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## Periodical Part

### Integrated business enterprise survey / The Republic of Rwanda, National Institute of Statistics Rwanda. 2019/2021

Integrated business enterprise survey / The Republic of Rwanda, National Institute of Statistics Rwanda

#### Provided in Cooperation with:

National Institute of Statistics of Rwanda (NISR) , Kigali City

*Reference:* In: Integrated business enterprise survey / The Republic of Rwanda, National Institute of Statistics Rwanda Integrated business enterprise survey / The Republic of Rwanda, National Institute of Statistics Rwanda. 2019/2021 (2023).

<https://www.statistics.gov.rw/file/13928/download?token=RRrbBj0L>.

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**2019-2021**

**RWANDA INTEGRATED BUSINESS  
ENTERPRISE SURVEY REPORT**

**March 2023**



## Foreword

The 2019-2021 Rwanda *Integrated Business Enterprise Survey* (IBES) is a comprehensive business enterprise survey undertaken to collect, compile, and analyse data on the level and structure of non-agricultural economic activity in the country for both informal and formal sectors, with the formal sector defined as those businesses registered with the Rwanda Revenue Authority (RRA) and that keep regular business accounts. Data collection has been carried out by the National Institute of Statistics of Rwanda (NISR) from May to August 2022 with the year 2021 being the reference period. In addition, some business data for the years 2019 and 2020 have been collected to fill the gap created by the advent of COVID-19 of which countermeasures have put on hold data collection for these two years.

IBES seeks to address the lack of business data and provide inputs vital to the formulation of government economic policy and the monitoring of performance against development goals, as well as providing information for the expansion of the business sector and market research. IBES 2019/2021 has drawn crucial lessons from the previous survey rounds: IBES 2018, IBES 2017, IBES 2016, IBES 2015, IBES 2014 and the pilot IBES 2013. These lessons have already been used to introduce improvements.

The survey targets all business enterprises classified under Sections B to S of the International Standard Industrial Classification of All Economic Activities, Revision 4 (ISIC-4). In addition, IBES does not cover all activities of public administration and extraterritorial organizations. It gathers detailed business enterprise level data through questions on employment, compensation to workers, fixed assets, and background information such as location, ownership status, and business environment to mention but a few.

Conducting an business enterprise survey constitutes a challenging and enriching experience, significantly improving NISR capacity to accomplish its mandate. NISR staff were involved in every aspect: from the design, formulation of the questionnaire, implementation, data processing, and report writing. At least two levels of training were conducted: training of trainers and the training for data collection. An instruction manual was also written. NISR has conducted field visits to monitor data collection. Data editing was carried out simultaneously with data collection to ensure timely correction of any mistakes in data collection.

This report presents main results of the survey. Business activities in Rwanda are presented in section one, business environment in section two, and conclusions and areas of research in section three.

**MURANGWA Yusuf**  
Director General

## Acknowledgments

The IBES 2019/2021 report is the outcome of many months of cooperative efforts of NISR Staff. The project recognizes the leadership of NISR management at various stages of the survey and spearheading the monitoring of progress of data collection during the actual survey period. Their suggestions and comments on the report are also acknowledged with thanks.

The Department of Economic Statistics coordinated field operations and provided clarifications on technical matters related to the survey. Special thanks are due to the technical committee members, who at all stages of the fieldwork visited enumerators to assess whether data collection guidelines were being followed and suggested remedial measures.

Recognition also goes to primary fieldworkers and their team leaders. Commendations are due to them for their work done of codification and data entry after fieldwork.

Recognition goes to Youll Plan Ltd which has been instrumental in the development of survey methodology, including the construction of the survey instruments, instruction manual, tabulation plan and data analysis.

The International Growth Centre Rwanda (IGC Rwanda) deserves praise for its contribution to the report writing.

Lastly grateful acknowledgments are given to all formal and informal business enterprises which have cooperated and to whom we guarantee maximum confidentiality.

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## List of abbreviations

COVID-19	: Coronavirus disease 2019
DES	: Department of Economic Statistics
EC	: Establishment Census
Freq.	: Frequency
IBES	: Integrated Business Enterprise Survey
IGC	: International Growth Centre
ISIC	: International Standard Industrial Classification
NISR	: National Institute of Statistics of Rwanda
NPISHs	: Non-Profit Institutions Serving Households
PAYE	: Pay as You Earn
RCPA	: Rwanda Classification of Products by Activity
TIN	: Taxpayer Identification Number
VAT	: Value Added Tax
VPN	: Virtual Private Network
WASAC	: Water and Sanitation Corporation



## 0. SUMMARY OF KEY MESSAGES



92% is the rate of informality of Rwanda's business landscape.



Insufficient collaterals is cited as the main barrier to the access to finance with 15% of formal businesses and 97.7% of informal businesses

29.3% of formal compared to 36.6% of informal businesses used personal resources for financing



4% for formal and 0.1% of informal businesses are engaged in exports low demand by 49.3%



The capacity underutilization is 57.6% for formal businesses. Among the reasons for underutilizations include low demand by 49.3%



Both basic and advanced IT skills top the skills gap concerns amongst business enterprise managers

14.4% of business enterprises present lack of fund as the main barrier for staff trainings



49% of formal business enterprises and 47% of informal business enterprises pay someone to dispose waste from their



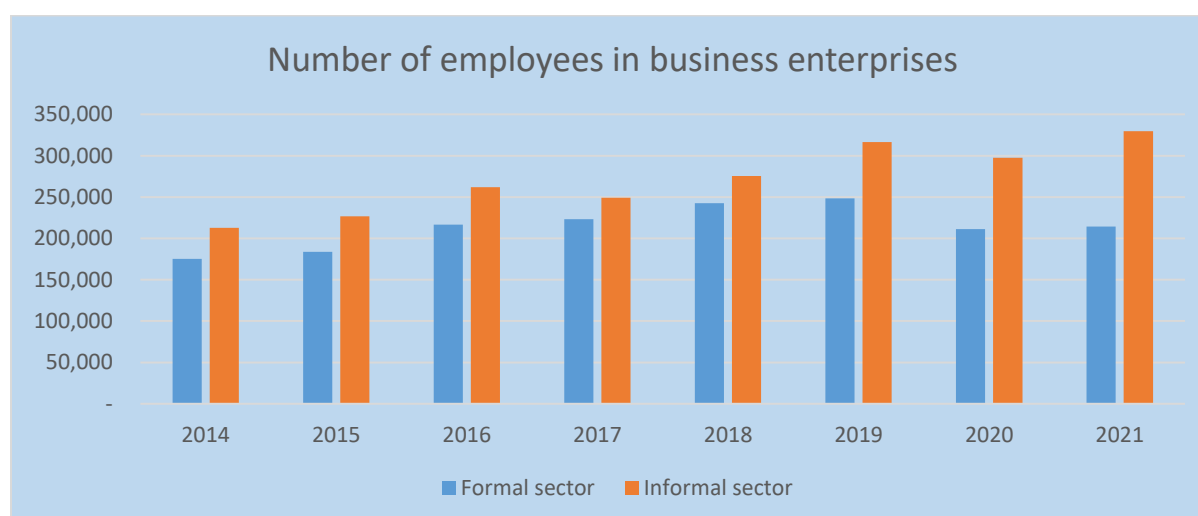
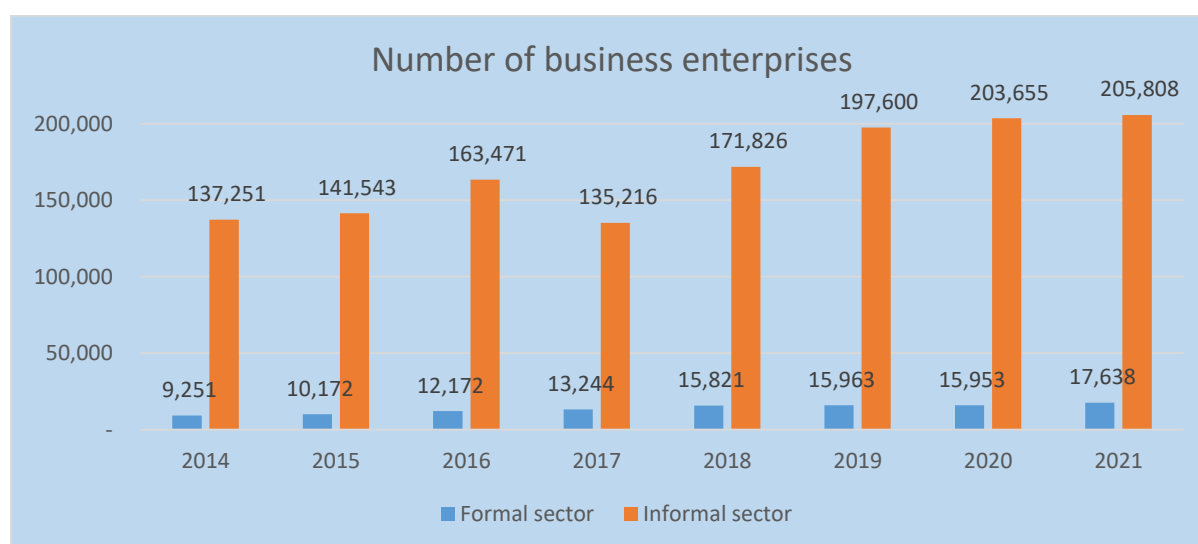
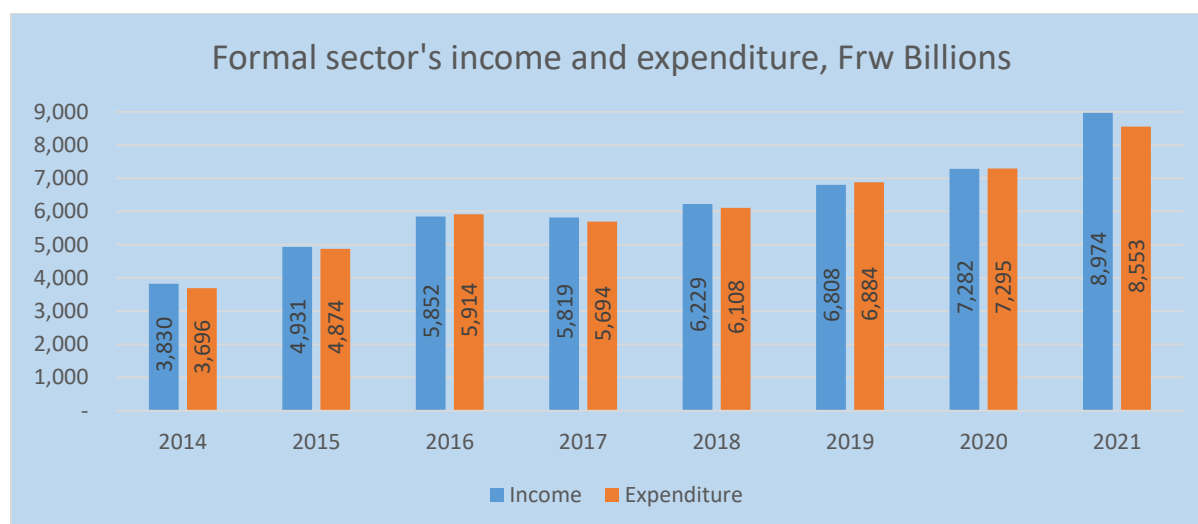
Given the increasing energy demand, the use of solar energy by Rwandan business enterprises is still very low. Results shows that it is used by 6% of businesses

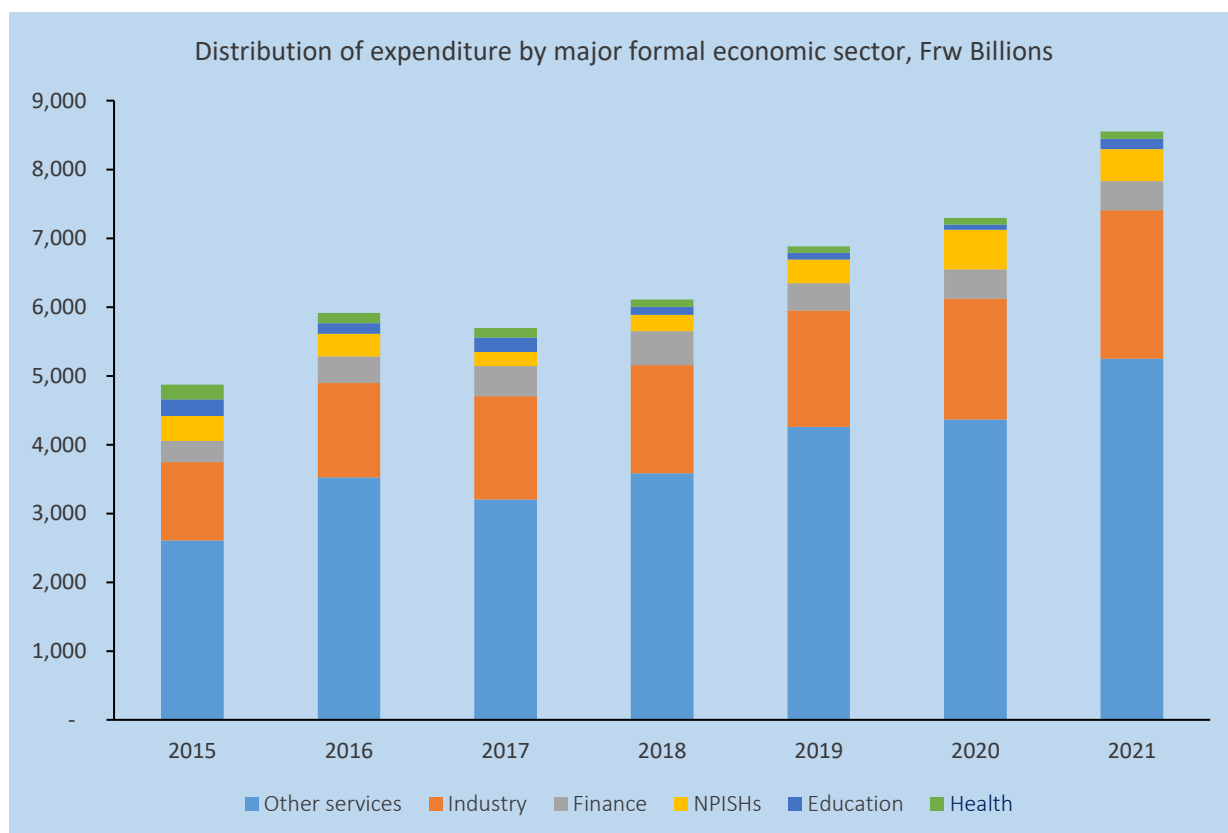
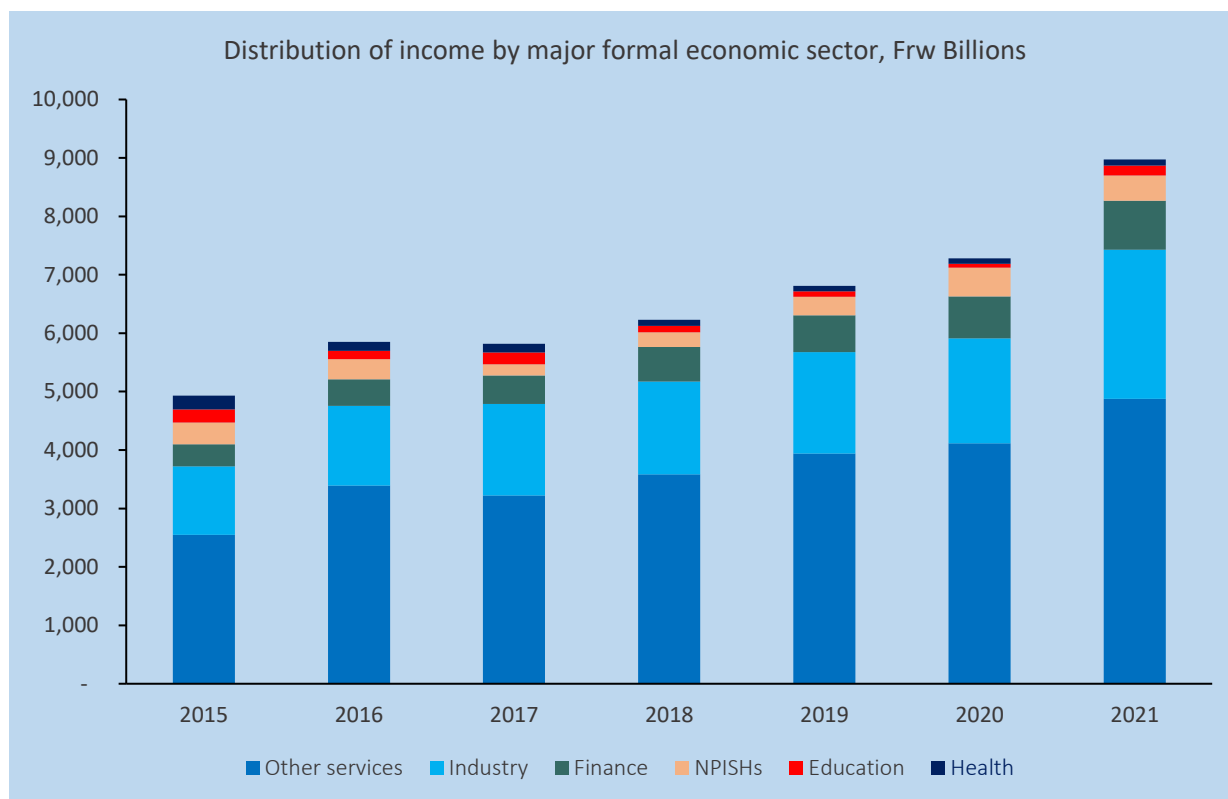
Covid-19 pandemic affected income of 81% of formal enterprises compared to 90.2% of informal enterprise



88%- average share of business enterprises that did not receive any COVID-19 pandemic relief or support







## 1. BUSINESS ACTIVITIES IN RWANDA

### 1.1. Introduction - Macroeconomic Conditions

The Integrated Business Enterprise Report 2019/2021 provides a detailed analysis and description of Rwanda's business enterprise conditions. These include market, institutional, behavioral, and infrastructural characteristics in which business enterprises operate. These conditions do not occur in a vacuum. They are inextricably linked to the overall macroeconomic conditions in the country. This report will, therefore, be prefixed by a brief overview of Rwanda's economic conditions, which will serve as a framework for the report; coupled with explanations of what the Integrated Business Enterprise Survey (IBES) is all about.

Despite an unfavorable global economic environment in the last few years, Rwanda has continued to exhibit robust economic growth. Pre-pandemic economic growth rates in Rwanda were some of the highest rates in the world, growing by 8.6% and 9.5% in 2018 and 2019 respectively, and posting an average of 8% over the last two decades (World Bank, 2023). With the onset of the COVID-19 pandemic, Rwanda experienced its first economic contraction in nearly twenty years, with the Gross Domestic Product (GDP) contracting by 3.4% (NISR, 2022). According to the Ministry of Finance and Economic Planning, industry and services sectors experienced the most significant slowdowns in sector growth. Industry sector growth slowed down from 15% in 2019 to 3% in 2020, while growth in the services sector slowed down to just about 2% in 2020 from 8% in 2019 (Republic of Rwanda Ministry of Finance and Economic Planning, 2021). In 2021, however, the country's GDP growth reached 10.9% largely driven by a recovery in global demand, easing of COVID-19 restrictions, and fiscal stimulus (NISR, 2022).

While Rwanda experienced impressive economic recovery in 2021, vulnerabilities still exist. For instance, unemployment rates continue to rise, reaching 23.5% in 2021 as compared 22% and 15% in 2020 and 2019 (Ministry of Finance and Economic Planning, 2021). Further, public debt levels remain dangerously high and is projected to further increase through to the end of 2023. Total public debt in the fiscal year 2020/2021 increased to 71.7% of the GDP, as compared to 63.3% and 55% in the 2019/2020 and 2018/2019 fiscal years (Ministry of Finance and Economic Planning, 2021). This was largely attributed to increased expenditure requirements due to the COVID-19 pandemic. Climate change also poses a risk to Rwanda's economic future. More frequent extreme weather events and droughts are causing damage to agricultural yields, health, and infrastructure, and could lead to additional costs of 1% of annual GDP by 2030 (NISR, 2022). Inflation is further causing economic uncertainty with sharp increases in the price of essential products. Headline inflation is projected to increase from 0.8% in 2021 to 9.5% in 2022 (IMF, 2022). Overall, Rwanda's Consumer Price Index (CPI) increased by 31.7% by the end of 2022, largely driven by increases in food and non-alcoholic beverages (44.3%) (NISR, 2022).

IBES is an annual data collection exercise by NISR on business enterprises operating in Rwanda. The survey aims at providing reliable statistics and data on the nature of business enterprises in Rwanda, their labour employment patterns, ownership and legal characteristics of the businesses among others. The survey and its subsequent report also provide insights on the businesses' perspective on the business environment they operate in. The survey compiles detailed statistics on business aspects as access to finance, waste

management practices, energy usage, and utilisation of information communication technologies. Further, business performance by sector and size of business enterprises are analysed using income and expenditure data.

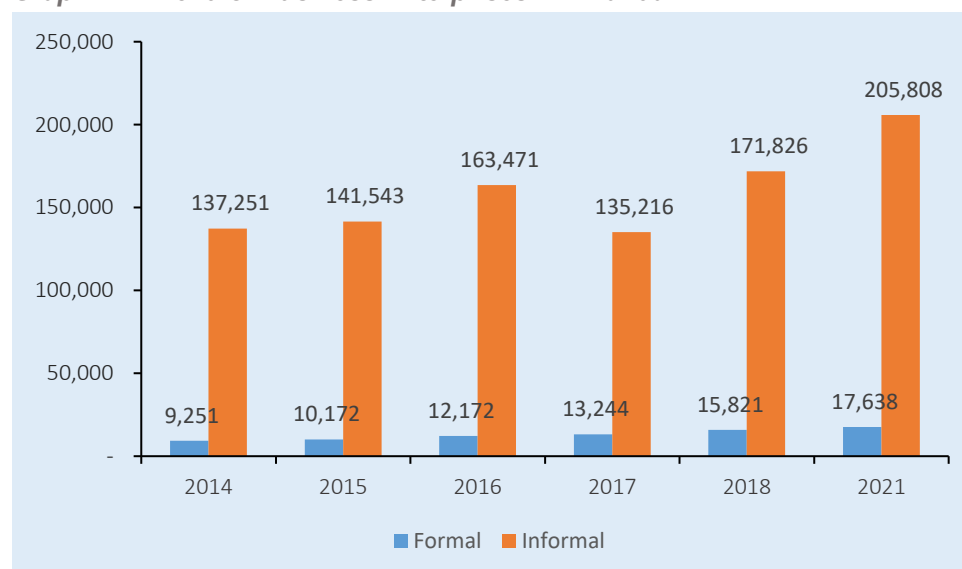
This 2019-2021 IBES report resumes after a brief hiatus due to the COVID-19 pandemic. It extensively compiles business data through the three-year period and includes insights on the impact of the pandemic on business enterprises in Rwanda. The survey data is structured as a panel, which allows for execution of further analysis that includes both spatial and temporal dimensions.

This section details the key characteristics of business enterprises in Rwanda. It describes the Rwanda's business enterprises based on geographic location, size, age of the business enterprises, economic activity, among others. It further disaggregates the features by formality.

## 1.2. Characteristics of Rwanda's Business enterprises and their activities

*In 2021, the total number of business enterprises was estimated to be 223,446. The survey results show that, business enterprise activities in Rwanda are overwhelmingly informal, with informal business enterprises accounting for 92.1% of total business enterprises.*<sup>1</sup>

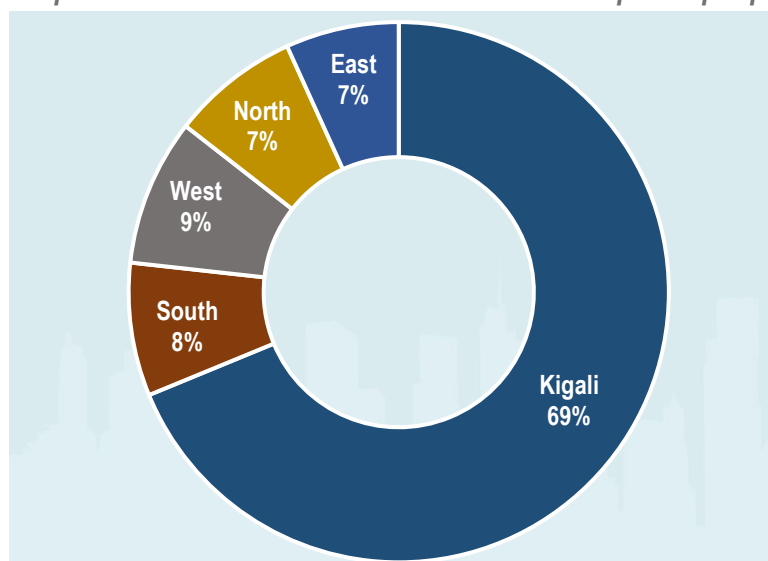
**Graph 1.1. Trend of Business Enterprises in Rwanda**



Based on Graph 1.1, business formality rates have been dropping since their peak in 2017, when 8.9% percent of business enterprises were formal. The rate of business formality has fallen by 1% to about 7.9% in 2021.

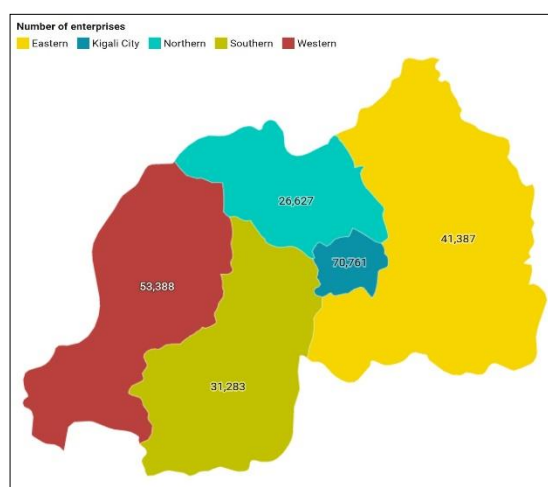
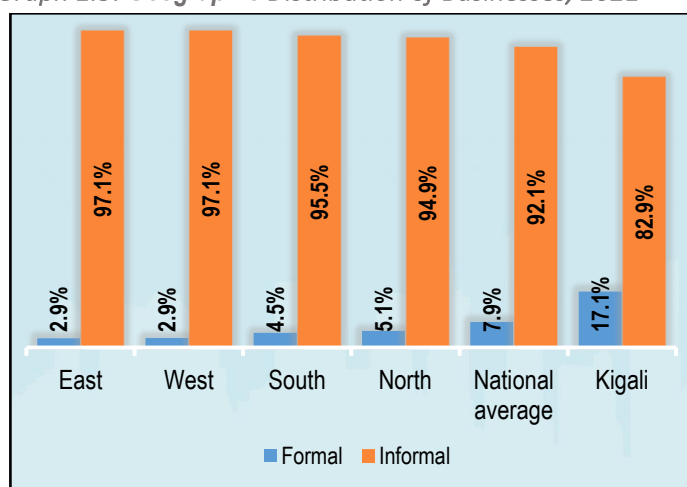
<sup>1</sup> These are population estimates based on the sample.

**Graph 1.2. Distribution of Formal Business Enterprises per provinces**



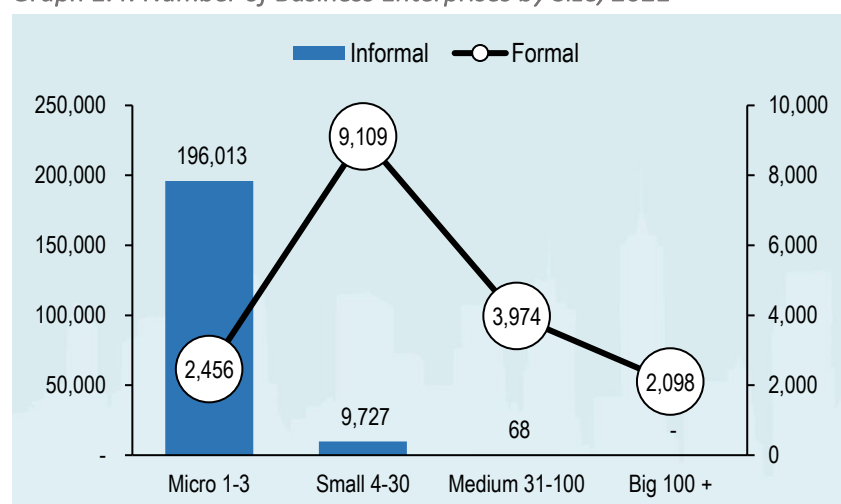
Kigali City in Rwanda accounts for the highest concentration of formal business enterprises with 69% of total formal businesses. The Northern, Southern, Eastern and Western provinces follow with 7.9%, 8.7%, 7.7%, and 6.8% of total formal businesses respectively.

**Graph 1.3: Geographic Distribution of Businesses, 2021**



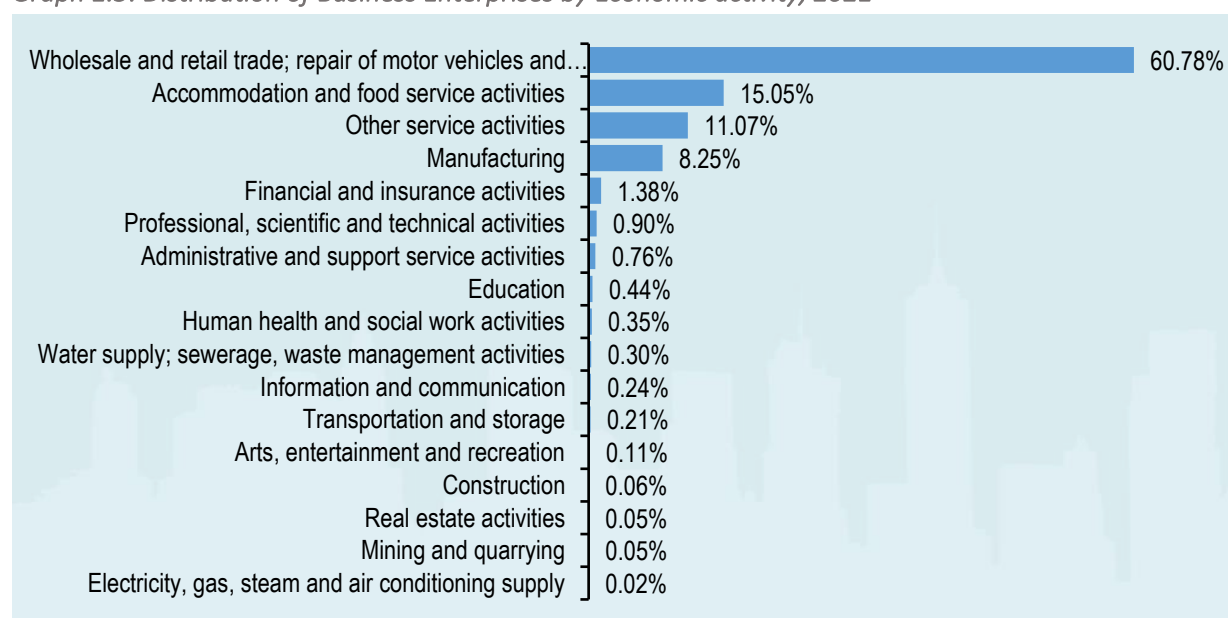
Micro business enterprises are backbone of business enterprise activities in Rwanda (Graph 1.3). Micro business enterprises, which employ 1 to 3 people, account for 88% of business activities in Rwanda. They are largely informal accounting for 95% of all informal businesses and around 88% of total business activities in Rwanda.

Graph 1.4: Number of Business Enterprises by Size, 2021



Formal business enterprises are mainly characterized by small business enterprises which employ 4 to 30 people. Formal small business enterprises account for more than half of all formal business enterprises (52%) and about 48% of small business enterprises. While small business enterprises account for the highest numbers in absolute terms in formality medium-sized business enterprises have higher formality rates. Nearly 98% of medium-sized business enterprises are formal. All large business enterprises (with more than 100 employees) are formal.

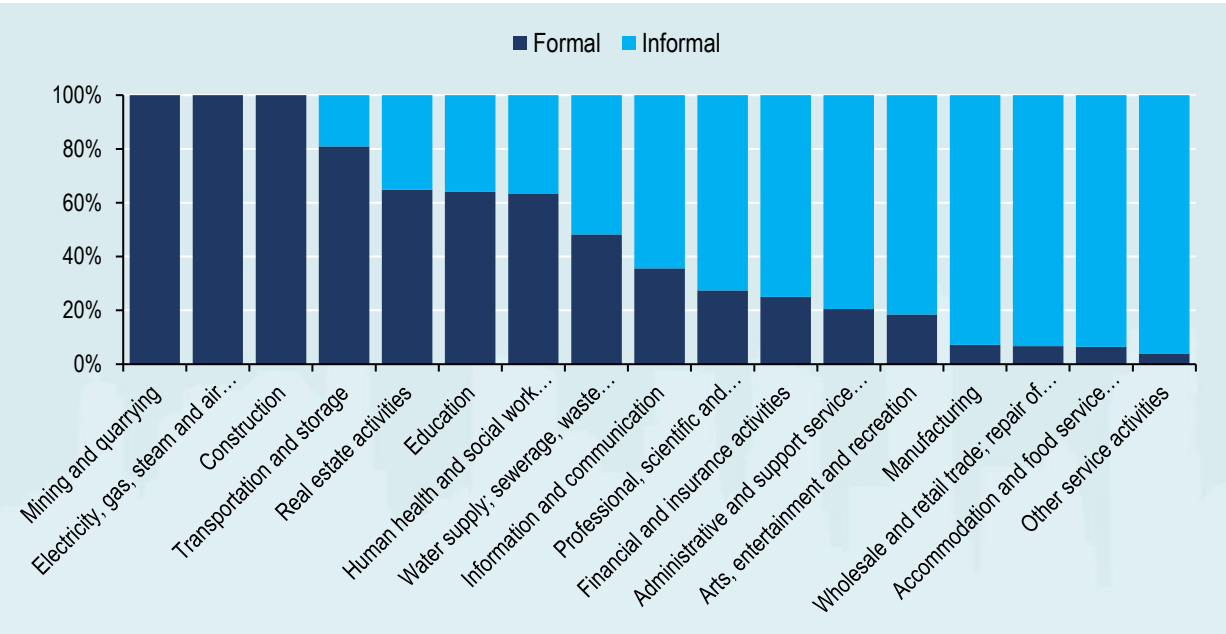
Graph 1.5: Distribution of Business Enterprises by Economic activity, 2021



Wholesale and retail trade activities dominates the economic activity landscape with 61% of all business enterprises in Rwanda, followed by accommodation and food services with 15%.

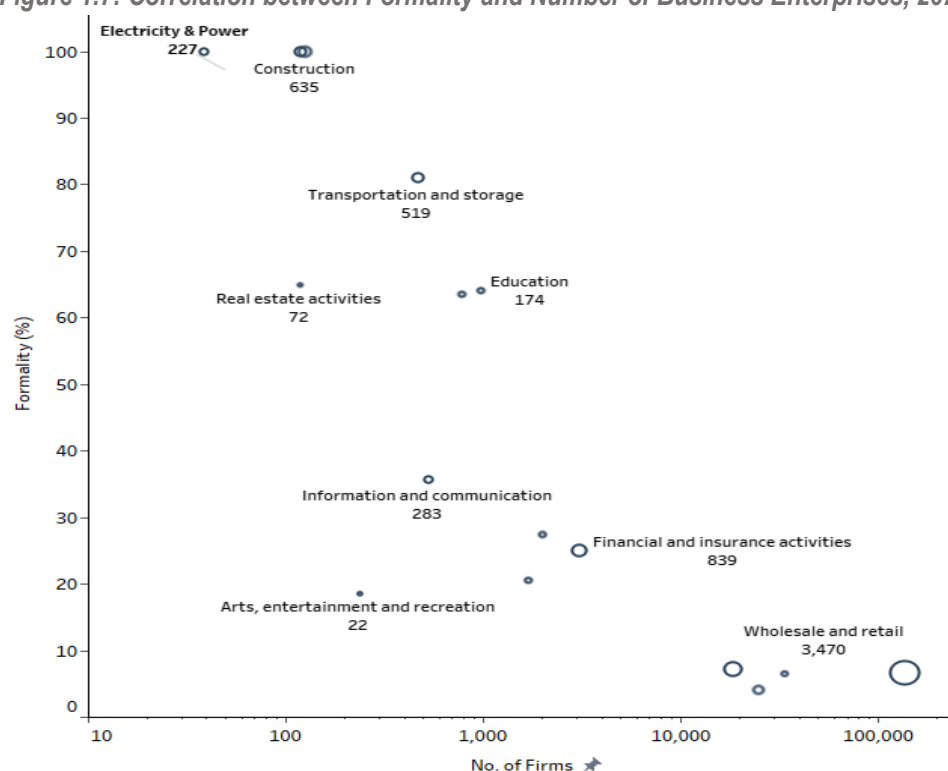
Formality by economic activity declines as the number of business enterprises per category increases (Figure 1.6). While the wholesale and retail sub-sector generally dominates the economic activity landscape, the sub-sector is only 6.7% formal.

Graph 1.6. Business Enterprises by Economic Activity, 2021



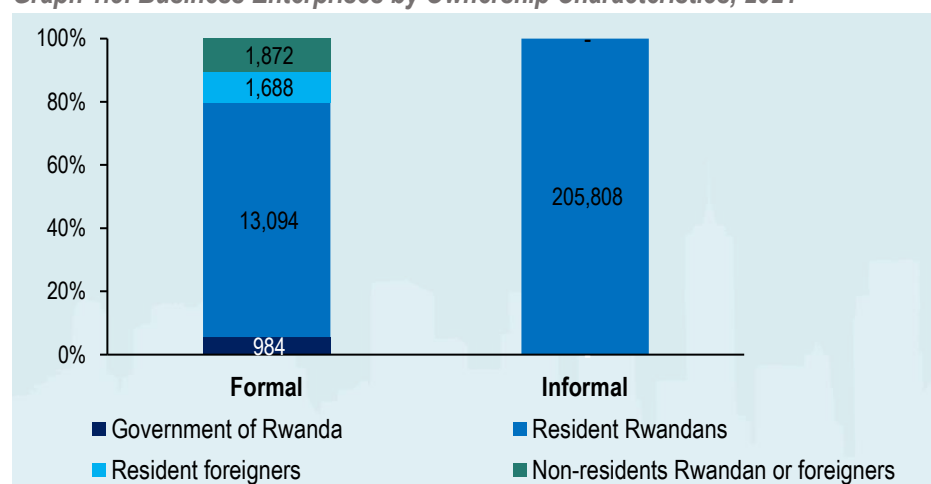


**Figure 1.7: Correlation between Formality and Number of Business Enterprises, 2021**

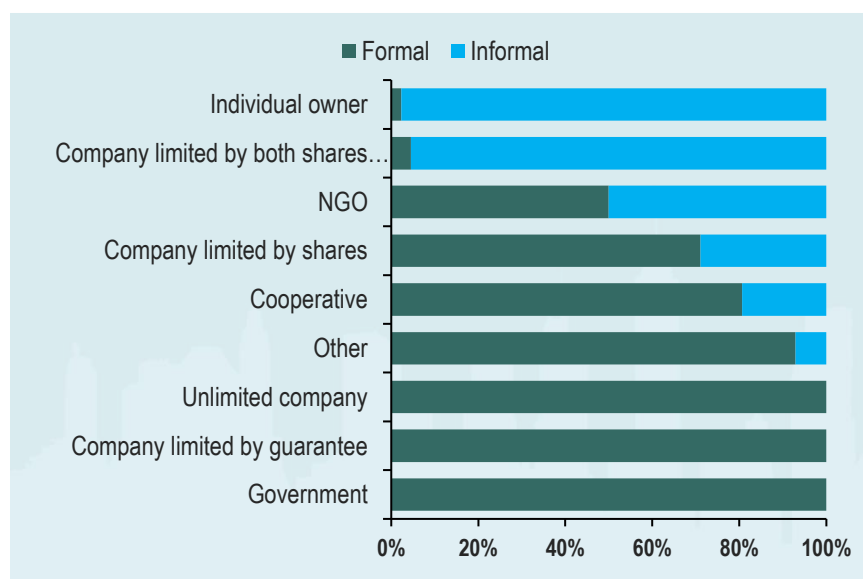


Resident Rwandans dominate the ownership of business enterprises in Rwanda, accounting for 98% of ownership (Graph 1.8). In the informal sector, resident Rwandans own all of the business enterprises while they account for 74% of ownership in the formal sector. Further, around 91% of business enterprises are sole proprietorships, that is, owned by a single individual (Graph 1.9), and largely operate as informal entities.

**Graph 1.8: Business Enterprises by Ownership Characteristics, 2021**

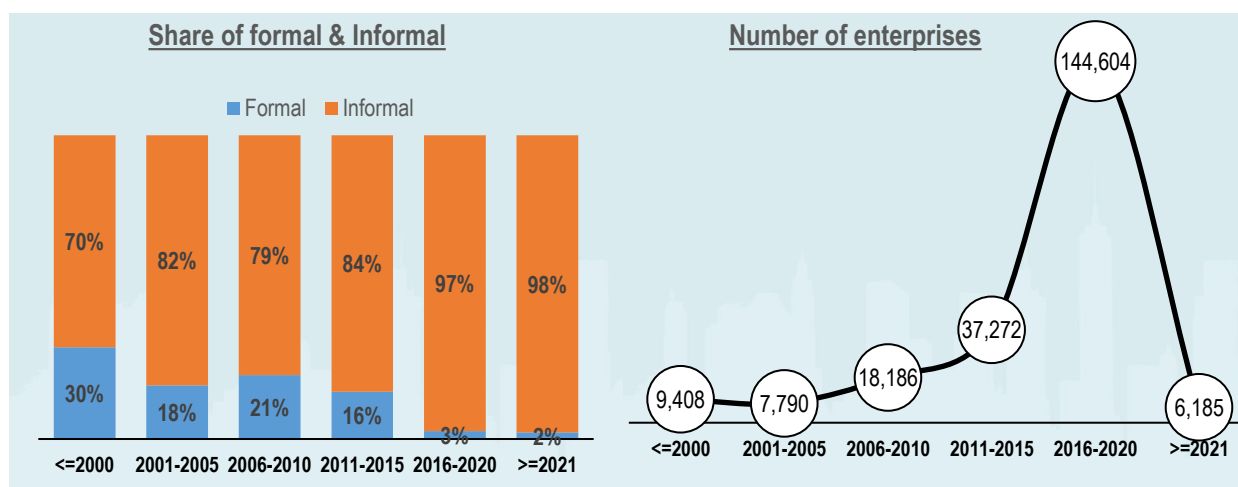


Graph 1.9: Legal Status of Business Enterprises, 2021



Business enterprises in Rwanda are young entities, 65% of the current operating businesses have started operations between 2016 and 2020. Most of the business enterprises formed (97%) are informal. It is also evident that the share of new formal business enterprises has been drastically decreasing, falling from around 30% in 2000 to around 2.2% in 2021.

Graph 1.10: Business Enterprises by Age of Business Enterprise



**Table 1.1. Summary of Business Distribution in Rwanda**

	Formal					Informal				
Descriptive	Kigali	South	West	North	East	Kigali	South	West	North	East
<b>Main Sector</b>										
Industry	1,287	148	149	147	191	4,192	1,861	4,492	2,554	4,356
Service	10,203	934	1,087	937	662	53,687	27,620	47,036	22,597	34,467
Finance	408	60	120	114	71	400	325	284	85	1,215
Education	92	153	101	106	173	189	52	-	-	111
Health	143	111	94	49	100	161	19	26	38	42
<b>Business Enterprise Size</b>										
Micro 1-3	1,673	219	243	177	144	54,535	29,213	48,963	24,469	38,833
Small 4-30	6,371	716	804	623	595	4,094	653	2,875	778	1,327
Medium 31-100	2,573	360	378	334	329	0	11	0	26	31
Big 100+	1,515	111	125	220	128					
<b>Economic Activity</b>										
Mining & quarrying	49	20	28	16	4					
Manufacturing	808	125	118	91	174	4,031	1,693	4,492	2,554	4,340
Electricity & Power	33	0	0	0	7					
Water supply & waste management	282	0	0	40	0	161	167	0	0	17
Construction	116	2	2	0	6					
Wholesale & retail trade	7,170	425	513	637	336	40,021	19,654	28,994	16,140	21,913
Transportation & storage	352	0	15	5	5	76	0	0	0	13
Accommodation & food service	1,161	232	380	232	169	6,862	3,469	11,014	4,147	5,961
Information & communication	165	0	12	0	12	0	38	12	19	272
Finance & Insurance	408	60	120	114	71	400	325	284	85	1,215
Real estate	62	12	4	0	0	33	9	0	0	0
Professional, scientific & technical	524	0	0	12	12	563	11	98	168	613
Administrative & support	305	8	8	17	8	277	0	866	19	185
Education	92	153	101	106	173	189	52	0	0	111
Human health and social work	143	111	94	49	100	161	19	26	38	42
Arts, entertainment & recreation	44	0	0	0	0	116	9	25	0	44
Other service activities	419	256	154	34	120	5,739	4,430	6,026	2,103	5,466
<b>Business Enterprise Formation</b>										
>=2021	66	8	9	53	0	839	0	500	4571	139
2016-2020	2,790	173	200	310	207	42679	17691	36040	13463	31051
2011-2015	4,167	414	540	339	335	8121	7317	9236	3959	2844
2006-2010	2,670	339	310	271	229	4007	2071	2446	2168	3676
2001-2005	897	69	161	125	119	1256	719	2382	520	1542
2000 and less	1,542	402	329	256	307	1727	2078	1235	592	940

## 2. BUSINESS ENVIRONMENT

***Business performance is inextricably linked to a country's business environment, which consists of a range of structural, institutional, and behavioral variables.*** The key variables used as indicators for the business environment include access to finance, information communication technology, trade and exports, labour market structures, energy use, environmental and infrastructural factors, among others. A favorable business environment will spur economic activity and positively affect business performance. It will further spur confidence in the markets and, thus, improve both domestic and foreign investments, capital increments, employment growth, and export-oriented activities.

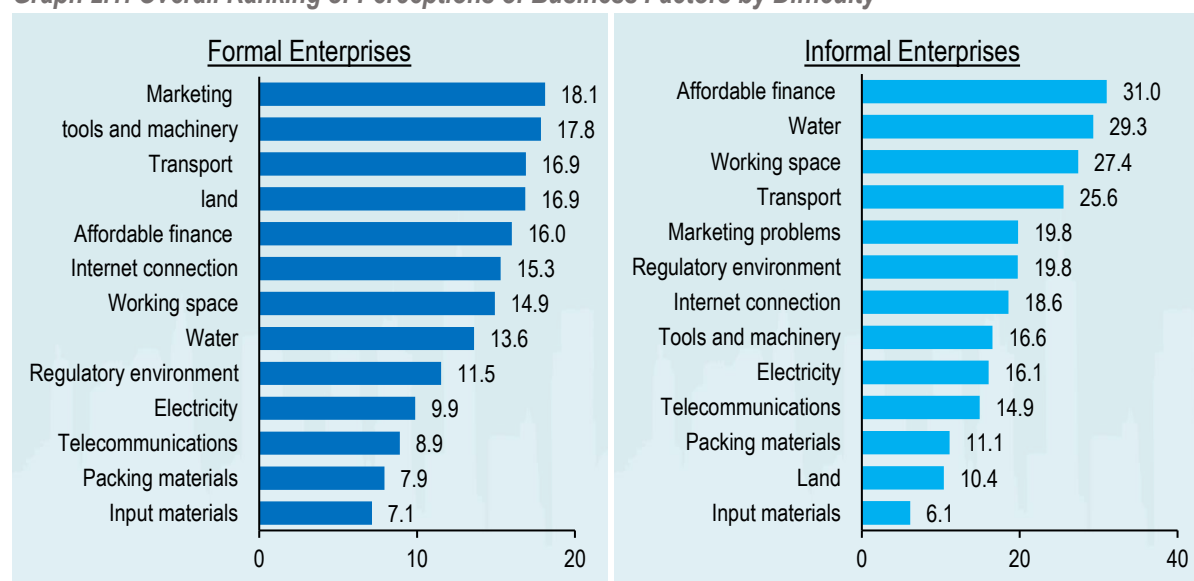
A weak environment on the other hand, will not only lead to divestment but also to probable counterproductive and/or costly actions by business enterprises to cushion themselves from the weaknesses. For instance, unreliable power will result in business enterprises investing in alternative power generators; insecurity will lead to higher security and insurance costs; and a lack of credit will lead to fewer investments, just to describe a few. A weak business environment will most likely result in productivity losses and employment stagnation.

This section will report on the different aspects of the business environment (indicators as mentioned above), for both formal and informal business enterprises. Business environment factors are differentiated into two categories; market factors, infrastructure & the environment, and labour characteristics. Further disaggregation of the analysis will be done based on the main economic sectors and size of the business enterprises. It is worth noting that the data presented in this section is solely for the year 2021.

### 2.1. Business Environment Factors

***In general, formal and informal business enterprises face different challenges regarding the nature of the business environment (Graph 2.1).*** There are stark difference in the top three most pressing challenges based on formality. Formal business enterprises rank problems in marketing (18.12%), availability of tools and machinery (17.84%), and the state of transport facilities and infrastructure (16.89%) as their most pressing challenges. Following closely is the availability of land and the access to affordable finance. On the other hand, informal business enterprises rank access to finance, water, and working space, as their primary concerns. Almost a third of informal business enterprises report difficulties in accessing loans and credit, while 29.3% and 27.4% report difficulties in accessing water facilities and working space.

**Graph 2.1: Overall Ranking of Perceptions of Business Factors by Difficulty**



**Table 1.2: Summary of Perception of Business Environment Challenges by Formality, Sector, & Size`**

		Economic Activities					Size			
		Industry	Services	Finance	Education	Health	Micro	Small	Medium	Big
Formal	Inputs	15.1%								
	Tools	14.0%			16.2%					13.6%
	Finance		12.0%	21.4%				10.5%	12.7%	
	Transports	9.7%			19.6%	22.1%		11.1%		12.2%
	Marketing		12.0%				23.1%			
	Water			14.2%	13.7%	13.7%	9.7%		10.6%	
	Working space					20.6%				
	Land		14.2%	17.8%			19.6%	19.6%	9.3%	10.6%
Informal	Tools				14.0%					
	Finance		13.3%	22.3%		34.7%	13.0%			
	Transport	14.0%						22.1%		
	Water		12.2%	28.2%	23.0%	7.1%	11.9%	10.9%		
	Working space	19.7%	14.0%	17.0%	12.4%		14.1%	26.9%		
	Land					58.1				

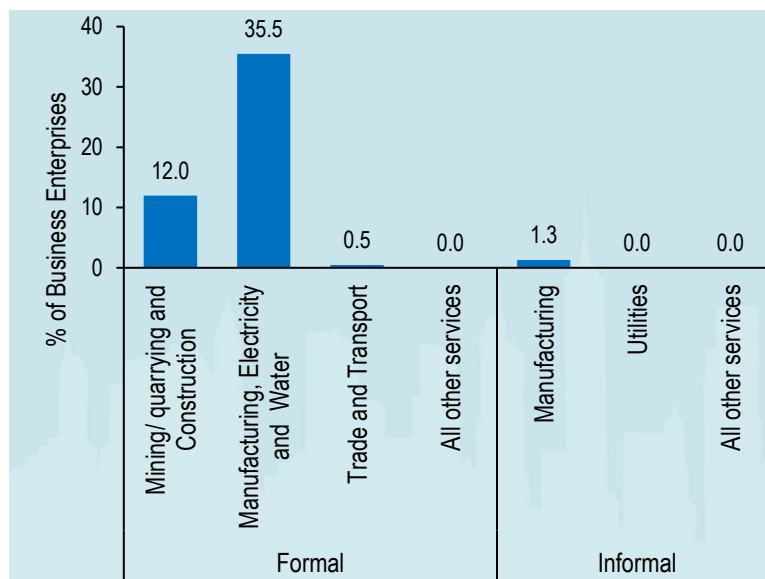
## 2.1.1. Market Factors

### 2.1.1.1. International Trade (Exports)

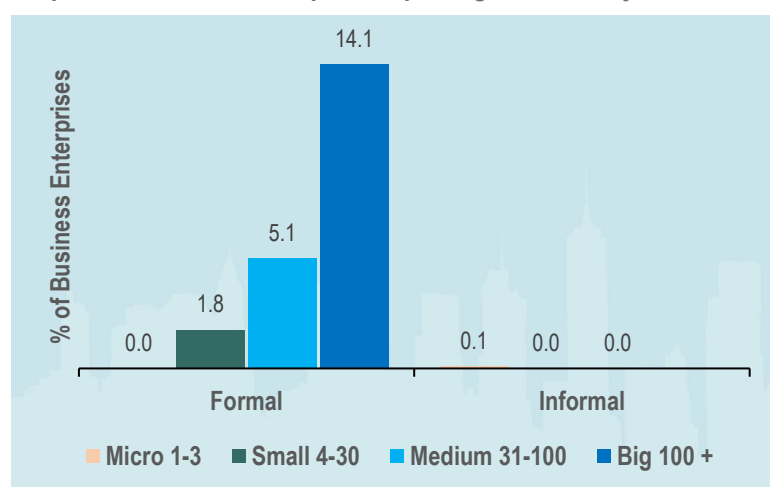
**The linkage between trade participation and business enterprise growth has long been an important policy consideration for Rwanda.** Various strategies and policy documents (such as the National Export Strategy I & II) have been created to encourage and grow the export capacity of business enterprises in the country. There several merits of increased participation in export activities by business enterprises. First, exporting improves business enterprise productivity through exploring new foreign markets and diversifying demand for products. Secondly, exporting can improve a business enterprise's long-term production efficiency through "learning-by-doing" from international best practices and from economies of scale effects.

**Graphs 2.2 and 2.3 below summarize exporting activities in Rwanda.** Overall, only about 4% of formal business enterprises and a miniscule 0.1% of informal business enterprises are engaged in exporting activities. Mining and manufacturing activities in the country, however, exhibit the highest shares of participation in exporting activities with about 12% and 35% of business enterprises. Informal business enterprises typically do not engage in exporting activities. In addition, the report also finds that larger formal business enterprises are more likely to participate in foreign trading than smaller ones. Big business enterprises lead in export activities, with 14% of business enterprises engaged in international trade, as compared to 5.1% of medium and 1.8% of small business enterprises (Graph 2.3).

**Graph 2.2: Business Enterprise Exporting Activities by Economic Activity**



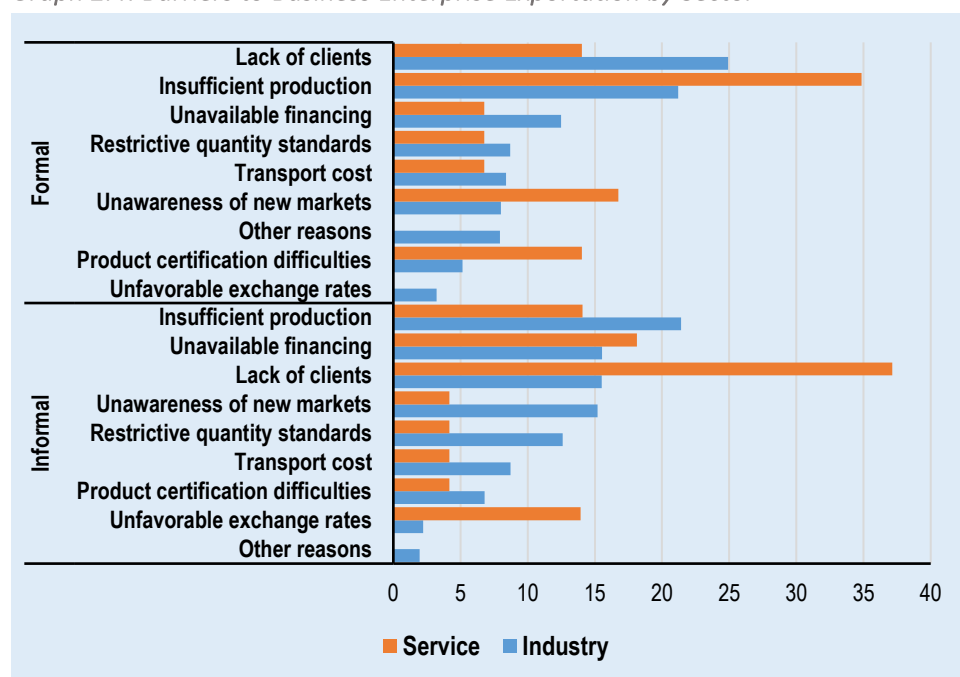
**Graph 2.3: Business Enterprise Exporting Activities by Size**



**Such low rates of export activity participation are caused by varying reasons depending on sector and business enterprise size (Graph 2.4 & 2.5).** The IBES 2019/2021 considers several possible barriers to trade export including a lack of clients, export financing, product certification, and lack of supply capacity among others. Barriers to participating in exporting activities for formal business enterprises in the industry sector are mainly a lack of demand for products

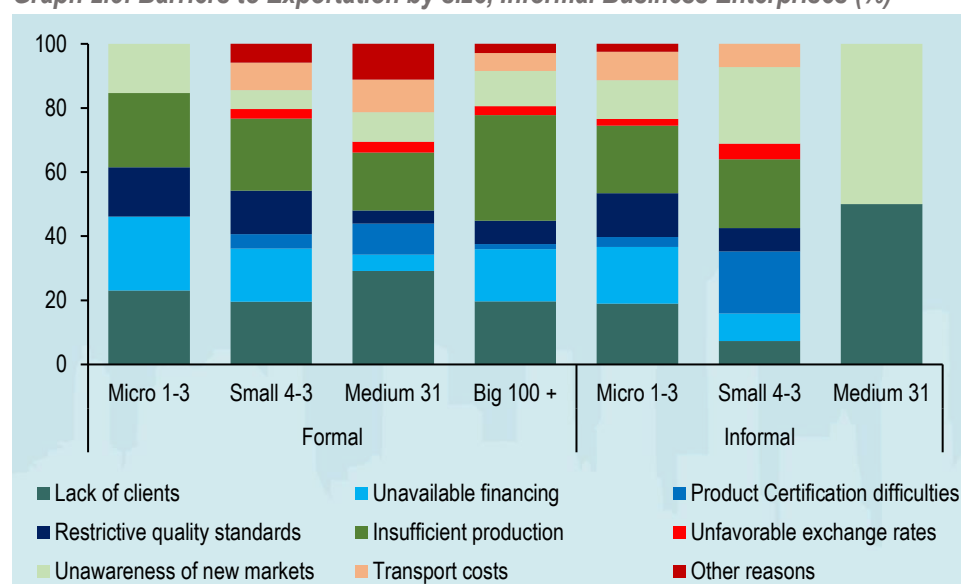
(25%) and insufficient production (21% of business enterprises). 35% of formal business enterprises in the service sector cited insufficient production as the top barrier to exporting, with an unawareness of new markets coming in second with 16.7% of business enterprises. Product certification difficulties and lack of export financing were also significant barriers with 14% of business enterprises citing the two. In the informal sector, business enterprises in services (37%) reported a lack of demand as the main factor for not exporting their products. Unavailable export financing (18%) and insufficient production (14%) were also significant barriers. On the other hand, insufficient production was the leading barrier for participating in exporting activities as reported by 21.4% of business enterprises in the industry sector. Similarly, unavailable financing, lack of clients, and unawareness of entry points to new markets were other significant barriers.

**Graph 2.4: Barriers to Business Enterprise Exportation by Sector**



Barriers to exportation also differ by business enterprise size and along formality lines. About 21% of formal micro business enterprises reported a lack of clients and insufficient products as the main barriers to exportation respectively. 22.5% and 19.6% of small business enterprises reported insufficient production and a lack of clients. Lack of demand for products was the most significant barrier for medium business enterprises as reported by 29% of business enterprises, while a third of big business enterprises cited insufficient production. Small informal business enterprises struggled with insufficient production (21.4%) and product certification challenges (19%), while micro business enterprises cited insufficient (21%), unavailable financing (17.6%), and a lack of clients (19%).

**Graph 2.5: Barriers to Exportation by size, Informal Business Enterprises (%)**

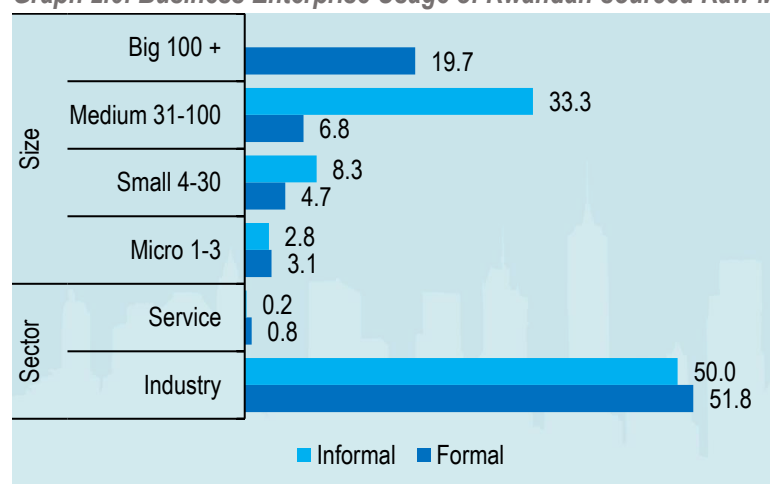


### 2.1.1.2. Access to Rwandan Produced Raw Materials

**Raw materials and their sourcing are one of the most important supply chain management decisions for business enterprises.** The quality of raw materials directly impacts the output quality and hence price points and profits. Further, decision on whether business enterprises source their raw materials locally or from abroad influence the cost of production. There could also be differences in cost, quality, and supply depending on input sources. Raw materials sourced from abroad may incur certain costs that locally-sourced products may not. Sourcing decisions are not obvious as some business enterprises just produce one product and hence require one or few raw materials, while others produce multiple products and may require inputs from different sources. Thus, sourcing decisions and constraints could have a direct effect on business enterprises' production and productivity outcomes.



**Graph 2.6: Business Enterprise Usage of Rwandan-sourced Raw Materials, % of Business Enterprises**



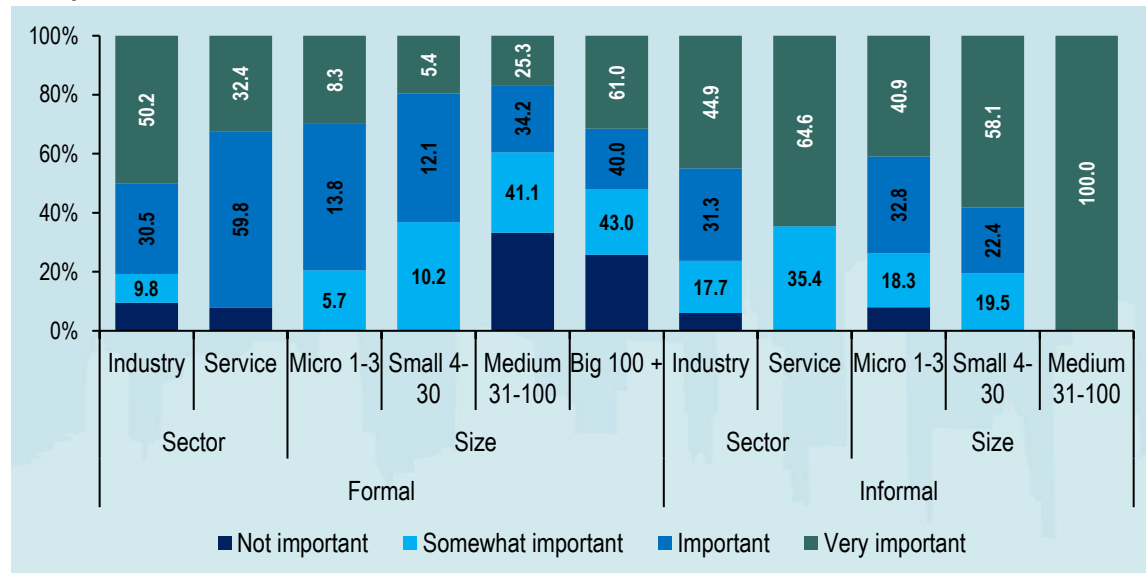
**On average, business enterprises utilize locally produced raw materials, albeit in varying levels.**

Graph 2.6 above illustrates the share of business enterprises by formality and size that use Rwandan raw materials. About 51.8% of formal and 50% of informal business enterprises in the industry sector utilize Rwandan-produced raw materials. Disaggregating further by broad economic activity, 67.2% of formal business enterprises in manufacturing activities use locally sourced materials as compared to 51% of informal business enterprises.

Further, the share of business enterprises using Rwandan raw materials increases by business enterprise size. Informal sector SMEs exhibit higher shares of locally sourcing their raw materials than their formal counterparts. 41.6% of informal SMEs (8.3% of small and 33.3% of small and medium business enterprises respectively) use Rwandan-produced inputs as compared to 11.5% of their formal counterparts. Finally, almost 1 in 5 of big formal business enterprises use locally produced raw materials for their production processes.

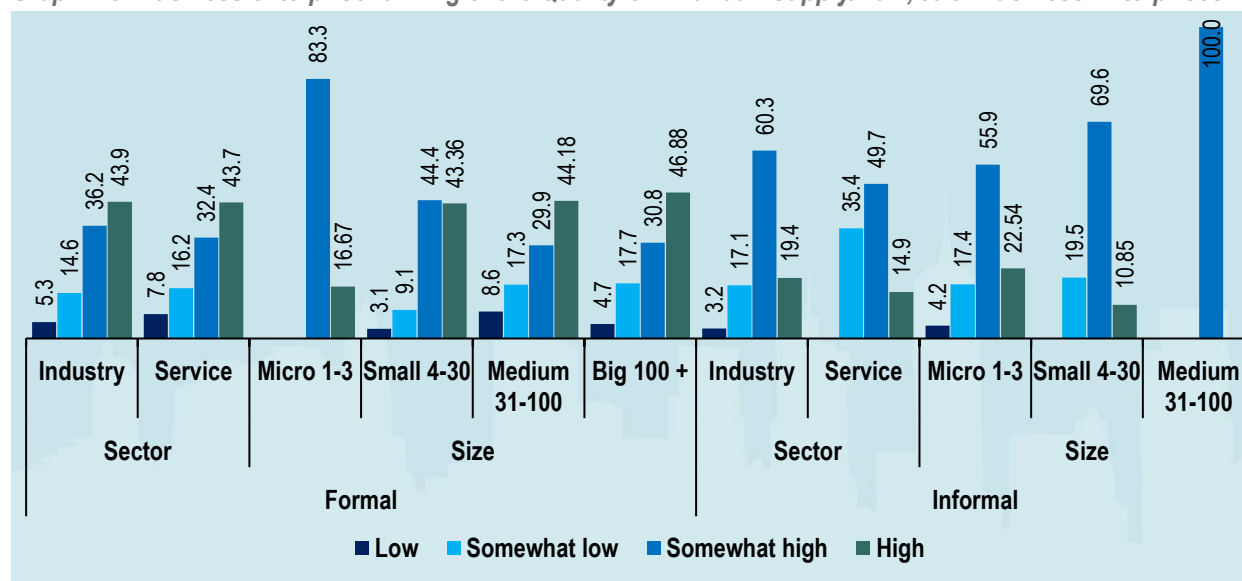
**Business enterprises that use locally produced inputs (both formal and informal) on average regard Rwandan-produced raw materials as important for their activities, due to satisfactory quality (Graph 2.7 & graph 2.8).** 80% of formal business enterprises in the industry sector describe locally sourced inputs as at least important, as do over 90% of business enterprises in the service industry. This sentiment is also observed in the informal sector with 75% and 64.9% of business enterprises in the industry and service sectors regarding local inputs as important. Further, more than 75% formal micro, SMEs, and big business enterprises hold local inputs in high importance, as do informal business enterprises in all size categories.

**Graph 2.7: Business Enterprise Perception of the Importance Rwanda Raw Materials, % of Business Enterprises**



Graph 2.8 below illustrates the perception of the quality of Rwandan-produced raw materials by business enterprises. Quality perception of inputs may reflect market demand of Rwandan raw materials by business enterprises. Just as Rwandan business enterprises view local inputs as important; they also perceive them to be of satisfactory quality. Over 75% of business enterprises in the industry and service sectors view Rwandan raw materials as at least of somewhat high quality, as do business enterprises in the informal sector. Further, over 70% of formal SMEs using Rwandan inputs perceive them to be of satisfactory quality, as do over 80% of those in the informal sector. 76.5% of formal big business enterprises also rank local inputs as of high quality.

**Graph 2.8: Business enterprise ranking of the Quality of Rwandan Supply/Raw, % of Business Enterprises**



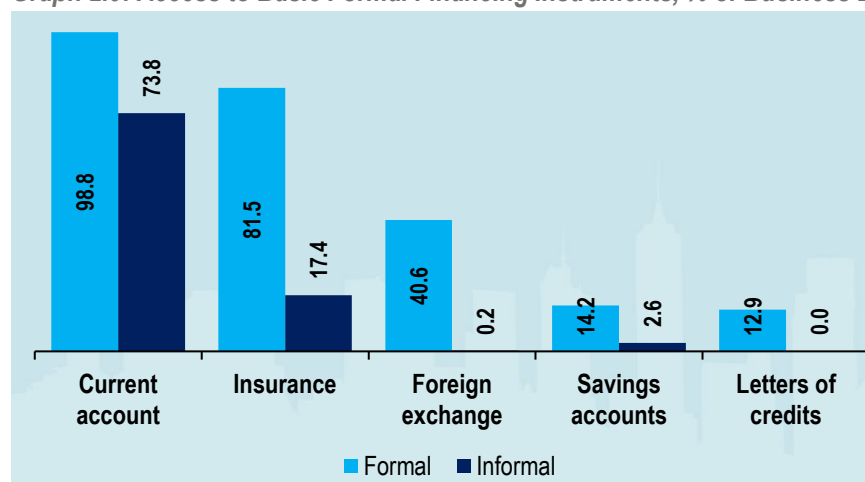
### **2.1.1.3. Access to Finance**

**Access to finance is a key ingredient to business enterprise growth.** There are several potential links between access to financial loans and credit by business enterprises and productivity. The first is the direct availability of resources for business enterprise expansion and sustainability. Financially-constrained business enterprises face increased difficulties in raising resources for both operational and investment purposes. Innovative capacity as well as research and development for new products, services, and technologies for instance is an important factor for business enterprise growth. Business enterprises require adequate financing to offset the cost of innovation activities, and those that readily access this financing are able to leverage innovation to spur business enterprise growth. Financing has also been linked to the increased survival of business enterprises during economic shocks and resilience to cope with other risks attached to the business environment. Access to finance also provides added security in the form of continued working capital.

**Graph 2.9 below shows the availability of basic financial instruments to formal and informal business enterprises in Rwanda.** The survey differentiates between three types of instruments. The first are deposit-oriented that enable business enterprises to manage their liquidity (current and savings accounts); the second are credit-oriented instruments through which business enterprises can borrow funds; and the third are other types of instruments available to business enterprises. Current accounts are used for short-term operational banking activities such as paying bills, making rent payments, and cash deposits. Letters of credit are a form of export finance given to buyers/importers and offers secure payment agreements to suppliers. A savings account allows users to deposit cash and accrue interest over time.

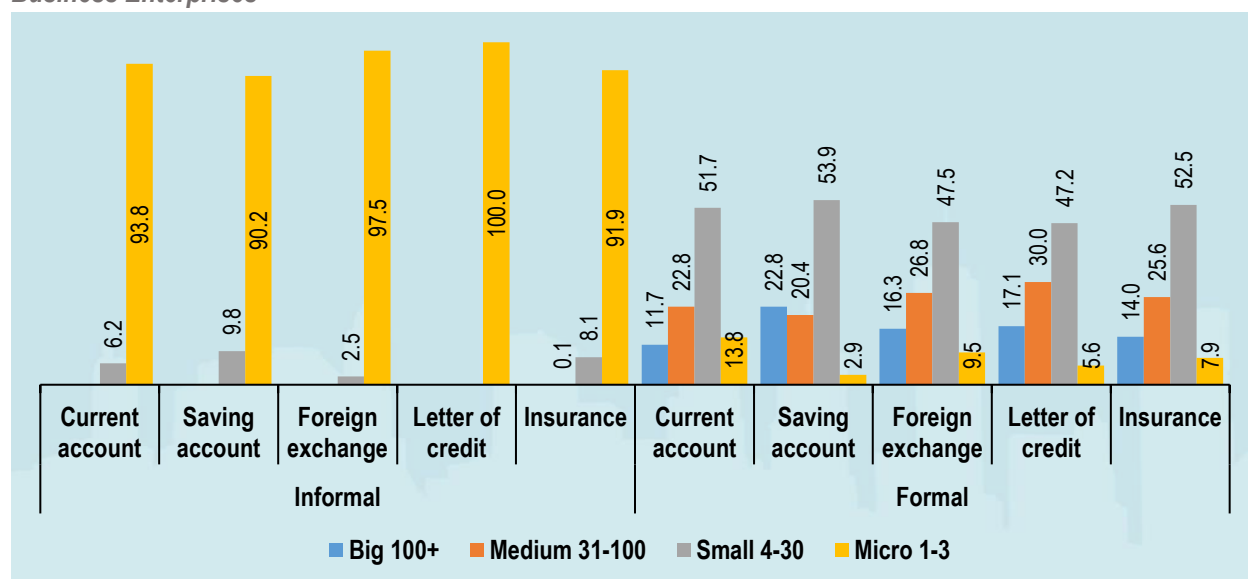
Current accounts are the most widely utilized financial instrument with 98.8% and 74% of formal and informal business enterprises having operational accounts respectively. Wider disparities are observed with the use of insurance instruments. 81.5% of formal business enterprises use various forms of insurance instruments (e.g. motor vehicle, property, medical and life insurance), while only 17% of informal business enterprises insure property or other assets. While savings accounts and letters of credit are the least utilized financial instrument, informal business enterprises are again disproportionately accounted for in their access, with less than 3% of business enterprises utilizing both.

Graph 2.9: Access to Basic Formal Financing Instruments, % of Business Enterprises



**Small and medium business enterprises (SMEs) account for the largest share (75%) of the utilization of financial instruments in the formal sector (Graph 2.10).** On average, small business enterprises account for half of the utilization of financial tools considered in the 2019-2021 survey, while medium business enterprises account for 25%. Small business enterprises account for 54%, 52.5%, and 51.7% of savings accounts, insurance policies, and current accounts held by the formal sector. On the other hand, micro business enterprises account for an average of 95% of the financial tools used in the informal sector.

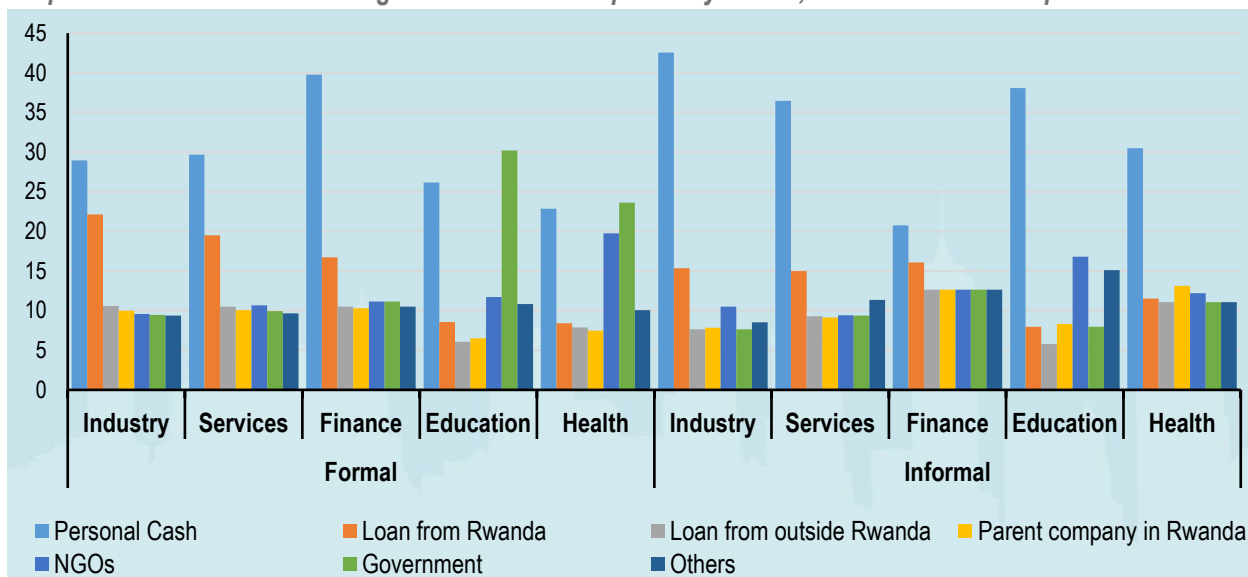
Graph 2.10: Business Enterprise Use of Financial Instruments by Business Enterprise Size, % of Total Business Enterprises



**Sources of financing also differ between different categories of business enterprises.** The IBES 2019/2021 considers several sources of financing including personal cash, government financing, and loans from within and outside the country, amongst others. Personal cash is the most widely used form of financing for both formal and informal business enterprises. On average, informal business enterprises use personal cash to a high degree than their formal counterparts accounting for 33.6% of their financial sources, as

compared to 28.9% for their formal counterparts. For formal business enterprises, government and loans from within Rwanda are also significant sources, accounting for 17% and 15% of their funding respectively. Loans from within Rwanda (13%) and NGOs (12.3%), on the other hand, represent significant funding sources for informal business enterprises.

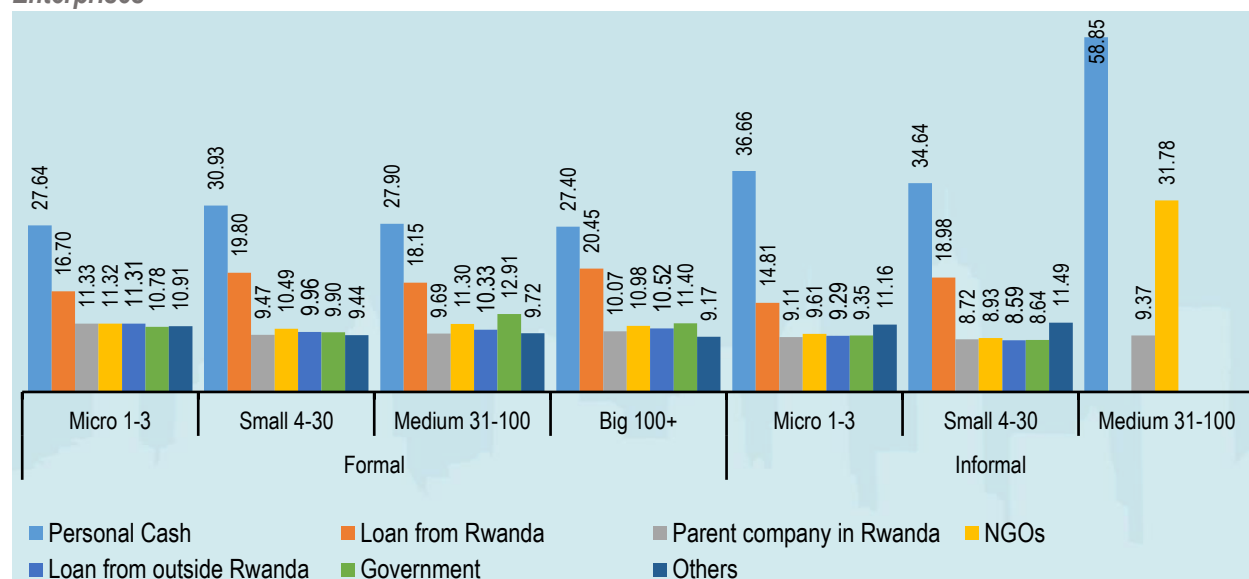
**Graph 2.11: Sources of Financing for Business Enterprises by Sector, % of Business Enterprises**



**Analysis by sector reveals that personal cash is the most important source of financing for all sectors, except formal education and health business enterprises (Graph 2.11).** Personal cash represents the highest source of financing for service and finance sectors in particular, accounting for 29.67% and 29.76% respectively. This is closely followed by the industry sector with 28.9%. However, formal education and health sectors obtain their highest financing from the government, with financing from this source accounting for 30.2% and 23.6% respectively. This is dissimilar to their informal counterparts who obtain a majority of their funding from personal sources, with 38% for education and 30.5% for health. However still, informal industry and services sectors account for the highest share of personal financing with 42.5% and 36.4% respectively.

Further, Graph 2.12 below emphasizes personal cash as the primary source of finance for business enterprises categorized by size. Informal medium-sized business enterprises exhibit the highest shares of usage of personal finance with nearly 59%. This is followed by informal micro and small business enterprises with 36.6% and 34.65 respectively. Loans from Rwanda were another important source of financing particularly for formal big, small, and medium business enterprises, accounting for 20.4%, 19.8%, and 18% of financing respectively.

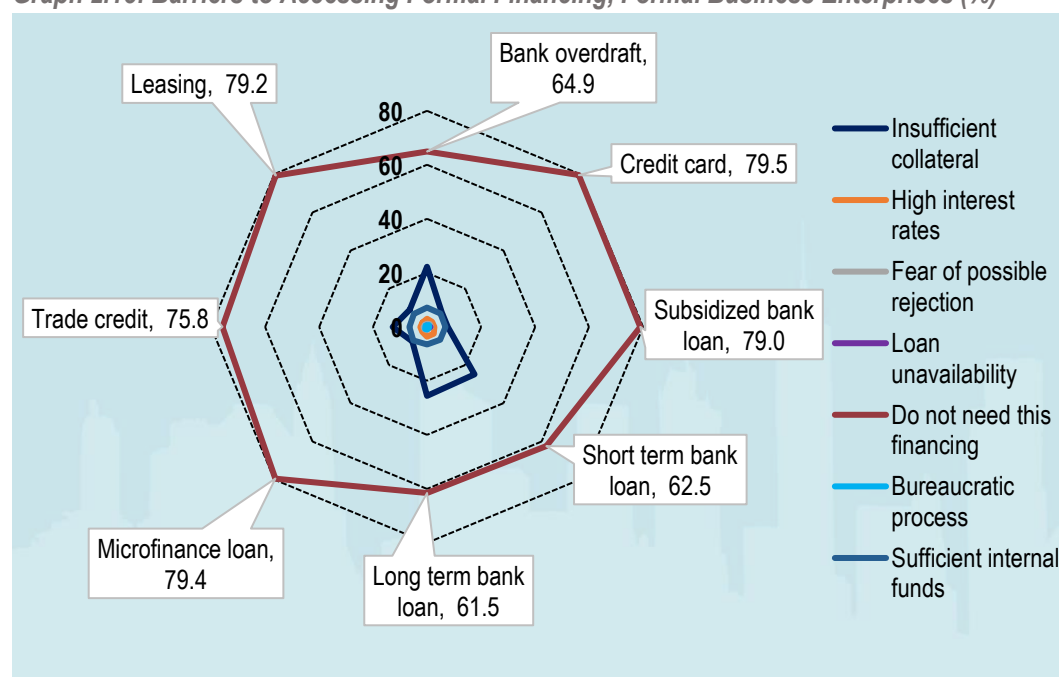
**Graph 2.12: Sources of Financing for Business Enterprises by Business Enterprise Size, % of Business Enterprises**



**With findings illustrating difficulties in accessing finance, Rwandan business enterprises report differences in the barriers to accessing formal finance.** The IBES 2019/2021 identifies several barriers to financing including, loan unavailability, fear of possible rejection, and high interest rates, among others. For formal business enterprises, low demand for available financing options accounts for the highest share (72.7% on average) of the reasons why business enterprises do not access financing (Graph 2.13). This implies that the available forms of financing are not appropriate for formal business enterprises and that business enterprises would prefer other forms of financing. A far second barrier to accessing financing for formal business enterprises is insufficient collateral accounting for about 15% on average. For instance, insufficient collateral accounts for 22.3%, 25%, and 25.6% of the reasons why formal business enterprises do not access bank overdrafts, short-term, and long-term loans respectively. High collateral requirements of around 120%<sup>2</sup> of loan values remain unaffordable to startups, small and informal businesses.

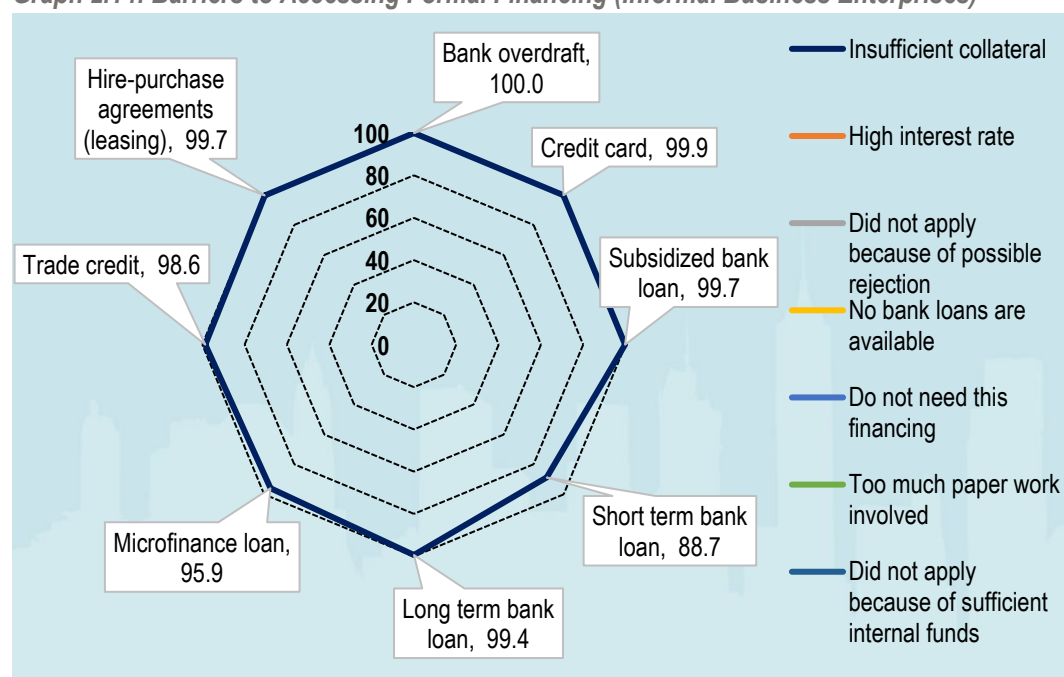
<sup>2</sup> This figure is referenced from a World Bank grant proposal document on access to finance for recovery and resilience project; <https://documents1.worldbank.org/curated/en/278251623981731464/pdf/Rwanda-Access-to-Finance-for-Recovery-and-Resilience-Project.pdf>

Graph 2.13: Barriers to Accessing Formal Financing, Formal Business Enterprises (%)



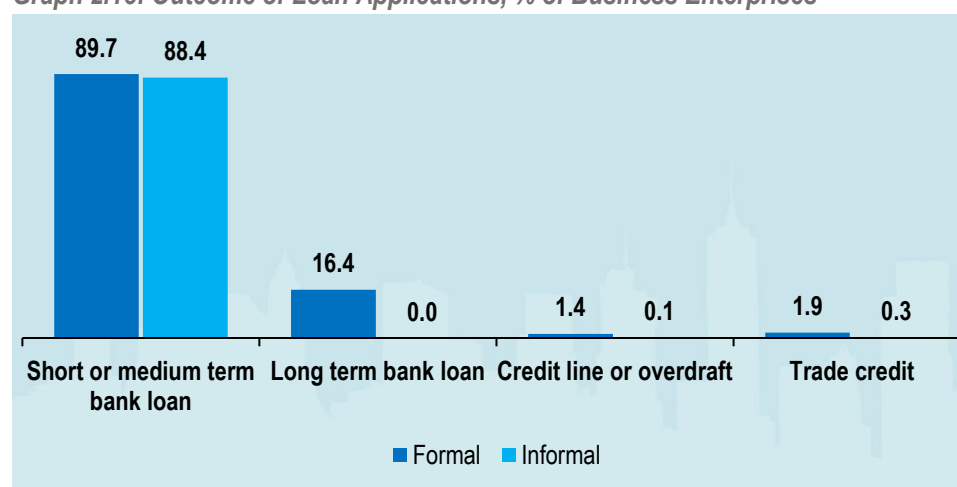
**Informal business enterprises struggle the most with insufficient collateral**, accounting for 97.7% of the reasons the business enterprises do not access formal financing (Graph 2.14). For instance, insufficient collateral was the sole barrier for the access to bank overdrafts by informal business enterprises, and on average accounted for 99% of reasons why business enterprises could not access credit card loans and long-term bank loans. Collateral are key for borrowers looking to access future financing. Collateral may be tangible properties such as real estate, machinery, livestock, tractors and vehicles; or intangible assets such as accounts receivables. However, for informal business enterprises, these assets may be unavailable to them and thus unable to borrow funds against any collateral and are effectively excluded from accessing finance.

**Graph 2.14: Barriers to Accessing Formal Financing (Informal Business Enterprises)**



**Further, business enterprises in Rwanda are unlikely to receive 100% of finance requested for both formal and informal business enterprises (Graph 2.15).** About 90% of formal business enterprises and 88% of informal business enterprises that applied for short or medium-term loans received the full amount requested. While both formal and informal business enterprises have significantly reduced probabilities of receiving long-term loans, credit lines, and trade credit in full, informal business enterprises are more unlikely to be excluded from these forms of financing. For instance, 16.37% of formal business enterprises received long-term bank loans in full as compared to none from the informal sector.

**Graph 2.15: Outcome of Loan Applications, % of Business Enterprises**



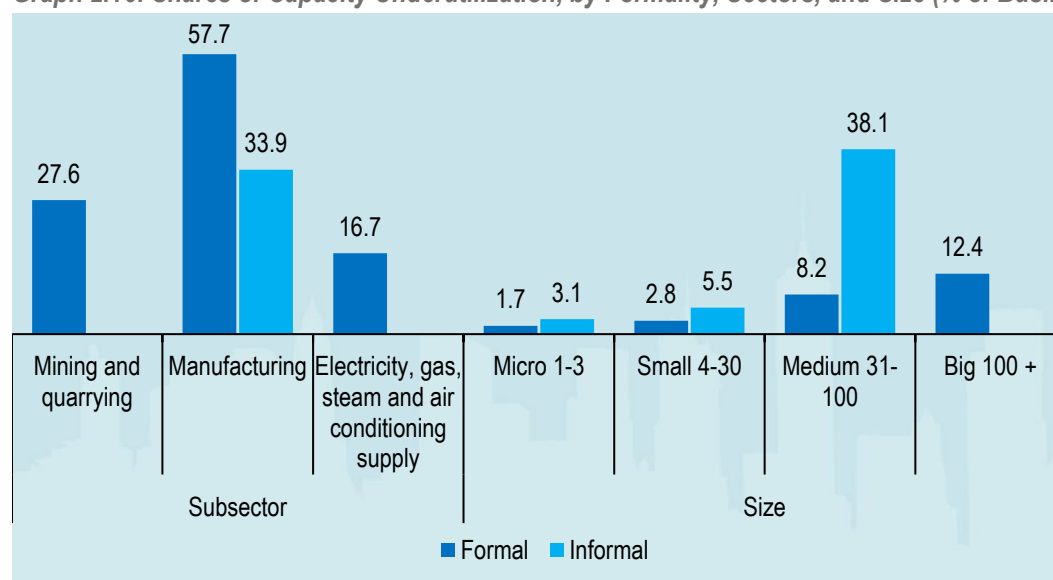


#### 2.1.1.4. Capacity Utilisation

**Capacity utilization is crucial to business enterprise performance and could impact on the share of business enterprises investing in long-term assets, annual labour productivity growth, and sales growth.** Capacity utilization is conceptualized in this report as the extent of production capabilities being utilized by business enterprises at any one given time. It explains the difference between the output produced in a certain period, and the output that could have been produced had the elements of production been working/utilized at full capacity. It further indicates business enterprise efficiency levels by illustrating the extent to which a business enterprise can increase production at the same production cost.

**In production unit business enterprises, capacity underutilization is prevalent more in formal than informal subsectors, excluding mining and quarrying.** Formal business enterprises in the manufacturing sector report the highest shares of capacity underutilization at 57.6% (Graph 2.16), as compared to 27.5% of business enterprises in mining and quarrying. On the other hand, 33.8% and 16.6% of informal business enterprises in manufacturing and electricity and power supply respectively reported underutilization. Further, in the formal sector, capacity underutilization increases with the business enterprise size. 12.44% of big business enterprises experience capacity underutilization as compared to 8.15%, 2.75%, and 1.7% for medium, small, and micro business enterprises respectively.

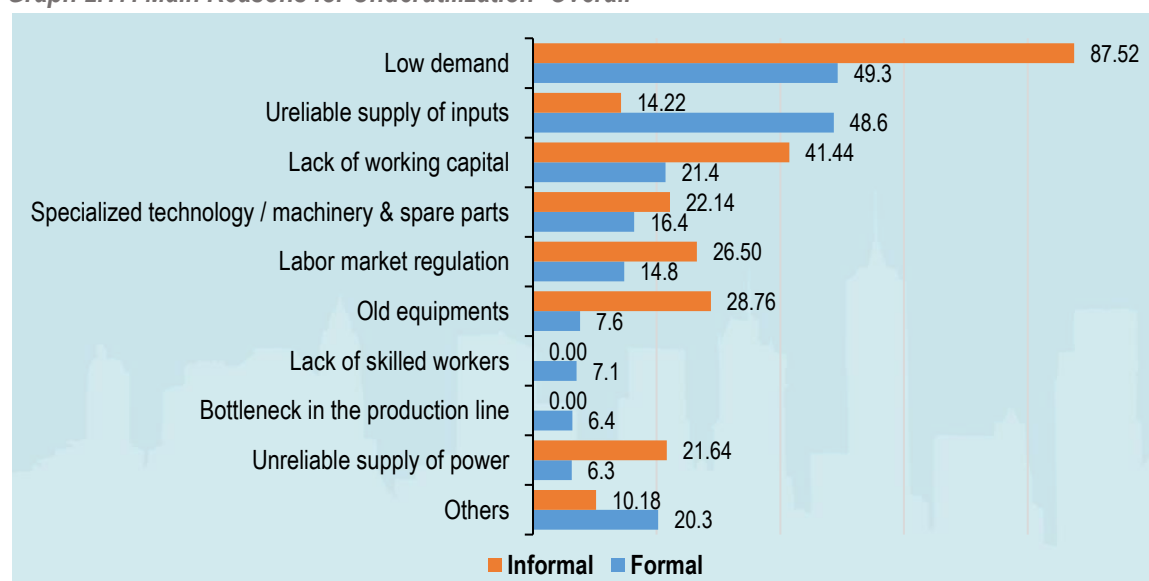
**Graph 2.16: Shares of Capacity Underutilization, by Formality, Sectors, and Size (% of Business Enterprises)**



**There exist differences on the causes of business enterprise underutilization by formality.** For both formal and informal business enterprises, the top reason for capacity underutilization is low demand. 49.3% of formal business enterprises and 87.5% of informal business enterprises reported low demand as the major barrier for full utilization (Graph 2.17). Lack of working capital (41.4% of business enterprises) and old equipment (28.7% of business enterprises) complete the top three in the ranking of the reasons for capacity underutilization for informal business enterprises. For formal business enterprises, 48.6% and 21.4% of

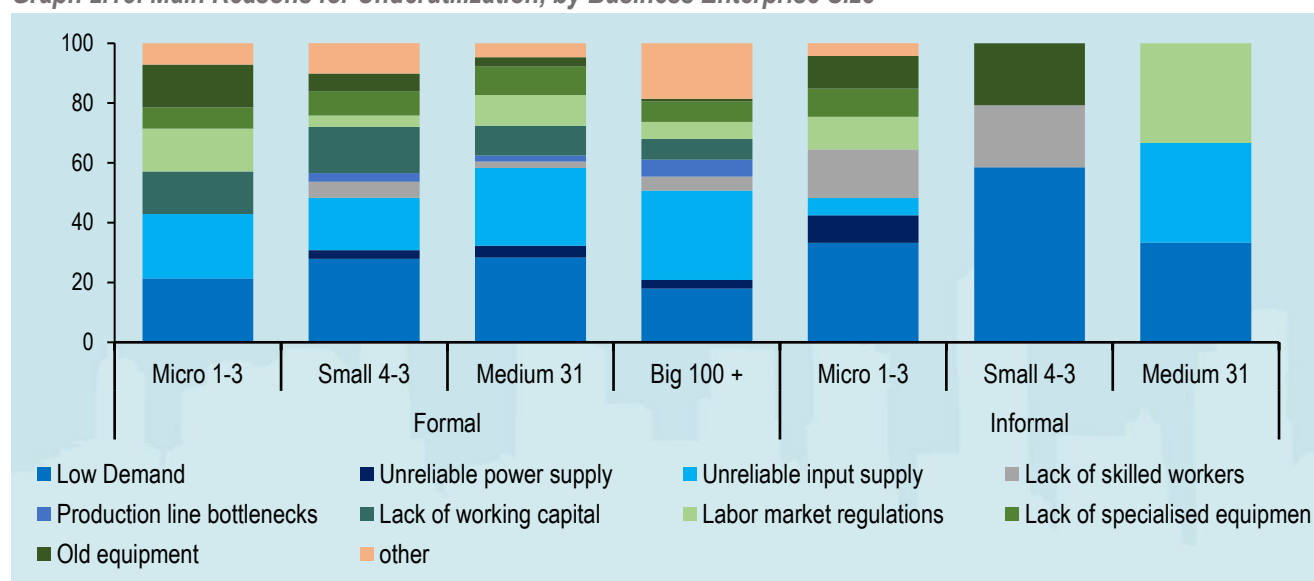
business enterprises further reported an unreliable supply of inputs and a lack of working capital as other major concerns regarding full utilization.

**Graph 2.17: Main Reasons for Underutilization- Overall**



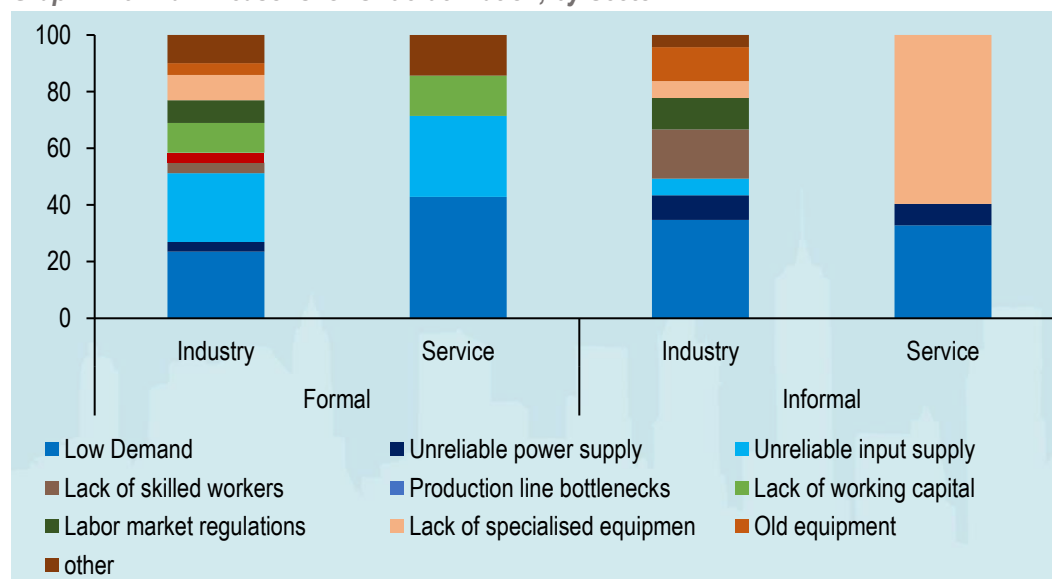
**Barriers of full capacity utilization further differ by business enterprise size and sectors.** Low demand accounts for the highest share of capacity utilization barriers across all business enterprise sizes except for big formal business enterprises. 21.4%, 27.8%, and 28.3% of formal micro, small, and medium business enterprises respectively cite low demand as the top reason for their capacity underutilization challenges, while 30% of big business enterprises cited unreliable input supply. Low demand was also the dominant barrier with 33.3%, 58.4%, and 33% of micro, small, and medium respectively in the informal sector. Other significant barriers for the formal sector include unreliable input supply (micro, small, and medium business enterprises), lack of working capital for small business enterprises, and labour market regulations and old equipment for small business enterprises.

**Graph 2.18: Main Reasons for Underutilization, by Business Enterprise Size**



Similarly, low demand was a dominant barrier of capacity utilization for the formal service sector (42.8% of business enterprises), and the informal industry sector (34.7%). On the other hand, unreliable input supply was the greatest challenge for formal business enterprises in the industry sector (24.2%), business enterprises in the informal service sector cite a lack of specialized equipment and technology (59.6%).

**Graph 2.19: Main Reasons for Underutilization, by Sector**



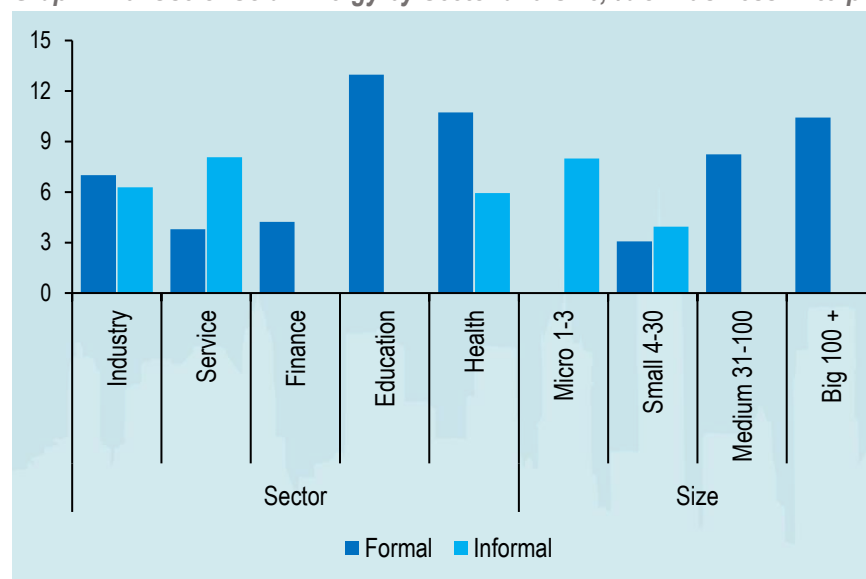
## 2.1.2. Infrastructure and the Environment

### 2.1.2.1. Energy Use and Access to Reliable Power

**The world faces a daunting challenge in climate change and businesses worldwide have a key role to play in adapting to and/or mitigating the effects of climate change.** The transition to sustainable energy, especially in the processes of production is vital to the fight against climate change. This transition is important for several reasons. First, by innovating in low cost and energy-efficient sources, businesses can reduce their operating costs through lower energy costs. Secondly, businesses can attract new investors as energy-conscious business enterprises can be seen as being more innovative. Lastly, business enterprises can attract new customers who regard the reduction of carbon footprints as a worthy cause for the future.

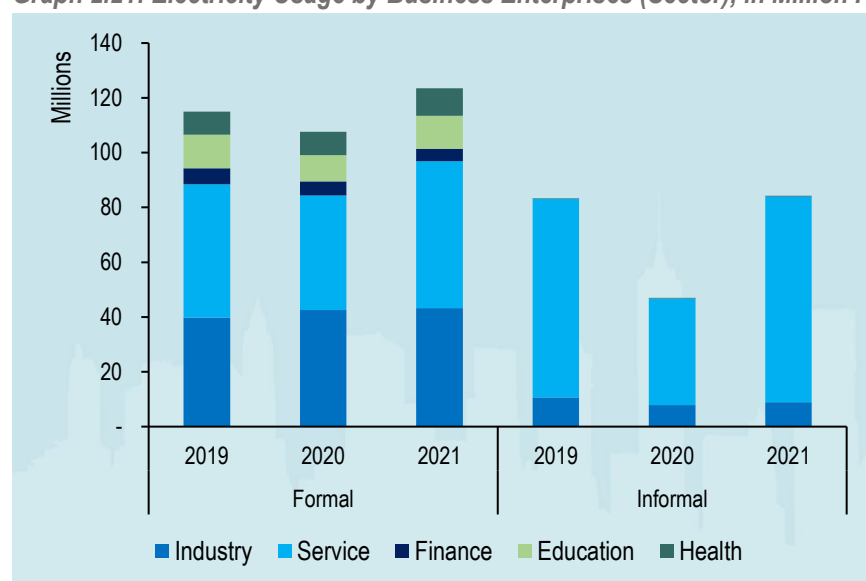
**Rwandan business enterprises exhibit a low capacity for solar energy use.** In fact, on average, only about 6% of business enterprises use solar energy, with more utilization in formal business enterprises (Graph 2.20). The formal education sector has the highest solar energy usage with about 13% of business enterprises, closely followed by formal health business enterprises with about 11% of business enterprises. In the informal sector, 8% of business enterprises in services use solar energy (the highest share) while business enterprises in education and finance do not use any solar power.

**Graph 2.20: Use of Solar Energy by Sector and Size, % of Business Enterprises**

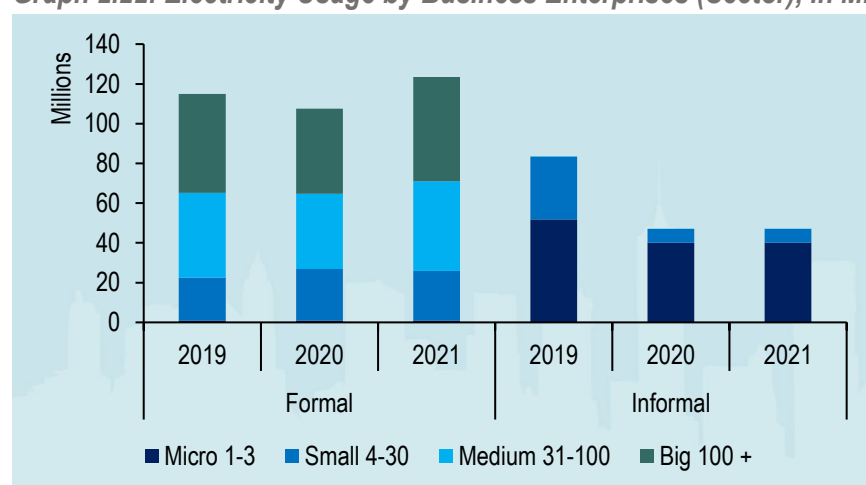


While solar power is not widely used in Rwandan business enterprises, demand for electricity and energy remains high. Graphs 2.21 and 2.22 below illustrates the average use of electricity and power by business enterprises. In 2021, the formal sector increased its electricity consumption by 7% relative to 2019 levels. The formal services and industry sector consume the largest share of electricity, with a combined proportion of about 85%. Furthermore, SMEs in Rwanda account for the highest electricity consumption with about 60% of total consumption, but with medium-sized business enterprises accounting for the larger proportion.

**Graph 2.21: Electricity Usage by Business Enterprises (Sector), in Million Kilowatts**

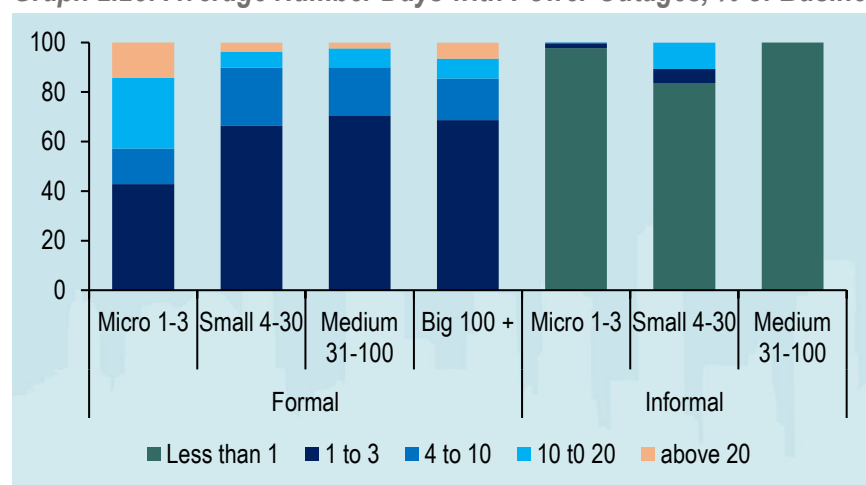


**Graph 2.22: Electricity Usage by Business Enterprises (Sector), in Million Kilowatts**

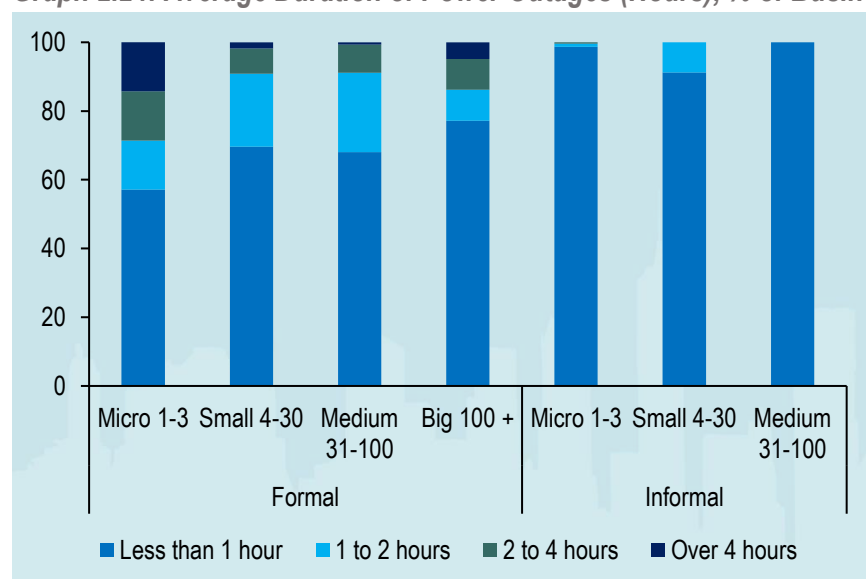


**While electrical usage has increased from 2019 to 2021, its reliability is varied.** Business enterprises still experience power outages which may compromise business enterprise output and productivity. Typically, formal business enterprises experienced power outages 1 to 3 times a month with, for instance, 70.6%, 68%, and 66% of medium-sized, big, and small business enterprises reporting this respectively (Graph 2.23). While about 42% of formal small business enterprises reporting power outages 1 to 3 times a month, a significant share (about 30%) experience outages 10 to 20 times a month. The duration of power outages also slightly varies (Graph 2.24). The informal sector primarily experience less than an hour of outages. In the formal sector, 90.5% of SMEs experience outages for up to two hours on average.

**Graph 2.23: Average Number Days with Power Outages, % of Business Enterprises**



**Graph 2.24: Average Duration of Power Outages (Hours), % of Business Enterprises**

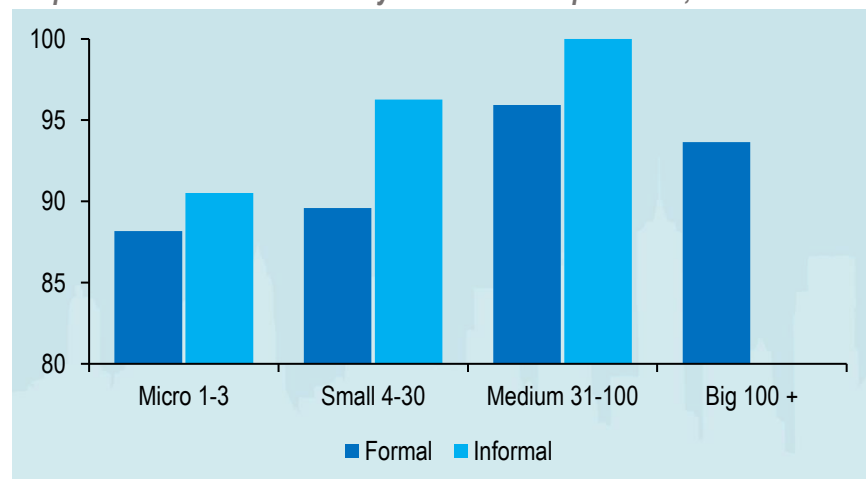


### 2.1.2.2. Environmental Protection

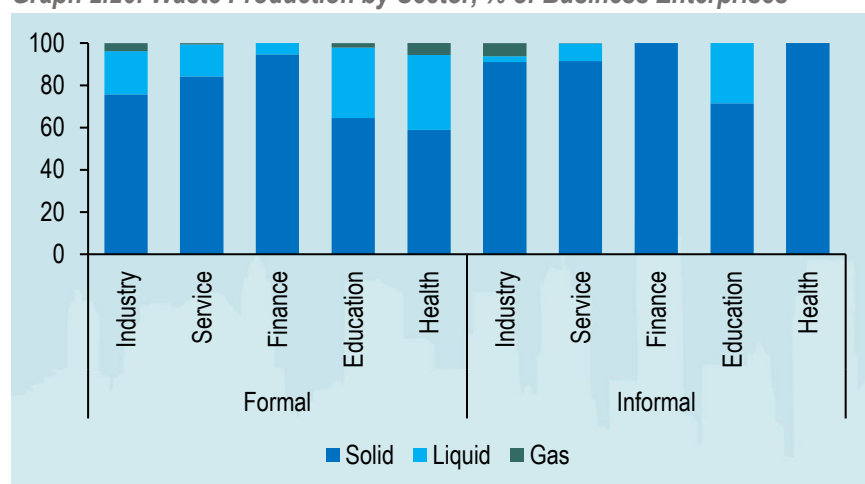
**For businesses, environmental protection can have economic and social benefits both at micro and macro level.** Practices that help conserve the natural environment can help in reducing operating costs through the efficient use of resources and reducing waste. For instance, business enterprises that employ a circular model of production can reduce production costs by reusing and/or recycling materials, and hence reducing their reliance on raw materials. In addition, this reduced reliance on a single source of input increases business enterprise resilience, especially during periods of supply chain disruptions and economic shocks. Environmentally friendly practices may also improve a business enterprise's returns by differentiating it from their competitors and attracting a new and emerging demand from consumers who favor environmentally sensitive practices of production. On a broader scale, environmental protection by business enterprises is important to the overall well-being of people and the planet. Businesses have a crucial role to play in ensuring that production of goods is done within planetary boundaries, preserving the natural environment, and reducing pollution.

In Rwanda, an average of 91.8% of formal business enterprises and 95.5% of informal business enterprises reported producing waste. Overall, the industry sector accounts for the highest shares of waste in all forms, that is, 77.6%, 66.2%, and 39.3% of solid, liquid, and gaseous waste respectively. Graph 2.25 below disaggregates waste production by business enterprise size, illustrating that medium-sized business enterprises in both formal and informal sectors have higher shares of waste production. All Informal medium-sized business enterprises reported to produce some waste, followed by small (96%) and micro (90%) business enterprises. In the formal sector, 95% of business enterprises produces waste, closely followed by big business enterprises (93.6%). Further, the type of waste produced differs across business enterprises. Across all business enterprises, solid waste was the most produced form of waste. The health and education sectors also produced significant shares of liquid waste (as a proportion of their total waste production), accounting for 35% and 33% respectively. Furthermore, formal SMEs accounted for about 74% of all solid waste produced, 76% of liquid, and 60.7% of gas waste produced by Rwanda business enterprises (Graph 2.27).

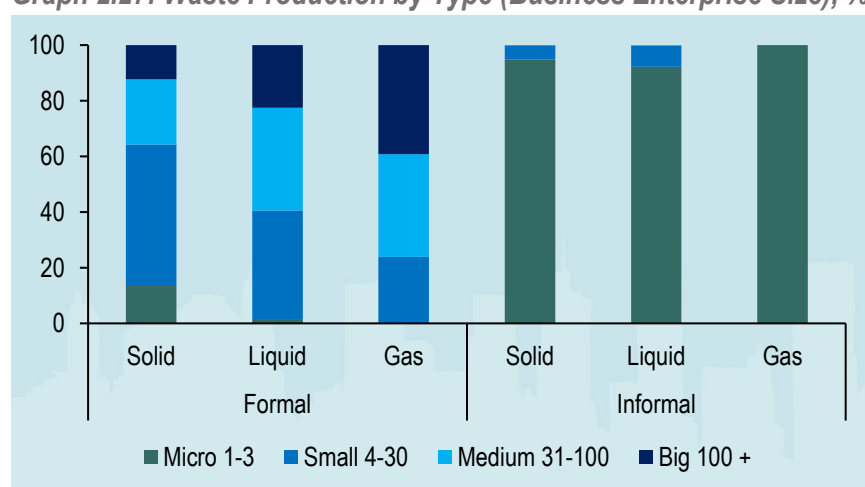
**Graph 2.25: Waste Production by Business Enterprise Size, % of Business Enterprises**



**Graph 2.26: Waste Production by Sector, % of Business Enterprises**



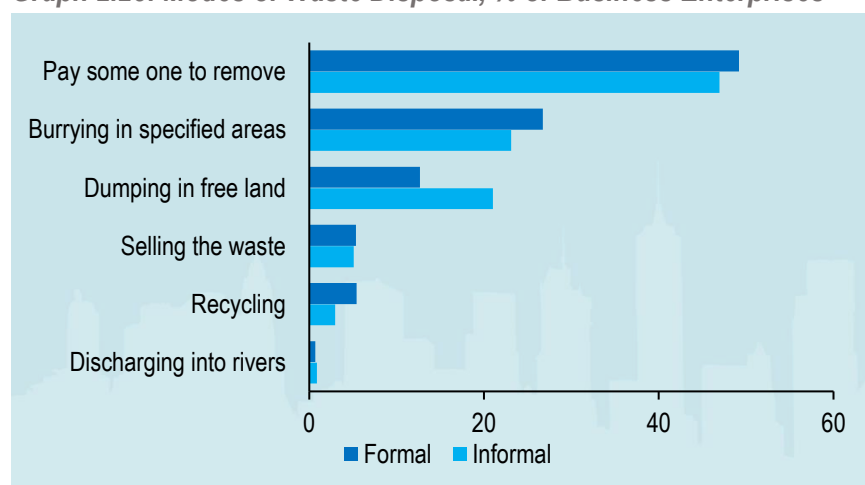
**Graph 2.27: Waste Production by Type (Business Enterprise Size), % of Business Enterprises**



**Business enterprise's modes of waste removal are largely informal and rarely include environmentally friendly practices.** For instance, 49% of formal business enterprises and 47% of informal business enterprises pay someone to dispose waste from their business enterprises (Graph 2.28). The final point of waste disposal is unknown and is thus likely to encourage environmental deterioration in the event the waste is dumped in rivers, landfills, etc. Burying of waste is another common practice by business enterprises which is likely to damage soil ecosystems, with 27% and 23% of formal and informal business enterprises respectively engaging in this practice. Additionally, dumping waste in free land is also a common mode of disposing waste particularly by informal business enterprises (21% of business enterprises).

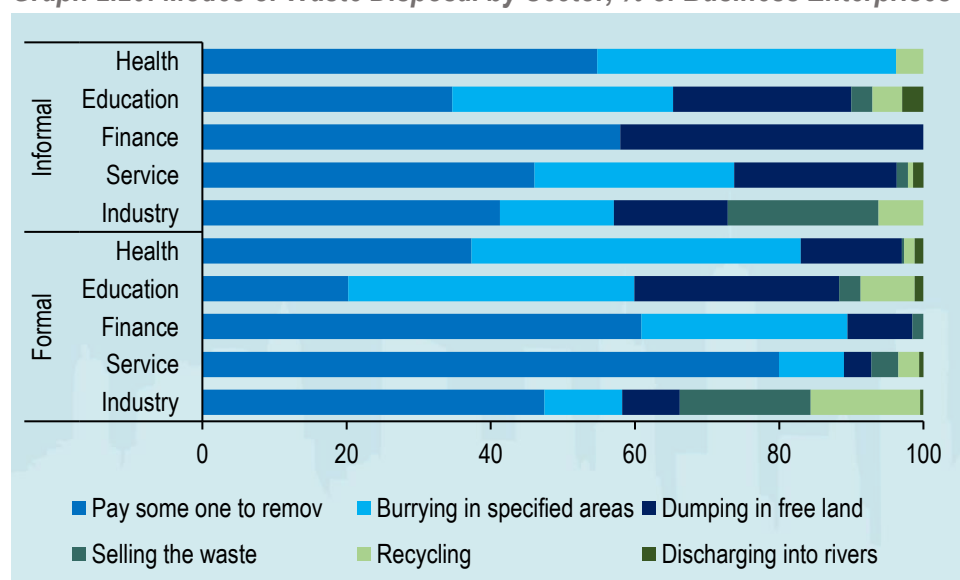


**Graph 2.28: Modes of Waste Disposal, % of Business Enterprises**



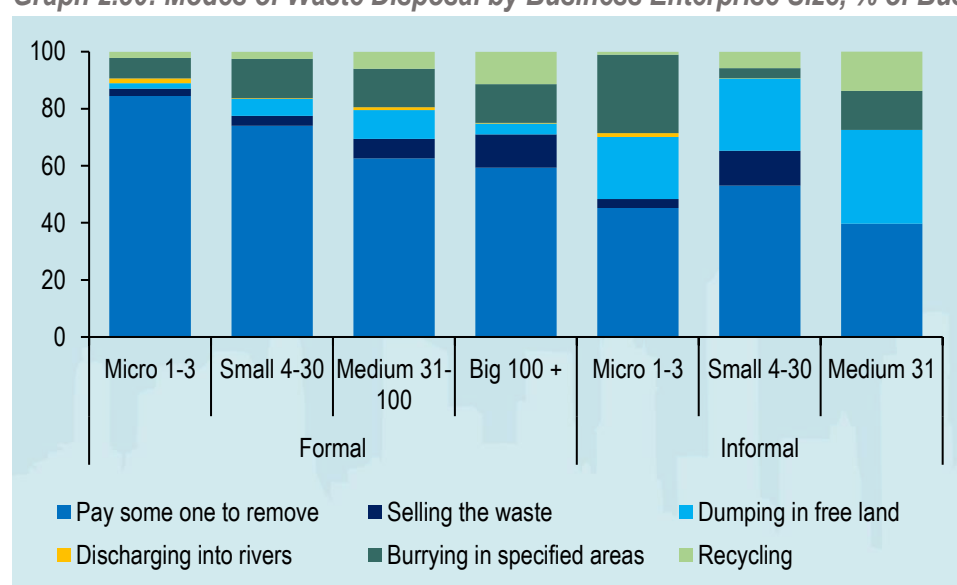
Across all sectors (except for formal education and health), paying external individuals to get rid of business enterprise waste is the most commonly used mode of waste disposal (Graph 2.29). 80% and 61% of formal business enterprises in the service and finance sectors pay individuals to collect waste. This is also the case for almost half of formal industry sector business enterprises, while others in the same sector (18%) sell the waste. Environmentally friendly forms of waste disposal are not common practice with 15% of formal industry sector business enterprises engaging in recycling activities. This represents the highest share of recycling activities of any sector. Education and health sector business enterprises (39.6% and 45.6% respectively) mainly bury their waste in specified areas. Dumping in free land and paying external individuals to dispose of waste are also common practices in the formal education and health sectors. In the informal sector, paying external individuals to dispose the waste is the most common practice across all sectors; industry, 41%, service, 46%, finance, 58%, 34.6%, and health, 54.7%. Burying in specified areas and dumping in free land is also common practice.

**Graph 2.29: Modes of Waste Disposal by Sector, % of Business Enterprises**



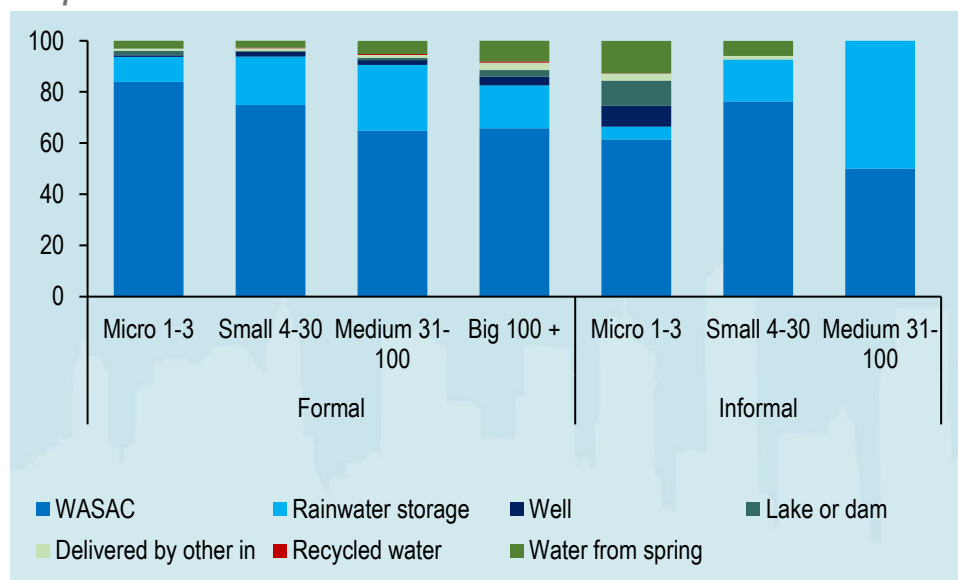
Formal micro business enterprises display the highest shares of payment to external individuals for waste disposal (with 84.4% of business enterprises). While this practice is common across all business enterprise sizes, the proportions reduce as business enterprise size increases, with 59% big business enterprises engaging in the practice as compared to 62.5% and 74% of medium and small business enterprises. The informal sector has a more balanced proportion of waste disposal practices. While paying someone to dispose waste is still the most common practice across business enterprise sizes, dumping in free land is used quite significantly, with 21.8%, 25.4%, and 32.95 of small, medium, and big-sized business enterprises engaging in the practice respectively. As the informal sector is more likely to dump waste into free land, the results suggests that the sector is more likely to contribute to garbage build-up in the country.

**Graph 2.30: Modes of Waste Disposal by Business Enterprise Size, % of Business Enterprises**



Closely linked to waste disposal approaches are the business enterprise's sources of water. Business enterprises across all business enterprise size categories and formality obtain their water from the Water and Sanitation Corporation (WASAC), with 81%, 75%, 64%, and 65.7% of formal micro, small, medium, and big business enterprises connect to the national distributor respectively. Rainwater storage is also a significant source of business enterprises' water, with 50% of informal medium-sized business enterprises storing water for usage. Similarly, 25% of their counterparts in the formal sector store rainwater in various storage facilities, such as tanks.

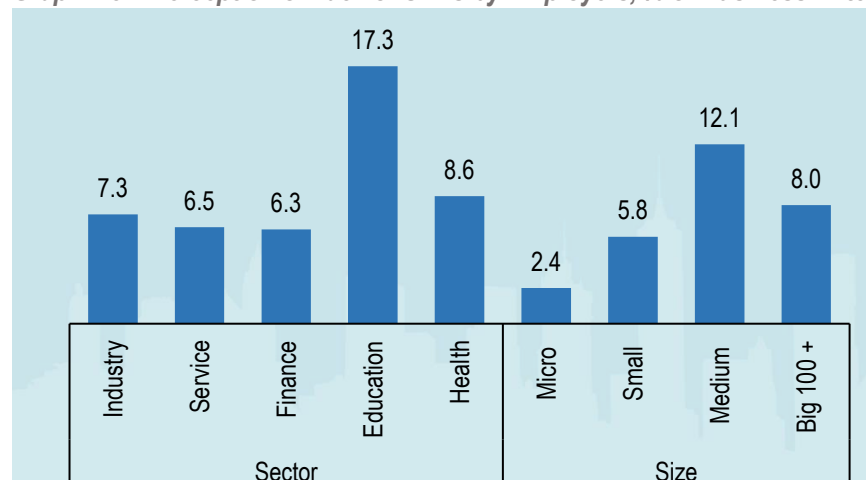
**Graph 2.31: Business Enterprise Water Sources by Business Enterprise Size, % of Business Enterprises**



### 2.1.3. Labour Market

**Employees are an integral part of business enterprises, and their skill-level will significantly determine a business enterprise's efficiency in producing quality output.** According to employers, there exists skill gaps within the labour force, albeit to varying degree amongst sectors and business enterprise size. On average, about 9.2% of employers in all sectors identify gaps in skills necessary to accomplish various tasks. However, the highest perception of skills gap was in the education sector, with 17% of managers reporting an existing gap in skills (Graph 2.32). Analysis by business enterprise size shows that 12.5% of managers in medium business enterprises perceive skills gap in their employees. Seemingly, the share of managers identifying skills gap increases by size. Big companies have, however, a slightly lower managerial perception of skills gap at 7.9% than their counterpart medium-sized business enterprises.

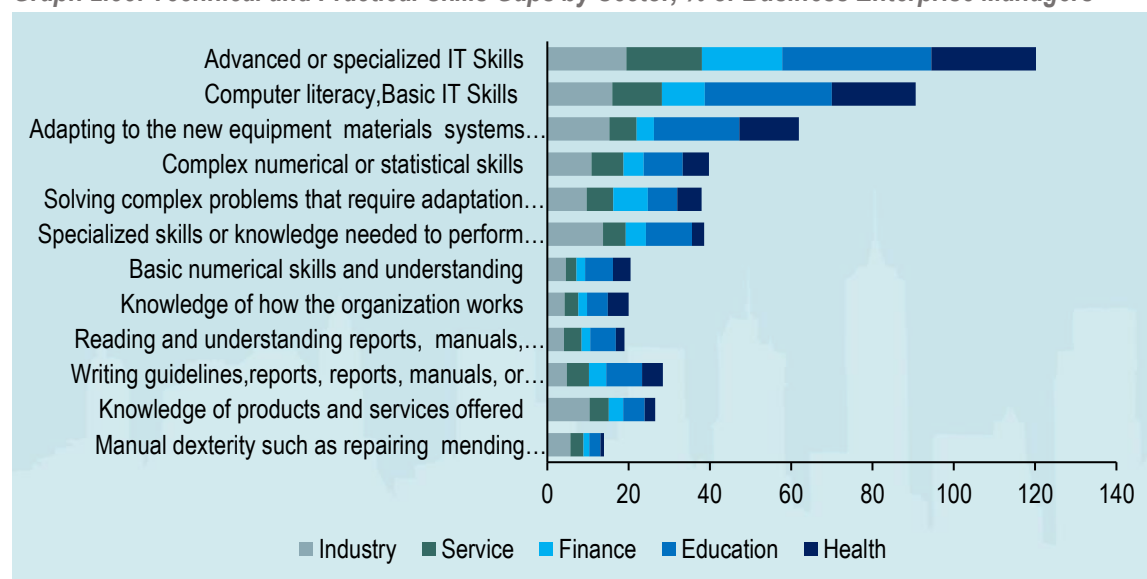
**Graph 2.32: Perception of Lack of Skills by Employers, % of Business Enterprise Managers**



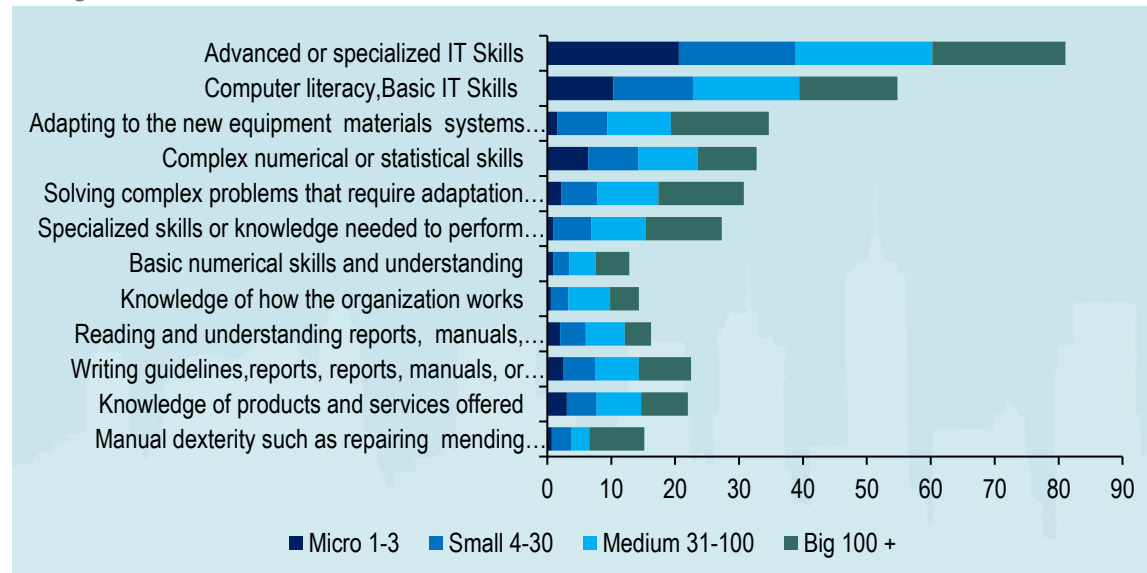
**According to managers, the largest skills gap exists in technology and computer-based areas.** On average, almost 1 in 4 of managers (24%) in all sectors identified gaps in advanced IT skills. The education sector struggles the most with regards to advanced IT skills, with 36.7% of managers reporting a skills gap (Graph 2.33). The health sector also reported significant gaps in IT skills with 25% managers identifying the gap. A further 18% of managers perceive a gap in computer literacy and basic IT skills, with 31% of managers in the education sector identifying this as a gap. Thus, on average, about 42% of managers recognize that employees significantly lack both basic and advanced skills required to carry out their roles. Other relevant gaps include adapting to new technologies with 15%, 14.5% and 21% of managers in the industry, health and education sectors respectively identifying significant gaps. On average, employees in the education sector struggle the most with gaps in technical skills, while those in the finance sector exhibit the least gaps.

Similarly, when disaggregating the results by business enterprise size, the report finds that the largest gaps are in basic and advanced IT skills (Graph 2.34). More managers from medium-size and big business enterprises reported a lack of advanced skills than in any other size category, at 21.37% and 20.82% respectively. 20.5% of managers from micro-sized business enterprises also reported the same. Computer literacy and basic IT skills was identified as another significant area with gaps, affecting medium-sized and big business enterprises the most (16.6% and 15.4% of managers respectively). Employees from big business enterprises also struggle with skills relating to adapting to new equipment, systems, or technologies, creatively and innovatively solving complex problems, and specialized skills/knowledge with 15.36%, 13.4%, and 11.8% of managers reporting concerns in these areas respectively.

**Graph 2.33: Technical and Practical Skills Gaps by Sector, % of Business Enterprise Managers**



**Graph 2.34: Technical and Practical Skills Gaps by Business Enterprise Size, % of Business Enterprise Managers**



**Further, managers have identified certain gaps in interpersonal skills amongst Rwandan employees.**

On average, the top three skills gap concern form sector-wide managers are time management and task prioritization, ability to instruct/teach, and public presentation skills, with 11%, 7.2%, and 6.4% of managers identifying significant gaps respectively (Graph 2.35). Employees from the education and industry sectors struggle the most with time management and ability to instruct, followed by those in the health and service sectors. Overall, the finance sector has the least concerns with regards to gaps in skills required to carry out their tasks with only 4.15% of managers expressing concern, while the industry sector struggles the most with interpersonal skills.

**Graph 2.35: Interpersonal/Soft Skills Gaps by Sector, % of Business Enterprises**



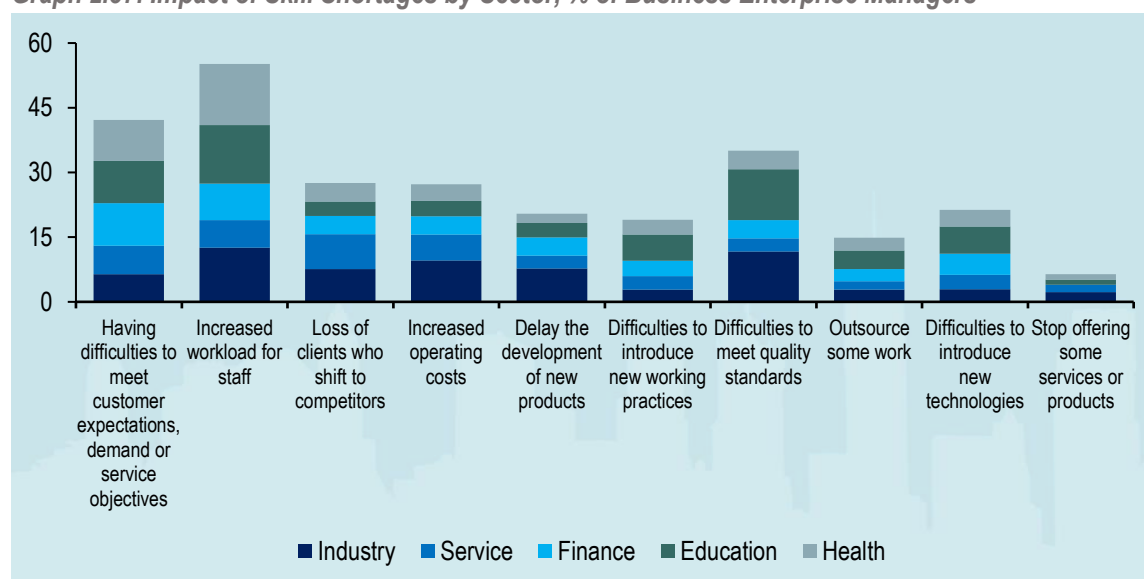
Interestingly, results analyzed by business enterprise size reveal that in all skill categories, concerns in skill-set gaps increase by business enterprise size. For instance, 15.7% of managers in big business enterprises identify significant gaps in their employees' ability for time management as compared to 5.3%, 9.64%, and 10.6% in micro business enterprises and SMEs respectively. The same is exhibited in employees' emotional intelligence with 11.67% of managers citing it as a concern, as compared to 2.165, 3.65%, 7.15% of managers in micro, small, and medium business enterprises respectively.

**Graph 2.36: Interpersonal/Soft Skills Gaps by Size, % of Business Enterprise Managers**



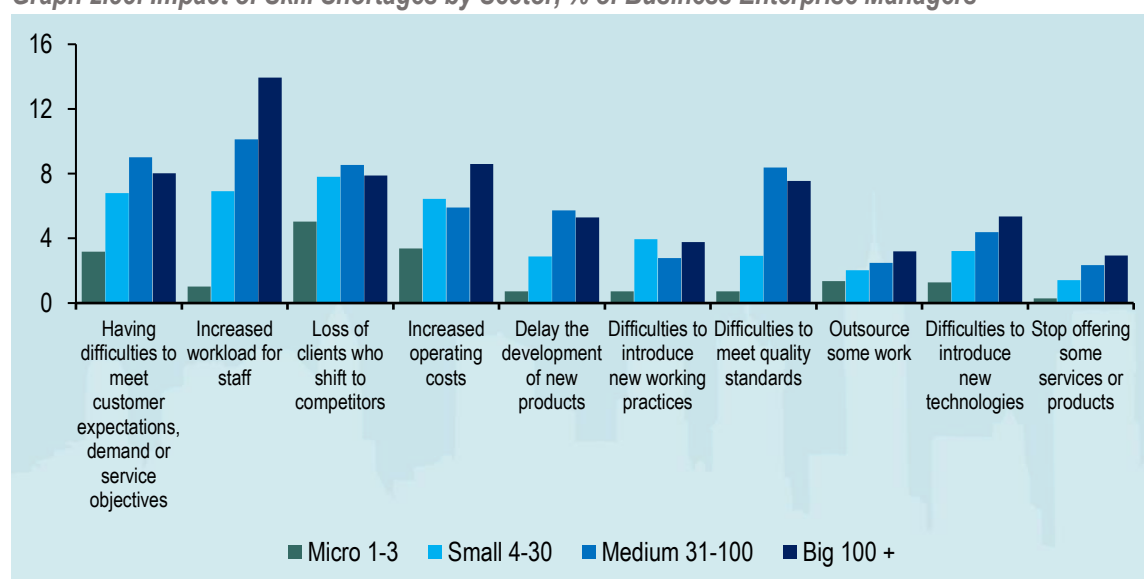
**As a result of the gaps in numerous crucial skills, business enterprise managers have identified the major impacts skill gaps (Graph 2.37).** On average, managers identified increased staff workload (11%), difficulties meeting customer expectations, (8.4%), and difficulties meeting quality standards as the main impacts of the skills gaps in business enterprises. In particular, education and industry sectors identified the most significant impacts on staff workload (13.5% and 12.5% respectively) and difficulties in meeting quality standards (11.8% and 11.7% respectively). While the service sector on average had the least share of management perception of negative impacts of skills gaps, it struggled the most with loss of clients to competitors, with 8% of managers reporting this effect. Similarly, in the finance sector, managers identified difficulties in meeting customer expectations (9.9% of managers) and increased staff workload as the main impacts of skill shortages.

**Graph 2.37: Impact of Skill Shortages by Sector, % of Business Enterprise Managers**



Findings further reveal that impacts significantly vary by business enterprise size (Graph 2.38). On average, however, managers reported increased staff workload (8%), loss of clients (7.3%), and difficulties in meeting customer expectations as the most significant impacts of skills gaps. For micro business enterprises, the largest impact concern was loss of clients and increased operating costs. For SMEs, managers identified increased staff workload as the major impact reported by 7% and 10% of small and medium-sized business enterprises respectively.

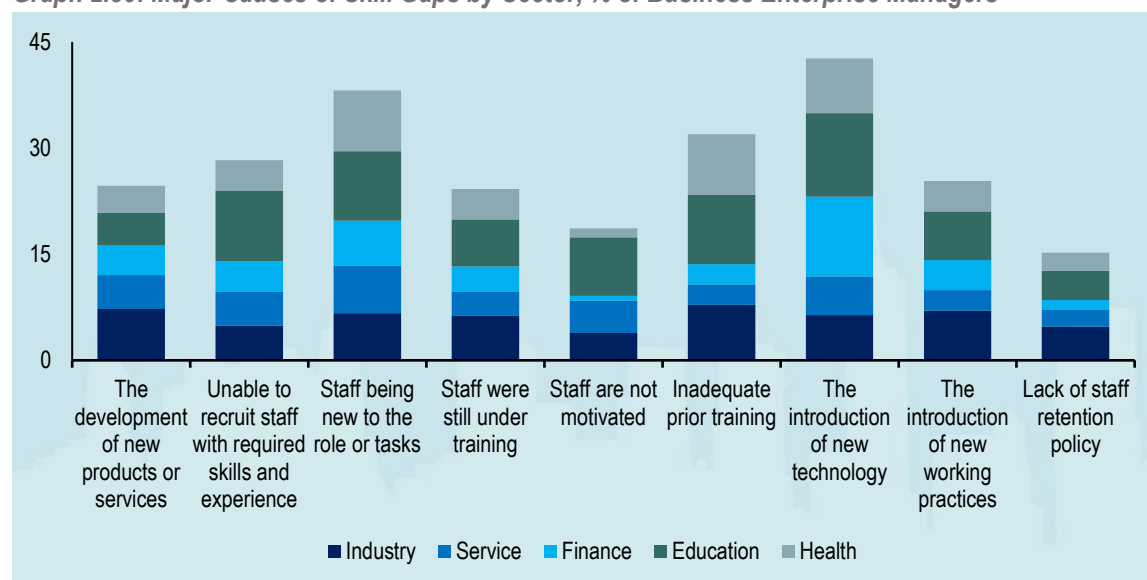
**Graph 2.38: Impact of Skill Shortages by Sector, % of Business Enterprise Managers**



**The report analysis investigates the causes of discussed skills gaps and finds that the main drivers are related to adaptability capacities (Graph 2.39).** On average, the main causes of skills gaps in Rwandan business enterprises are difficulties arising from introducing new technologies, slow adaptation process to new roles, and inadequate training as reported by 8.5%, 7.6%, and 6.4% of sector managers respectively.

Both the finance and education sectors cited the introduction of new technologies as the main cause of skills gaps as reported by 11.3% and 11.8% of sector managers respectively. On the other hand, 7.8% and 8.6% of managers in the industry and health sector reported inadequate training as the main cause of skills shortages respectively.

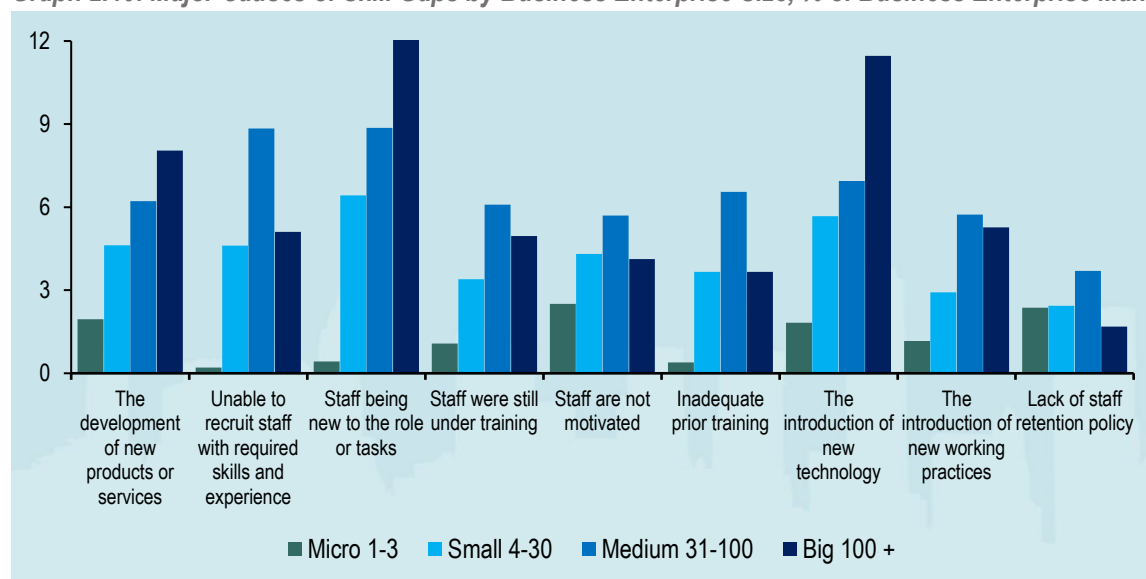
**Graph 2.39: Major Causes of Skill Gaps by Sector, % of Business Enterprise Managers**



In terms of size, managers identified the introduction of new technologies (6.4% of managers), introduction of new products (5.2%), and the inability to recruit skilled staff (4.7%) as the main reasons for skill shortages (Graph 2.40). The lack of motivation and drive amongst employees in micro business enterprises was identified as the major cause for skills gaps, while new roles and tasks was a major concern for SMEs. Similarly, adaptability to new roles/tasks, and technologies was identified as the top two causes for skill gaps in big business enterprises.

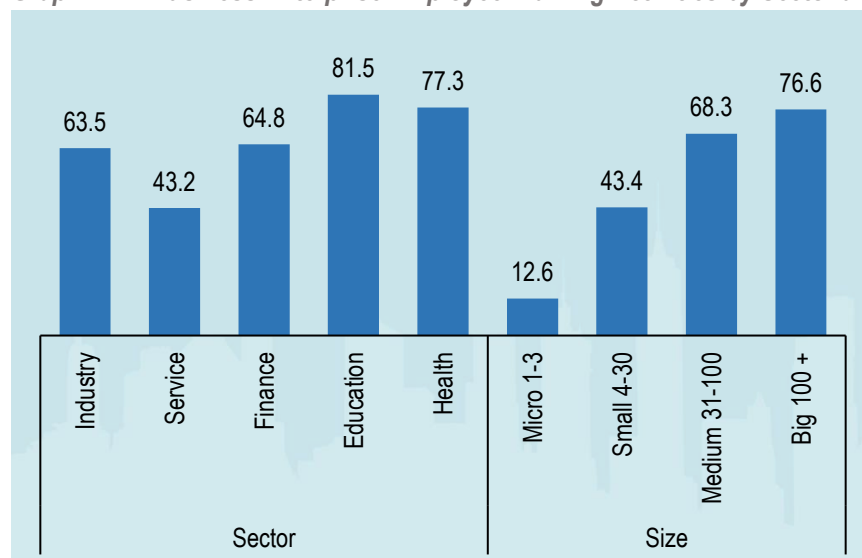


**Graph 2.40: Major Causes of Skill Gaps by Business Enterprise Size, % of Business Enterprise Managers**



***In the face of the challenges in shortage of required skills, business enterprises in Rwanda have been facilitating staff training activities.*** Graph 2.41 below illustrates the proportions of business enterprises investing in training for their employees. Education and health sectors exhibited the highest share of business enterprises training their staff with 81% and 77% of business enterprises respectively. The service sector conducted the least Staff trainings, with only 43% of service sector business enterprises providing any training sessions.

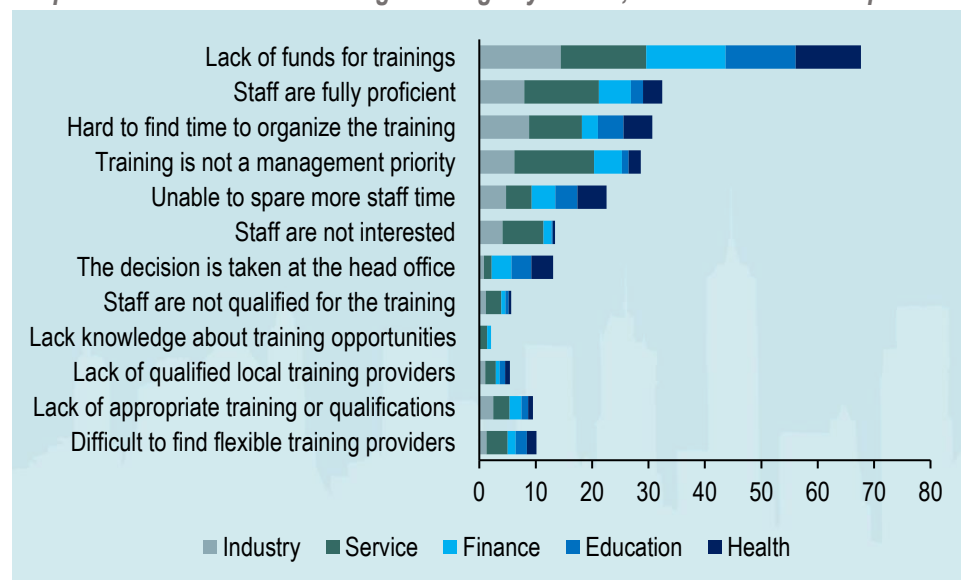
**Graph 2.41: Business Enterprise Employee Training Activities by Sector and Size, % of Business Enterprises**



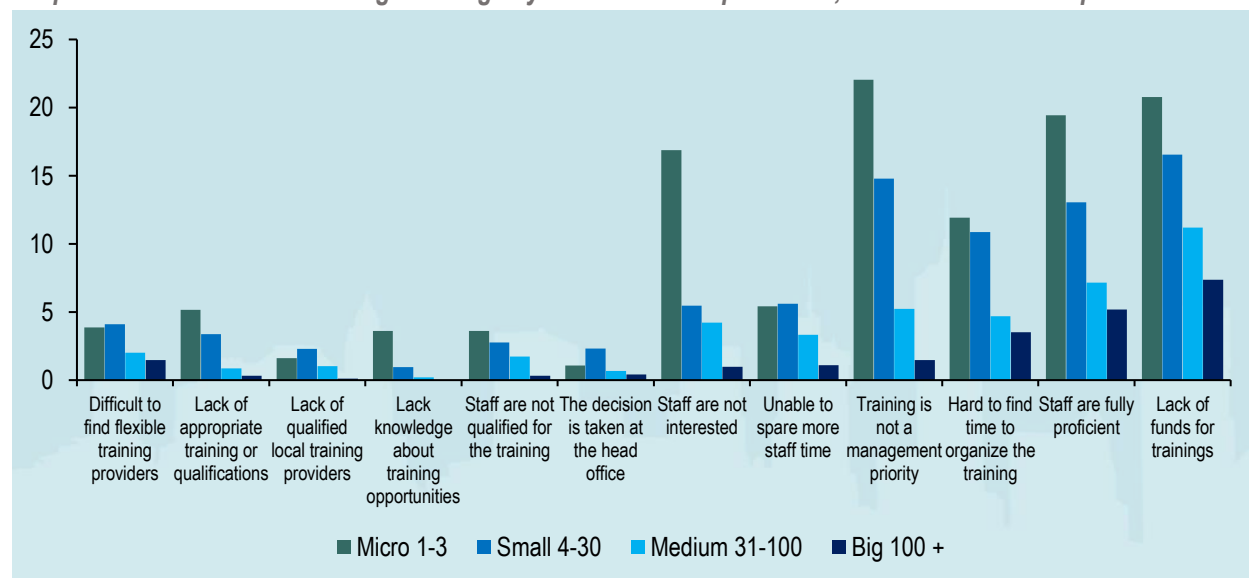
On average, a lack of training funding as the main reason for business enterprises not conducting staff training, with 14.4% of managers reporting. 15% of service managers reported a shortage of funds for training as the top barrier. Other significant reasons include the proficiency of staff, and therefore, no urgent need to carry out any training. Similarly, on average, a lack of funding for training was the top barrier to providing any

training while disaggregating results by business enterprise size (Graph 2.42). However, the impact was largest in smaller business enterprises, with 20.7%, 16.6%, and 11.2% of micro, small and medium business enterprises -citing funding a barrier respectively. This is compared to only 7.4% of big business enterprises. Further, for micro-business enterprises, training was simply not a priority for management with 225 of managers citing this as the main reason for a lack of training. Staff disinterest in training is another significant barrier (16.9% of managers).

**Graph 2.42: Barriers to Providing Trainings by Sector, % of Business Enterprise Managers**



**Graph 2.43: Barriers to Providing Trainings by Business Enterprise Size, % of Business Enterprises**



### 3. BUSINESS PERFORMANCE

This section will measure business performance by looking at several indicators including income, employment growth, and asset growth. Performance metrics will further be disaggregated by sector and size. It will start by analysis of the perception of the impact of COVID-19 on Rwandan business enterprises, and the extent to which business enterprises accessed pandemic relief.

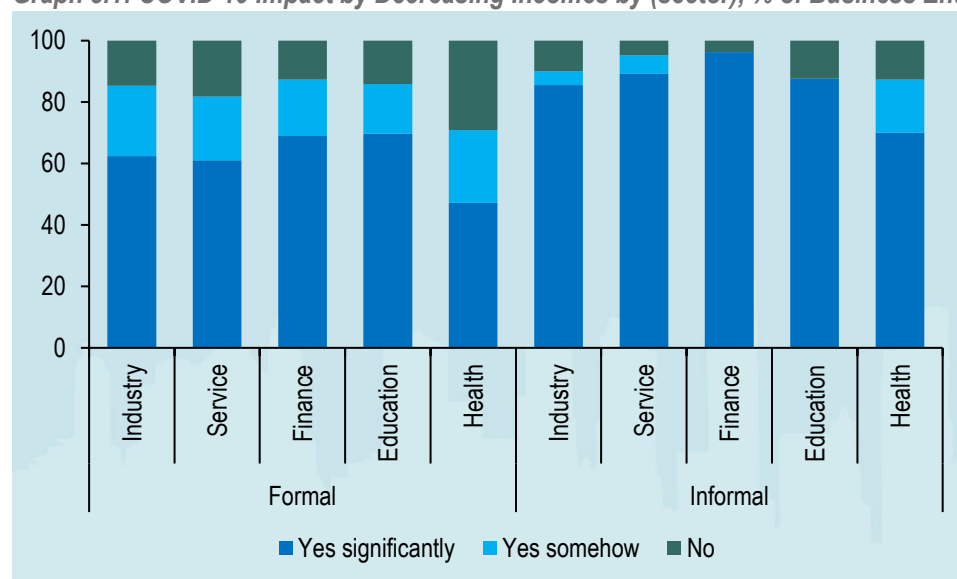
#### 3.1. COVID-19 and Rwandan Business Enterprises

***When the COVID-19 pandemic hit, the world was forced to grapple with both health and economic crises.*** Governments around the world instituted policies to limit the spread of the corona virus including social distancing measures, closure of learning institutions, working from home measures, and limited movement amongst others. Such measures had a significant impact on businesses, disrupting supply chains and forcing businesses to reduce their operations resulting in significant financial losses and, in some cases, worker layoffs. This subsection will discuss the perceived impacts of the pandemic on Rwandan businesses and the extent to which government support during the pandemic reached vulnerable business enterprises and sectors.

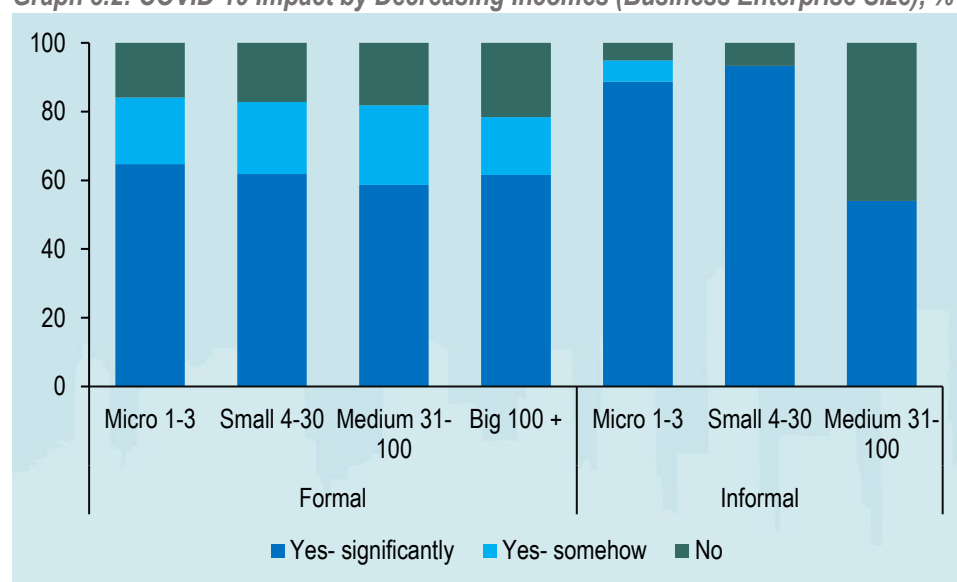
***The COVID-19 pandemic had disproportionate impacts on the informal sector.*** On average about 90.2% of business enterprises in the informal sector experienced a decrease in income, with 85.7% and 5.5% reporting the impacts as significant and somehow significant. This is compared to 81% of business enterprises in the formal sector. Compared to the 85.7% in the informal sector, 61.8% of formal business enterprises described the decreases as significant. Impacts varied across sectors. In the formal sector, business enterprises in the education sector were particularly impacted with 69.7% of business enterprises reporting significant income losses, closely followed by business enterprises in the finance sector with 69% (Graph 3.1). Business enterprises in the health sector exhibited the least financial hit, with 47% of business enterprises reporting significant income decreases. On the other hand, the finance sector in the informal sector was worst hit, with 96% of business enterprises reporting significant income losses, closely followed by the service and industry sectors with 89% and 85% of business enterprises respectively.

***Analysis by size reveals differential impacts, with business enterprises in the informal sector being disproportionately impacted.*** 93% and 89% of small and micro business enterprises in the informal sector reported significant income decreases. Similarly, in the formal sector, micro-sized and small business enterprises were most impacted with 64.5% and 62% of business enterprises reporting significant income losses.

**Graph 3.1: COVID-19 Impact by Decreasing Incomes by (sector), % of Business Enterprises**

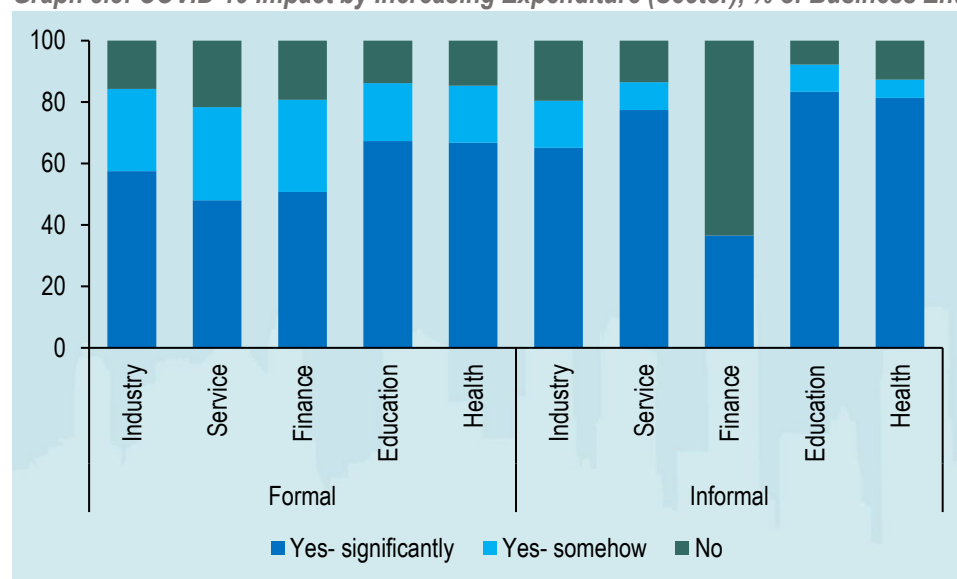


**Graph 3.2: COVID-19 Impact by Decreasing Incomes (Business Enterprise Size), % of Business Enterprises**

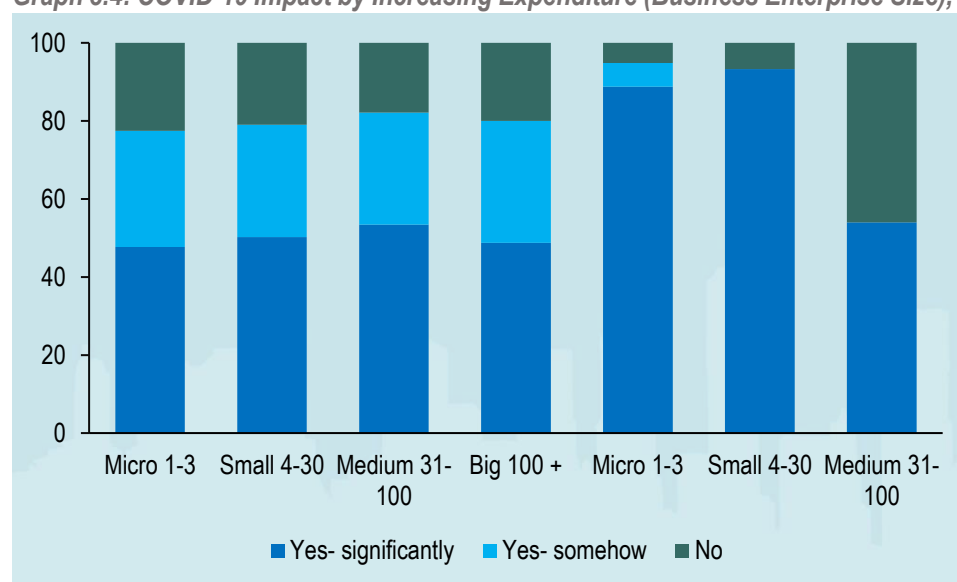


**The COVID-19 pandemic also resulted in expenditures increases across business enterprises with more business enterprises in the informal sector reporting increases than in the formal sector.** 83%, 81%, and 77% of informal business enterprises in education, health, and service respectively experienced an increase in expenditures, as are 65% and 36% of business enterprises in industry and finance. There were significantly less business enterprise shares of expenditure increases reported in the formal sector. 67% and 66% of business enterprises in education and health, reported expenditure increases, with only half of business enterprises in the finance sector reporting the same. Analysis by size shows larger vulnerabilities in the informal sector with 93% and 88% of small and micro business enterprises reporting significant expenditure increases. Meanwhile, in the formal sector, 53% and 50% of medium-sized and small business enterprises respectively reported expenditure increases.

**Graph 3.3: COVID-19 Impact by Increasing Expenditure (Sector), % of Business Enterprises**

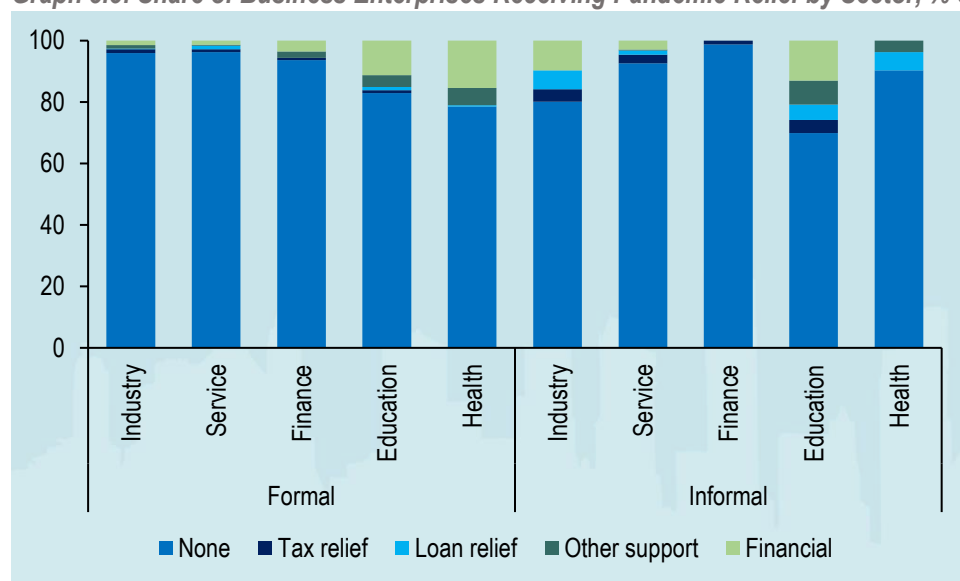


**Graph 3.4: COVID-19 Impact by Increasing Expenditure (Business Enterprise Size), % of Business Enterprises**

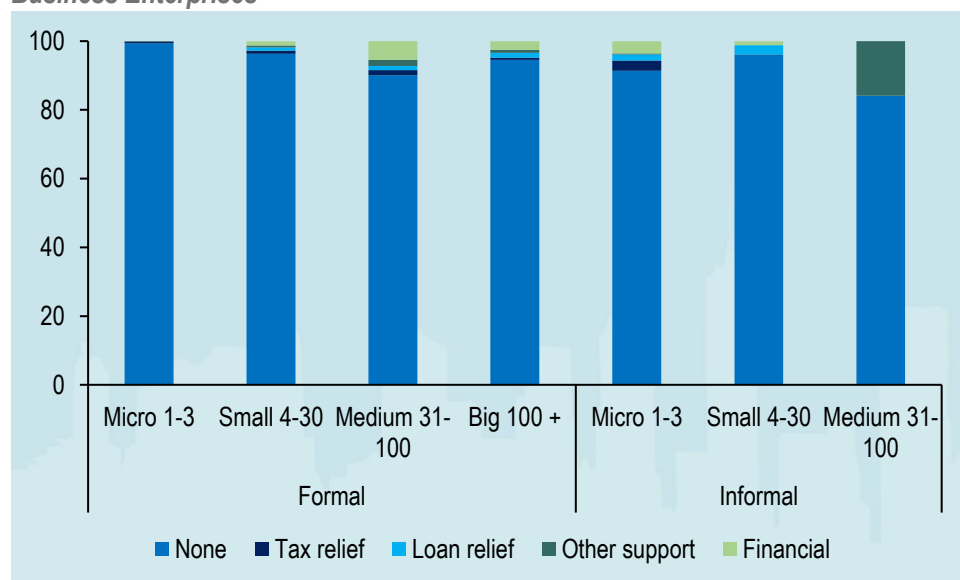


**With clear vulnerabilities to the COVID-19 pandemic, analysis reveals that business enterprises barely received any relief to cushion against the ravaging effects of the pandemic.** Over 90% of formal business enterprises in service, industry, and finance did not receive any pandemic relief. Only 11% and 15% of formal business enterprises in education and health respectively received financial support. In the informal sector, only 13% and 9.6% of educational and service business enterprises received financial support. Similarly, over 90% of formal micro, SMEs, and big business enterprises did not receive any relief, while only 16% of medium-sized business enterprises received support in other forms.

**Graph 3.5: Share of Business Enterprises Receiving Pandemic Relief by Sector, % of Business Enterprises**



**Graph 3.6: Share of Business Enterprises Receiving Pandemic Relief by Business Enterprise Size, % of Business Enterprises**

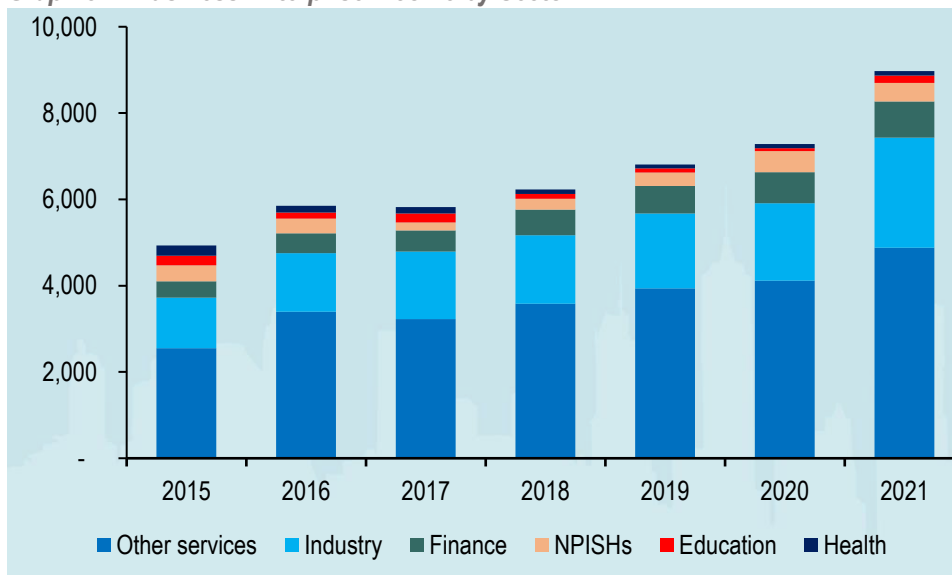


### 3.2. Formal Sector Performance

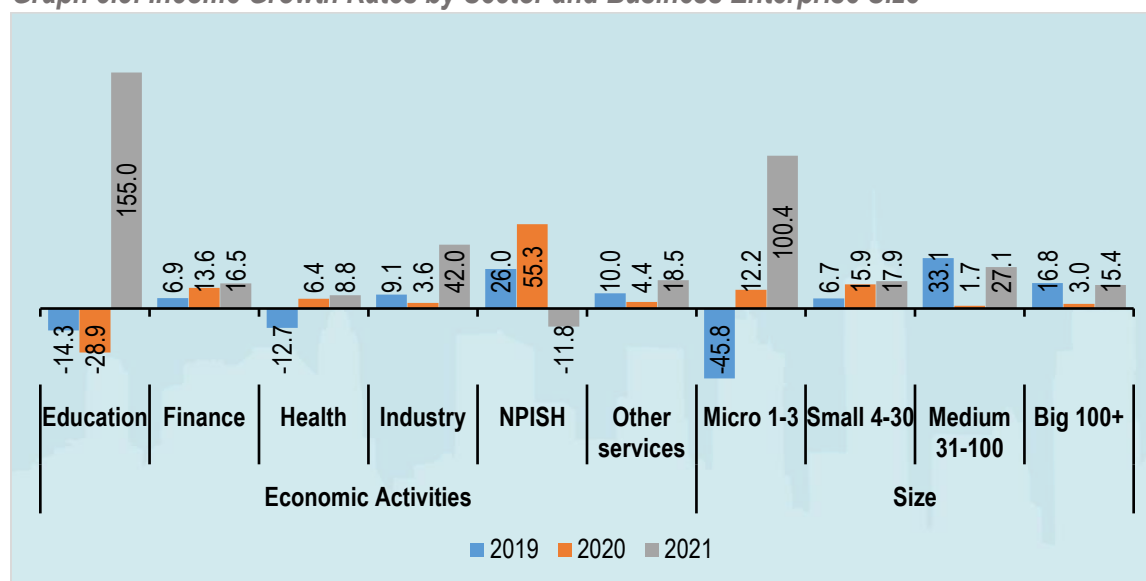
#### 3.2.1. Business Enterprise Income

***Rwandan business enterprises experienced contracted income growth in 2020 as compared to 2019, but with a stronger rebound in 2021.*** In absolute terms, incomes grew from RWF 6,808 billion in 2019 to RWF 7,282 in 2020 and RWF 8,974 billion in 2021 (Graph 3.7). However, while business enterprises' income grew by 15.55% in 2019, they slowed down to 7% in 2020 and grew an impressive 23.2% in 2021. Further, analysis reveals that the education sector experienced the largest slump in 2020 with incomes falling by 29%, likely due to the closures as a result of the COVID-19 pandemic (Graph 3.8). However, this may have been exacerbated by a downward momentum as incomes fell 14.3% in 2019. The sector, however, experienced a very strong rebound in 2021 with incomes growing by a whopping 155%. The finance and health sectors registered growth albeit in modest rates 2020 and 2021, growing 13.6% and 16.5%, and 6.4% and 8.8% respectively.

**Graph 3.7: Business Enterprise Income by Sector**

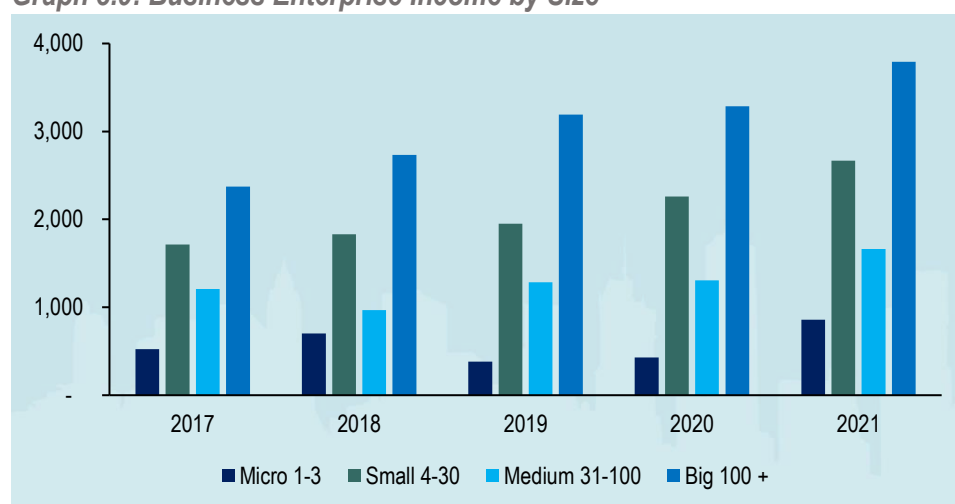


**Graph 3.8: Income Growth Rates by Sector and Business Enterprise Size**



**Business performance showed strong differentials by business enterprise size.** While micro business enterprises experienced depressed incomes in 2019 (falling by 45.8%), they regained a growth momentum in 2020 with incomes increasing by 12.2% and an eventual ballooning by 100.4% in 2021 (Graph 3.8). Small business enterprises registered steady but modest growth rates as compared to micro business enterprises, growing by 6.7%, 15.9%, and 17.9% in 2019, 2020, and 2021 respectively. Medium and big business enterprises experienced a “U-shaped” growth trajectory in the same period. Both business enterprise categories registered relatively strong income growth rates in 2019, with medium and big business enterprise incomes growing by 33.3% and 16.8% respectively. However, both registered deep growth declines in 2020, with incomes decreasing to 1.7% and 3% growth rates by medium and big business enterprises respectively. Both business enterprise categories experienced impressive rebounds in 2021 (although not to 2019 levels), with incomes growing 16.8% and 15.4% for medium and big business enterprises respectively.

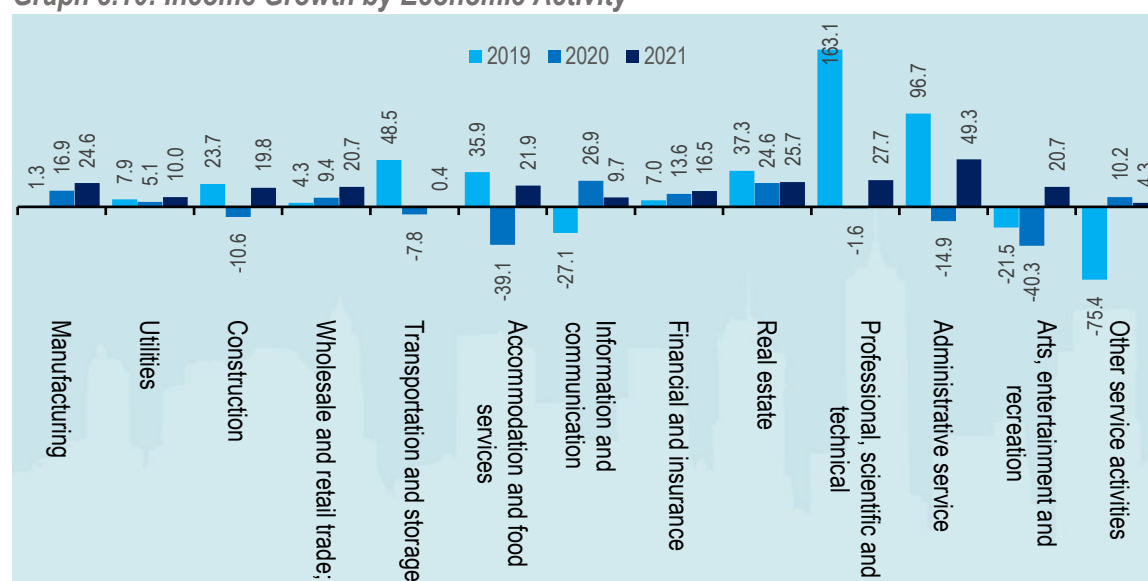
**Graph 3.9: Business Enterprise Income by Size**





**Further disaggregation reveals differences in income growth rates by economic activity, particularly in 2020.** Activities in mining, communication, and other services, contracted in 2019 by 49%, 27%, and 75% respectively. Mining sustained further contractions in 2020 by 4.7%, while communication and other services rebounded albeit modestly. In 2020, activities in the accommodation and food services and in the arts, entertainment and recreation experienced the largest decrease in income growth rates, falling 39% and 40% respectively. This decline is likely due to the economic headwinds as a result of the COVID-19 pandemic and supply chain challenges. Both sub-categories of economic activities however registered positive income growth rates of 22% and 20% respectively in 2021. All economic activity groups registered positive income growth rates in 2021, with mining and administrative and support services growing the largest by 460% and 49% respectively.

**Graph 3.10: Income Growth by Economic Activity**



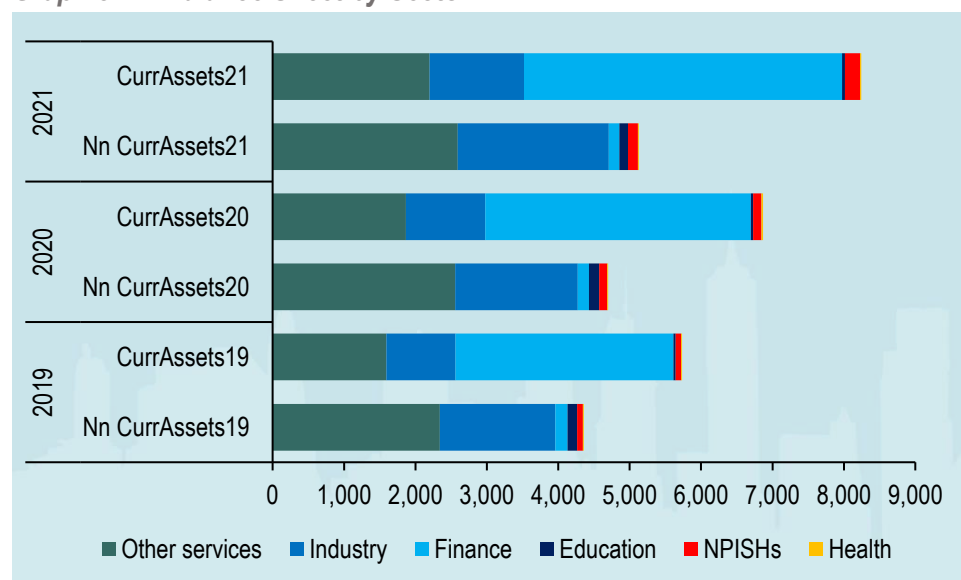
### 3.2.2. Balance Sheets

**Financial stability, as indicated by several factors such as current and non-current assets, equity, liabilities, cash flow, and debt, is the most important feature of financial and economic activity.** A strong balance is essential to an business enterprise's growth. In fact, the state of an business enterprise's balance sheet has been shown to influence its resilience to economic downturns and shocks as they are able to cushion against the effects of shocks for a longer period of time. Business enterprises with stronger balance sheets are structurally sounder than those without. For instance, business enterprises with stronger balance sheets are likely to have higher collateral and thus more likely to gain access to finance and obtaining investment. Business enterprises with stronger financial capacities are more competitive and are more likely to invest in activities that spur their revenue growth, such as research and development, better skilled workers, information communication technologies, and quality equipment which in turn has effects on worker and capital productivity.

***This report defines current assets as those resources held by an business enterprise that can be converted into cash streams in the short-term***, usually within a year and may include account receivables, bank deposits, short-term investments and other inventory. Non-current assets are more long term investments usually of high value for long-term revenue generation such as land, property, machinery, patents, and goodwill. Graph 3.11 illustrates the distribution and trend of current and non-current assets by sector. The financial sector has grown the value of its current assets from RWF 3,035 billion in 2019 to RWF 3,720 billion and RWF 4,455 billion in 2020 and 2021 respectively. This implies that the financial sector has more opportunity to convert asset holdings into cash flows in the short-term. The financial sector also account for the largest share of current assets as compared to other sectors, accounting for 53.2%, 54%, and 55.8% in 2019, 2020, and 2021 respectively. Therefore, the financial sector holds modest values in non-current assets, whose value- has decreased over time. In 2019, the total value of non-current assets held by the financial sector amounted to RWF 170 billion, which declined to RWF 157 billion and RWF 148 billion in 2020 and 2021 respectively.

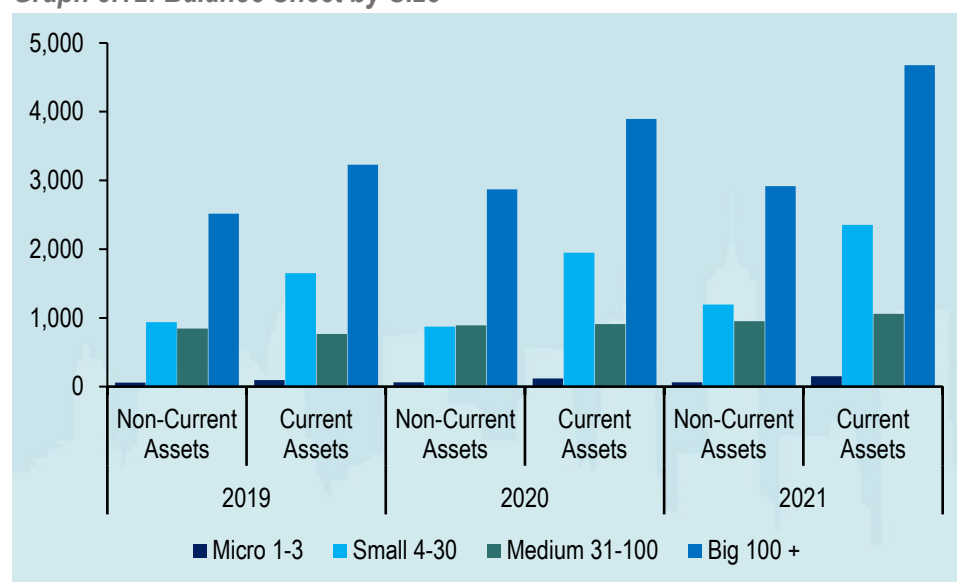
***On the other hand, the services sector dominate shares and values of non-current assets in absolute terms***, accounting for 53.4%, 54.3%, and 50.5% of non-current assets in 2019, 2020, and 2021 respectively. Unlike the finance sector, however, the industry sector holds more non-current assets than current assets. This implies that it holds more value in long term investment assets than short-term revenue generating assets. Therefore, the industry sector - holds a significant value of non-current assets, marginally growing from RWF 1,615 billion in 2019 to RWF 1,718 billion and RWF 2,113 billion in 2020 and 2021 respectively. Furthermore, the industry sector holds more non-current than current assets due to high-value equipment, land and property.

**Graph 3.11: Balance Sheet by Sector**



**Large business enterprises account for the largest share of current assets followed by small business enterprises (Graph 3.12).** Both have seen a steady growth from 2019 to 2021, growing by around 45% and 42.6% for large and medium business enterprises respectively. Not only did medium business enterprises have lower value of current assets than small business enterprises, but also registered a lower growth rate of 39%. Large business enterprises also largely dominated the value of non-current assets, with small and medium business enterprises holding similar value amounts.

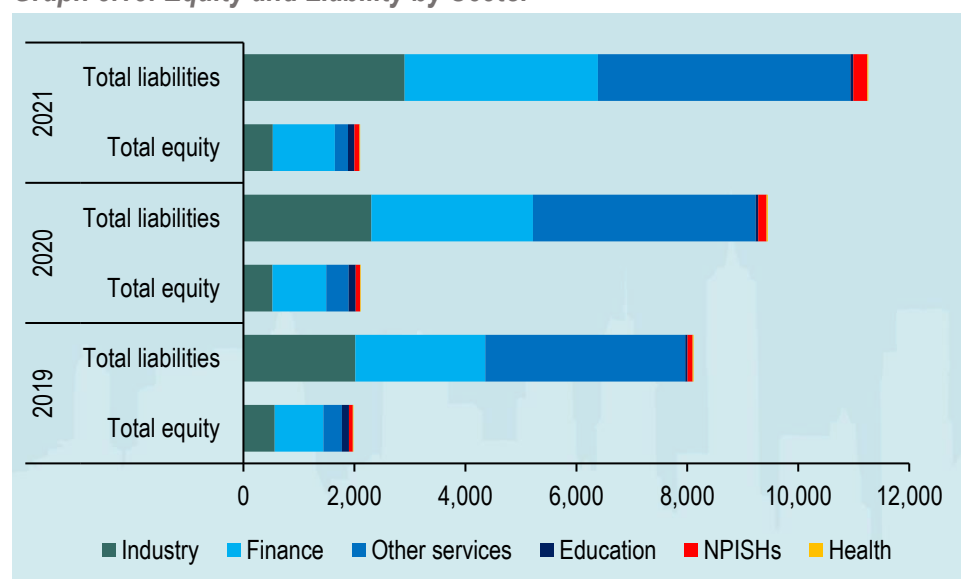
**Graph 3.12: Balance Sheet by Size**



**The survey results show that business enterprises hold more liability than equity and are thus more dependent on debt to finance their operations.** Liabilities (debt) are defined as the financial obligations that business enterprises have including interest payable, taxes, and accounts payable. Equity on the other hand is defined as the value of owner's or shareholders' interest in the business enterprise, or the value of the owner's/shareholders' assets once liabilities have been paid. The status of more liability than equity has been observed.

**Business enterprises' liability has experienced an increment growing 39% from 2019 to 2021, and in absolute terms from RWF 8,112 billion in 2019 to RWF 9,450 billion and RWF 11,265 billion in 2020 and 2021 respectively (Graph 3.13).** Over the three years the service, industry, and finance sectors have accounted for more than 97% of total liabilities held by business enterprises. The service industry has grown its liabilities from RWF 3,604 billion in 2019 to RWF 4,014 and RWF 4,551 billion in 2020 and 2021. The finance and industry sectors have followed similar patterns. On the other hand, total equity reduced in 2021 from RWF 2,104 billion from RWF 2,113 billion in 2020, after a modest growth from 2019. The finance sector held a majority of total equity accounting 44%, 45.7%, and 53% in 2019, 2020, and 2021 respectively. The industry sector has faced a decline in equity in 2020 to RWF 526 billion from RWF 566 billion in 2019, but growing to RWF 531 billion in 2021. The service sector experienced a decline in equity in 2021(RWF 238 billion), from RWF 333 billion and RWF 405 billion in 2019 and 2020.

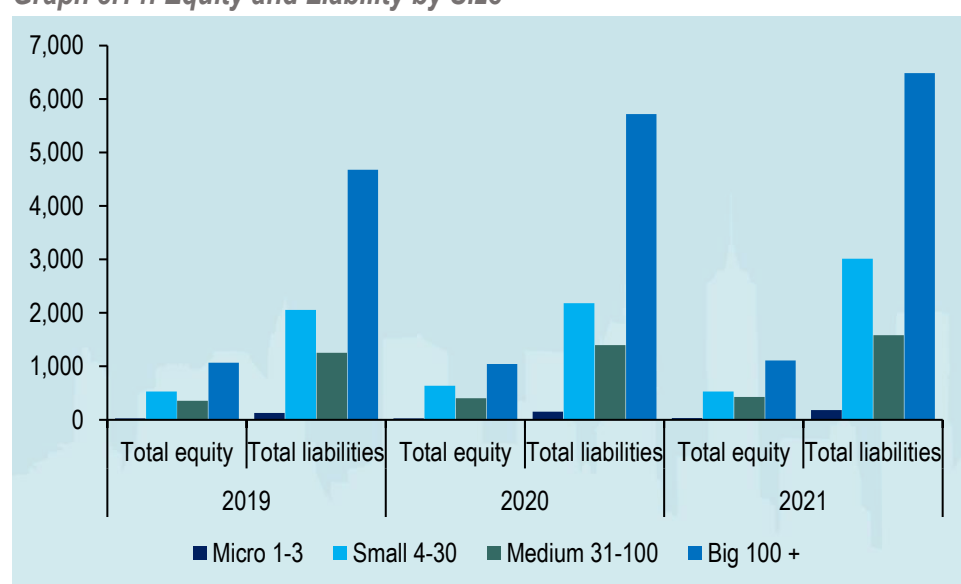
**Graph 3.13: Equity and Liability by Sector**



**Large and small business enterprises accounted for the largest shares of liabilities (Graph 3.14).**

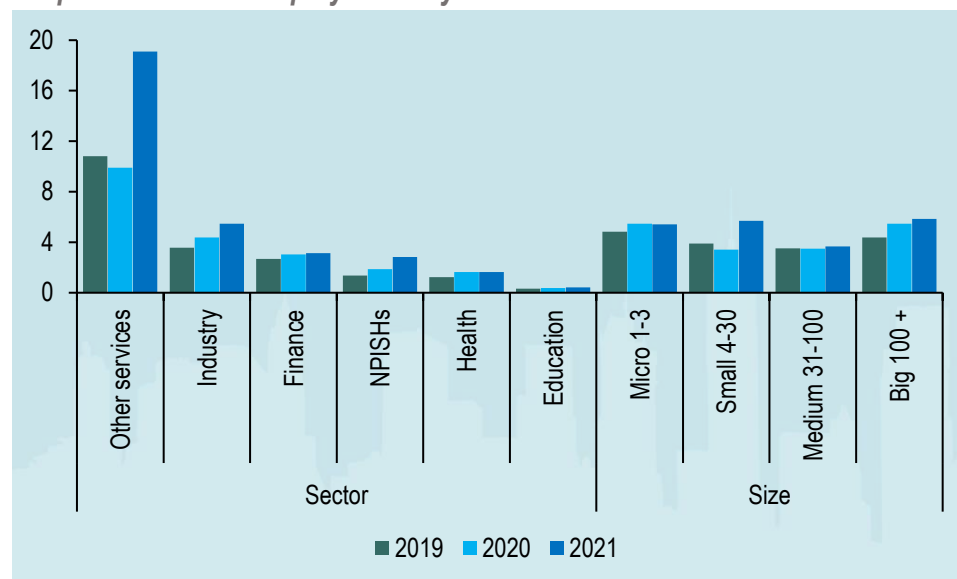
However, in 2020, big business enterprises have saw a decline in equity from RWF 1,070 billion in 2019 to RWF 1,046 billion in 2020, but an eventual increase to RWF 1,109 billion in 2021. Similarly, small business enterprises experienced a sharp decrease in equity in 2021 to RWF 530 billion from RWF 637 billion in 2020, a 16.7% drop. Medium-sized business enterprises experienced a steady growth in equity values from RWF 356 billion in 2019 to RWF 431 billion in 2021. Micro-sized business enterprises hold very modest equity values.

**Graph 3.14: Equity and Liability by Size**



**Another important indicator is the Debt-to-Equity (D/E) ratio, which measures the extent of a business enterprise's dependence on debt (Graph 3.15).** Across a majority of sectors and size, the D/E ratio has increased over the period of investigation. This implies that business enterprises are increasingly reliant on debt over time, and this could point to vulnerability to financial risk. The services sector registered the highest D/E ratio over the 2019/2021 period, peaking at 19% in 2021. The education, health, and NPISH sectors on the other hand, have the lowest D/E ratios, which may point to either business enterprises not taking advantage of available funding options, or simply not accessing financing.

**Graph 3.15: Debt-to-Equity Ratio by Sector and Size**



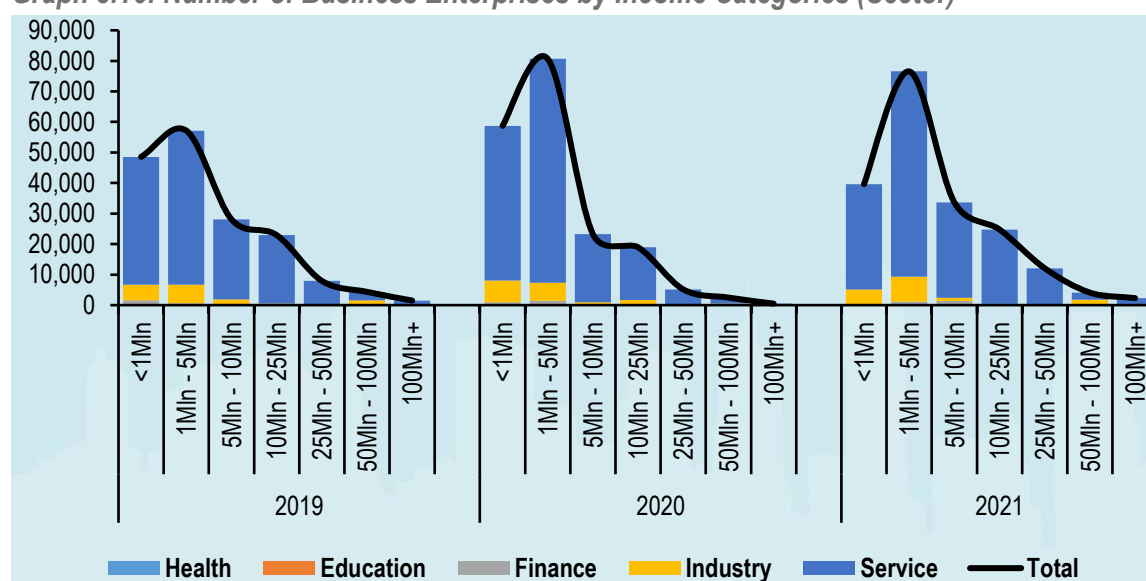
### 3.3. Informal Sector Performance

This subsection will discuss performance in the informal sector. Unlike the formal sector, performance in the informal sector will be measured against three metrics; income, expenditure, and addition of fixed assets. Business enterprise performance will be based on absolute count/numbers under different income bands per year.

#### 3.3.1. Income

Generally, income for Rwandan business enterprises lie in the income levels between RWF 1 million to RWF 5 million. For all years analyzed, the income band between RWF 1 million and 5 million was composed of the highest number of business enterprises, followed by the income band of less than RWF 1 million. Further, business enterprises in the services sector dominated the composition of business enterprises in all years and income categories.

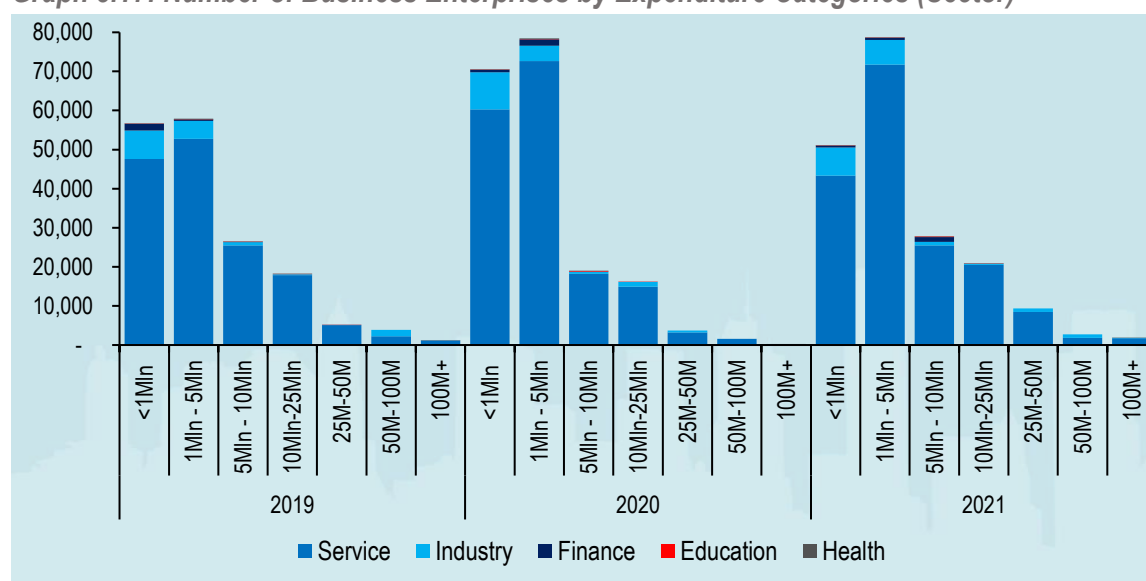
**Graph 3.16: Number of Business Enterprises by Income Categories (Sector)**



### 3.3.2. Expenditure

Similarly, most of the Rwandan business enterprises' expenditure lay in the RWF 1million to RWF 5 million category, followed by the expenditure category of less than RWF 1 million. Again, business enterprises in the service sector accounted for the highest share by absolute count in all years and expenditure categories.

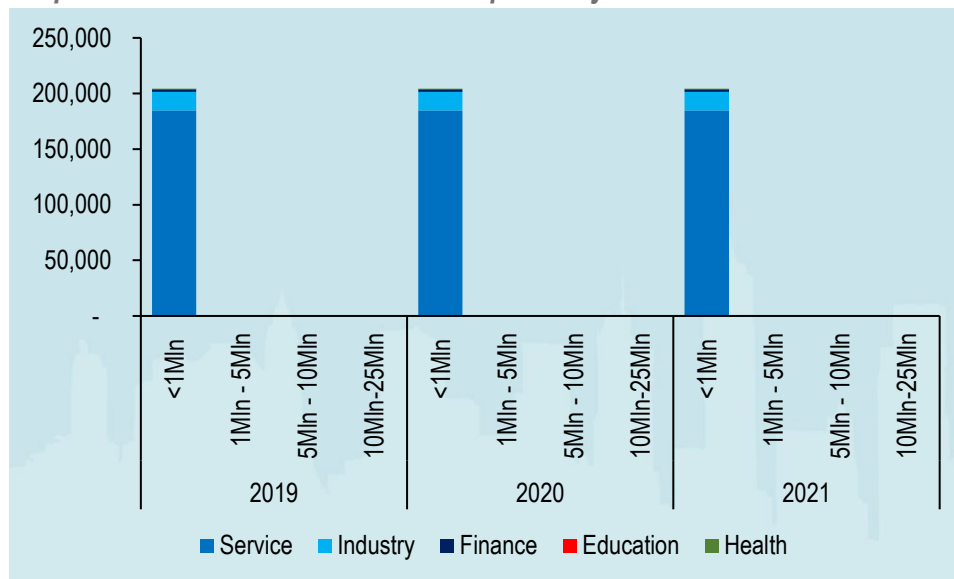
**Graph 3.17: Number of Business Enterprises by Expenditure Categories (Sector)**



### 3.3.3. Asset Accumulation

Asset accumulation has largely remained constant over the period 2019 to 2021. Business enterprises mainly add assets with a total value of less than RWF 1 million, with a very miniscule number of business enterprises adding capital with a total value of more than RWF 1 million. The services sector account for the largest share of new assets added in all years analyzed.

**Graph 3.18: Number of Business Enterprises by Total Value of Asset Addition Categories (Sector)**



## 4. CONCLUSIONS AND FURTHER AREAS OF RESEARCH

The IBES 2019/2021 has revealed crucial findings regarding the state of Rwanda's business environment. While some impressive progress has already been made towards improving the growth trajectories of business enterprises, more concerted efforts from various government agencies will be required to close existing gaps. Rwanda's business enterprises are still rely on informal modes of financing, have high levels of capacity underutilization, barely participate in exporting activities, and struggle with infrastructural needs such as reliable power. While these findings are important for decision and policymaking, further questions and points of potential research arise.

### 4.1. Potential Research Questions and Interest Areas

- a. What are some of the factors causing a decrease in formality rates amongst Rwandan business enterprises?
  - i. What are some of the influencing factors resulting in a decreasing formal share of new business enterprises?
- b. What are the entry and exit characteristics of business enterprises? What is the average longevity of business enterprises and what are the determinants for entry, exit, and business enterprise longevity?
- c. What are the transition characteristics of business enterprises across business enterprise sizes- from micro to small to medium to big? What factors determine business enterprise growth in Rwanda?
- d. Why is there a lack of demand for existing financial instruments amongst formal business enterprises? What would be more appropriate forms of financing for formal business enterprises?
- e. What are collateral requirements for business enterprises in Rwanda and how do they affect access to finance?
- f. What explains the difference between the rates of capacity underutilization of formal and informal business enterprises? Why are the rates higher in formal business enterprises?
- g. What are the major input-sourcing constraints for business enterprises?
- h. What explains the low levels (16% for formal business enterprises) of receipt of 100% of financing requested for long-term purposes by business enterprises? What are the supply side and demand side inhibitors?



## APPENDIX 1: METHODOLOGY AND RATIONALISATION OF KEY CONCEPTS

### 1. Integrated Business Enterprise Survey

As stated in the introduction of this report, IBES is an annual data collection exercise by NISR on business enterprises operating in Rwanda. The survey aims at providing reliable statistics and data on the nature of business enterprises in Rwanda, their labour employment patterns, ownership and legal characteristics of the businesses among others. The survey and its subsequent report also provide insights on the businesses' perspective on the business environment they operate in. The survey compiles detailed statistics on business aspects as access to finance, waste management practices, energy usage, and utilisation of information communication technologies. Further, business performance by sector and size of business enterprises are analysed using income and expenditure data.

Data collection has resumed after a brief hiatus due to the COVID-19 pandemic. It extensively compiles business data through the three-year period and includes insights on the impact of the pandemic on business enterprises in Rwanda. The survey data is structured as a panel, which allows for execution of further analysis that includes both spatial and temporal dimensions.

### 2. Coverage

The 2019-2021 IBES report covers a sample of non-agricultural business enterprises classified under sections B to S of the International Standard Industrial Classification of all economic activities, revision 4 (ISIC-4). Further, the survey does not cover public administrative and extraterritorial organizations (organizations outside Rwanda territorial borders). This report defines “**business enterprise**” as a legal entity possessing the right to conduct business on its own, for example to enter into contracts, own property, incur liabilities and establish bank accounts. It may be a corporation, a quasi- corporation, a non-profit institution, or an unincorporated business enterprise. The IBES survey contains information on Small and medium-sized business enterprises (SMEs) and big business enterprises. SMEs employ fewer than 100 people. They are further subdivided into micro business enterprises (fewer than 3 employees), small business enterprises (4 to 30 employees), and medium-sized business enterprises (31 to 100 employees). Big business enterprises employ 100 or more people. The management of an business enterprise typically develops a set of organizational objectives and a strategy for meeting those goals to help employees understand where the company is headed and how it intends to get there.

### **3. Sampling Design**

#### **3.1. Sampling Frame**

A sampling frame comprises a list of all units from which a sample survey is selected. An up-to-date, good quality sampling frame is an essential pre-requisite for organizing a sample survey. An Economic Census (EC) of all establishments can provide such a sampling frame, giving a listing of business enterprises and a count of workers by broad industry groups at the primary level of geographical units such as villages.

The Establishment Census carried out in 2020 (EC2020) served as the sampling frame for both formal and informal IBES 2019-2021. For informal IBES 2019-2021, EC2020 served as the sampling frame for the first stage sample and a listing exercise was carried out in the sampled administrative sectors in the second stage. In addition, for formal IBES 2019-2021 the EC2020 frame was supplemented using IBES panel business enterprises to ensure that all previous complying businesses were covered in the formal sector survey.

The IBES 2019-2021 is based on a sample of 2,442 formal and 2,507 informal sector business enterprises, selected from an estimated 17,818 formal and 205,808 informal business enterprises. Informal business enterprises were sampled from 50 selected administrative sectors. Thus, the survey has been designed so that it provides good quality estimates of shares or averages for the country as a whole.

##### **3.1.1. Formal Sector Sample and Estimation**

This report defines the formal sector as those businesses registered in the Rwanda Revenue Authority (RRA) portal and keep business accounts. The formal sector IBES 2019-2021 sample was produced from the following separate components: a panel component based on the IBES 2017 and large business enterprises from the VAT and BIT registers which were not in the IBES panel. Informal IBES 2019 sample has been drawn after a full enumeration in the sampled administrative sectors.

The IBES panel includes all business enterprises that responded to the IBES 2019-2021 survey. The purpose of this panel component of the IBES 2019-2021 sample is to preserve a time series element in the overall sample. This is designed to reduce the variance of the estimates of changes in the characteristics of the population over time. In addition, the panel should improve the overall response rate to the survey as all of the business enterprises in this component were willing and able to respond for formal IBES 2019-2021.

In addition, the survey sample was topped up by 643 large business enterprises with turnover greater than 1 billion RWF in 2021 drawn from the Value Added Tax (VAT) and Business Income Tax (BIT) registers which are registered with RRA for VAT or income tax and which were not in the IBES panel sample. At the end, a sample of 2,442 formal business enterprises and 2,507 informal business enterprises was developed and targeted.

Most of the estimates included in this report have been obtained by multiplying the data for each sampled business enterprise by its weight. The weight assigned to completely enumerated businesses was 1, as these

businesses represent only themselves. The larger businesses from whom no response was obtained have been excluded from this report.

The initial weights assigned to businesses in the sampled strata were the inverse of the probabilities of selection. For example, if half of the businesses in a stratum were selected, the initial weight was 2. It was also necessary to take into account of the businesses for which no response could be obtained within each stratum and to take out all non-eligible sampled businesses like businesses dealing in agriculture and public administration. The estimated actual, or valid, population of businesses in each stratum was taken as the original population less all non-eligible businesses. Similarly, the valid sample in each stratum was calculated as the original less all non-eligible businesses in the stratum.

As a result, the weights of the responding units were adjusted so as to maintain the original grossed up number of units in each stratum by dividing the valid population by the valid sample for all strata and theses final weights were distributed to each sampled business enterprise within the stratum. More precisely, if in each sampled stratum  $i$ ,  $n_i$  is the number of valid businesses enumerated out of a valid population of  $N_i$  business enterprises in the census, then the weight for each business is  $N_i/n_i$ . The assumption behind this method is that each business from which a valid response was received is representative of the eligible businesses in the wider population. Tables 1.1 and 1.2 in Appendices illustrate how the final weights were derived

### 3.1.2. Informal Sector Sample Estimation

The selection of business enterprises in the informal sector was based on a two stage sample. The first stage was the selection of administrative sectors, which form the enumeration areas (EAs); where a sample of 50 administrative sectors were selected using the 'probability proportional to size' (PPS) method based on data from EC2020. The measure of size (MoS) used was the number of business enterprises in each administrative sector, i.e.

$$MoS_{hi} = \sum_{j=1}^t P(h, i, j),$$

Where,  $S_{hi}$  is the size of the administrative sector  $i$ , in geographic stratum  $h$ ; and  $P(h, i, j)$  is the number of business enterprises in the economic activity  $j$ , within the sector  $i$ , in geographic stratum  $h$ . The fieldwork was carried out in the first stage (in 50 selected administrative sectors) where information was collected about the economic activity, number of workers, registration status, maintenance of regular business accounts and time of starting operations. Based on this, a new listing of all the business enterprises in the sample EAs was established. At the second stage, the listed business enterprises in each sample EA were then stratified by major economic activity (ISIC Rev.4 2 digit), and a sample of business enterprises was then selected within each stratum. At the second sampling stage, all of the listed business enterprises for some strata were included in the survey with certainty in case there were 3 or less business enterprises for one ISIC 2-digit code within the sampled administrative sector. The procedure led to a total sample of 2,507 informal business enterprises being selected.

The selection probabilities for business enterprises in an area sample depend on the sample design. As noted, the IBES informal sector area frame sample was based on a two-stage selection. As such, the probability of selection can be expressed as follows:

$$P_{hij} = \frac{m_h \times MoS_{hi}}{\sum_{i \in h} S_{hi}} \times \frac{n_{hij}}{N_{hij}},$$

Where;

$P_{hij}$  = probability of selection for the sample business enterprises in j-th economic activity group within the i-th sample segment (i.e., administrative sector) in geographic stratum h

$m_h$  = number of sample segments selected in geographic stratum h

$MoS_{hi}$  = measure of size (based on the indicator established for the PPS selection) for the i-th sample area in geographic stratum h

$n_{hij}$  = number of sample business enterprises selected in the j-th economic activity group within the i-th sample area in geographic stratum h

$N_{hij}$  = total number of business enterprises in the j-th economic activity group within the i-th sample area in geographic stratum h

In the sample strata where all the business enterprises for an economic activity are included in the sample at the second sampling stage, the second term of this probability was 1. The weight (or 'raising factor') applied to the data from the informal business enterprises is calculated as the inverse of this probability of selection, as follows:

$$W_{hij} = \frac{\sum_{i \in h} S_{hi}}{m_h \times MoS_{hi}} \times \frac{N_{hij}}{n_{hij}}$$

Finally, a non-response adjustment factor similar to that used for the formal IBES 2018 was applied to this weight, within the economic activity group in the EA. This factor is equal to the valid sample divided by the completed interviews for each stratum.

### 3.2. Comparison with National Accounts and turnovers from revenue authority

The published national accounts statistics include estimates of economic activity for the whole of Rwanda. These may differ from the survey estimates when one compiles indicators such as gross value added. A key reason for the difference is that, when producing the national accounts, many other sources of data are used in addition to information from the business sector. For example, data on consumption patterns from the Rwandan household budget survey (Integrated Households Living Conditions Survey EICV), data on international trade, and from other surveys, notably the Seasonal Agricultural Survey.

A further difference between the estimates from this survey and the national accounts arises because of coverage. The IBES covers the formal and informal activities in observable business premises. Additionally, the national accounts estimates include goods and services produced by household businesses without identifiable premises, often numerous but on a small scale. They also implicitly include estimates for the 'hidden' economy (transactions that are not recorded in business accounts) for example, goods that retailers may withdraw from their stocks for their own consumption.

For this reason, the national accounts estimates should be considered as providing the measure of the level of gross value added and output. However, the IBES can be used to enrich understanding of the underlying activity of the business sector by providing more detailed information relating to investment, employment, credit, and the general business environment.

### **3.3. Key concepts and data collection methodology**

#### **3.3.1. Distinction between business enterprise and establishment**

An business enterprise is an institutional unit as a producer of goods and services. It has the autonomy in decision-making and allocating resources. It may be engaged in one or more economic (productive) activities. It can be a corporate or non-corporate business enterprise. An establishment is an business enterprise or part of the business enterprise located in a single location and normally carrying out a single economic activity. In many cases, and particularly for smaller or medium-sized units, business enterprises and establishments are identical. Efforts were made to list and record details for each business enterprise including all its branches. Information on whether or not the establishment was part of an business enterprise was also recorded.

#### **3.3.2. Activity Coverage and Listing of Business Enterprises**

The IBES considered only non-agricultural activities. Agricultural activities- the primary production of agricultural and plantation crops, livestock and poultry, agricultural services, forestry and fishing were not covered. Activities related to the processing of the primary produce of agricultural and allied activities were treated as non-agricultural. Further, the sale of agricultural produce by the producer himself directly to wholesalers, retailers, or even consumers was considered agricultural.

Detailed guidelines were provided to determine the broad activity category of an business enterprise. Some are reproduced here. Manufacturing involves the transformation of raw materials into finished products. Trade is an act of purchase of goods and their resale, either wholesale or retail, without any intermediate physical transformation of the goods. A hotel (Division 55 of ISIC-4) provides accommodation with or without arrangements for meals and other prepared food and refreshments. A restaurant (Division 56 of ISIC-4) generally provides eating and drinking services where prepared meals, food, refreshment and other snacks are sold for immediate consumption without any provision for lodging. Such business enterprises are variously known as restaurants, cafes, cafeteria, snack bar, lunch counters, refreshment stands, milk bar, canteens etc. Bars and other drinking places also come under this category.

Transport is the act of carrying passengers and/or goods from one place to another. The operation of storage and warehouses on hire to the farm producer, dealer or trader, processor and manufacturing business enterprises, including the public, as a business is in the storage and warehousing industry (Division 52 of ISIC-4). However, warehouses meant for storing farm produce, trading commodities, manufactured goods etc., owned by the owner of the farm, trader or manufacturer himself, were not treated as storage and warehousing.

### 3.3.3. Items of Information and Related Concepts

Apart from collecting background information IBES collects data on the number of people the business enterprise employs and how much it pays them, its operating expenses and receipts, the value of fixed assets, and its outstanding loans.

- **Business enterprise size:** In this report the business enterprise size is measured by the number of employees; Micro business enterprise (1 to 3 employees), Small business enterprise (4 to 30 employees), Medium business enterprise (31 to 100 employees), and Big business enterprise (more than 100 employees).
- **Method of data collection:** this depended on whether the business enterprise maintained accounts. If it did, data were collected from them. Otherwise, the information was collected orally, as reported by the respondent. In both cases, primary field workers visited the sites of the business enterprises and collected data from the respondents by interviewing them. Key concepts and methodology involved in data collection are discussed below.
- **Reference year/last year:** For most of the items, namely compensation, operating expenses/inputs, and receipts/output, the reference or last year meant last accounting year for the business enterprises maintaining accounts and the previous 12 months for those not maintaining accounts.
- **Last day of the year:** Information on the value of fixed assets and outstanding loans related to the last day of the year. 'Last day' meant the closing day of the last accounting year for business enterprises maintaining accounts. In other cases, it was the day preceding the date of survey.
- **Background information about the business enterprise:** Certain background information about the business enterprise was collected first. These included broad activity of the business enterprise for which 12 codes were provided, main activity of the business enterprise in terms of 4-digit code as per ISIC-Rev 4, location (within permanent structure or within temporary structure or without any structure), ownership status, whether registered under any Act, age of the business enterprise, if received any government assistance during last 2 years, nature of problem faced during last year, whether accounts maintained, and whether establishment was part of an business enterprise in case of an establishment.

- **Employment and compensation of employees:** As regards the employment position, data on average number of workers working per day during the major period of working in the last year were collected. Break-up of number of paid and unpaid workers was also recorded. Paid workers were those who got regular salary or wages. Break-up employment was also noted by (a) sex, (b) occupation (i.e. manager/ professional/administrative and others), and (c) nationals or foreigners. Compensation payable to the workers included wages/salaries to hired workers and other remunerations in the form of providing food, canteen facility, health care facility or other facilities to its workers. Given the importance of employment related statistics, a specific module (Labor Module) was designed to cover all the details judged to be important.
- **Operating expenses:** All the expenses incurred by the business enterprise during last year including (a) compensation to workers, (b) rent on hired land and building (if any) and (c) interest payable on loan (if any) were covered under the head of expenditure. The relevant information was collected through two sections of the questionnaire module– one giving the details of the main inputs/raw materials used by the business enterprise and the other recording the residual operating expenses involved in the day to day running of the business enterprise. Value figures were recorded at the purchase price of raw materials and other inputs.
- **Income:** Information on income was also collected through two sections of the questionnaire – one furnishing details of the main receipts of the business enterprise directly associated with the value of goods and services produced while the other recording other receipts of the business enterprise. Valuation of income was at the sale value if sold or at the market value of goods made ready for sale in the market or at producer's prices for manufactured goods.
- **Fixed assets:** Information on value of fixed assets as on last day of the year was collected. It was the book value if the business enterprise-maintained accounts otherwise it was the market value of the asset owned or rented/hired. This apart, data on net addition to fixed assets and rent payable for hired assets were also collected.

## APPENDIX 2: DATA TABLES

### 2.1 BUSINESS ACTIVITIES IN RWANDA

#### *Geographical distribution of businesses by formality*

Province	Formal	Informal	Total
Kigali	12,132	40,191	52,324
East	1,405	58,629	60,035
North	1,550	25,273	26,823
South	1,353	29,876	31,230
West	1,197	51,838	53,035
<b>Total</b>	<b>17,638</b>	<b>205,808</b>	<b>223,446</b>

#### *Business enterprise by size and formality*

Business enterprise size	Formal	Informal	Total
Micro 1-3	2,456	196,013	198,469
Small 4-30	9,109	9,727	18,837
Medium 31-100	3,974	68	4,042
Big 100 +	2,098	-	2,098
<b>Total</b>	<b>17,638</b>	<b>205,808</b>	<b>223,446</b>

#### *Business enterprises by activity and formality*

Economic activity	Formal	Informal	Total	Shares
Mining and quarrying	118	-	118	100.00
Manufacturing	1,317	17,110	18,427	7.15
Electricity, gas, steam, and air conditioning supply	39	-	39	100.00
Water supply; sewerage, waste management and remediation activities	322	345	667	48.27
Construction	126	-	126	100.00
Wholesale and retail trade; repair of motor vehicles and motorcycles	9,082	126,723	135,805	6.69
Transportation and storage	378	89	467	80.94
Accommodation and food service activities	2,175	31,453	33,628	6.47
Information and communication	189	342	531	35.60
Financial and insurance activities	772	2,310	3,082	25.05
Real estate activities	77	42	119	64.86
Professional, scientific and technical activities	548	1,453	2,001	27.37
Administrative and support service activities	347	1,348	1,695	20.50
Education	625	351	976	64.02
Human health and social work activities	496	285	781	63.47
Arts, entertainment and recreation	44	194	238	18.49
Other service activities	983	23,764	24,746	3.97
<b>Total</b>	<b>17,638</b>	<b>205,808</b>	<b>223,446</b>	<b>7.89</b>



***Business enterprises by legal status and formality***

<b>Legal status</b>	<b>Formal</b>	<b>Informal</b>	<b>Total</b>
Individual owner	4,673	199,716	204,390
Company limited by shares	9,949	4,047	13,996
Company limited by guarantee	37	-	37
Company limited by both shares and guarantee	42	888	930
Unlimited company	28	-	28
Cooperative	925	222	1,146
Government	837	-	837
NGO	915	917	1,833
Other	231	18	249
<b>Total</b>	<b>17,638</b>	<b>205,808</b>	<b>223,446</b>

***Business enterprises by ownership and formality***

<b>Ownership by residence</b>	<b>Formal</b>	<b>Informal</b>	<b>Total</b>
Government of Rwanda	984	-	984
Resident Rwandans	13,094	205,808	218,902
Resident foreigners	1,688	-	1,688
Non-residents Rwandan or foreigners	1,872	-	1,872
<b>Total</b>	<b>17,638</b>	<b>205,808</b>	<b>223,446</b>

***Business enterprises by year of starting operations and formality***

<b>Period of commencement</b>	<b>Formal</b>	<b>Informal</b>	<b>Total</b>
>=2021	136	6,049	6,185
2016-2020	3,680	140,924	144,605
2011-2015	5,795	31,477	37,272
2006-2010	3,818	14,368	18,187
2001-2005	1,372	6,418	7,790
<=2000	2,837	6,571	9,409
<b>Total</b>	<b>17,638</b>	<b>205,808</b>	<b>223,446</b>

## 2.2: BUSINESS ENVIRONMENT, FORMAL SECTOR, ACCESS TO FINANCE

### Access to Financial Services by economic activities (%)

Sector	Current account	Savings account	Foreign exchange	Letters of credit	Insurance	Total
Industry	35.84	5.16	17.97	7.52	33.52	100
Service	40.23	4.86	17.07	5.29	32.55	100
Finance	31.96	20.55	14.38	3.20	29.91	100
Education	57.01	3.14	2.47	0.67	36.70	100
Health	46.40	5.00	5.60	0.60	42.40	100
<b>Sector</b>						
Industry	10.87	10.92	13.24	17.41	12.32	
Service	78.34	65.98	80.77	78.65	76.80	
Finance	4.37	19.59	4.78	3.34	4.95	
Education	3.58	1.38	0.38	0.32	2.79	
Health	2.83	2.13	0.83	0.28	3.14	
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	

### Access to Financial Services by size (%)

Size Band	Current account	Savings account	Foreign exchange	Letters of credit	Insurance	Total
Micro 1-3	54.53	1.66	15.30	2.91	25.60	100
Small 4-30	40.24	6.02	15.21	4.81	33.72	100
Medium 31-100	36.86	4.73	17.83	6.36	34.22	100
Big 100 +	32.98	9.18	18.90	6.31	32.63	100
<b>Total</b>	<b>39.82</b>	<b>5.71</b>	<b>16.39</b>	<b>5.22</b>	<b>32.87</b>	<b>100</b>
<b>Size Band</b>						
Micro 1-3	13.83	2.93	9.43	5.64	7.87	
Small 4-30	51.68	53.92	47.49	47.22	52.47	
Medium 31-100	22.78	20.40	26.77	30.02	25.62	
Big 100 +	11.71	22.75	16.31	17.12	14.04	
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	

**Sources of Finance by economic activities (%)**

<b>Type</b>	<b>Industry</b>	<b>Service</b>	<b>Finance</b>	<b>Education</b>	<b>Health</b>	<b>Total</b>
Personal Cash	11.09	79.49	4.53	2.64	2.26	100
Parent Company in Rwanda	11.33	79.89	4.64	1.94	2.20	100
Loans from Rwanda	13.05	80.43	3.91	1.33	1.28	100
Loans from outside Rwanda	11.49	80.03	4.53	1.73	2.21	100
Government	9.72	71.31	4.55	8.16	6.27	100
NGOs	9.87	77.12	4.57	3.18	5.27	100
Others	10.84	78.03	4.83	3.29	3.01	100
<b>Total</b>	<b>11.22</b>	<b>78.47</b>	<b>4.46</b>	<b>2.95</b>	<b>2.90</b>	<b>100</b>
<b>Type</b>						
Personal Cash	28.94	29.67	29.76	26.17	22.84	29.29
Parent Company in Rwanda	9.97	10.06	10.28	6.51	7.48	9.88
Loans from Rwanda	22.13	19.50	16.70	8.55	8.39	19.03
Loans from outside Rwanda	10.57	10.52	10.49	6.07	7.87	10.32
Government	9.46	9.92	11.13	30.19	23.61	10.92
NGOs	9.56	10.68	11.13	11.70	19.74	10.87
Others	9.36	9.64	10.49	10.82	10.06	9.69
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

**Sources of Finance by size (%)**

<b>Size Band</b>	<b>Micro 1-3</b>	<b>Small 4-3</b>	<b>Medium 31</b>	<b>Big 100 +</b>	<b>Total</b>
Personal Cash	14.16	51.99	22.35	11.50	100
Parent Company in Rwanda	17.22	47.23	23.02	12.53	100
Loans from Rwanda	13.17	51.24	22.37	13.21	100
Loans from outside Rwanda	16.45	47.53	23.48	12.54	100
Government	14.82	44.61	27.73	12.84	100
NGOs	15.64	47.52	24.41	12.43	100
Others	16.89	47.96	23.52	11.62	100
<b>Size Band</b>					
Personal Cash	27.64	30.93	27.90	27.40	29.29
Parent Company in Rwanda	11.33	9.47	9.69	10.07	9.88
Loans from Rwanda	16.70	19.80	18.15	20.45	19.03
Loans from outside Rwanda	11.31	9.96	10.33	10.52	10.32
Government	10.78	9.90	12.91	11.40	10.92
NGOs	11.32	10.49	11.30	10.98	10.87
Others	10.91	9.44	9.72	9.17	9.69
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

**Barriers to Finance by economic activities (%)**

<b>Barriers</b>	<b>Industry</b>	<b>Service</b>	<b>Finance</b>	<b>Education</b>	<b>Health</b>	<b>Total</b>
Insufficient collateral	12.18	84.20	2.20	0.75	0.67	100
High interest rates	5.62	90.70	1.89	0.73	1.06	100
Fear of possible Rejection	14.93	73.53	2.45	6.22	2.87	100
No bank loans are available	5.88	75.14	7.29	7.41	4.28	100
Do not need this financing	10.89	76.66	4.92	4.18	3.36	100
Too much paperwork	18.54	77.15	1.97	1.00	1.35	100
Did not apply because sufficient Internal Funds	9.50	79.46	4.89	3.61	2.53	100
Insufficient collateral	16.43	15.83	7.39	3.10	3.49	14.73
High interest rates	1.48	3.32	1.23	0.59	1.07	2.87
Fear of possible Rejection	1.73	1.19	0.70	2.21	1.29	1.26
No bank loans are available	0.29	0.51	0.88	1.11	0.80	0.53
Do not need this financing	72.76	71.41	81.78	85.8	86.80	72.96
Too much paperwork	1.34	0.77	0.35	0.22	0.38	0.79
Did not apply because sufficient Internal Funds	5.98	6.97	7.66	6.98	6.17	6.87

**Barriers to Finance by size (%)**

	<b>Micro 1-3</b>	<b>Small 4-30</b>	<b>Medium 31-100</b>	<b>Big 100+</b>	<b>Total</b>
Insufficient collateral	16.54	50.74	19.10	13.63	100
High interest rates	25.95	45.11	19.23	9.72	100
Fear of possible Rejection	11.27	44.96	34.57	9.20	100
No bank loans are available	28.88	47.09	23.07	0.96	100
Do not need this financing	13.04	51.85	23.52	11.59	100
Too much paperwork	14.41	39.19	14.14	32.27	100
Did not apply because sufficient Internal Funds	12.19	55.98	20.34	11.49	100
Insufficient collateral	17.47	14.49	12.45	16.85	14.73
High interest rates	5.33	2.51	2.44	2.34	2.87
Fear of possible Rejection	1.02	1.10	1.93	0.98	1.26
No bank loans are available	1.10	0.48	0.54	0.04	0.53
Do not need this financing	68.24	73.36	75.95	71.03	72.96
Too much paperwork	0.81	0.06	0.49	2.13	0.79
Did not apply because sufficient Internal Funds	6.01	7.46	6.19	6.63	6.87

## 2.3: ACCESS TO RELIABLE POWER & ENERGY USE

### *Use of Electricity by industry (Kilowatts)*

Sector	2019	2020	2021
Industry	39,746,162	42,594,679	43,225,889
Service	48,721,088	41,807,858	53,659,904
Finance	5,806,974	5,086,904	4,497,456
Education	12,333,667	9,569,083	12,070,703
Health	8,298,165	8,489,742	10,054,129
<b>Total</b>	<b>114,906,057</b>	<b>107,548,266</b>	<b>123,508,080</b>
<b>Size Band</b>			
Micro 1-3	895,407	943,326	895,347
Small 4-30	21,625,021	25,987,722	24,987,405
Medium 31-100	42,738,595	37,801,360	45,050,526
Big 100 +	49,647,034	42,815,858	52,574,802

### *Gasoline Generator by economic activity (Litres)*

Sector	2019	2020	2021
Industry	1,004,848	218,749	271,039
Service	2,696,656	2,686,128	2,994,978
Finance	17,507	13,755	9,625
Education	10,751	8,230	7,707
Health	21,967	19,592	24,940
<b>Total</b>	<b>3,751,729</b>	<b>2,946,455</b>	<b>3,308,289</b>
<b>Size Band</b>			
Micro 1-3			
Small 4-30	156,616	106,291	608,455
Medium 31-100	2,652,241	2,674,368	2,492,789
Big 100 +	942,872	165,796	207,045
<b>Total</b>	<b>3,751,729</b>	<b>2,946,455</b>	<b>3,308,289</b>

### *Usage of Solar Energy (% of Business Enterprises)*

Sector	Yes	No	Total
Industry	7.01	92.99	100
Service	3.79	96.21	100
Finance	4.23	95.77	100
Education	12.97	87.03	100
Health	10.73	89.27	100
<b>Size Band</b>			
Micro 1-3	0	100	100
Small 4-30	3.07	96.93	100
Medium 31-100	8.23	91.77	100
Big 100 +	10.43	89.57	100

**Power Outages (% of Business Enterprises)**

<b>Days</b>	<b>Micro 1-3</b>	<b>Small 4-30</b>	<b>Medium 31-100</b>	<b>Big 100 +</b>
Less than 1	0.00	0.00	0.00	0.00
1 to 3	42.86	66.35	70.64	68.66
4 to 10	14.29	23.46	19.35	16.82
10 to 20	28.57	6.54	7.69	8.07
Above 20	14.29	3.65	2.32	6.45
<b>Duration</b>				
Less than 1 hour	57.14	69.58	68.06	77.21
1 to 2 hours	14.29	21.29	23.12	9.01
2 to 4 hours	14.29	7.30	8.13	8.94
Over 4 hours	14.29	1.83	0.68	4.84

**2.4: ENVIRONMENTAL PROTECTION****Existence of Waste (% of Business Enterprises)**

<b>Sector</b>	<b>Yes</b>	<b>No</b>	<b>Total</b>
Industry	93.75	6.25	100
Service	90.39	9.61	100
Finance	90.14	9.86	100
Education	99.41	0.59	100
Health	99.14	0.86	100
<b>Size Band</b>			
Micro 1-3	88.18	11.82	100
Small 4-30	89.60	10.40	100
Medium 31-100	95.94	4.06	100
Big 100 +	93.65	6.35	100

**Types of waste (% of Business Enterprises)**

<b>Sector</b>	<b>Solid</b>	<b>Liquid</b>	<b>Gas</b>	<b>Total</b>
Industry	11.20	14.42	35.06	12.07
Service	77.68	66.21	39.31	75.20
Finance	4.24	1.13	0.00	3.66
Education	3.83	9.47	7.90	4.85
Health	3.04	8.75	17.72	4.22
<b>Size Band</b>				
Micro 1-3	13.40	1.29	0.00	
Small 4-30	50.84	39.33	23.87	
Medium 31-100	23.52	36.92	36.98	
Big 100 +	12.24	22.46	39.15	

**Mode of waste disposal by economic activities (% of business enterprises)**

<b>Sector</b>	<b>Industry</b>	<b>Service</b>	<b>Finance</b>	<b>Education</b>	<b>Health</b>
Pay someone to remove waste	47.43	79.98	60.9	20.24	37.31
Burying in specified areas	10.78	8.99	28.57	39.67	45.67
Dumping in free land	8.01	3.83	9.02	28.40	14.03
Selling the waste	18.15	3.71	1.50	2.99	0.30
Recycling	15.18	2.92	0.00	7.47	1.49
Discharging into rivers	0.45	0.58	0.00	1.22	1.19
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Size</b>	<b>Micro 1-3</b>	<b>Small 4-30</b>	<b>Medium 31-100</b>	<b>Big 100 +</b>	
Pay someone to remove waste	84.46	74.07	62.57	59.37	
Burying in specified areas	2.59	3.48	6.85	11.65	
Dumping in free land	1.96	5.88	10.16	3.75	
Selling the waste	1.58	0.27	0.95	0.23	
Recycling	7.20	13.82	13.42	13.59	
Discharging into rivers	2.21	2.47	6.04	11.41	
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	

**Sources of Water by economic activity (% of business enterprises)**

	<b>Industry</b>	<b>Service</b>	<b>Finance</b>	<b>Education</b>	<b>Health</b>
WASAC	59.28	78.30	62.59	39.93	47.54
Rainwater storage	18.96	16.14	30.94	45.39	38.55
Well	4.07	1.39	2.88	3.16	2.90
Lake or dam	3.81	0.43	0.72	1.33	0.87
Delivered by other forms	2.85	1.01	0.72	1.82	0.58
Recycled water	1.19	0.07	0.00	0.73	0.58
Water from spring	9.84	2.65	2.16	7.65	8.99
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

**Sources of Water by size (% of business enterprises)**

	<b>Micro 1-3</b>	<b>Small 4-3</b>	<b>Medium 31</b>	<b>Big 100+</b>
WASAC	83.92	74.92	64.87	65.79
Rainwater storage	9.77	18.92	25.64	16.74
Well	0.66	1.85	1.92	3.37
Lake or dam	1.69	0.41	0.93	2.68
Delivered by other forms	0.93	1.01	1.05	2.89
Recycled water	0.00	0.16	0.47	0.5
Water from spring	3.03	2.73	5.11	8.03

## 2.5: COVID-19 & RWANDAN BUSINESSES

### COVID-19 Impact by Decreasing Incomes, % of Business Enterprises

<b>Sector</b>	<b>Yes significantly</b>	<b>Yes somehow</b>	<b>No</b>
Industry	62.43	22.94	14.63
Service	61.06	20.70	18.24
Finance	69.01	18.31	12.68
Education	69.74	16.11	14.15
Health	47.21	23.61	29.18
<b>Size</b>			
Micro 1-3	64.68	19.43	15.89
Small 4-30	61.83	20.95	17.22
Medium 31-100	58.67	23.16	18.17
Big 100 +	61.52	16.90	21.57

### COVID-19 Impact by Increasing Expenditures, % of Business Enterprises

<b>Sector</b>	<b>Yes- significantly</b>	<b>Yes- somehow</b>	<b>No</b>
Industry	57.49	26.80	15.70
Service	48.06	30.33	21.61
Finance	50.71	30.00	19.29
Education	67.26	18.93	13.81
Health	66.81	18.53	14.66
<b>Size</b>			
Micro 1-3	47.66	29.79	22.55
Small 4-30	50.20	28.79	21.01
Medium 31-100	53.43	28.70	17.87
Big 100 +	48.79	31.22	19.99

### Pandemic Relief and Support by economic activity (% Business Enterprises)

<b>Sector</b>	<b>None</b>	<b>Tax relief</b>	<b>Loan relief</b>	<b>Other support</b>	<b>Financial</b>
Industry	95.93	1.26	0.21	1.15	1.45
Service	96.25	0.96	1.12	0.32	1.35
Finance	93.66	0.70	0.00	2.11	3.52
Education	82.91	0.98	0.98	3.93	11.20
Health	78.54	0.00	0.43	5.58	15.45
<b>Size</b>					
Micro 1-3	99.41	0.50	0.00	0.00	
Small 4-30	96.31	0.91	1.00	0.53	
Medium 31-100	90.12	1.49	1.17	1.76	
Big 100 +	94.51	0.70	1.41	0.79	



## 2.6: INFORMAL SECTOR, ACCESS TO FINANCE

### Access to Financial Services by economic activities (%)

	Current account	Savings account	Foreign exchange	Letters of credit	Insurance	Total
Industry	79.79	2.07	0.00		18.14	100
Service	78.33	2.78	0.25	0.04	18.59	100
Finance	86.14	4.56			9.30	100
Education	62.27	12.93			24.80	100
Health	55.93				44.07	100
Industry	8.61	6.33			8.30	8.46
Service	89.50	90.03	100	100	90.14	89.66
Finance	1.52	2.28			0.70	1.39
Education	0.23	1.36			0.39	0.29
Health	0.14				0.47	0.20
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

### Access to Financial Services by size (%)

	Current account	Savings account	Foreign exchange	Letters of credit	Insurance	Total
Micro 1-3	93.75	90.18	97.54	100	91.85	93.31
Small 3-10	6.21	9.82	2.46	0.00	8.05	6.64
Medium 31-100	0.04	0.00	0.00	0.00	0.10	0.05
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
Micro 1-3	78.84	2.68	0.24	0.04	18.21	100
Small 3-10	73.40	4.10	0.08	0.00	22.42	100
Medium 31-100	64.93	0.00	0.00	0.00	35.07	100

### Sources of Finance (% of Business Enterprises)

	Industry	Service	Finance	Education	Health	Total
Personal cash	8.47	90.12	1.13	0.13	0.14	100
Parent company in Rwanda	6.26	90.60	2.78	0.11	0.24	100
Loans from Rwanda	7.44	90.22	2.14	0.07	0.12	100
Loans from Outside Rwanda	6.00	90.99	2.73	0.08	0.20	100
Government	5.96	91.02	2.71	0.11	0.20	100
NGOs	7.98	88.95	2.63	0.22	0.21	100
Others	5.54	91.86	2.26	0.17	0.17	100
<b>Total</b>	<b>7.28</b>	<b>90.43</b>	<b>2.00</b>	<b>0.13</b>	<b>0.17</b>	<b>100</b>
Personal cash	42.56	36.44	20.75	38.07	30.50	36.57
Parent company in Rwanda	7.82	9.11	12.63	8.32	13.11	9.09
Loans from Rwanda	15.36	14.98	16.08	7.94	11.05	15.02
Loans from Outside Rwanda	7.63	9.31	12.63	5.79	11.05	9.25
Government	7.63	9.37	12.63	7.94	11.05	9.31
NGOs	10.50	9.43	12.63	16.81	12.02	9.59
Others	8.51	11.35	12.63	15.12	11.05	11.18
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

**Sources of Finance by size (% of Business Enterprises)**

	Micro 1-3	Small 4-3	Medium 31	Big 100 +	Total
Personal cash	95.23	4.73	0.03		100
Parent company in Rwanda	95.19	4.79	0.02		100
Loans from Rwanda	93.69	6.31			100
Loans from Outside Rwanda	95.36	4.64			100
Government	95.36	4.64			100
NGOs	95.28	4.66	0.07		100
Others	94.87	5.13			100
	Micro 1-3	Small 4-3	Medium 31	Big 100 +	
Personal cash	36.66	34.64	58.85	36.57	
Parent company in Rwanda	9.11	8.72	9.37	9.09	
Loans from Rwanda	14.81	18.98	0	15.02	
Loans from Outside Rwanda	9.29	8.59	0	9.25	
Government	9.35	8.64	0	9.31	
NGOs	9.61	8.93	31.78	9.59	
Others	11.16	11.49	0	11.18	
Total	100	100	100	100	

**2.7: ACCESS TO RELIABLE POWER & ENERGY USE**

**Use of Electricity by Year (Kilowatts)**

<b>Sector</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
Industry	10,641,009	7,835,742	8,905,860
Service	72,416,807	38,925,284	75,076,868
Finance	129,866	107,887	134,044
Education	55,101	36,572	51,599
Health	91,020	91,020	91,020
<b>Total</b>	<b>83,333,803</b>	<b>46,996,505</b>	<b>84,259,392</b>
<b>Size Band</b>			
Micro 1-3	51,867,629	40,028,521	40,028,521
Small 4-30	31,447,146	6,948,956	6,948,956
Medium 31-100	19,028	19,028	19,028
<b>Total</b>	<b>83,333,803</b>	<b>46,996,505</b>	<b>46,996,505</b>

**Usage of Solar Energy (% of Business Enterprises)**

<b>Sector</b>	<b>Yes</b>	<b>No</b>	<b>Total</b>
Industry	6.29	93.71	100
Service	8.06	91.94	100
Finance		100.00	100
Education		100.00	100
Health	5.93	94.07	100
<b>Size Band</b>			
Micro 1-3	7.99	92.01	100
Small 4-30	3.95	96.05	100
Medium 31-100	0.00	100.00	100

**Power Outages (% of Business Enterprises)**

<b>Days</b>	<b>Micro 1-3</b>	<b>Small 4-30</b>	<b>Medium 31-100</b>
Less than 1	97.78	83.71	100
1 to 3	1.71	5.63	
4 to 10	0.51		
10 to 20		10.65	
Above 20			
<b>Duration</b>			
Less than 1 hour	98.72	91.23	100
1 to 2 hours	0.87	8.77	
2 to 4 hours	0.41		
Over 4 hours			

**2.8: ENVIRONMENTAL PROTECTION****Existence of Waste**

<b>Sector</b>	<b>Yes</b>	<b>No</b>	<b>Total</b>
Industry	97.96	2.04	100
Service	90.71	9.29	100
Finance	43.26	56.74	100
Education	86.97	13.03	100
Health	88.47	11.53	100
<b>Size Band</b>			
Micro 1-3	90.51	9.49	100
Small 4-30	96.27	3.73	100
Medium 31-100	100.00		100

**Types of waste produced (% of Business Enterprises)**

<b>Sector</b>	<b>Solid</b>	<b>Liquid</b>	<b>Gas</b>	<b>Total</b>
Industry	9.22	3.33	72.98	9.27
Service	89.94	95.9	27.02	89.9
Finance	0.54			0.49
Education	0.16	0.78		0.21
Health	0.14			0.12
<b>Size Band</b>				
Micro 1-3	94.91	92.19	100.00	94.74
Small 4-30	5.05	7.61		5.21
Medium 31-100	0.04	0.20		0.05

**Modes of Waste Disposal, % of Business Enterprises**

<b>Sector</b>	<b>Industry</b>	<b>Service</b>	<b>Finance</b>	<b>Education</b>	<b>Health</b>
Pay someone to remove waste	41.29	46.07	57.95	34.67	54.77
Burying in specified areas	20.89	1.53		2.95	
Dumping in free land	15.83	22.55	42.05	24.72	
Selling the waste		1.46		2.95	
Recycling	15.77	27.69		30.60	41.45
Discharging into rivers	6.22	0.71		4.11	3.78
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Size</b>	<b>Micro 1-3</b>	<b>Small 4-30</b>	<b>Medium 31-100</b>		
Pay someone to remove waste	45.26	53.11	39.68		
Selling the waste	3.10	12.16			
Dumping in free land	21.74	25.42	32.85		
Discharging into rivers	1.36	0.11			
Burying in specified areas	27.48	3.42	13.74		
Recycling	1.06	5.77	13.74		
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>		

**Sources of Water, % of Business Enterprises**

<b>Sector</b>	<b>Industry</b>	<b>Service</b>	<b>Finance</b>	<b>Education</b>	<b>Health</b>
WASAC	68.43	61.79	100.00	56.27	62.00
Rainwater storage	11.66	5.39		27.29	27.86
Well	18.18	7.11			
Lake or dam		9.74			
Delivered by other in		2.88		10.50	2.47
Recycled water		0.07			
Water from spring	1.73	13.03		5.95	7.67
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Size</b>	<b>Micro 1-3</b>	<b>Small 4-3</b>	<b>Medium 31</b>		
WASAC	61.37	76.31	50.00		
Rainwater storage	5.09	16.38	50.00		
Well	8.24				
Lake or dam	9.70				
Delivered by other in	2.81	1.44			
Recycled water	0.06				
Water from spring	12.72	5.86			
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>		

## **COVID-19 & RWANDAN BUSINESSES**

### ***COVID-19 Impact by Decreasing Incomes, % of Business Enterprises***

<b>Activity</b>	<b>Yes significantly</b>	<b>Yes somehow</b>	<b>No</b>
Industry	85.52	4.45	10.03
Service	89.21	6.02	4.77
Finance	96.24		3.76
Education	87.67		12.33
Health	69.97	17.33	12.70
<b>Size</b>			
Micro 1-3	88.74	6.11	5.14
Small 4-30	93.29		6.71
Medium 31-100	54.00		46.00

### ***COVID-19 Impact by Increasing Expenditures, % of Business Enterprises***

<b>Activity</b>	<b>Yes- significantly</b>	<b>Yes- somehow</b>	<b>No</b>
Industry	65.08	15.4	19.52
Service	77.43	9.02	13.55
Finance	36.55		63.45
Education	83.35	8.89	7.76
Health	81.37	5.93	12.70
<b>Size</b>			
Micro 1-3	75.49	9.72	14.79
Small 4-30	85.33	3.97	10.70
Medium 31-100	15.92	38.08	46.00

### ***Pandemic Relief and Support, % of Business Enterprises***

<b>Sector</b>	<b>None</b>	<b>Tax relief</b>	<b>Loan relief</b>	<b>Other support</b>	<b>Financial</b>
Industry	80.11	4.06	6.19		9.64
Service	92.67	2.72	1.37	0.29	2.95
Finance	98.82	1.18			
Education	69.89	4.28	5.04	7.76	13.03
Health	90.29		5.93	3.79	
<b>Size</b>					
Micro 1-3	91.42	2.95	1.73	0.29	3.61
Small 4-30	96.01	0.15	2.64		1.19
Medium 31-100	84.08			15.92	

***Distribution of income by major formal economic sector, Frw Billions***

<b>Activity</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
Industry	1,171	1,361	1,565	1,590	1,734	1,796	2,551
Finance	376	456	491	593	634	720	839
NPISHs	374	344	190	250	315	489	431
Education	226	144	205	112	96	68	174
Health	234	155	146	102	89	95	103
Other services	2,551	3,393	3,222	3,582	3,940	4,114	4,876
<b>Total</b>	<b>4,931</b>	<b>5,852</b>	<b>5,819</b>	<b>6,229</b>	<b>6,808</b>	<b>7,282</b>	<b>8,974</b>

***Distribution of expenditure by major formal economic sector, Frw Billions***

<b>Activity</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
Industry	1137.1	1369.2	1502	1576	1690.87	1762.43	2159.94
Finance	305.2	387.3	438	493	394.8	420.88	420.02
NPISHs	363.5	331	204	236	346	576	467
Education	241.3	151	208	117	99	77	150
Health	217.8	150.5	139	104	93	96	107
Other services	2,609	3525.1	3203	3582	4260	4363	5249
<b>Total</b>	<b>4,874</b>	<b>5,914</b>	<b>5,694</b>	<b>6,108</b>	<b>6,884</b>	<b>7,295</b>	<b>8,553</b>

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