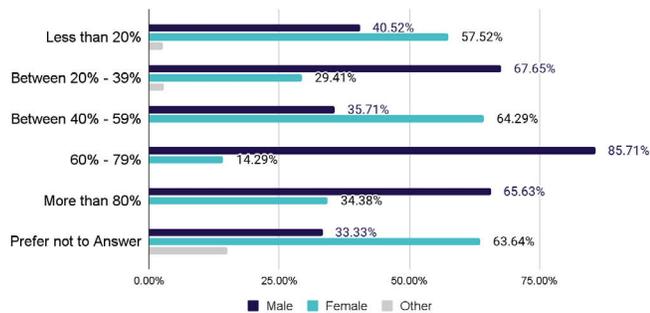
Between male and female employers who cut staff, males have made slightly more staff cuts with a percentage of 51.33%. When comparing these employers in relation to not cutting staff, female employers lead with a higher percentage of 55.12%.

**Figure 65: Staff Cut by Gender (%)**



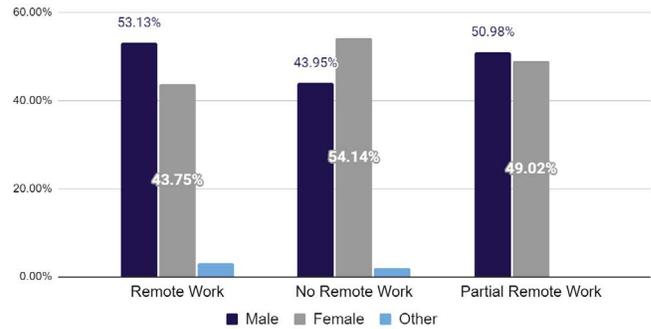
In terms of youth staff, 65.63% of male employers revealed they have more than 80% of youth employees within their business establishment while only 34.38% of female business owners do. Male employers dominate the 60% - 79% youth staff range with a representation of 85.71%. The most significant range in which majority female employers (64.29%) have youth staff is the 40% - 59% range. Overall, this clearly shows that male business owners tend to have more youth staff compared to female business owners.

**Figure 66: Youth Staff by Gender (%)**



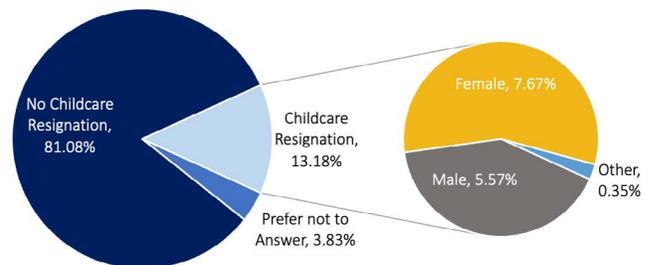
There are some businesses who allow their employees to work remotely. Of those businesses that do, male employers (53.13%) are seen outweighing females (43.75%). For establishments that allow staff to partially work remotely, male and female employers have almost similar representation with males having 50.98% and females having 49.02%. For businesses that do not allow working remotely, female employers have a higher total with 53.80%.

**Figure 67: Remote Work Allowed by Gender (%)**



Further, some staff were forced to resign due to childcare. Of those who resigned, the majority were female who generally tend to take on the nurturing role. It can be clearly seen that females lost more jobs due to their parenting responsibilities compared to males.

**Figure 68: Staff Resigned due to Childcare by Gender (%)**



## FINANCIAL PRODUCTS BY GENDER

As seen in Figure 69, access to a bank account is almost evenly distributed by males and females - males recording a slightly higher percentage than females.

**Figure 69: Access to Bank Account by Gender (%)**

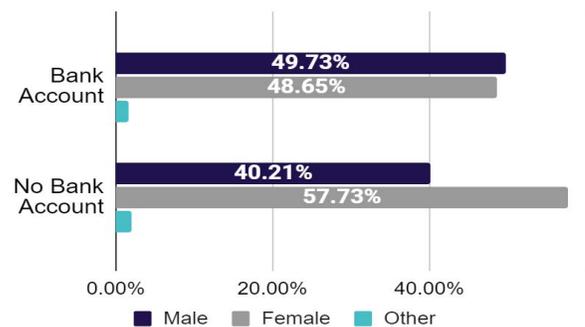


Figure 70 further analyses those who claimed to have a bank account by gender. It shows females typically share business from personal accounts while males typically separate the accounts.

**Figure 70: Shared vs Separate Bank Accounts by Gender (%)**

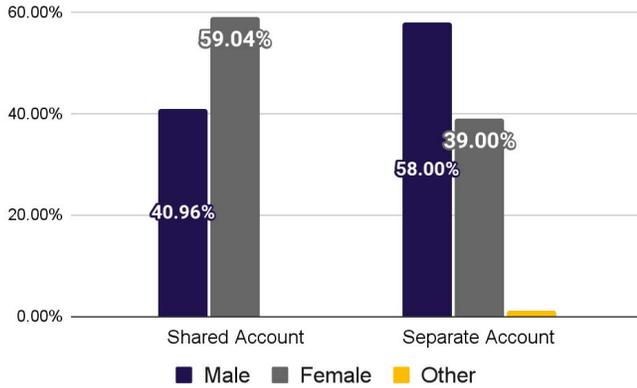
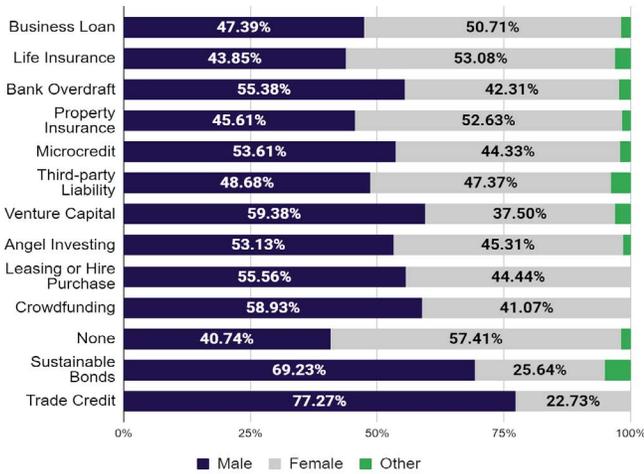


Figure 71 presents the gender breakdown of the familiarity with business credit facilities or services. It shows males (77.27%) are most knowledgeable about trade credit compared to females (22.73%) surveyed. Males are also dominant in terms of knowledge about sustainable bonds with a 69.23% representation. The highest female representation is seen where 53.08% of females are more knowledgeable about life insurance compared to 43.85% of males surveyed.

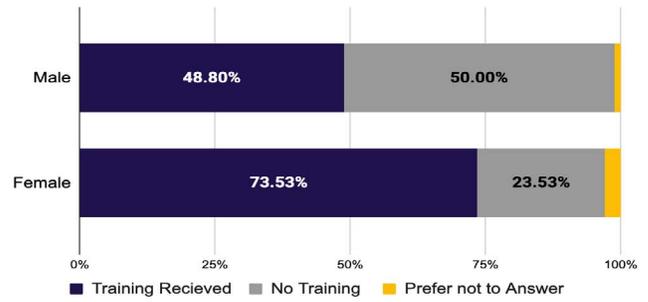
**Figure 71: Familiarity with Business Credit Facilities or Services by Gender (%)**



**MANAGEMENT AND PLANNING BY GENDER**

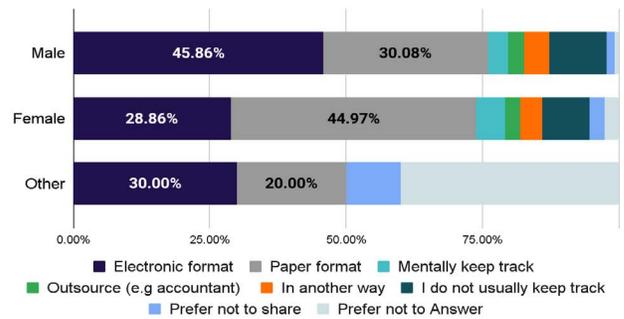
Of the male business owners surveyed, almost half (48.80%) have received financial management training and half have not. However, among the female business owners, a large disparity is observed as the majority (73.53%) have received training while less than a quarter have not.

**Figure 72: Training Received by Gender (%)**



In terms of ways respondents keep financial records, male respondents mostly keep records through electronic formats (45.86%) while most females keep it in paper form (44.97%).

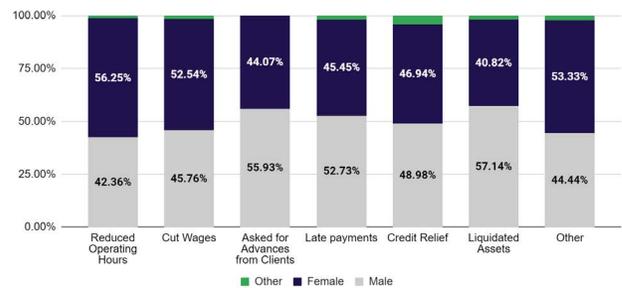
**Figure 73: Financial Records by Gender (%)**



**PANDEMIC RESPONSE BY GENDER**

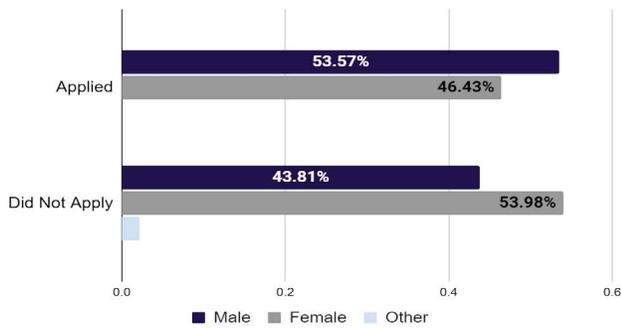
Most male and females use an almost similar approach to respond to the pandemic. Figure 74 shows the measures used and the distribution of male and female. Males lead in three (3) while females lead in two (2) approaches, i.e. responses over 50%. Male respondents lead in asking for advances from clients; late payments; and liquidating assets. Female respondents lead in reducing operating hours; and cutting wages.

**Figure 74: Pandemic Response by Gender (%)**



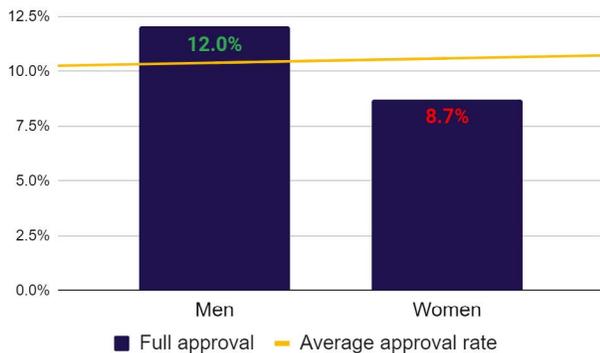
Business loans are progressively being issued amidst the Covid-19 pandemic. The results of the survey indicated that more males applied for loans and represented 53.57% to females 46.43%.

**Figure 75: Loan Application by Gender (%)**



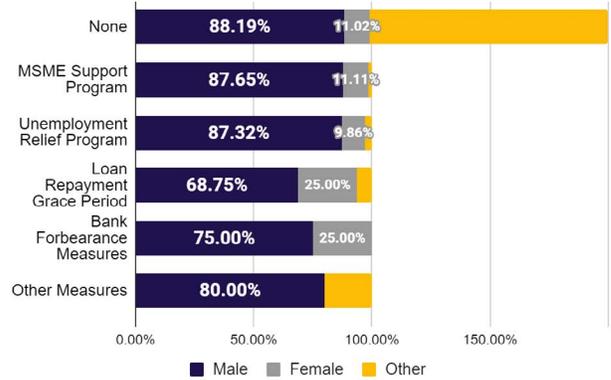
The outcome of loan approvals was also looked at from the gender perspective. This perspective leads to the conclusion that although there is an average approval rate a little over 10%, it is more likely that men would be approved than females. Males lead females in loan approval with 12% to 8.7% respectively.

**Figure 76: Outcome of Loan by Gender (%)<sup>19</sup>**



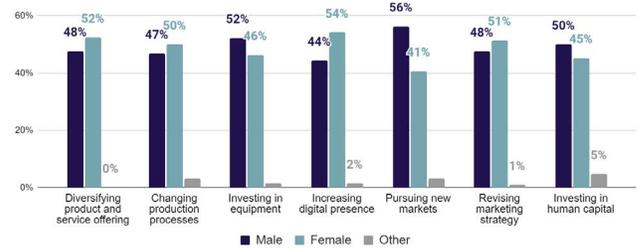
The listed government measures for Covid-19 are accessed by both male and females. An analysis of the results show that males significantly accessed more government measures than females. There is a high concentration of respondents who did not know about any of the measures. However, those persons who knew and followed through with accessing the measures are mostly males. Males have over 65% dominance in all measures listed with the highest being 87.65% in the MSME support program.

**Figure 77: Government Measures Accessed by Gender (%)**



Both male and female entrepreneurs have had to alter their business plan, product or service in some way in order to continue operation amidst Covid-19. Males lead in areas such as investing in equipment (52%), pursuing new markets (56%) and investing in human capital (50%). On the other hand, females lead in areas such as diversification (52%), changing production processes (50%), increasing digital presence (54%) and revising marketing strategies (51%). It should be noted across all measures taken by entrepreneurs, male and female took similar approaches with very low disparity among the measures taken.

**Figure 78: Measures Done Since Pandemic by Gender (%)**



<sup>19</sup> Only male and female respondents indicated they have applied for a loan. "Other" did not.



## GENDER INCLUSIVITY INDICATOR

A gender inclusivity indicator was developed by combining macro-level indicators with gender specific data obtained through the survey. Exposure, susceptibility, and coping levels were obtained from the 2021 World Risk Report and speak to the national context in terms of exposure to natural disasters and catastrophes, susceptibility to losses and damages, and the capacity to cope in times of crises.<sup>20</sup> The World Risk Report methodology is also used with slight modifications. The World Bank Women, Business, and the Law Index was used to assess the level of gender-specific inclusivity that speaks to how women are able to address macro issues as well as business related issues.<sup>21</sup> The Gender Inequality Index is used as a weight for final scoring.

**Table 8: Macro-environmental Factors**

Indicator	Score	Classification
Exposure	16.73	HIGH
Susceptibility	28.2	HIGH
Coping	74.46	MEDIUM
Inclusivity	74.9	MEDIUM
Inequality	41.5	MEDIUM

These scores were combined using the following formula to arrive at a weighted inclusivity score for Belize:  $\text{Inclusivity Index} = 0.6(\text{Inclusivity} + \text{Inequality}) \times 0.4(\text{Exposure} + \text{Susceptibility} + \text{Coping})$ . After transforming the data through min-max normalization, we arrive at an index score

of 49.2 for Belize. For comparison, index scores for selected countries are included below.

**Table 9: Gender Inclusivity Index Scores**

Country	Index Score
Bahamas	53.6
Barbados	58.1
Belize	49.2
Costa Rica	49.1
El Salvador	43.9
Guatemala	43.8
Honduras	46.4
Jamaica	51.0
Mexico	49.1
Trinidad and Tobago	54.1
USA	55.4

Belize scores fairly well in terms of inclusivity relative to its Central American neighbors of Honduras, El Salvador, Costa Rica, and Guatemala. It performs slightly better than Mexico, but scores lower than its CARICOM counterparts the Bahamas, Barbados, Jamaica, and Trinidad and Tobago. The USA has the second best index score at 55.4, with Barbados having the highest score at 58.1.

<sup>20</sup> Source: Mariya Aleksandrova, et al. 2021. World Risk Report 2021. Accessed at: <https://reliefweb.int/sites/reliefweb.int/files/resources/2021-world-risk-report.pdf>

<sup>21</sup> Source: World Bank (2021)

# MULTIDIMENSIONAL VULNERABILITY INDEX

## METHODOLOGICAL NOTE

In this analysis, the empirical calculation of the MVI is based on the multidimensional approach developed by Alkire and Foster (2011). The rationale for choosing this methodology is that it is intuitive and easy to understand for policymakers. It emphasizes the joint deprivations faced by individuals, households or businesses with regard to the indicators that compose the MVI. The MVI is an adjusted headcount ratio index designed to measure vulnerability, and can be broken down into **incidence**, **intensity**, and **dimensional composition**.

The **incidence** of vulnerability (**H**, for Headcount ratio) is the proportion of individuals (within a given population) who are identified as vulnerable based on the multiple deprivations they experience. The **intensity** of vulnerability (**A**, for Average deprivation share) is the average proportion of deprivations vulnerable individuals experience. It measures how vulnerable individuals are, on average. The MVI is the product of both **H** and **A**.

$$MVI = H \times A$$

In practice, we consider a sample of **N** units (units refer to either households or businesses) and **D** ≥ 2 indicators. Indicators related to the same area of deprivation are grouped into dimensions. For example, the nutrition's dimension for households is identified in the data with two indicators. Let **Y** be the **N** × **D** matrix whose entry **y<sub>ij</sub>** denotes the level of indicator **j** for unit **i**. The **1** × **D** vector **z** = (z<sub>1</sub>, ..., z<sub>D</sub>) contains the deprivations cut-offs of **D** indicators, which is used to determine if a unit is deprived in each of the indicators **D**. Let us assume that, for an indicator **j** and unit **i**, the deprivation occurs when **y<sub>ij</sub>** falls strictly below the respective cut-offs, that is **y<sub>ij</sub>** < **z<sub>j</sub>**. The **1** × **D** vector **w** = (w<sub>1</sub>, ..., w<sub>D</sub>), with **w<sub>j</sub>** being between 0 and 1, and **w<sub>j</sub>** add up to 1.

Let **g<sup>0</sup>** be the **N** × **D** deprivation matrix whose entries are given by **g<sub>ij</sub><sup>0</sup>** = **w<sub>j</sub>** if an indicator entry **y<sub>ij</sub>** falls strictly below the respective cut-offs **z<sub>j</sub>**. The row sum of **g<sup>0</sup>** represents the number of weighted deprivations faced by unit **i**, that is **c<sub>i</sub>** = ∑<sub>j=1</sub><sup>D</sup> **g<sub>ij</sub><sup>0</sup>**.

Here, **k** is defined as the vulnerability cut-off, which represents the extent of weighted deprivations a unit must exceed to be considered vulnerable. Knowing the cut-off **k**, we can define the vulnerability identification function **ρ<sub>k</sub>** (**y<sub>i</sub>**, **z**) which equals 1 if the weighted deprivation rate exceeds the cut-off **k** and 0 otherwise. Therefore, the headcount ratio **H** or incidence of vulnerability can be calculated as follows:

$$H = \frac{\sum_{i=1}^N \rho_k(y_i, z)}{N}$$

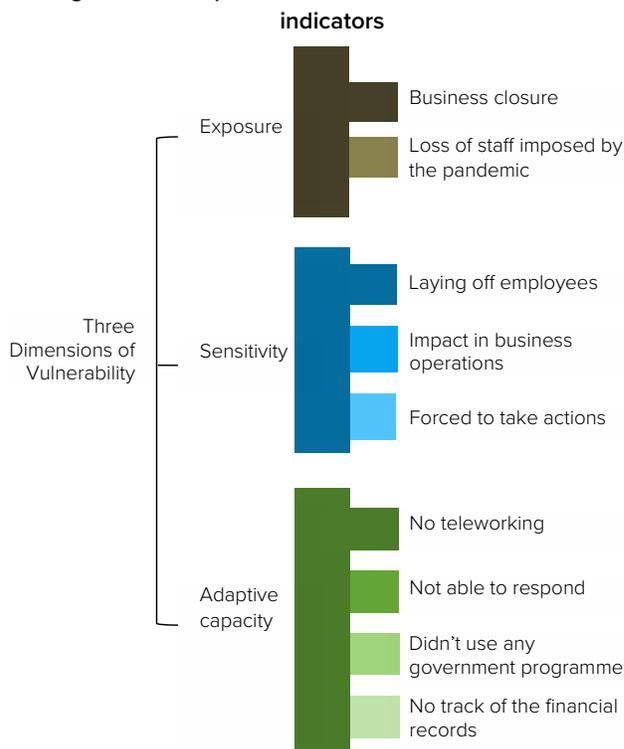
As explained above, the intensity **A** is the average proportion of deprivations vulnerable units experience.

The MVI can also be calculated using its dimensional composition, by breaking it down by each of its indicators. The figure to be used in this regard is the **censored headcount ratio**, **h<sub>j</sub>**, which is the percentage of individuals identified as vulnerable and deprived in each component indicator (**j**). The MVI is constructed by summing the weighted censored headcount ratio **h<sub>j</sub>** of each indicator **D**:

$$MVI = \sum_{j=1}^d w_j h_j$$

The selection of dimensions and indicators for Belize's businesses MVI followed the conceptualization of vulnerability as a combination of: exposure, sensitivity, and adaptive capacity (McCarthy et al., 2001; Brooks, 2003; Schröter et al., 2005; Adger, 2006; Luers et al., 2003; Turner et al., 2003a, b).

Figure 79: Composition of the MVI – Dimensions and indicators



Source: Surge Data Hub, UNDP

This conceptualization is useful for the analysis of businesses' exposure to shocks, as well as the way in which they are impacted by and respond to these shocks. Thus, the measurement highlights both the degree to which businesses are affected by the shock, as well as their ability to respond and adapt to it.

For these reasons, the three dimensions of the MVI were defined as:

- **Exposure:** reflects the extent to which a firm is subject to, or in contact with, the shock.
- **Sensitivity:** is the degree to which a firm is impacted by a shock or a range of different shocks
- **Adaptive capacity:** refers to the ability that a firm has to respond to the disturbances and to recover from a shock.

Subsequently, indicators were chosen from the variables available in the dataset that corresponded with these definitions, and thus could fit into one of these dimensions. It is worth noting, however, that the questionnaire of the assessment was not designed in order to conduct the MVI analysis, but rather, the MVI was decided to be constructed after conducting the assessment, in order to count with a specialized tool that could contribute to highlight the main areas of vulnerability, as well as the main groups of businesses that are the most vulnerable to shocks such as the one produced by the COVID-19 pandemic. Therefore, the aggregation of the different variables into indicators, and indicators into dimensions of the MVI, was subject to certain limitations.

**Table 10: Dimensions and indicators of the MVI**

Dimension	Indicator	Question in survey	Deprived if..	Weight
<b>Exposure</b>	Business closure	Was your business closed due to the COVID-19 outbreak, and if so for how long your business was closed?	Business closed for more than 4 weeks	1/6
	Loss of staff imposed by the pandemic	Have staff resigned due to childcare or healthcare responsibilities in response to the pandemic?	Respondent selected "Yes"	1/6
<b>Sensitivity</b>	Laying off employees	Did you have to cut staff or grant absences due to the pandemic?	Respondent selected "Yes"	1/9
	Impact in business operations	How would you describe the impact of the COVID-19 crisis on the following items related to your business?	The business has decreased Revenue, Productivity, Liquidity, Accounts receivable, Exports, or increased Debt (3 or more of the above)	1/9
	Forced to take actions	4. Have you had to resort to any of the following strategies in response to the pandemic?	The business selected 3 or more of the below options: Cut wages, Reduced operating hours, Asked advances from clients or solicited them to pay amounts due, Asked for credit and payment deferrals from suppliers, Paid staff, taxes or loan repayments late, Liquidated physical assets.	1/9
<b>Adaptive capacity</b>	No teleworking	Does the nature of the business allow employees to work remotely?	Respondent selected "No"	1/12
	Not able to respond	Since the start of the Covid-19 pandemic, has the business done (or is doing) any of the following?	Respondent selected "None of the above"	1/12
	Did not use any government programe	Can you tell us whether you have used (or taken advantage of) the following government measures introduced during the COVID-19 crisis to support the business?	Respondent selected "Did not use any"	1/12
	No track of the financial records	How do you keep track of the financial records of the business?	Respondent selected "I do not usually keep track"	1/12

The sample profile of the data that is included in the MVI analysis is 303 businesses. 44 responses are removed for the initial sample, due to missing values for the indicators that are used in the MVI analysis. Below is shown the sample profile that is used in this analysis.

**Table 11: Sample profile**

<b>Variable</b>	<b>Category</b>	<b>Count</b>	<b>Share</b>
<b>Business location</b>	Rural	86	28%
	Urban	198	65%
	Not reported	19	6%
<b>Business name registered</b>	Yes	226	75%
	No	63	21%
	Prefer not to answer	2	1%
	Not reported	12	4%
<b>Registered for tax purposes</b>	Yes	117	39%
	No	151	50%
	Prefer not to answer	24	8%
	Not reported	11	4%
<b>Sector</b>	Primary	16	5%
	Secondary	23	8%
	Tertiary	260	86%
	Not reported	4	1%
<b>Business age</b>	Less than 1 year	25	8%
	1 - 2 years	85	28%
	3 - 5 years	69	23%
	6 - 10 years	44	15%
	More than 10 years	55	18%
	Not reported	25	8%
<b>Business size (employees)</b>	Less than 5	249	82%
	5-10	27	9%
	11-19	8	3%
	20-49	3	1%
	More than 50	2	1%
	Not reported	14	5%
<b>Share of female-staff (%)</b>	None	42	14%
	10% or less	60	20%
	11% to 30%	22	7%
	31% to 50%	62	20%
	51% to 75%	18	6%
	76% to 99%	12	4%
	100%	56	18%
	Not reported	31	10%
<b>Gender of the owner/ top manager</b>	Female	162	53%
	Male	135	45%
	Prefer not to answer	2	1%
	Not listed	2	1%
	Not reported	2	1%
<b>Total</b>		<b>303</b>	<b>100%</b>

## BUSINESS VULNERABILITY

The general results from the MVI (Table 12) show a high level of vulnerability towards COVID-19 among the surveyed businesses. There is a 65% incidence of vulnerability for the 33% deprivation cut-off. This means that 65% of businesses were experienced deprivations on at least 33% (3) of the indicators considered for the MVI. Moreover, the 0.46 intensity for this same cut-off indicates that these businesses were deprived, on average, on 46% of these indicators. This results in an MVI score of 0.3, which means that surveyed businesses experienced 30% of all potential deprivations towards COVID-19 on the dimensions and indicators considered.

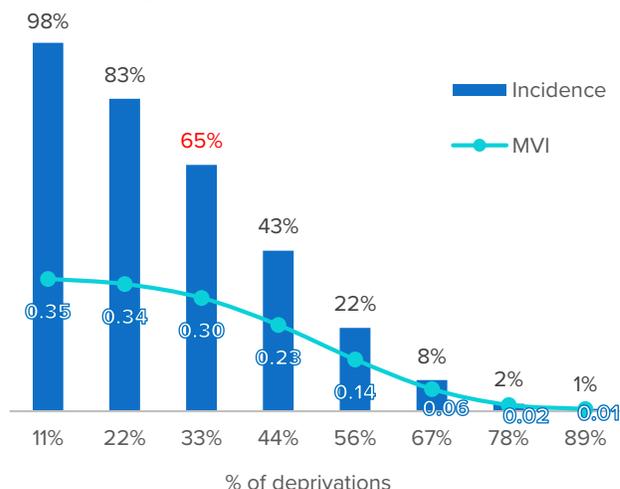
**Table 12: MVI by deprivations (n=303)**

% of deprivations	Incidence	Intensity	MVI
11%	98%	0.36	0.35
22%	83%	0.41	0.34
33%	65%	0.46	0.30
44%	43%	0.54	0.23
56%	22%	0.62	0.14
67%	8%	0.72	0.06
78%	2%	0.85	0.02
89%	1%	0.92	0.01

To understand the severity of these results, it is useful to illustrate the meaning of reaching the highest and lowest possible values of the MVI. A score of 1 (highest possible) would represent a scenario in which all businesses experience all possible deprivations, whereas a score of 0 (lowest possible) posits a scenario where no business experiences any deprivation in the assessed areas. Therefore, a 0.3 MVI score, which is below the middle level, translates into a relatively stable scenario. However, considering the indicators that were used to construct this index, and the implications that falling below the established threshold for each indicator can represent for businesses, the situation observed is still concerning and posits a necessity of actions to support recovery and resilience.

Figure 80 illustrates the changes in incidence and MVI scores when moving across the various cut-offs. The results show that the reduction on incidence and MVI as we move to higher cut-offs is increasingly high, with smaller differences for the lowest cut-offs and bigger differences for the highest cut-offs. This means that a high percentage of businesses experienced deprivations, but only a small percentage experienced a deprivations on a high percentage of the indicators used to construct the MVI. Broadly, this suggests that the effects of the COVID-19 pandemic and related measures on businesses in Belize were generalized, but only extremely severe for a minority of businesses.

**Figure 80: MVI by deprivations (n=303)**

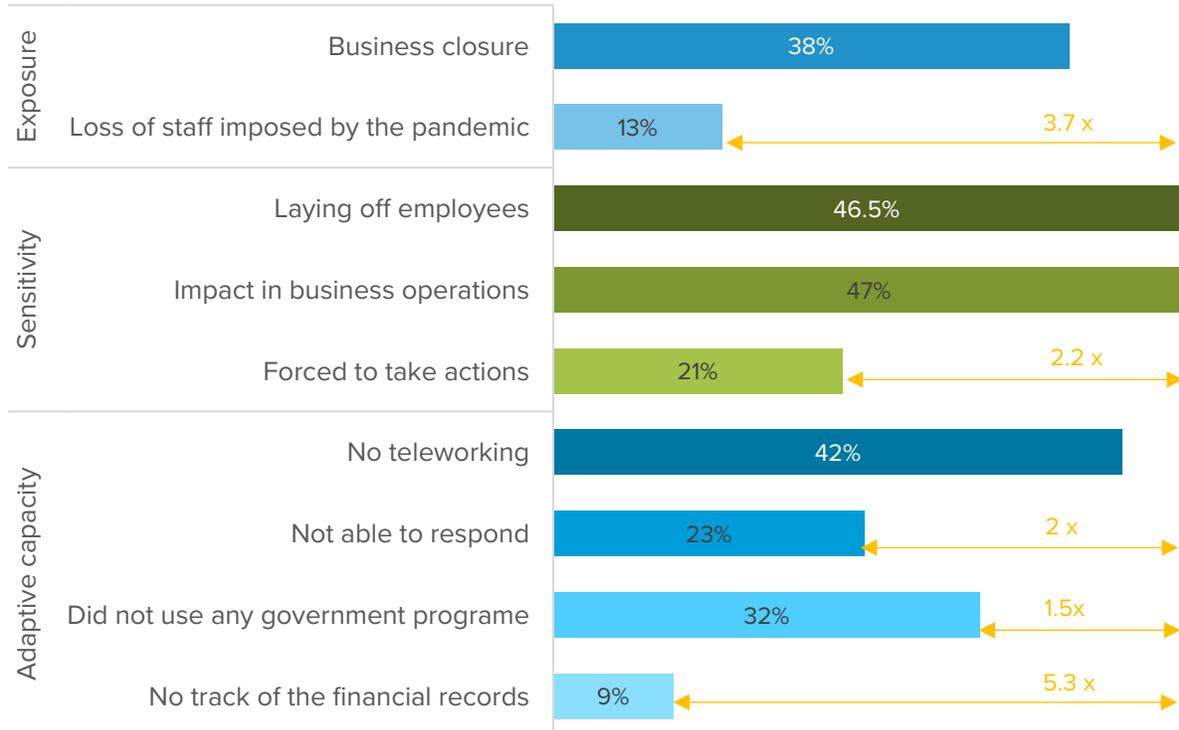


This type of analysis, derived from observing the differences in incidence and MVI score across different cut-offs, provides relevant insight. However, while this is useful for the broader analysis, when looking at the disaggregation of vulnerability by dimensions and indicators of the MVI, as well as key business characteristics, an excess of analyses can blur the key takeaways and produce an unnecessarily large amount of results that provide little useful information. For this reason, the rest of the results presented in this report will be presented for the 33% cut-off.

The results presented in Figure 81 show the censored headcount ratios for each indicator of the MVI. These ratios indicate the percentage of businesses that were deprived (below the threshold) in each indicator and that were also identified as vulnerable by the overall MVI (for the 33% cut-off). The indicators with the highest censored headcount ratios are both in the sensitivity dimension, and they are impact on business operations (47%) and laying off employees (46.5%). However, the headcount ratios for no teleworking (42%), business closure (38%) and no use of government programmes (32%) were still considerably high.

The pattern that seems to be presented here is that the main vulnerabilities exposed by the pandemic were directly associated with the lockdown measures undertaken to reduce the spread of the virus. For instance, while few businesses reported that staff resigned due to childcare or healthcare needs (13% of vulnerable businesses), almost half of all vulnerable businesses indicated that they had to cut staff, either permanently or temporarily due to the pandemic. Also, 42% of surveyed businesses cannot function through teleworking, which means that they most likely had to close their business, at least temporarily, as indicated by the 38% headcount ration on business closure. In addition to this, 32% of vulnerable businesses indicated that they did not use any government program, which limits their resilience and recovery capacities.

**Figure 81: Censored headcount ratios of each indicator to overall MVI**

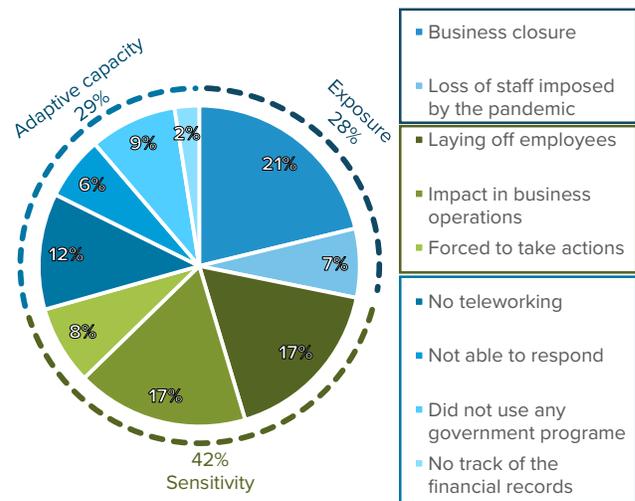


In spite of the impacts of the pandemic and lockdown measures, businesses seem to have a certain degree of preparedness for such crises. Only 9% of vulnerable businesses do not keep track of their financial records, and 77% were able to take adaptation measures to deal with the effects of the pandemic. Moreover, only 21% were forced to take extreme actions as a response to the crisis, meaning that a considerable majority were able to overcome the difficult scenario in spite of the losses.

The censored headcount ratios analysis can be supplemented with an analysis of the percentage contribution<sup>1</sup> of each indicator or dimension to MVI. While the censored headcount ratio shows the proportion of businesses deprived in each indicator among vulnerable businesses, it does not show the relative value of the indicators or dimensions within the MVI. Two indicators can have the same censored headcount ratios but different contributions to the MVI. This is because the contribution depends not only on the censored headcount ratios but also on the weight of each indicator or dimension within the index. This is important, because indicators have different levels of impact on vulnerability. Limiting the analysis to headcount ratios assumes this is the case, thus inflating the apparent influence of less impactful aspects. The inclusion of

the weighting applied to each indicator and dimension allows to obtain the real level of contribution to the MVI. Therefore, while the headcount ratios are useful for knowing the incidence of each specific vulnerability among all vulnerable businesses, the contributions are particularly useful for making comparisons between different indicators.

**Figure 82: Contribution of each indicator to overall MVI**



<sup>1</sup> The contribution of each indicator to overall MVI is calculated as follows. Let us denote the contribution of indicator j to the MVI by  $\Phi_j$ . Then, the contribution of indicator j for vulnerability cut-off k is given by  $\Phi_j(k) = w_j \times \frac{h_j(k)}{MVI}$  where  $h_j(k)$  is the censored headcount ratio of indicator j, and  $w_j$  is the weight of indicator j.

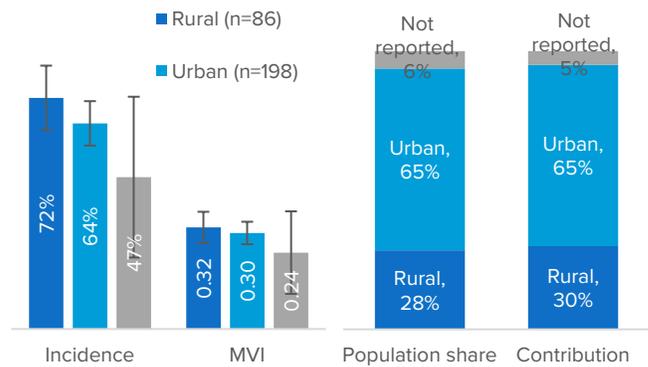
In this case, the results from Figure 82 with regards to the contribution of each indicator and dimension to the MVI are consistent with what was analysed from the censored headcount ratios. The dimension with the highest contribution to the vulnerability of businesses towards COVID-19 was sensitivity (42%), which encompasses the indicators measuring the. Also, the indicators with the highest contributions, similar to the headcount ratios, were business closure, laying off employees, impact on business operations and no teleworking. The main difference obtained is that, although the sensitivity dimension had the highest contribution, the indicator with the highest contribution was business closure, from the exposure dimension.

### VULNERABILITY BY BUSINESS CHARACTERISTICS

To compliment the general findings obtained from the MVI, a group of 6 key business characteristics were selected. These characteristics allow to view the differences in vulnerability experienced by different types of businesses, thus providing crucial information for the design of targeted resilience and recovery measures and programs that prioritize the most vulnerable economic sectors and business profiles.

Businesses located in rural areas experienced a higher vulnerability towards COVID-19, as observed in Figure 83. This is true both in terms of incidence and MVI score, however, the difference is proportionally smaller for the MVI than for the incidence. This means that the difference in vulnerability between rural and urban businesses is due to a higher number of rural businesses experiencing deprivations compared to those on urban areas, more so than due to rural businesses experiencing a higher number of deprivations than urban ones. Moreover, the comparison between the proportion of the surveyed population of businesses in urban and rural areas (population share) and the contribution of each of the two to the overall MVI, reveals that there is not a significant difference between businesses in the two areas. Therefore, while there is a higher prevalence of vulnerability among rural households, this is likely due to the difference in the amount of businesses in these areas, as well as the percentage of surveyed businesses that did not report their location.

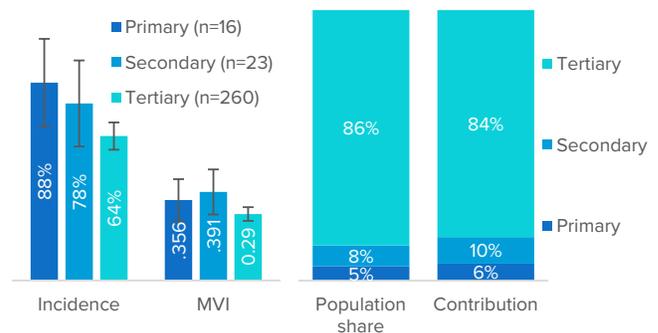
Figure 83: Vulnerability by business location



In terms of sectors of activity, the most affected was the primary sector, followed by the secondary sector, and lastly the tertiary sector. This is interesting, because the direct effects of lockdown and social distancing measures are mainly received by goods and services selling businesses (tertiary sector), or by production enterprises (secondary sector) that group large amounts of workers in their facilities at the same time. Thus, it would not be expected for the primary sector to be the one with the highest vulnerability, especially when considering that the general results of the MVI showed that the main areas of vulnerability were related to the impacts of these measures.

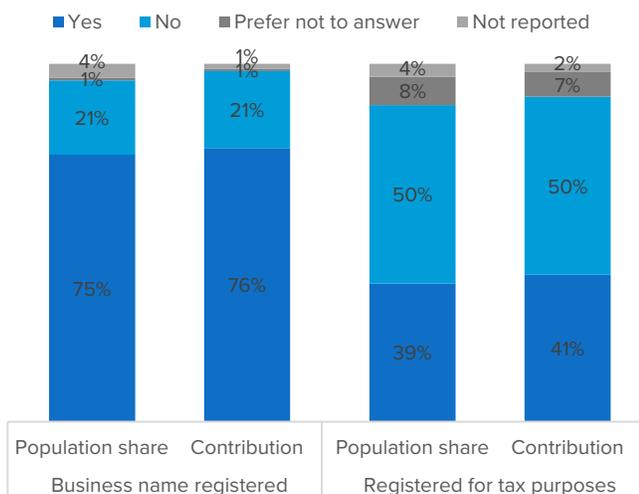
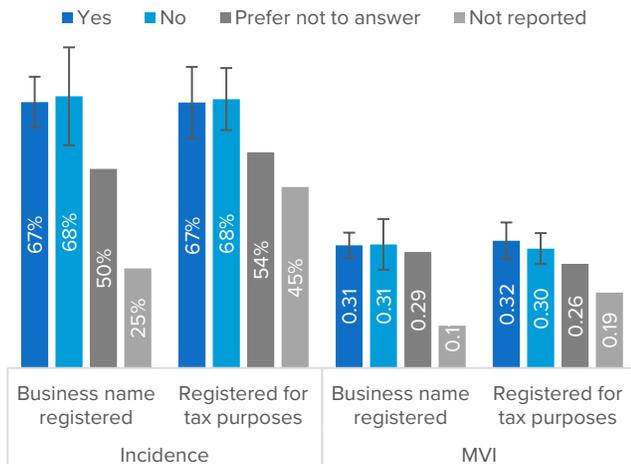
This result, however, is consistent with the ones obtained with regards to business location. Businesses in the primary sector tend to be mostly located in rural areas, and therefore the fact that it is these areas that had the highest vulnerability, contributes to explaining why this would translate mainly to the primary sector. With this in mind, it may be that these businesses were the most affected due to being smaller and with less capacity to cope with the effects of the crisis.

Figure 84: Figure 6: Vulnerability by business sector

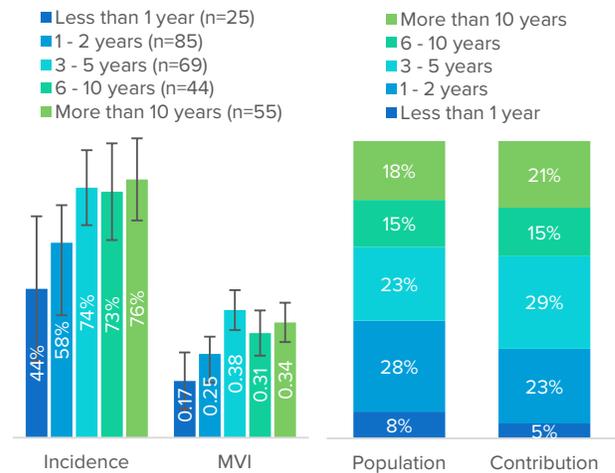


There does not seem to be a relevant difference on business vulnerability with regards to their legal registration status. The results from Figure 85 indicate that the incidence and MVI of registered and unregistered businesses, both in terms of their business names and for tax purposes, are more or less the same. This finding is also solidified by looking at the contribution of both groups of businesses to the MVI in contrast with their respective population shares. It is worth noting that it is likely that there is an underreporting of unregistered businesses due to fear of being fined or imposed some sort of penalty, as suggested by the 12% of businesses that “preferred not to answer” and “not reported” their answer to the question of whether or not they are registered for tax purposes. However, the differences observed are very small and do not show any clear tendency, thus, it is unlikely that accounting for these businesses as unregistered would produce any relevant change in the results.

**Figure 85: Vulnerability by type of registration**



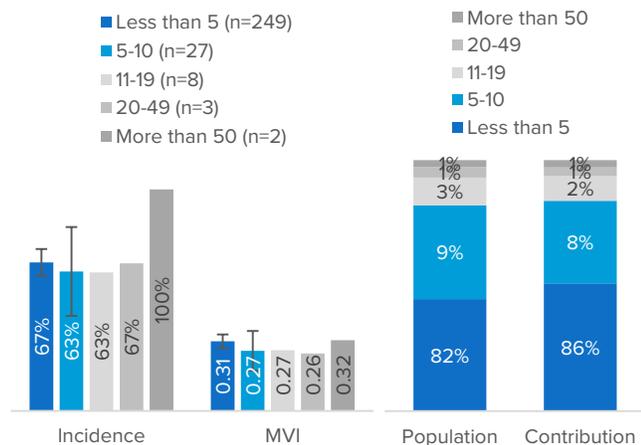
The results presented in Figure 86 show the differences in vulnerability by the age of the business. The data seem to form two groups, one for businesses 3 or more years old, which have the higher levels of vulnerability, and another one for those with less than 3 years, which have the lowest levels of vulnerability. In fact, the lowest vulnerability is found within businesses less than 1 year old, followed by those with 1 to 2 years, although there is no significant difference between businesses 3-5 years old compared to those older than that. This is counter-intuitive, as older businesses would be expected to be more established and have higher availability of resources to cope with the effects of the pandemic, in comparison to newer businesses. However, in order to better understand these results, it is worth looking at the specific indicators in which older businesses have deprivations compared to newer ones, which will be analysed later in this report.



**Figure 86: Vulnerability by business age**

With regards to the business size, or number of employees, the results found in Figure 87 suggest that there is no difference in incidence of vulnerability between businesses of different sizes. While there is an apparently higher incidence (of 100%) for businesses with more than 50 employees, it must be noted that the sample size obtained for this particular group was only of two businesses, and similarly, the sample for businesses with 20 to 49 employees was only of 3. For this reason, it is not possible to establish a statistically significant difference between these groups and the rest.

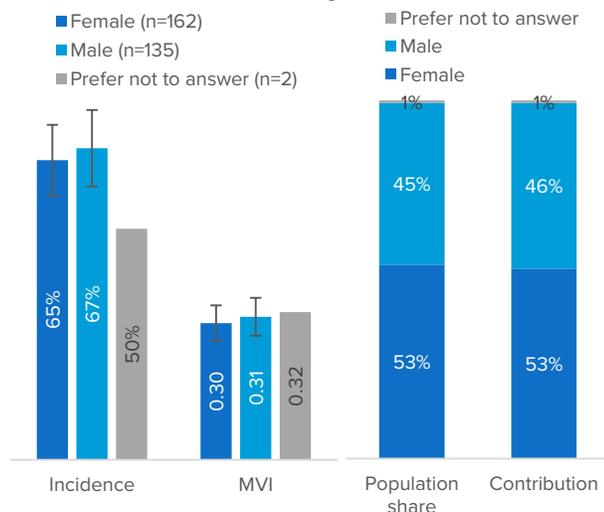
**Figure 87: Vulnerability of business size (number of employees)**



However, there is a significant difference between businesses with less than 5 employees and all other (bigger) businesses in terms of MVI scores. Because the MVI is the product of multiplying the incidence (percentage of vulnerable businesses) by the intensity (average number of deprivations experienced), this means that while the percentage of businesses affected by the COVID-19 pandemic is roughly the same regardless of their size, those smaller than 5 employees suffered a higher number of deprivations. This is also shown when looking at the comparison between contributions and population shares at the right side of the figure, which shows that businesses with less than 5 employees share a disproportionately higher burden of vulnerability compared to their population share.

With regards to the gender of the business owner or manager, both the incidence and the MVI are almost identical. Moreover, the population share and contribution of both male and female owned businesses are also the same, meaning that the burden of vulnerability is distributed among female and male owned businesses in proportion to their percentage of all businesses.

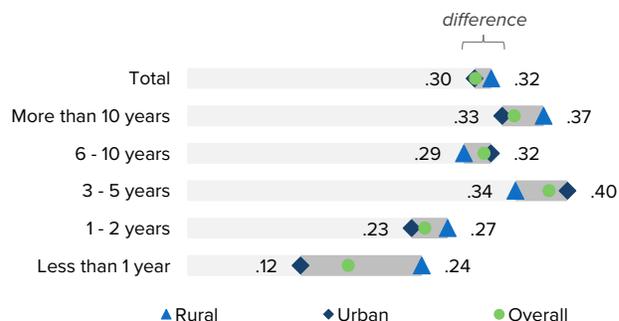
**Figure 88: Vulnerability by gender of the business owner/manager**



## VULNERABILITY AND CROSS-TABULATIONS OF BUSINESS CHARACTERISTICS

The analyses presented so far provide useful insights on the key characteristics that contribute to the vulnerability of businesses in Belize to COVID-19. However, just like vulnerability is multidimensional, many of the key characteristics that can be correlated to vulnerability may behave in an intersectional fashion, meaning that the intersections between two characteristics may produce groups of businesses that are even most vulnerable than those of the most vulnerable group out of each of the two characteristics individually. For this reason, this section will present results for some key cross-tabulations that were selected for the potential intersections that they could produce.

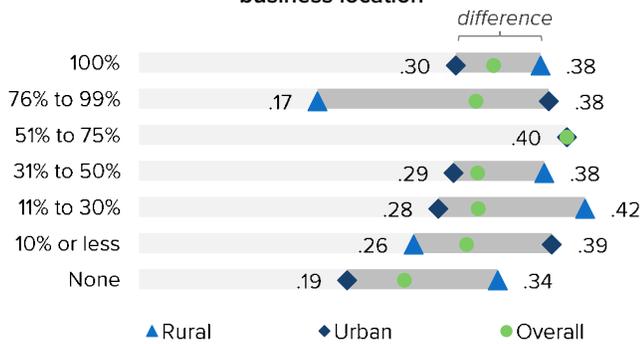
Figure 89 presents results of differences in MVI between rural and urban businesses disaggregated by the age of the business. For newer businesses, with 2 or less years, urban businesses have a lower MVI compared to rural ones, as was observed in the general analysis by business location. This is also true for businesses with more than 10 years, although the difference is higher for the newer businesses. However, for businesses with 3 to 10 years, it is those in the urban areas that have the highest MVI scores. The variations observed here make it difficult to define a clear trend, but it can be said that older businesses located in the urban areas have particularly high levels of vulnerability.



**Figure 89: Differences in MVI by business age and location**

Some differences in vulnerability are also observed, with regards to business location, between businesses with different percentages of female staff (Figure 90). However, the differences in this case do not seem to follow any observable trend or meaningful behaviour, thus, it is likely that there is no significant intersection between business location and share of female staff in terms of their effect on business vulnerability towards COVID-19. Something similar can be said about the intersection of business location and the gender of the business owner/manager (Figure 91). In this case, however, there is no difference at all between the two groups, with rural businesses having the highest MVI for both male and female led businesses.

**Figure 90: Differences in MVI by share of female-staff and business location**



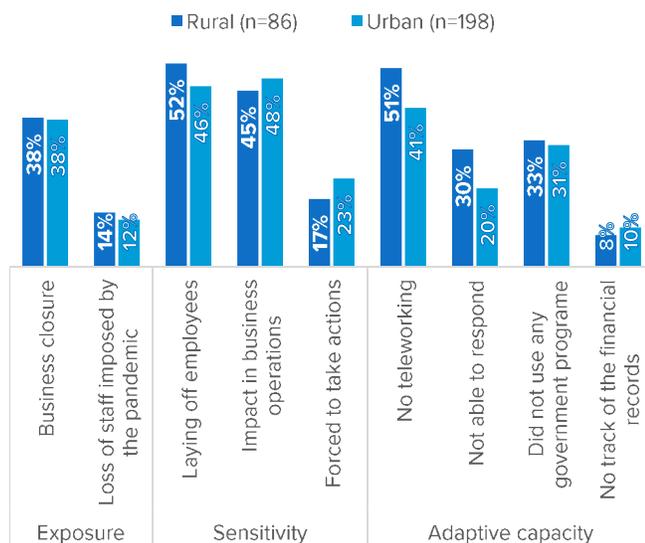
**Figure 91: Differences in MVI by gender of the owner/manager and business location**



## DECOMPOSITION OF MVI BY BUSINESS CHARACTERISTICS

The general MVI analysis showed that rural businesses were most vulnerable than those in urban areas. The results by dimension and indicator, presented in Figure 92 and Figure 93 show the areas of vulnerability in which urban and rural businesses differ, thus allowing to better approach an understanding of the underlying factors of the differences in vulnerability between the two groups.

**Figure 92: Censored headcount ratios by business area**

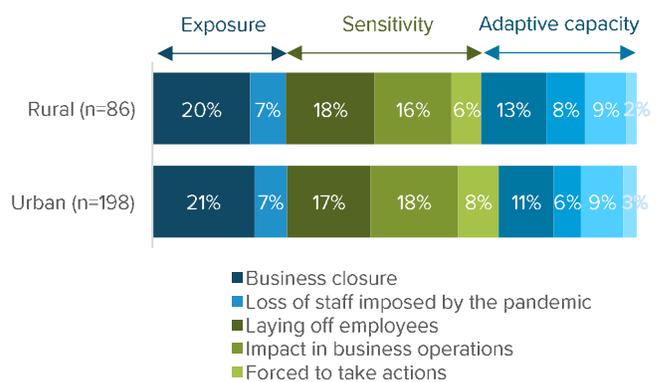


The censored headcount ratios in Error! Reference source not found. show that the indicators that were more prevalent among rural businesses compared to urban ones were: inability to respond to the crisis (30% vs 20%), no teleworking (51% vs 41%), laying off employees (52% vs 46%), and loss of staff (14% vs 12%). The fact that the two main differences are in terms of their response to the crisis and their ability to use teleworking reveals some things about the nature of the differences.

It is in fact predictable that rural businesses in general would have less capacity to telework than those on urban areas, due to the nature of the activities they develop. However, it is also true that rural businesses also tend to group less workers in small areas, and tend to have more open spaces, both of which are key factors that enable social distancing in the workplace. For this reason, even though it may not be possible for these businesses to telework, this does not necessarily result in the business having to shut down or cease its activities. The latter is also confirmed by the fact that there is no difference in the business closure indicator between rural and urban businesses. A similar analysis can be drawn from the indicator of inability to respond to the crisis. This indicator was constructed by aggregating the answers to whether or not the business conducted a list of actions that are considered to be useful for adapting to the effects of the pandemic. However, some of these actions are inherent to the activities of urban businesses, and thus, inapplicable to rural ones (for example: use of digital platforms, investment in software and digital solutions). As a result, it may also be possible that the higher prevalence of this deprivation among rural businesses does not necessarily represent a higher degree of vulnerability to COVID-19 in practical terms.

With regards to the relative contributions of each indicator and dimension to the overall MVI Figure 93 there do not seem to be any considerable differences between rural and urban businesses in any particular indicator or dimension.

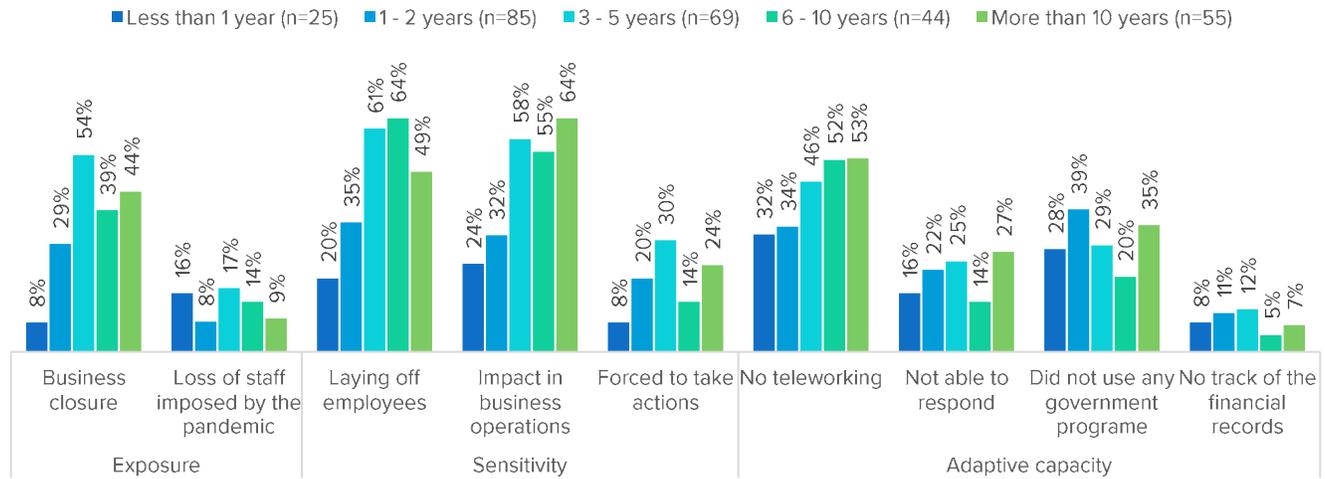
**Figure 93: Contribution of each indicator to the MVI by business area**



The results about the distribution of vulnerability for each indicator and dimension by business age (Figure 94 and Figure 95) present a clearer picture on the differences observed prior. The main areas in which the two groups previously identified (businesses with less than 3 years and businesses with 3 or more years) differ are: business closure, laying off employees, impact on business operations, and no teleworking.

It is possible that newer businesses also tend to be smaller, and thus, similar to rural businesses, have less need to close their businesses, lay off employees, or change their business operations to reduce the spread of COVID-19. However, this does not explain the differences in terms of teleworking capacity.

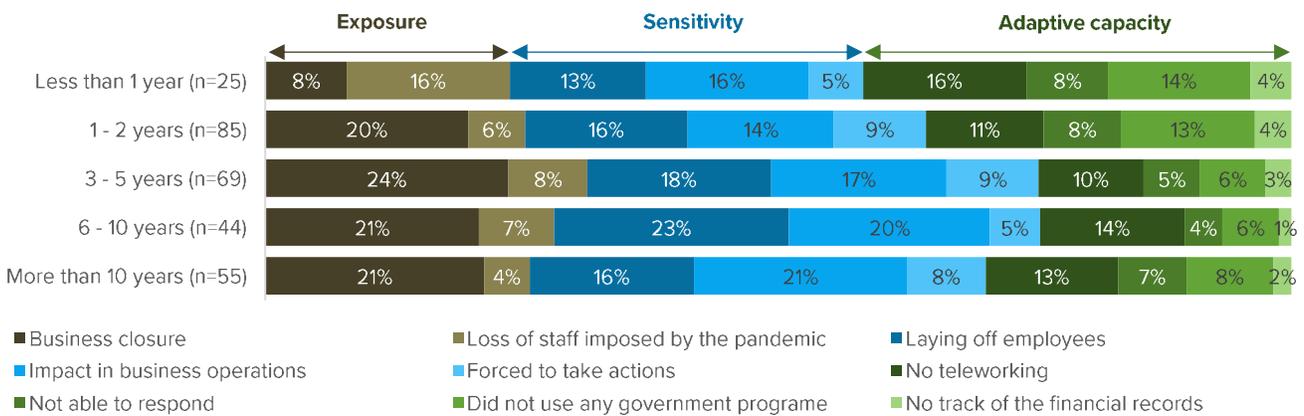
**Figure 94: Censored headcount ratios by business age**



The contributions of each indicator to the MVI by business age (Figure 95) provide some additional information. Overall, the distribution of the contributions of each indicator to the MVI is more or less the same for all groups, but there are some key differences. For businesses with less than 1 year, the contribution of the business closure indicator is considerably smaller than for all other groups, while that of loss of staff is much higher. Also, for businesses with 3 or more years, the

contribution of the adaptive capacity dimension is significantly smaller than for businesses less than 3 years old, while the contributions of sensitivity and exposure are larger. This means that while newer businesses are overall less vulnerable to the effects of the pandemic, their main vulnerabilities lie on their adaptive capacity, whereas older businesses have higher adaptive capacity, but were more impacted by the pandemic, likely due to their characteristics.

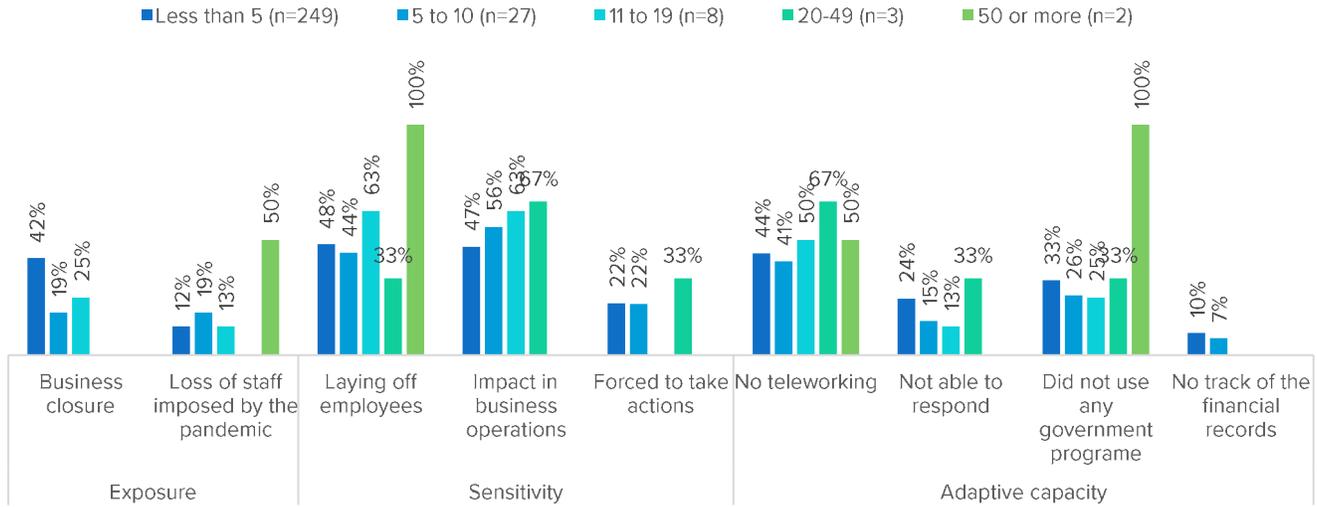
**Figure 95: Contribution of each indicator to the MVI by business age**



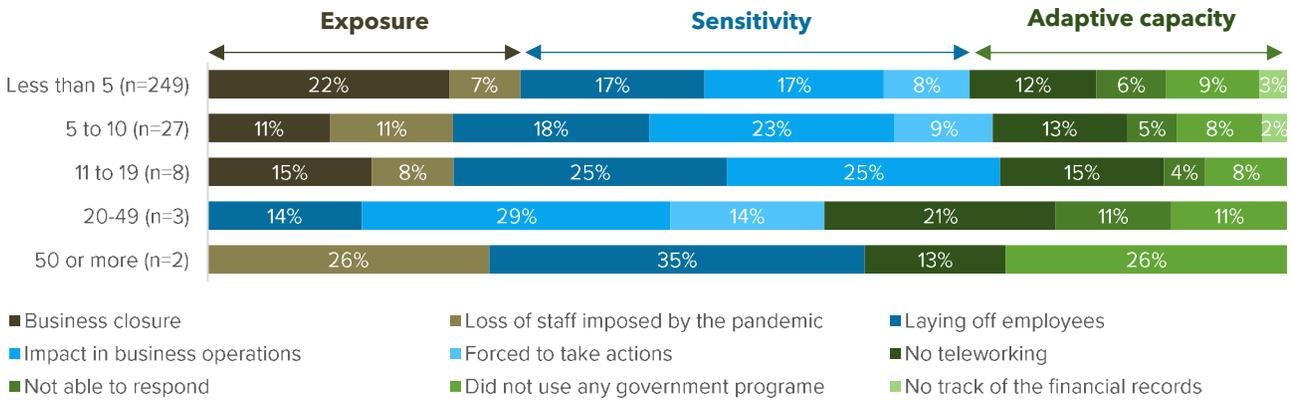
There are very drastic differences in the main areas of vulnerability between businesses of different sizes (Figure 96 and Figure 97). It is worth noting that the sample sizes obtained for the groups of businesses over 10 employees are very small, and thus make it difficult to draw any statistically significant conclusions. However, it seems clear that the main deprivation

that was more prevalent among smaller businesses (with less than 5 employees) was the closure of the business. While the differences in other indicators are either small or difficult to assess due to sample sizes, the difference in the percentage of businesses that had to close is clearly higher among businesses with less than 5 employees.

**Figure 96: Censored headcount ratios by business size (employees)**



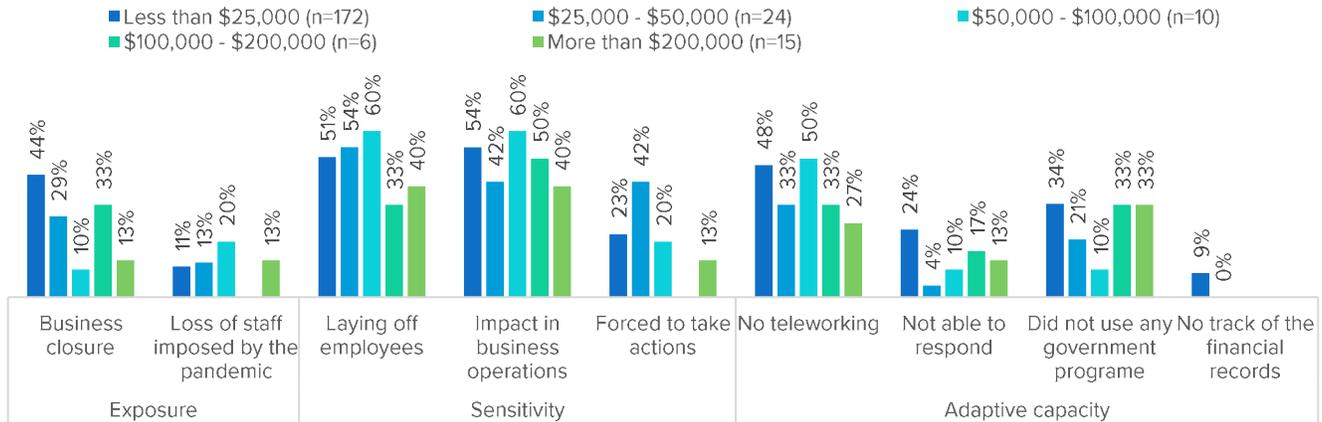
**Figure 97: Contribution of each indicator to the MVI by business size (employees)**



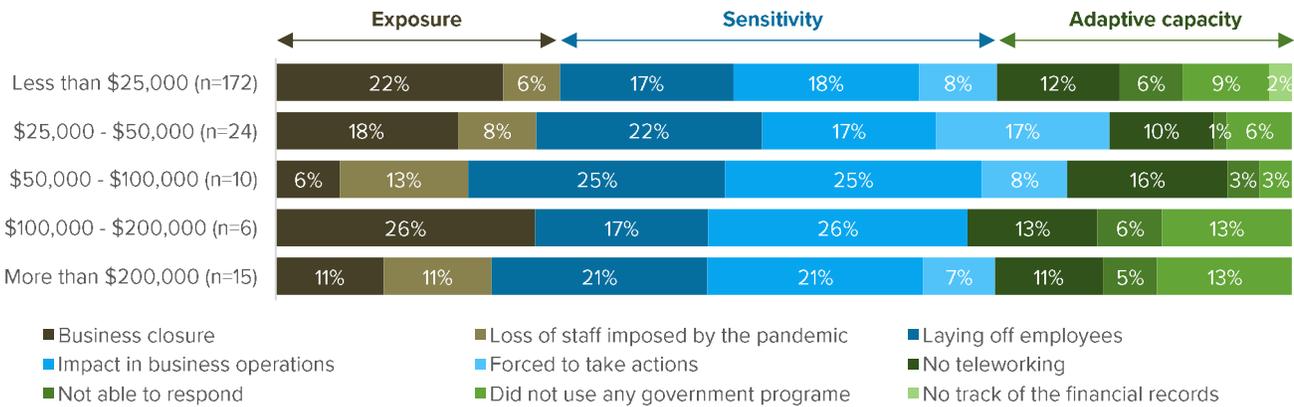
The results regarding the main dimensions and indicators of vulnerability by business revenues also show a lot of variation between different levels of revenue. However, there does not appear to be any correlation that allows to establish a direction of the interaction between these two variables. While for some indicators, such as laying off employees and loss of staff, the data show that there is a higher prevalence among businesses

with higher revenue for the first 3 revenue levels, this is reversed for the latter two groups. Thus, it is difficult to clearly identify what the differences in key areas of vulnerability are in accordance to the level of revenue of businesses.

**Figure 98: Censored headcount ratios by business revenues**



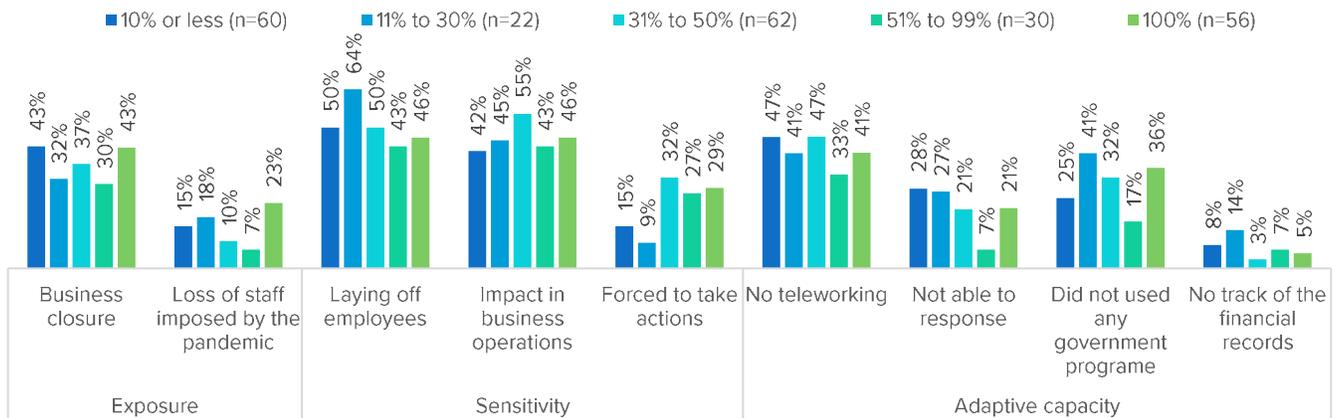
**Figure 99: Contribution of each indicator to the MVI by business revenues**



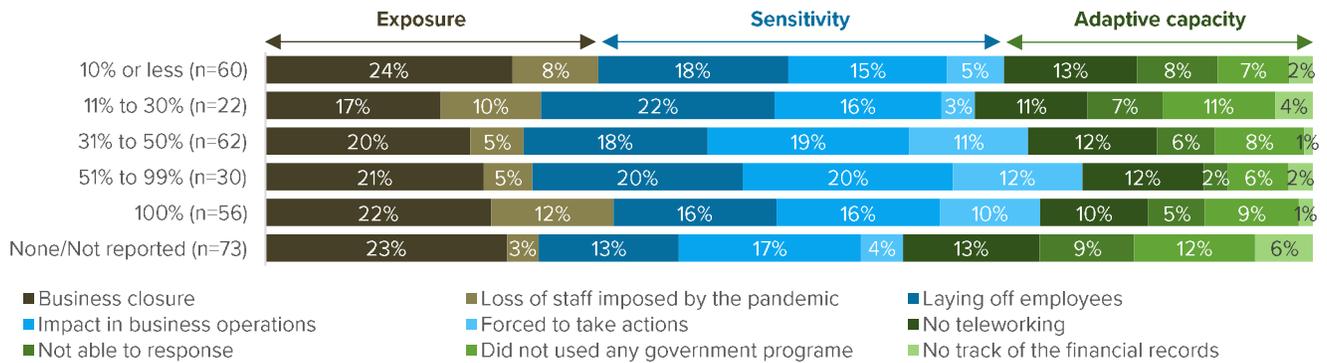
The results from the censored headcount ratios (Figure 100) and contributions of each indicator and dimension to the MVI (Figure 101) by share of female-staff do not seem to present any clear trends. While there are some significant differences across groups for the headcount ratios of some indicators, these differences do not appear to follow any tendency. The same can be said about the distribution of the contributions of

each indicator and dimension to the MVI for each group, which is more or less the same for all groups, with small, seemingly random variations. Therefore, the data do not indicate that the percentage of female staff working in the business has an impact on business vulnerability towards COVID-19 on any of the assessed indicators.

**Figure 100: Censored headcount ratios by share of female-staff**



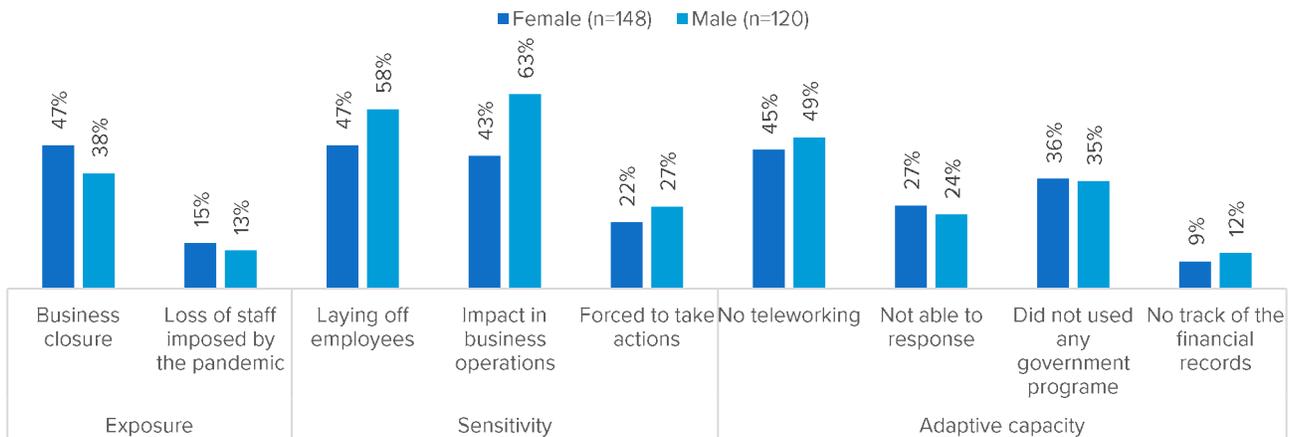
**Figure 101: Contribution of each indicator to the MVI by share of female-staff**



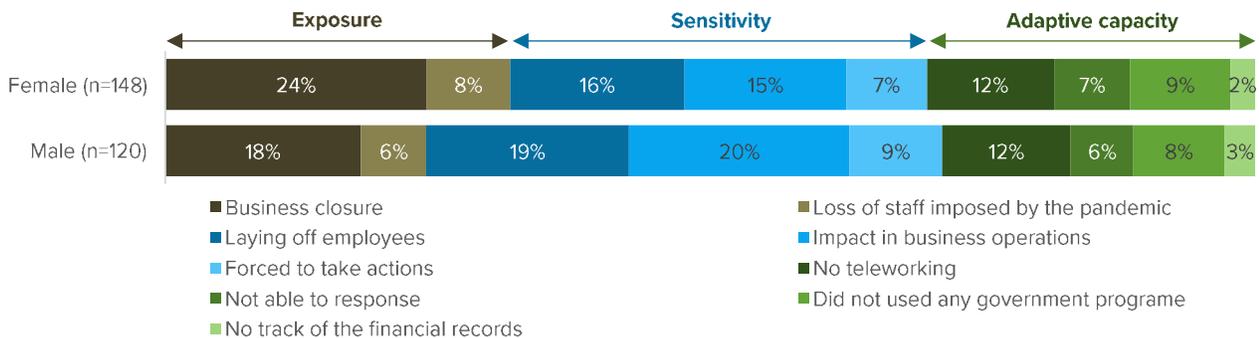
The results from figure Figure 102 and Figure 103 show the censored headcount ratios and the contributions of each indicator and dimension to the MVI by gender of the owner or manager of the business. Interestingly, although the general results presented prior showed that there is no difference in the overall level of vulnerability between female and male owned businesses, the results for each indicator do show a difference in the main areas of vulnerability for each group. Female led businesses have lower headcount ratios, compared to their

male counterparts, in all of the sensitivity indicators, especially laying off employees and impact in business operation. In contrast, male led businesses have lower headcount ratios in both exposure indicators, especially in business closure. This is also evidenced in the contributions to the MVI, with male owned businesses the highest contribution to their MVI from the sensitivity dimension, and their female counterparts having a relatively higher contribution from the exposure dimension.

**Figure 102: Censored headcount ratios by gender of the owner/manager**



**Figure 103: Contribution of each indicator to the MVI by gender of the owner/manager**



# CONCLUSION

The SEIA covered 338 respondents consisting of business owners who operate in various sectors. The final analytical sample consisted of 296 unique respondents. Most respondents were micro business owners who generated less than \$25,000 in annual revenue in 2020 and held less than \$25,000 in assets in 2020. Most business owners have at least a high school degree and most have received some form of financial training in the past. The majority had access to a bank account and kept separate personal and business accounts.

Prior to the pandemic, business owners mostly regarded their revenues, profitability, debts, productivity, liquidity, accounts receivable and exports between adequate to high. However, results in this assessment show the significant impacts on business owners, specifically on their revenue, profitability, productivity and liquidity. Despite constraints and impacts, most business owners did not apply for a loan or utilize government support measures. Of those that accessed either loans or support programs, most were micro businesses located in Belize District. Some businesses had to resort to staff cuts, with a greater proportion of businesses indicating that they cut male employees. Notably, most employers allowed remote work and the majority did not have to close operations, indicating that there is considerable resilience within the MSME sector.

The negative impact of COVID-19 on businesses operating in Belize has also been empirically documented by the Multidimensional Vulnerability Index analysis. Among the surveyed businesses, 65% experienced deprivations on at least 33% of the indicators considered for the MVI. The main vulnerabilities exposed by the pandemic were directly associated with the lockdown measures undertaken to reduce the spread of the virus.

While few businesses reported that staff resigned due to childcare or healthcare needs (13% of vulnerable businesses), almost half of all vulnerable businesses indicated that they had to cut down on staff, either permanently or temporarily, due to

the pandemic. In addition, 42% of surveyed businesses could not support remote work, meaning they most likely had to close their business, at least temporarily, as indicated by the 38% headcount ration on business closure.

Businesses that were three or more years old reflected the highest levels of vulnerability, whereas other businesses fewer than three years old manifested the lowest levels of vulnerability. This could be considered counter-intuitive as older businesses are typically expected to be more established and have higher availability of resources to cope with the effects of the pandemic compared to newer businesses. While additional research might be required to pinpoint the reason behind this finding, policymakers might want to consider the relationship between vulnerability and business age when designing policies to support MSMEs.

A noteworthy finding of the MVI analysis is that business vulnerability is affected by economic sector. As such, policymakers should consider this finding when framing recovery plans and instruments, but evidence should be interpreted with caution as the sample size for the primary and secondary sectors is relatively small compared to the tertiary sector. Overall, the findings underline that, to overcome some of the key deprivations that push businesses into vulnerability, institutional support is required.

The outlook for MSMEs in Belize reveals an uncertain future as the country continues to operate in a state of emergency with some restrictions still imposed on non-essential services. However, survey results indicate that most entrepreneurs and business owners have a positive attitude and outlook towards entrepreneurship - a majority of respondents indicated that they were growth-driven entrepreneurs as opposed to necessity based.

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# APPENDIX

**Table 13: Incidence, Intensity and MVI by number of deprivations**

# of deprivations	% of deprivations	Incidence	Intensity	MVI
1	11%	98%	0.36	0.35
2	22%	83%	0.41	0.34
3	33%	65%	0.46	0.30
4	44%	43%	0.54	0.23
5	56%	22%	0.62	0.14
6	67%	8%	0.72	0.06
7	78%	2%	0.85	0.02
8	89%	1%	0.92	0.01

**Table 14: Incidence, Intensity and MVI by business location and registration**

Variable	Category	Incidence	Intensity	MVI	CI (Incidence)	CI (MVI)	Population share	Contribution
<b>Business location</b>	Rural (n=86)	72%	.440	0.32	10%	5%	28%	30%
	Urban (n=198)	64%	.467	0.30	7%	4%	65%	65%
	Not reported (n=19)	47%	.503	0.24	25%	13%	6%	5%
	<b>Total (n=303)</b>	<b>65%</b>	<b>.460</b>	<b>0.30</b>	<b>6%</b>	<b>3%</b>	<b>100%</b>	<b>100%</b>
<b>Business name registered</b>	Yes (n=226)	67%	.461	0.31	6%	3%	75%	76%
	No (n=63)	68%	.455	0.31	12%	6%	21%	21%
	Prefer not to answer (n=2)	50%	.583	0.29	94%	57%	1%	1%
	Not reported (n=12)	25%	.426	0.11	29%	11%	4%	1%
<b>Total (n=303)</b>	<b>65%</b>	<b>.460</b>	<b>0.30</b>	<b>6%</b>	<b>3%</b>	<b>100%</b>	<b>100%</b>	
<b>Registered for tax purposes</b>	Yes (n=117)	67%	.480	0.32	9%	5%	39%	41%
	No (n=151)	68%	.444	0.30	8%	4%	50%	50%
	Prefer not to answer (n=24)	54%	.483	0.26	22%	11%	8%	7%
	Not reported (n=11)	45%	.417	0.19	34%	13%	4%	2%
<b>Total (n=303)</b>	<b>65%</b>	<b>.460</b>	<b>0.30</b>	<b>6%</b>	<b>3%</b>	<b>100%</b>	<b>100%</b>	

**Table 15: Incidence, Intensity and MVI by business age and size**

Variable	Category	Incidence	Intensity	MVI	CI (Incidence)	CI (MVI)	Population share	Contribution
<b>Business age</b>	Less than 1 year (n=25)	44%	.381	0.17	21%	8%	8%	5%
	1 - 2 years (n=85)	58%	.430	0.25	11%	5%	28%	23%
	3 - 5 years (n=69)	74%	.510	0.38	11%	6%	23%	29%
	6 - 10 years (n=44)	73%	.425	0.31	14%	7%	15%	15%
	More than 10 years (n=55)	76%	.446	0.34	12%	6%	18%	21%
	Not reported (n=25)	52%	.573	0.30	22%	12%	8%	8%
	<b>Total (n=303)</b>		<b>65%</b>	<b>.460</b>	<b>0.30</b>	<b>6%</b>	<b>3%</b>	<b>100%</b>
<b>Business size (workers)</b>	Less than 5 (n=249)	67%	.468	0.31	6%	3%	82%	86%
	5-10 (n=27)	63%	.431	0.27	20%	9%	9%	8%
	11-19 (n=8)	63%	.439	0.27	40%	17%	3%	2%
	20-49 (n=3)	67%	.389	0.26	70%	26%	1%	1%
	More than 50 (n=2)	100%	.319	0.32	25%	8%	1%	1%
	Not reported (n=14)	36%	.383	0.14	29%	11%	5%	2%
	<b>Total (n=303)</b>		<b>65%</b>	<b>.460</b>	<b>0.30</b>	<b>6%</b>	<b>3%</b>	<b>100%</b>

**Table 16: Incidence, Intensity and MVI by business sector and annual revenue**

Variable	Category	Incidence	Intensity	MVI	CI (Incidence)	CI (MVI)	Population share	Contribution
<b>Sector</b>	Primary (n=16)	88%	.407	.356	19%	9%	5%	6%
	Secondary (n=23)	78%	.500	.391	19%	10%	8%	10%
	Tertiary (n=260)	64%	.460	0.29	6%	3%	86%	84%
	Not reported (n=4)	0%		0.00	13%	0%	1%	0%
	<b>Total (n=303)</b>		<b>65%</b>	<b>.460</b>	<b>.301</b>	<b>6%</b>	<b>3%</b>	<b>100%</b>
<b>Annual revenue in 2020</b>	Less than \$25,000 (n=172)	71%	.464	0.33	7%	4%	57%	62%
	\$25,000 - \$50,000 (n=24)	58%	.464	0.27	22%	10%	8%	7%
	\$50,000 - \$100,000 (n=10)	70%	.377	0.26	33%	12%	3%	3%
	\$100,000 - \$200,000 (n=6)	50%	.435	0.22	48%	20%	2%	1%
	More than \$200,000 (n=15)	53%	.392	0.21	29%	11%	5%	3%
	Do not know (n=37)	59%	.452	0.27	17%	8%	12%	11%
	Prefer not to answer (n=30)	60%	.494	0.30	19%	10%	10%	10%
	Not reported (n=9)	44%	.521	0.23	38%	18%	3%	2%
<b>Total (n=303)</b>		<b>65%</b>	<b>.460</b>	<b>0.30</b>	<b>6%</b>	<b>3%</b>	<b>100%</b>	<b>100%</b>

**Table 17: Incidence, Intensity and MVI by share of female-staff and gender of the owner/manager**

Variable	Category	Incidence	Intensity	MVI	CI (Incidence)	CI (MVI)	Population share	Contribution
<b>Share of female-staff (%)</b>	None (n=42)	55%	.453	0.25	16%	8%	14%	11%
	10% or less (n=60)	68%	.448	0.31	13%	6%	20%	20%
	11% to 30% (n=22)	68%	.465	0.32	22%	10%	7%	8%
	31% to 50% (n=62)	69%	.456	0.32	12%	6%	20%	22%
	51% to 75% (n=18)	78%	.514	0.40	22%	11%	6%	8%
	76% to 99% (n=12)	75%	.420	0.31	29%	12%	4%	4%
	100% (n=56)	66%	.502	0.33	13%	7%	18%	20%
	Not reported (n=31)	52%	.387	0.20	19%	7%	10%	7%
<b>Total (n=303)</b>		<b>65%</b>	<b>.460</b>	<b>0.30</b>	<b>6%</b>	<b>3%</b>	<b>100%</b>	<b>100%</b>
<b>Gender of the owner/ top manager</b>	Female (n=162)	65%	.456	0.30	8%	4%	53%	53%
	Male (n=135)	67%	.459	0.31	8%	4%	45%	46%
	Prefer not to answer (n=2)	50%	.639	0.32	94%	63%	1%	1%
	Not listed (n=2)	50%	.750	0.38	94%	74%	1%	1%
	Not reported (n=2)	0%		0.00	25%	0%	1%	0%
<b>Total (n=303)</b>		<b>65%</b>	<b>.460</b>	<b>0.30</b>	<b>6%</b>	<b>3%</b>	<b>100%</b>	<b>100%</b>

**Table 18: Censored headcount ratio and contribution to MVI**

DIMENSION	INDICATOR	Count	Censored headcount ratio	Weight	Weighted h	Contribution
<b>Exposure</b>	Business closure	116	38%	0.167	0.064	21%
	Loss of staff imposed by the pandemic	38	13%	0.167	0.021	7%
<b>Sensitivity</b>	Laying off employees	141	46.5%	0.111	0.052	17%
	Impact in business operations	142	47%	0.111	0.052	17%
	Forced to take actions	65	21%	0.111	0.024	8%
<b>Adaptive capacity</b>	No teleworking	128	42%	0.083	0.035	12%
	Not able to respond	70	23%	0.083	0.019	6%
	Did not use any government programe	96	32%	0.083	0.026	9%
	No track of the financial records	27	9%	0.083	0.007	2%
	<b>Sum</b>			<b>1</b>	<b>0.301</b>	<b>100%</b>

**Table 19: Censored headcount ratio by business location**

DIMENSION	INDICATOR	CENSORED HEADCOUNT RATIO		
		Rural (n=86)	Urban (n=198)	Not reported (n=19)
Exposure	Business closure	38%	38%	42%
	Loss of staff imposed by the pandemic	14%	12%	11%
Sensitivity	Laying off employees	52%	46%	21%
	Impact in business operations	45%	48%	37%
	Forced to take actions	17%	23%	26%
Adaptive capacity	No teleworking	51%	41%	16%
	Not able to respond	30%	20%	21%
	Did not use any government programe	33%	31%	32%
	No track of the financial records	8%	10%	0%

**Table 20: Contribution to MVI by business location**

DIMENSION	INDICATOR	CONTRIBUTION		
		Rural (n=86)	Urban (n=198)	Not reported (n=19)
Exposure	Business closure	20%	21%	29%
	Loss of staff imposed by the pandemic	7%	7%	7%
Sensitivity	Laying off employees	18%	17%	10%
	Impact in business operations	16%	18%	17%
	Forced to take actions	6%	8%	12%
Adaptive capacity	No teleworking	13%	11%	6%
	Not able to respond	8%	6%	7%
	Did not use any government programe	9%	9%	11%
	No track of the financial records	2%	3%	0%

**Table 21: Censored headcount ratio by business age**

DIMENSION	INDICATOR	CENSORED HEADCOUNT RATIO					
		Less than 1 year (n=25)	1 - 2 years (n=85)	3 - 5 years (n=69)	6 - 10 years (n=44)	More than 10 years (n=55)	Not reported (n=25)
Exposure	Business closure	8%	29%	54%	39%	44%	44%
	Loss of staff imposed by the pandemic	16%	8%	17%	14%	9%	16%
Sensitivity	Laying off employees	20%	35%	61%	64%	49%	36%
	Impact in business operations	24%	32%	58%	55%	64%	40%
	Forced to take actions	8%	20%	30%	14%	24%	24%
Adaptive capacity	No teleworking	32%	34%	46%	52%	53%	28%
	Not able to respond	16%	22%	25%	14%	27%	36%
	Did not use any government programe	28%	39%	29%	20%	35%	32%
	No track of the financial records	8%	11%	12%	5%	7%	8%

**Table 22: Contribution to MVI by business age**

DIMENSION	INDICATOR	CONTRIBUTION					Not reported (n=25)
		Less than 1 year (n=25)	1 - 2 years (n=85)	3 - 5 years (n=69)	6 - 10 years (n=44)	More than 10 years (n=55)	
<b>Exposure</b>	Business closure	8%	20%	24%	21%	21%	25%
	Loss of staff imposed by the pandemic	16%	6%	8%	7%	4%	9%
<b>Sensitivity</b>	Laying off employees	13%	16%	18%	23%	16%	13%
	Impact in business operations	16%	14%	17%	20%	21%	15%
	Forced to take actions	5%	9%	9%	5%	8%	9%
<b>Adaptive capacity</b>	No teleworking	16%	11%	10%	14%	13%	8%
	Not able to respond	8%	8%	5%	4%	7%	10%
	Did not use any government programme	14%	13%	6%	6%	8%	9%
	No track of the financial records	4%	4%	3%	1%	2%	2%

**Table 23: Censored headcount ratio by business size (number of employees)**

DIMENSION	INDICATOR	CENSORED HEADCOUNT RATIO					Not reported (n=14)
		Less than 5 (n=249)	5 to 10 (n=27)	11 to 19 (n=8)	20-49 (n=3)	50 or more (n=2)	
<b>Exposure</b>	Business closure	42%	19%	25%	0%	0%	29%
	Loss of staff imposed by the pandemic	12%	19%	13%	0%	50%	0%
<b>Sensitivity</b>	Laying off employees	48%	44%	63%	33%	100%	7%
	Impact in business operations	47%	56%	63%	67%	0%	21%
	Forced to take actions	22%	22%	0%	33%	0%	14%
<b>Adaptive capacity</b>	No teleworking	44%	41%	50%	67%	50%	0%
	Not able to respond	24%	15%	13%	33%	0%	21%
	Did not use any government programme	33%	26%	25%	33%	100%	21%
	No track of the financial records	10%	7%	0%	0%	0%	7%

**Table 24: Contribution to MVI by business size (number of employees)**

DIMENSION	INDICATOR	CONTRIBUTION					Not reported (n=14)
		Less than 5 (n=249)	5 to 10 (n=27)	11 to 19 (n=8)	20-49 (n=3)	50 or more (n=2)	
<b>Exposure</b>	Business closure	22%	11%	15%	0%	0%	35%
	Loss of staff imposed by the pandemic	7%	11%	8%	0%	26%	0%
<b>Sensitivity</b>	Laying off employees	17%	18%	25%	14%	35%	6%
	Impact in business operations	17%	23%	25%	29%	0%	17%
	Forced to take actions	8%	9%	0%	14%	0%	12%
<b>Adaptive capacity</b>	No teleworking	12%	13%	15%	21%	13%	0%
	Not able to respond	6%	5%	4%	11%	0%	13%
	Did not use any government programme	9%	8%	8%	11%	26%	13%
	No track of the financial records	3%	2%	0%	0%	0%	4%

**Table 25: Censored headcount ratio by business revenue**

		CENSORED HEADCOUNT RATIO					
DIMENSION	INDICATOR	Less than \$25,000 (n=172)	\$25,000 - \$50,000 (n=24)	\$50,000 - \$100,000 (n=10)	\$100,000 - \$200,000 (n=6)	More than \$200,000 (n=15)	No answer/Don't know/Not reported (n=76)
<b>Exposure</b>	Business closure	44%	29%	10%	33%	13%	37%
	Loss of staff imposed by the pandemic	11%	13%	20%	0%	13%	16%
<b>Sensitivity</b>	Laying off employees	51%	54%	60%	33%	40%	36%
	Impact in business operations	54%	42%	60%	50%	40%	32%
	Forced to take actions	23%	42%	20%	0%	13%	16%
<b>Adaptive capacity</b>	No teleworking	48%	33%	50%	33%	27%	36%
	Not able to respond	24%	4%	10%	17%	13%	30%
	Did not use any government programe	34%	21%	10%	33%	33%	33%
	No track of the financial records	9%	0%	0%	0%	0%	16%

**Table 26: Contribution to MVI by business revenue**

		CONTRIBUTION					
DIMENSION	INDICATOR	Less than \$25,000 (n=172)	\$25,000 - \$50,000 (n=24)	\$50,000 - \$100,000 (n=10)	\$100,000 - \$200,000 (n=6)	More than \$200,000 (n=15)	No answer/Don't know/Not reported (n=76)
<b>Exposure</b>	Business closure	22%	18%	6%	26%	11%	22%
	Loss of staff imposed by the pandemic	6%	8%	13%	0%	11%	10%
<b>Sensitivity</b>	Laying off employees	17%	22%	25%	17%	21%	14%
	Impact in business operations	18%	17%	25%	26%	21%	13%
	Forced to take actions	8%	17%	8%	0%	7%	6%
<b>Adaptive capacity</b>	No teleworking	12%	10%	16%	13%	11%	11%
	Not able to respond	6%	1%	3%	6%	5%	9%
	Did not use any government programe	9%	6%	3%	13%	13%	10%
	No track of the financial records	2%	0%	0%	0%	0%	5%

**Table 27: Censored headcount ratio by share of female-staff (%)**

DIMENSION	INDICATOR	CENSORED HEADCOUNT RATIO					None/ Not reported (n=73)
		10% or less (n=60)	11% to 30% (n=22)	31% to 50% (n=62)	51% to 99% (n=30)	100% (n=56)	
<b>Exposure</b>	Business closure	43%	32%	37%	30%	43%	32%
	Loss of staff imposed by the pandemic	15%	18%	10%	7%	23%	4%
<b>Sensitivity</b>	Laying off employees	50%	64%	50%	43%	46%	27%
	Impact in business operations	42%	45%	55%	43%	46%	36%
	Forced to take actions	15%	9%	32%	27%	29%	8%
<b>Adaptive capacity</b>	No teleworking	47%	41%	47%	33%	41%	36%
	Not able to respond	28%	27%	21%	7%	21%	25%
	Did not use any government programme	25%	41%	32%	17%	36%	32%
	No track of the financial records	8%	14%	3%	7%	5%	15%

**Table 28: Contribution to MVI by share of female-staff (%)**

DIMENSION	INDICATOR	CONTRIBUTION					None/ Not reported (n=73)
		10% or less (n=60)	11% to 30% (n=22)	31% to 50% (n=62)	51% to 99% (n=30)	100% (n=56)	
<b>Exposure</b>	Business closure	24%	17%	20%	21%	22%	23%
	Loss of staff imposed by the pandemic	8%	10%	5%	5%	12%	3%
<b>Sensitivity</b>	Laying off employees	18%	22%	18%	20%	16%	13%
	Impact in business operations	15%	16%	19%	20%	16%	17%
	Forced to take actions	5%	3%	11%	12%	10%	4%
<b>Adaptive capacity</b>	No teleworking	13%	11%	12%	12%	10%	13%
	Not able to respond	8%	7%	6%	2%	5%	9%
	Did not use any government programme	7%	11%	8%	6%	9%	12%
	No track of the financial records	2%	4%	1%	2%	1%	6%

**Table 29: Censored headcount ratio by business location**

DIMENSION	INDICATOR	CENSORED HEADCOUNT RATIO		
		Female (n=148)	Male(n=120)	Prefer not to say/ Not reported (n=6)
<b>Exposure</b>	Business closure	47%	38%	33%
	Loss of staff imposed by the pandemic	15%	13%	17%
<b>Sensitivity</b>	Laying off employees	47%	58%	33%
	Impact in business operations	43%	63%	33%
	Forced to take actions	22%	27%	17%
<b>Adaptive capacity</b>	No teleworking	45%	49%	33%
	Not able to respond	27%	24%	17%
	Did not use any government programme	36%	35%	17%
	No track of the financial records	9%	12%	0%

**Table 30: Contribution to MVI by business location**

DIMENSION	INDICATOR	CONTRIBUTION		
		Female (n=148)	Male (n=120)	Prefer not to say/ Not reported (n=6)
<b>Exposure</b>	Business closure	24%	18%	24%
	Loss of staff imposed by the pandemic	8%	6%	12%
<b>Sensitivity</b>	Laying off employees	16%	19%	16%
	Impact in business operations	15%	20%	16%
	Forced to take actions	7%	9%	8%
<b>Adaptive capacity</b>	No teleworking	12%	12%	12%
	Not able to respond	7%	6%	6%
	Did not use any government programe	9%	8%	6%
	No track of the financial records	2%	3%	0%

**Table 31: MVI by business location and different variables**

VARIABLE	CATEGORY	BUSINESS LOCATION		OVERALL
		Rural	Urban	
<b>Business age</b>	Less than 1 year	.24	.12	<b>.17</b>
	1 - 2 years	.27	.23	<b>.25</b>
	3 - 5 years	.34	.40	<b>.38</b>
	6 - 10 years	.29	.32	<b>.31</b>
	More than 10 years	.37	.33	<b>.34</b>
<b>Share of female-staff (%)</b>	None	.34	.19	<b>.25</b>
	10% or less	.26	.39	<b>.31</b>
	11% to 30%	.42	.28	<b>.32</b>
	31% to 50%	.38	.29	<b>.32</b>
	51% to 75%		.40	<b>.40</b>
	76% to 99%	.17	.38	<b>.31</b>
	100%	.38	.30	<b>.33</b>
<b>Gender of the owner/ top manager</b>	Female	.3168	.29	<b>.30</b>
	Male	.3170	.31	<b>.31</b>
	Not listed		.38	<b>.38</b>
	Prefer not to answer		.32	<b>.32</b>
	<b>Total</b>	<b>.32</b>	<b>.30</b>	<b>.30</b>

# ANNEX 1: INDUSTRY LISTING BY SECTOR

Sector	Industry
Primary	<ul style="list-style-type: none"><li>• Agriculture, forestry and fishing</li></ul>
Secondary	<ul style="list-style-type: none"><li>• Manufacturing</li><li>• Construction and real estate</li></ul>
Tertiary Sector	<ul style="list-style-type: none"><li>• Wholesale and retail trade; auto repair</li><li>• Other service activity</li><li>• Accommodation, food and beverage services</li><li>• Professional, scientific and technical activities</li><li>• Administrative and support service activities</li><li>• Information and communication</li><li>• Transportation and storage</li><li>• Financial and insurance activities</li><li>• Real estate activities</li><li>• Education</li><li>• Human health and social work activities</li><li>• Arts, entertainment and recreation</li><li>• Activities of households as employers</li></ul>



