



THE REPUBLIC OF RWANDA



Integrated Business Enterprise Survey 2017

NATIONAL INSTITUTE OF STATISTICS OF RWANDA

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Integrated Business Enterprise Survey 2017

Foreword

The *Integrated Business Enterprise Survey in Rwanda 2017* (IBES 2017) is a comprehensive enterprise survey undertaken to collect, compile, and analyze 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 keeps regular business accounts. The formal sector also includes companies have 30 or more employees. Data collection has been carried out by the National Institute of Statistics of Rwanda (NISR) from 15th May to 14th September 2018 with the year 2017 as the reference period.

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 2017 has drawn crucial lessons from the previous survey rounds: IBES 2016, IBES 2015, IBES 2014 and the pilot IBES 2013. These lessons have already been used to introduce improvements to the IBES 2017.

The survey targets all 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 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 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. It introduces the survey in Chapter 1, business activities in Chapter 2, business environment in Chapter 3, and business performance in Chapter 4.

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List of abbreviations

DES	: Department of Economic Statistics
EC	: Establishment Census
Freq.	: Frequency
IBES	: Integrated Business Enterprise Survey
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

IBES 2017 sectoral coverage and report highlights

Sectoral coverage

IBES 2017 covered all non-agricultural 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. The 16 activities include:

- Mining and quarrying;
- Manufacturing;
- Electricity, gas, steam and air conditioning supply;
- Water supply, sewage, waste management and remediation activity;
- Construction;
- Wholesale and retail trade; repair of motor vehicles and motorcycles;
- Transportation and storage;
- Accommodation and food service activities;
- Information and communication;
- Financial and insurance activities;
- Real estate activities;
- Professional, scientific and technical activities;
- Administrative and support service activities;
- Human health and social work activities;
- Arts, entertainment and recreation; and
- Other service activities

In addition to background information about each enterprise, this survey has collected data on the number of people employed, their compensation, operating expenses and receipts, value of fixed assets, and outstanding loans. In this report, we have presented total assets, total equity and total liabilities for each sector.

Key statistics from the survey

- The estimated total number of workers employed by enterprises in formal sector in 2017 was 223,043 working in an estimate of 13,244 enterprises;
- 55.7% of employees in the formal business sector were based in Kigali;
- The largest business activity in the formal sector is education, employing around 19.1% of all employees;
- 36.0% of formal businesses were owned by a single individual, while around 28.3% were limited companies and 10.0% are cooperatives;
- 2.7% of enterprises employed at least 100 staff, while 27.7% had 3 employees or fewer;
- 75.8% of enterprises were owned by Rwandan resident, while 3.6% were owned by non-residents;
- 40.1% of businesses had been operating for less than 5 years, while 15.1% had been in existence for at least 20 years;
- Amongst the largest businesses (those with 100 or more employees) 33.9% had been operating for less than 5 years, while 25.1% had been operating for 20 or more years;
- 66.4 % of formal sector employees were men, and 33.6% women.

- In the informal sector, 96.3% of all businesses were found to have at most 3 employees.
- 66.8% of informal workers were men, and 33.2% women.

Tables 0.1 and 0.2 below summarize IBES survey findings for the previous IBES data collected for 2014, 2015, 2016 and 2017.

Table 0.1: IBES key survey findings, 2014-2017

Indicator/Reference year	2014	2015	2016	2017
1.Estimated total number of enterprises in formal sector	9,251	10,172	12,172	13,244
2.Estimated total number of workers in formal sector enterprises	175,244	183,667	216,524	223,043
3.Percentage of employees in the formal businesses working in Kigali	48.0	51.7	53.7	55.7
4.Percentage of formal businesses owned by single individuals	54.0	49.4	40.3	36.0
5.Percentage of limited companies in formal sector	18.0	22.2	22.3	28.3
6.Percentage of cooperatives in formal sector	10.0	9.9	9.2	10.0
7.Percentage of formal enterprises employing at least 100 persons (Large companies)	2.4	2.3	1.9	2.7
8.Percentage of formal enterprises employing 3 persons or fewer (Small businesses)	41.0	38.3	33.5	27.7
9.Percentage of formal enterprises owned by Rwandan residents	69.0	90.5	83.8	75.8
10.Percentage of formal enterprises owned by non-residents	2.4	3.1	3.0	3.6
11.Percentage of formal businesses of less than 5 years of operations	58.0	47.9	43.9	40.1
12.Percentage of formal businesses of at least 20 years of operations	9.0	8.4	12.7	15.1
13.Percentage of the largest businesses (with 100 or more employees) of less than 5 years of operations	31.0	34.2	22.6	33.9
14.Percentage of the largest businesses (with 100 or more employees) of 20 or more years of operations	18.0	18.9	31.7	25.1
15.Percentage of employed men in the formal sector	67.0	70.1	68.2	66.4
16.Percentage of employed women in the formal sector	33.0	29.9	31.8	33.6
17.Percentage of informal businesses with at most 3 employees (Small businesses)	91.7	94.9	95.0	96.3
18.Percentage of employed men in the informal sector	64.0	61.1	59.8	66.8
19.Percentage of employed women in the informal sector	36.0	38.9	40.2	33.2

Source: NISR, IBES Surveys 2014, 2015, 2016 and 2017

Table 0.2: Total Income and Expenditure, 2014-2017, Frw Billion

Description	Income				Expenditure			
	2014	2015	2016	2017	2014	2015	2016	2017
Mining and quarrying	157.3	106.4	87.5	93.3	163.1	108.2	84.6	92.9
Manufacturing	461.6	515.9	621.2	787.4	466.7	507.0	615.3	785.9
Utilities	74.2	131.8	186.5	178.0	102.7	127.5	183.2	168.5
Construction	343.6	416.9	465.4	503.6	298.7	393.7	475.2	482.4
Wholesale and retail trade; repair of motor vehicles	1,645.4	1,868.1	2,408.3	2,311.0	1,628.2	1,817.3	2,360.4	2,294.7
Transportation and storage	178.3	230.2	220.7	308.6	164.7	221.7	208.3	299.6
Accommodation and food service activities	78.9	96.3	160.6	151.8	78.7	107.4	189.4	212.2
Information and communication	207.1	201.8	429.7	112.4	242.4	293.9	523.2	136.2
Financial and insurance activities	480.6	375.8	455.5	490.5	365.5	305.2	393.9	437.8
Real estate activities	14.5	21.0	23.6	40.6	26.2	17.4	109.2	50.2
Professional, scientific and technical	43.4	53.6	47.2	102.3	40.3	44.6	43.2	98.5
Administrative and support service activities	40.7	52.1	71.2	96.9	30.0	44.0	63.1	85.7
Arts, entertainment and recreation	25.7	19.2	34.9	44.3	13.0	19.8	23.0	11.7
Other service activities	78.3	8.6	126.3	88.5	75.5	8.9	133.3	80.2
Total	3,829.5	4,097.7	5,334.5	5,309.2	3,695.6	4,016.7	5,324.4	5,236.7

Source: NISR, IBES Surveys for 2014, 2015, 2016 and 2017

CHAPTER 1: OVERVIEW AND KEY CONCEPTS

1.1 Integrated Business Enterprise Survey

The Integrated Business Enterprise Survey (IBES) has been planned to collect information about the state of business in the country, the number and nature of enterprises, their location, who and how many they are employing. It also collects information on business income and expenditure that are required for national accounting purposes, including the calculation of input-output ratios by industry. This information is useful for the private sector, the government and the development community alike.

In addition, the IBES project helps build and strengthen the capacity of the NISR - especially in the area of conducting enterprise surveys - including design, implementation, and data processing.

1.2 Coverage

IBES 2017 covered all non-agricultural 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. The term “**enterprise**” is defined 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 enterprise. Small and medium-sized enterprises (SMEs) employ fewer than 100 people. SMEs are further subdivided into micro enterprises (fewer than 3 employees), small enterprises (4 to 30 employees), medium-sized enterprises (31 to 100 employees). Big enterprises employ 100 or more people. The management of an 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.

1.3 Sample Design

1.3.1 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 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 2017 (EC2017) served as the sampling frame for both formal IBES 2017 and informal IBES 2018. For informal IBES 2018, EC2017 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 2017 the EC2017 frame was supplemented using IBES panel enterprises to ensure that all previous complying businesses were covered in the formal sector survey.

The IBES 2017 is based on a sample of 3,522 formal and 1,773 informal sector enterprises, selected from an estimated 13,244 formal and 135,216 informal enterprises. Informal 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.

1.3.1.1 Formal sector sample and estimation

The formal sector was defined in both EC2017 and IBES as those businesses registered with the Rwanda Revenue Authority (RRA) and keeping business accounts. The formal IBES 2017 sample was produced from three separate components: a sample drawn from EC2017, a partial panel based on the IBES 2016, and large businesses. Informal IBES 2018 sample has been drawn after a full enumeration in the sampled administrative sectors.

A random sample of 385 small firms were selected from EC2017 for those which were not in the IBES panel. This part of the sample was stratified by size of firm and by ISIC level two. A minimum stratum sample size of 10 was applied (or full enumeration for strata with fewer than 10 firms). The IBES panel includes all firms which responded to the IBES 2016 survey. In total there were 564 such enterprises. The purpose of this panel component of the IBES 2016 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 because all of the enterprises in this component were willing and able to respond for formal IBES 2016.

In addition, the sample was topped up based on large firms from the VAT and BIT registers. here were 1,710 enterprises which are registered with RRA for VAT or income tax and which are not in the IBES panel sample. This component of the sample includes all firms registered with RRA with turnover greater than 1 billion RWF in 2017. A sample of 3,522 formal enterprises and 2,857 informal enterprises was developed and targeted.

Most of the estimates included in this report have been obtained by multiplying the data for each sampled 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. These initial sample weights ranged between 1.7 and 35.3. 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. 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 these final weights were distributed to each sampled 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 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.

1.3.1.2 Informal sector sample and estimation

The selection of 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 EC2017.

The measure of size (MoS) used was the number of 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 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 enterprises in the sample EAs was established. At the second stage, the listed enterprises in each sample EA were then stratified by major economic activity (ISIC Rev.4 2 digit), and a sample of enterprises was then selected within each stratum. At the second sampling stage, all of the listed enterprises for some strata were included in the survey with certainty in case there were 3 or less enterprises for one ISIC 2-digit code within the sampled administrative sector. The procedure led to a total sample of 2,857 informal enterprises being selected.

The selection probabilities for 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:

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

where:

p_{hij} = probability of selection for the sample enterprises in the j -th economic activity group within the i -th sample segment (that is 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 enterprises selected in the j -th economic activity group within the i -th sample area in geographic stratum h

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

In sample strata where all the 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 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 2017 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.

1.4 Schedules, survey period, and fieldwork

The survey employed simultaneously two schedules of enquiry, one to collect information for the formal sector and the other to collect information for the informal sector. These schedules were pre-tested in the field to ascertain the feasibility of data collection, and certain modifications were incorporated based on experience. Inquiries were almost completed in three months (from 15th May to 14th August 2018) with few late responses that were collected from 15th August to 14th September 2018.

A team of 170 primary fieldworkers, 19 team leaders, 15 data editors, and 6 regional supervisors did the fieldwork. Before the commencement of fieldwork, a two-tier training program was conducted which covered the training of trainers/supervisors and a training of the primary fieldworkers. The training of trainers took 2 days while the training of fieldworkers lasted for 11 days. Data collectors have been trained on concepts and definitions involved in filling up the questionnaire during data collection. Practical sessions have been organized in which fieldworkers exercised on how to fill in the questionnaire modules and solve problems encountered therein.

In addition, at the preliminary stage of the fieldwork, field visits were conducted at selected samples to assess whether the guidelines of data collection were being properly followed in canvassing the schedules of enquiry and to suggest remedial measures. NISR monitored the progress of data collection during the survey period and provided necessary clarifications on technical survey matters. A technical committee comprising of NISR staff reviewed, commented, discussed and came up with practical solutions to the new fieldwork revelations that were later shared to all IBES staff. A team of 40 did the data entry and helped in data cleaning while another team of 19 performed coding of questionnaires.

1.5 Comparison with the National Accounts

The published national accounts statistics also 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. The national accounts estimates additionally 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.

After the above calculated weights have been applied to the collected data the results have been compared to RRA declared figures. Furthermore, business survey data methodology has been introduced in order to take into account non responses of some enterprises which have declared their turnovers in 2017 by using turnovers. We have assumed to have a VAT and BIT frame, and identified all IBES 2017 respondents which are in the new frame in order to take into account non responses of big enterprises.

Two main issues arose. The first issue was for companies with a turnover of more than 1 billion Frw which did not provide their turnover in IBES 2017 but had declared it in the new RRA frame. The second issue regarded companies with turnover in IBES 2017 but missing in the new RRA frame. The first ones were treated as non-responses while the second category was considered as self-representing with the weight of 1.

Finally, other final cleanings have been done to address wrong classification, currency used, and nonmatching reported in IBES 2017 and RRA figures. The corrected weights can be seen in table below.

1.6 Key concepts and data collection methodology

1.6.1 Distinction between enterprise and establishment

An 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 enterprise. An establishment is an enterprise or part of the enterprise located in a single location and normally a single economic activity is carried out in the establishment. It is to be noted that in the majority of the cases, and particularly for the smaller or medium-sized units, enterprise and establishment are identical. Efforts were made to list and record details for each enterprise including all its branches. Information on whether or not the establishment was part of an enterprise was also recorded

1.6.2 Activity Coverage and Listing of 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 relating to the processing of the primary produce of agricultural and allied activities were treated as non-agricultural. 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 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, other prepared food and refreshments. A restaurant (Division 56 of ISIC-4) generally provides eating and drinking services where prepared meals, food, and

refreshment and other snacks are sold for immediate consumption without any provision for lodging. Such 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 enterprises, including the general public, as a business is in the storage and warehousing industry (Division 52 of ISIC-4). But 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.

1.6.3 Items of Information and Related Concepts

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

- **Enterprise size:** In this report the enterprise size is measured by the number of employees; Micro enterprise (1 to 3 employees), Small enterprise (4 to 30 employees), Medium enterprise (31 to 100 employees), and Big enterprise (more than 100 employees).
- **Method of data collection:** this depended on whether the 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 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 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 enterprises maintaining accounts. In other cases, it was the day preceding the date of survey.
- **Background information about the enterprise:** Certain background information about the enterprise was collected first. These included broad activity of the enterprise for which 12 codes were provided, main activity of the 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 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 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 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 enterprise and the other recording the residual operating expenses involved in the day to day running of the 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 enterprise directly associated with the value of goods and services produced while the other recording other receipts of the 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 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.

CHAPTER 2: BUSINESS ACTIVITIES IN RWANDA

2.1 Introduction

This chapter presents IBES 2017 findings for economic activities of enterprises both in formal and informal sectors. The formal sector was defined in both the Establishment Census and the IBES as those businesses both registered with the Rwanda Revenue Authority (RRA) and keeping accounts. This Chapter gives an overview of the general description of the structure of business activities in Rwanda.

2.2 Structure of business activities

As stated in the previous chapter, the total estimated enterprises were 13,244 in IBES 2017 for all formal non-agricultural activities reached as shown in Table 2.1. The above estimate is based on a total sample of 3,522 enterprises drawn from EC2017, IBES panel and RRA tax registers while in informal sector, the total estimated enterprises was 135,216.

Kigali City ranks number one with more formal and informal enterprises, with 47.7 and 26.2 percent respectively, followed by the Southern Province with 15.0 and 23.2 percent respectively.

Table 2.1: Estimated total number of enterprises by province

Province	Formal		Informal	
	Frequency	Percent	Frequency	Percent
Kigali	6,320	47.7	35,467	26.2
South	1,980	15.0	31,307	23.2
West	1,880	14.2	25,147	18.6
North	1,116	8.4	27,160	20.1
East	1,948	14.7	16,134	11.9
Total	13,244	100.0	135,216	100.0

Source: NISR, IBES 2017 Survey

Table 2.2 in appendices illustrates that Wholesale and retail trade; repair of motor vehicles and motorcycles, Education, and Other service activities were the dominating economic sectors occupying 38.3, 14.2, and 8.9 percent of the total formal business enterprises respectively.

When all formal business enterprises are classified by their legal status, the outcome shows that more of them, 36.0 percent are individually owned followed by company limited by shares at 28.2 percent as shown in Table 2.1 below.

Table 2.2: Distribution of enterprises by ownership for formal sector

Legal status of the enterprise	Formal		Informal	
	Frequency	Percent	Frequency	Percent
Individual owner	4,764	36.0	131,821	98.0
Company limited by shares	3,732	28.2	1,594	1.2
Company limited by guarantee	9	0.1	7	0.0
Company limited by both shares and guarantee	2	0.0		
Unlimited company	24	0.2	9	0.0
Cooperative	1,330	10.0	923	1.0
Government	1,786	13.5	66	0.0
NPISHs	1,322	10.0	797	1.0
Other	275	2.1		
Total	13,244	100.0	135,216	100.0

Source: NISR, IBES 2017 Survey

From the Table 2.3 below, it has been observed that in formal sector, 60.8 percent of enterprises employ between 4-30 persons. While in the informal sector, 96.4 percent of enterprises employ not more than 3 persons.

Table 2.3 Distribution of enterprises by size

Size (employees)	Formal		Informal	
	Freq.	Percent	Freq.	Percent
Micro	3,662	27.6	130,402	96.4
Small	8,056	60.8	4687	3.5
Medium	1,173	8.8	112	0.1
Big	352	2.6	14	0.0
Total	13,244	100.0	135,216	100.0

Source: NISR, IBES 2017 Survey

Table 2.4 below, highlights the distribution of enterprises by ownership of the enterprise. It illustrates that Resident Rwandans own 76.1 percent of all formal enterprises and 99.0 percent of all informal enterprises.

Table 2.4 Distribution of enterprises by residency

Ownership of the enterprise	Formal		Informal	
	Frequency	Percent	Frequency	Percent
Government of Rwanda	1,793	13.5		
Resident Rwandans	10,075	76.1	133,837	99.0
Resident foreigners	913	6.9	1,363	1.0
Non-residents Rwandan or foreigners	463	3.5	16	0.0
Total	13,244	100.0	135,216	100.0

Source: NISR, IBES 2017 Survey

Table 2.5 below highlights the distribution of formal and informal enterprises by period of commencement of their respective economic activities whereby 40.1 and 80.4 per cent for formal and informal respectively are less than 5 (five) years old.

Table 2.5 Distribution of enterprises by period of commencement for formal & informal sector

Period of commencement	Formal		Informal	
	Freq.	Percent	Freq.	Percent
<=5Years	5,307	40.1	108,765	80.4
>5-10 Years	3,830	28.9	14,269	10.6
>10-15 Years	1,358	10.3	7,180	5.3
>15-20 Years	743	5.6	4,012	3.0
20+Years	2,006	15.1	990	0.7
Total	13,244	100.0	135,216	100.0

Source: NISR, IBES 2017 Survey

CHAPTER 3: BUSINESS ENVIRONMENT

3.1 Introduction

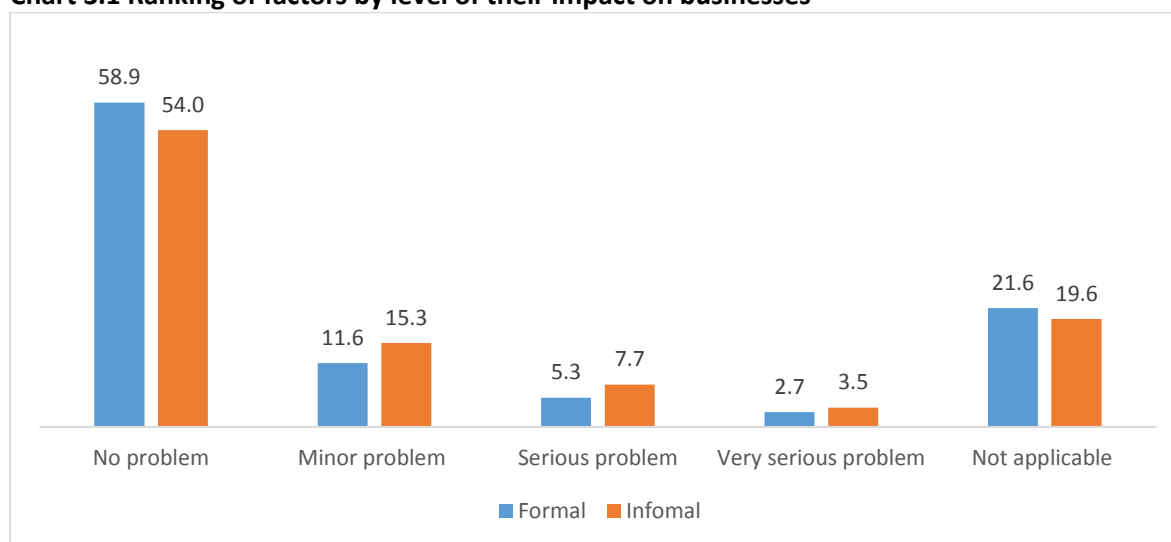
This chapter covers information that has been collected on business environment factors in general, for both formal and informal sectors. Areas covered include: environment protection, capacity utilization, access to Rwandan produced raw materials, access to reliable power, exportation, and access to finance. Also included is the disaggregation of factors explaining business environment by enterprise size. In this chapter, all presented data are for both formal and informal sector except otherwise specified. Some tables have been taken in the appendices for more details.

3.2 Business environment factors

The business environment includes a combination of internal and external factors that influence businesses' performance. Those factors are mainly: availability of affordable finance or bank loans, tools and machinery, working space, skilled or technical labour, electricity, water, land, input materials, transport facilities, regulatory environment, marketing problems, telecommunications and internet connection. These factors are ranked by 5 levels: no problem, minor problem, serious problem, very serious problem and not applicable.

Chart 3.1 shows an aggregated view of the factors ranked by formal and informal sector. It shows that 58.9 percent in the formal sector and 54.0 percent in the informal sector reported that they do not have a problem with any of the factors. Furthermore, 2.7 percent in the formal sector and 3.5 percent in the informal reported having very serious problem with some of the factors. For more details, see Table 3.1 in appendices.

Chart 3.1 Ranking of factors by level of their impact on businesses



Source: NISR, IBES 2017 Survey

3.2.1 Formal business environment factors by size

The survey has revealed that businesses are affected depending on their size; micro businesses are most affected compared to others. Table 3.1 below depicts business environment factors that affects businesses by size; 6.4 percent of micro business have reported that availability of affordable finance or bank loan is a serious problem while 85.3 percent and 85.9 of companies declared not having any problem with the regulatory environment and availability of electricity respectively.

Table 3.1: Ranking of factors by the level of their impact on formal micro enterprises

Factor	No problem	Minor problem	Serious problem	Very serious problem	Not applicable	Total
Availability of affordable finance or bank loans	77.1	13.1	6.4	2.3	1.2	100.0
Availability of tools and machinery	71.9	15.0	3.4	0.3	9.4	100.0
Availability of working space	83.3	9.2	5.2	2.3	0.0	100.0
Availability of electricity	85.9	11.7	0.7	1.7	0.0	100.0
Availability of water	78.0	9.6	4.4	1.6	6.4	100.0
Availability of land	39.5	7.6	6.9	4.4	41.7	100.0
Availability of input materials	7.6	1.8	0.2	0.2	90.3	100.0
Availability of transport facilities and infrastructures	80.8	10.5	5.5	1.3	2.0	100.0
Regulatory environment	85.3	8.3	4.7	1.6	0.1	100.0
Marketing problems	52.4	30.7	7.6	3.6	5.7	100.0
Telecommunications	81.6	14.0	2.3	2.2	0.0	100.0
Internet connection	43.4	12.3	8.1	6.6	29.6	100.0
Packing materials	31.8	12.6	4.9	2.9	47.8	100
Other problems	8.6	0.1	1.7	1.4	88.2	100
Total	59.1	11.2	4.4	2.3	23.0	100.0

Source: NISR, IBES 2017 Survey

Table 3.2 below shows perception of business environment factors in the small size band where 6.8 percent reported that availability of affordable finance or bank loan is a serious problem while 87.3 percent, 73.5 percent and 78.5 percent of companies declared not having any problem with the regulatory environment, availability of water and electricity respectively.

Table 3.2: Ranking of factors by the level of their impact on formal small enterprises

Factor	No problem	Minor problem	Serious problem	Very serious problem	Not applicable	Total
Availability of affordable finance or bank loans	73.4	14.1	6.8	1.5	4.2	100.0
Availability of tools and machinery	69.5	18.5	7.0	1.8	3.1	100.0
Availability of working space	75.3	16.0	6.9	1.8	-	100.0
Availability of electricity	78.5	12.6	3.9	5.0	0.1	100.0
Availability of water	73.5	10.0	7.4	8.6	0.5	100.0
Availability of land	53.7	13.8	7.8	3.0	21.8	100.0
Availability of input materials	6.1	2.4	0.7	0.4	90.4	100.0
Availability of transport facilities and infrastructures	67.7	15.6	12.0	3.9	0.9	100.0
Regulatory environment	87.3	6.8	4.0	1.6	0.3	100.0
Marketing problems	63.0	18.3	4.8	1.4	12.5	100.0
Telecommunications	83.5	12.1	3.2	0.7	0.5	100.0
Internet connection	57.0	17.2	12.1	7.5	6.2	100.0
Packing materials	22.0	4.7	0.7	0.8	71.8	100.0
Other problems	6.6	2.1	2.1	2.6	86.6	100.0
Total	58.4	11.7	5.7	2.9	21.3	100.0

Source: NISR, IBES 2017 Survey

Table 3.3 below illustrates that 4.1 percent of medium sized enterprises reported that availability of affordable finance or bank loan is a serious problem while 91.9 percent, 72.6 percent and 77.7 percent of companies declared not having any problem with the regulatory environment and availability of water and electricity respectively.

Table 3.3: Ranking of factors by the level of their impact on formal medium enterprises

Factor	No problem	Minor problem	Serious problem	Very serious problem	Not applicable	Total
Availability of affordable finance or bank loans	78.8	11.1	4.1	0.9	5.1	100.0
Availability of tools and machinery	68.0	22.2	6.9	2.4	0.6	100.0
Availability of working space	72.3	14.0	11.8	1.8	0.1	100.0
Availability of electricity	77.7	15.6	4.0	2.6	0.2	100.0
Availability of water	72.6	14.7	6.9	5.3	0.6	100.0
Availability of land	60.4	13.1	8.7	1.6	16.2	100.0
Availability of input materials	14.3	5.9	1.4	0.5	77.9	100.0
Availability of transport facilities and infrastructures	65.6	15.4	12.5	5.2	1.3	100.0
Regulatory environment	91.9	5.2	2.2	0.4	0.3	100.0
Marketing problems	70.0	10.6	4.1	0.8	14.5	100.0
Telecommunications	86.8	10.1	2.4	0.5	0.2	100.0
Internet connection	59.7	18.9	10.1	4.9	6.5	100.0
Packing materials	24.9	3.7	2.2	2.2	67.1	100.0
Other problems	5.7	2.2	1.5	2.1	88.6	100.0
Total	60.6	11.6	5.6	2.2	19.9	100.0

Source: NISR, IBES 2017 Survey

Table 3.4 below shows business environment factors as reported by big businesses. Among them, 2.8 percent reported that availability of affordable finance or bank loan is a serious problem while 81.2 percent, 85.4 percent and 74.2 percent of companies declared not having any problem with the regulatory environment, availability of water, and electricity respectively.

Table 3.4: Ranking of factors by the level of their impact on formal big enterprises

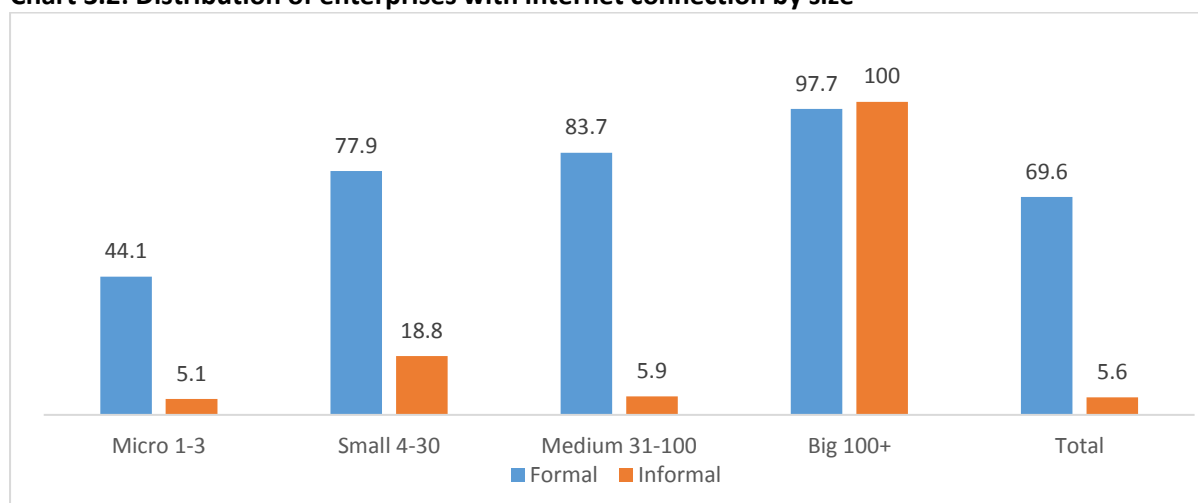
Factor	No problem	Minor problem	Serious problem	Very serious problem	Not applicable	Total
Availability of affordable finance or bank loans	85.2	8.8	2.8	0.9	2.3	100.0
Availability of tools and machinery	78.0	14.7	6.7	0.6	0.0	100.0
Availability of working space	83.6	11.9	3.4	1.1	0.0	100.0
Availability of electricity	74.2	18.9	3.4	3.5	0.0	100.0
Availability of water	85.4	8.6	3.4	2.6	0.0	100.0
Availability of land	67.3	6.0	6.3	1.4	19.0	100.0
Availability of input materials	23.9	5.7	2.6	2.3	65.6	100.0
Availability of transport facilities and infrastructures	66.9	11.7	8.0	12.3	1.1	100.0
Regulatory environment	81.2	15.4	2.0	0.9	0.6	100.0
Marketing problems	67.5	26.5	1.4	0.0	4.5	100.0
Telecommunications	78.3	17.2	4.2	0.3	0.0	100.0
Internet connection	71.7	20.6	6.6	1.1	0.0	100.0
Packing materials	41.7	7.6	2.0	0.9	47.8	100.0
Other problems	6.5	1.7	0.3	0.9	90.6	100.0
Total	65.1	12.5	3.8	2.0	16.5	100.0

Source: NISR, IBES 2017 Survey

3.2.2 Information technology and internet use

Survey findings on access to information technology and the use of internet by formal businesses show that on average 34 out of 44 employees (77.3%) in the Information and communication industry are using a computer in their job whereas in wholesale and retail trade; repair of motor vehicles and motorcycles only 3 out of 11 employees (27.3%) on average use a computer. In general, 9 out 41 employees (21.9%) on average use computers in their jobs. For more details see Tables 3.2 and 3.3 in appendices.

Chart 3.2: Distribution of enterprises with internet connection by size



Source: NISR, IBES 2017 Survey

Table 3.5 below shows the prevalence of companies with internet connection by formal and informal sector and by economic activity. In the Information and communication sector, all formal companies have access to internet against 46.8 percent in informal sector. Electricity, gas, steam and air conditioning supply and ICT sectors have reported highest levels of internet connection in the formal sector with 100 percent. Informal construction service was the leading activity with internet connection in the informal sector with 96.5 percent. Overall, 69.6 percent of formal companies have reported to be connected to internet against 5.6 percent in informal sector.

Table 3.5: Distribution of enterprises with internet connection by economic activity

Activity/Sector	Formal (%)	Formal (Freq.)	Informal (%)	Informal (Freq.)
Mining and quarrying	79.3	108	12.5	120
Manufacturing	72.1	744	4.6	8,910
Electricity, gas, steam and air conditioning supply	100.0	14	71.4	4
Water supply; sewerage, waste management	75.8	38	5.5	263
Construction	93.8	173	96.5	329
Wholesale and retail trade; repair of motor vehicles and motorcycles	56.2	5,070	2.3	74,682
Transportation and storage	94.6	173	3	116
Accommodation and food service activities	84.1	993	6.8	31,894
Information and communication	100	133	46.8	753
Financial and insurance activities	98.8	770	44.1	195
Real estate activities	88.8	106	8.0	208
Professional, scientific and technical activities	96.6	492	69.2	735
Administrative and support service activities	75.9	299	54.1	986
Education	67.7	1,883		
Human health and social work activities	90.9	1059		
Arts, entertainment and recreation	100	14	15.7	61
Other service activities	50.7	1,175	8.8	15,960
Total	69.6	13,244	5.6	135,216

Source: NISR, IBES 2017 Survey

Modems were most frequently used by both formal and informal sectors while the usage of VPN and fiber optic was the least, see Table 3.6 below.

Table 3.6 Percentage of enterprises by type of internet used

Internet type	Formal (%)	Formal (Freq.)	Informal (%)	Informal (Freq.)
Wireless(Wi-Fi)	53.4	9,215	9.7	7,520
Broadband (fiber optic)	7.1	9,215	0.7	7,520
Modem	59.2	9,215	21.5	7,520
VPN	4.5	9,215	1.1	7,520
Telephone	41.7	9,215	30.0	7,520
Total	33.2	9,215	10.5	7,520

Source: NISR, IBES 2017 Survey

Table 3.7 below shows that formal and informal enterprises mostly use internet for tax declaration (91.7 and 34.3 percent respectively). Video conferencing and staff training remain low in using internet in both sectors.

Table 3.7: Distribution of enterprises by what internet is used for

Internet use	Formal (%)	Formal (Freq.)	Informal (%)	Informal (Freq.)
Make purchases for this enterprise	30.4	9,215	4.4	7,520
Deliver services to this enterprise's clients	44.6	9,215	15.2	7,520
Receipts from customers payments	25.1	9,215	2.7	7,520
Do research and develop ideas on new products	58.2	9,215	28.6	7,520
Advertise job vacancies	15.9	9,215	2.9	7,520
Declaration of taxes	91.7	9,215	34.3	7,520
Payment of taxes	56.2	9,215	12.3	7,520
Internet banking	39.7	9,215	4.4	7,520
Video conference	8.8	9,215	5.1	7,520
Staff training	13.3	9,215	0.7	7,520
Advertise Company's products	22.3	9,215	3.0	7,520

Source: NISR, IBES 2017 Survey

3.2.3 Environment protection

This section is about the source of energy, water and waste management habits used in protecting environment. Table 3.7 in the appendices shows that 96.0 percent of formal enterprises have either scraps or waste. In the formal sector, Electricity, gas, steam and air conditioning supply, and construction produce the most scraps or waste with 100.0 and 99.1 percent respectively.

Table 3.8 below demonstrates that the majority of formal companies with scraps or waste are of small size (61.7 percent) while big companies have a lower percentage of 3.1. The trend is the same for scraps and waste type as small companies dominate with 60.2, 68.0, 75.8 percent for solid, liquid and gas respectively.

Table 3.8: Percentage distribution of enterprises by type of scraps and waste and enterprise size

Sector	Type\Enterprise size	Micro	Small	Medium	Big	Total
Formal	Solid	28.2	60.2	8.9	2.7	100.0
	Liquid	12.0	68.0	15.3	4.7	100.0
	Gas	0.0	75.8	10.8	13.3	100.0
	Total	25.1	61.7	10.1	3.1	100.0
Informal	Solid	96.7	3.2	0.1	0.0	100.0
	Liquid	91.4	8.5	0.0	0.1	100.0
	Gas	2.3	97.7	0.0	0.0	100.0
	Total	63.5	36.5	0.0	0.0	100.0

Source: NISR, IBES 2017 Survey

Table 3.9 below demonstrates that formal companies that pay someone to remove wastes or scraps as a mode of waste disposal are 65.9 percent; this method is followed by burying in specific places or burning waste and scraps (28.7 percent). Recycling stands at 4.3 percent of companies that use this mode of wastes and scraps disposal. Discharging waste into rivers or streams is at 0.3 percent

Table 3.9: Percent distribution of formal enterprises by mode of disposal of wastes and scraps

Mode of disposal	Yes	No	Total
Pay someone to remove the waste	65.9	34.1	100.0
Sells the waste	2.9	97.1	100.0
Dumping in free land	15.7	84.3	100.0
Discharging into river or streams	0.3	99.7	100.0
Burying in specified places or burning	28.7	71.4	100.0
Recycling	4.3	95.7	100.0

Source: NISR, IBES 2017 Survey

WASAC appears to be the main source of water for all formal enterprises with a percentage of 61.1, followed by rainwater storage (25.6 percent) as shown in Table 3.10 below. The use of recycled water was at only 1.2 percent.

Table 3.10: Percentage distribution of formal enterprises by water source

Source of water	Yes	No	Total
WASAC	61.1	38.9	100.0
Rainwater storage	25.6	74.4	100.0
Well	3.9	96.1	100.0
Lake or dam	3.2	96.8	100.0
Delivered by other in tank	3.3	96.7	100.0
Recycled water	1.2	98.8	100.0
Water from spring	9.4	90.6	100.0
Total	15.4	84.6	100.0

Source: NISR, IBES 2017 Survey

The tank is the most possessed water storing device with a percentage of 38.0 while other storing devices are the least possessed devices with 0.0 percent of companies with water storing systems, see Table 3.11 below.

Table 3.11: Percent distribution of formal enterprises storing water by type of water storing device

Water storing device	Yes	No	Total	Companies
Dam	0.6	99.4	100.0	13,244
Pond	2.8	97.2	100.0	13,244
Tanks	38.0	62.0	100.0	13,244
Others	0.0	100.0	100.0	13,244

Source: NISR, IBES 2017 Survey

The volume of firewood used in 1,916 formal enterprises is 376,410 m³. Education and Manufacturing enterprises are the most users of firewood with 135,143 and 115,008 m³ respectively while mining and quarrying are the least users with 8,568 m³. Table 3.12 below has more details.

Table 3.12: Volume of firewood used by formal economic activity

Activity	m3	Companies
Mining and quarrying	8,568	54
Manufacturing	115,008	143
Accommodation and food service activities	74,373	296
Education	135,143	912
Human health and social work activities	29,915	248
Other service activities	13,403	264
Total	376,410	1,916

Source: NISR, IBES 2016 Survey

Table 3.13 below illustrates that Small and Medium enterprises are the one that use a bigger volume of firewood as they have used 175,900 and 104,958 cubic meters respectively from the total volume of 377,200 cubic meters used in the total economy.

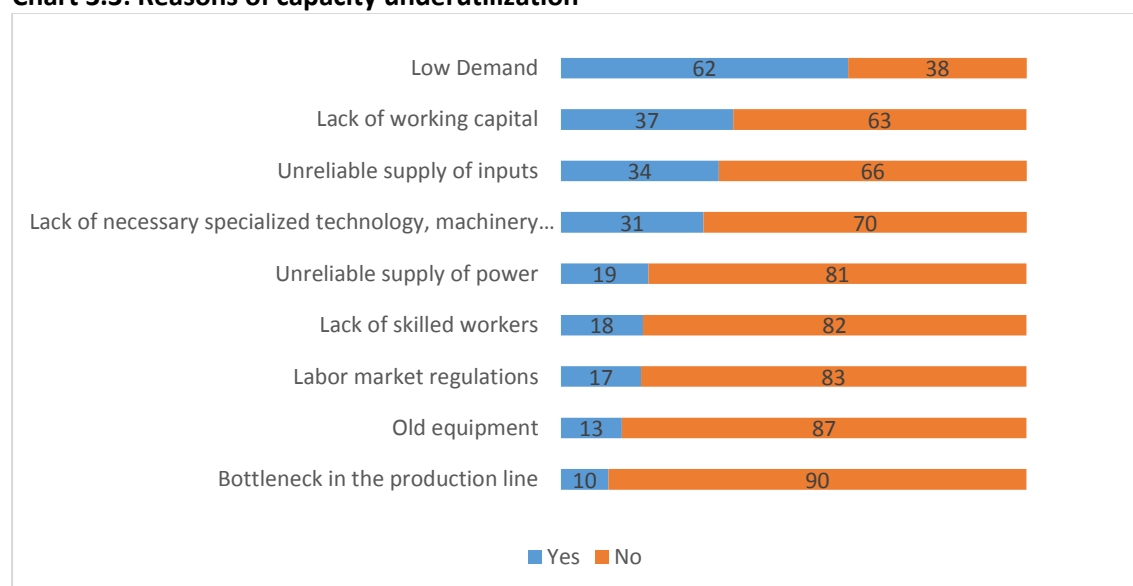
Table 3.13: Volume of firewood used by enterprise size

Enterprise size	m3	Companies
Micro	651	87
Small	175,900	1,323
Medium	104,958	468
Big	95,691	77
Total	377,200	1,955

Source: NISR, IBES 2017 Survey

3.2.4 Capacity utilization

In the formal sector, 74.5 percent of companies have reported to maximize the utilization of their capacity. The remaining 25.5 percent underutilize their capacity due to low demand (61.7 percent), unreliable supply of power (18.8 percent) and lack of skilled workers (17.6 percent). The least mentioned reason is the Bottleneck in the production line with 10.2 percent. For more details, see Chart 3.3 and Table 3.17 below.

Chart 3.3: Reasons of capacity underutilization

Source: NISR, IBES 2017 Survey

Taking into account the size of formal enterprises, medium enterprises are ranked first in capacity utilisation with a percentage of 81.2, see Table 3.14 below. Micro enterprises are the least with only 58.8 percent of their capacity used.

Table 3.14: Capacity utilization mean of production units by enterprise size

Enterprise size	Capacity utilization (%)	Companies (freq.)
Micro	58.8	58
Small	64.3	436
Medium	81.2	195
Big	69.2	105
Total	68.7	794

Source: NISR, IBES 2017 Survey

3.2.5 Access to Rwandan produced raw materials

Table 3.15 below summarizes the use of Rwandan raw materials, which was at the level of 74.8 percent. Formal manufacturing enterprises that use Rwanda produced raw materials are 73.3 percent against 93.0 and 39.1 percent of formal mining and utilities companies respectively.

Table 3.15: Production units by whether they use Rwandan raw materials and by economic activity

Activity	Yes	No	Total	Companies
Mining and quarrying	93.0	7.0	100.0	71
Manufacturing	73.3	26.7	100.0	660
Utilities	39.1	60.9	100.0	13
Total	74.8	25.2	100.0	744

Source: NISR, IBES 2017 Survey

Table 3.16 below describes importance of Rwandan raw materials. Overall, formal companies that considered Rwandan produced raw materials as very important were 52.0 percent in 2017.

Table 3.16 Production units using Rwandan raw materials by importance and economic activity

Activity	Not important	Somewhat important	Important	Very important	Total	Freq.
Mining and quarrying	0.0	4.5	19.6	75.9	100.0	66
Manufacturing	7.2	19.9	24.1	48.9	100.0	484
Utilities	0.0	0.0	61.3	38.7	100.0	5
Total	6.2	17.9	23.9	52.0	100.0	555

Source: NISR, IBES 2017 Survey

3.2.6 Access to reliable power in formal sector

Table 3.17 below shows that 74.8 percent of formal enterprises were connected to the national power grid while 25.2 percent were not in 2017.

Table 3.17 Production units by whether they are connected to the national power grid or not

Activity	Yes (%)	No (%)	Total (%)	Freq.
Mining and quarrying	80.4	19.6	100.0	71
Manufacturing	75.1	24.9	100.0	660
Utilities	31.5	68.5	100.0	13
Total	74.8	25.2	100.0	744

Source: NISR, IBES 2017 Survey

Table 3.18 below shows that 16.0 percent on the national power grid units need additional power in future whereas 84.0 percent of the national power grid units do not need additional power in future.

Table 3.18 National power grid units needing additional power in future by economic activity

Activity	Yes	No	Total	Freq.
Mining and quarrying	63.3	36.7	100.0	57
Manufacturing	10.6	89.4	100.0	496
Utilities	0.0	100.0	100.0	4
Total	16.0	84.0	100.0	557

Source: NISR, IBES 2017 Survey

Table 3.19 shows production units by number of power outages and economic activity. In 2017, 53.5 percent have experienced less than three power outages in a month.

Table 3.19 Production units by the number of power outages in month

Power outages in a month	1 to 3	4 to 10	10 to 20	Above 20	Total	Freq.
Mining and quarrying	21.0	12.2	0.0	66.8	100.0	57
Manufacturing	57.7	28.7	6.4	7.2	100.0	496
Utilities	0.0	76.0	24.0	0.0	100.0	4
Total	53.5	27.3	5.9	13.3	100.0	557

Source: NISR, IBES 2017 Survey

Table 3.20 below describes variation in the length of power outages by economic activity. In 2017, 0.2 percent of businesses have experienced power outages of more than eight hours. The frequency of power outages was relatively high in manufacturing sector where 57.6 percent of the businesses experienced power outages of less than one hour against 22.7 in mining and quarrying sector.

Table 3.20 Distribution of production units by length of power outages and by economic activity

Activity/Hours	Less than 1 hour	1 to 2 hours	2 to 4 hours	4 to 8 hours	Above 8 hours	Freq
Mining and quarrying	22.7	7.0	7.0	63.3	0.0	57
Manufacturing	57.6	27.8	8.0	6.6	0.0	496
Utilities	47.9	52.1	0.0	0.0	0.0	4
Total	54.0	25.9	7.8	12.4	0.2	557

Source: NISR, IBES 2017 Survey

3.2.7 Exportation

Table 3.21 below shows that 28.0 percent of enterprises have exported their products abroad. 22.5 percent of 71 companies in mining and quarrying enterprises were engaged in exportation activity.

Table 3.21 Distribution of enterprises by whether they exported and by economic activity

Activity	Yes	No	Total	Freq.
Mining and quarrying	22.5	77.5	100.0	71
Manufacturing	29.1	70.9	100.0	660
Utilities	0.0	100.0	100.0	13
Total	28.0	72.0	100.0	744

Source: NISR, IBES 2017 Survey

Table 3.22 below shows that 42.7 percent of big enterprises have exported their products.

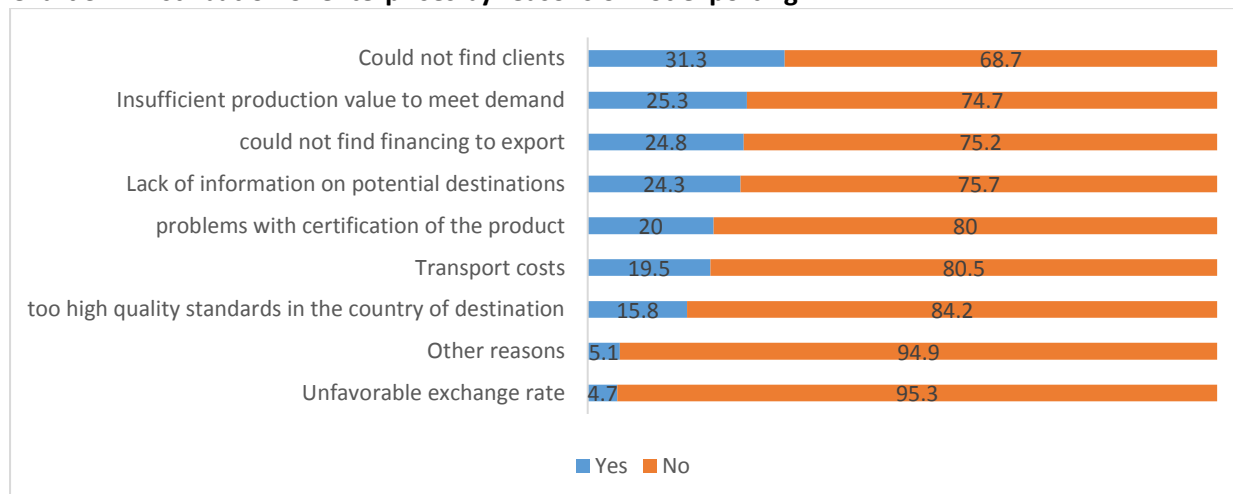
Table 3.22 Distribution of enterprises by whether they exported in 2017 and by enterprise size

Enterprise size	Yes	No	Total	Freq.
Micro	1.7	98.3	100.0	58
Small	27.2	72.8	100.0	436
Medium	28.2	71.8	100.0	195
Big	42.7	57.3	100.0	105
Total	27.7	72.3	100.0	794

Source: NISR, IBES 2017 Survey

Chart 3.4 below demonstrates that the main reason of not exporting was that enterprises could not find clients, 31.1 percent; followed by insufficient production to meet demand, 25.3 percent.

Chart 3.4: Distribution of enterprises by reasons of not exporting



Source: NISR, IBES 2017 Survey

3.2.8 Access to finance

Table 3.23 below shows that 99.6 percent in formal sector have a current account against 73.4 percent of companies in informal sector.

Table 3.23 Distribution of enterprises by financial services type used and by enterprise size

Financial services	Informal (%)	Formal (%)
Current account	73.4	99.6
Savings accounts	0.9	11.0
Foreign exchange	74.0	14.2
Letters of credits	0.0	2.9
Insurance	19.0	64.5
Total Companies	135,216	13,244

Source: NISR, IBES 2017 Survey

Table 3.24 below shows that motor vehicle and non-general insurance were the most insurance type used by enterprises with 52.0 and 62.0 percent respectively.

Table 3.24 Distribution of enterprises by the type of insurance used

Type of insurance	Yes	No	Total	Freq.
Motor vehicles	52.0	48.0	100.0	8,538
Medical and or Life insurance	62.0	38.0	100.0	8,538
Other property	50.0	50.0	100.0	8,538

Source: NISR, IBES 2017 Survey

Table 3.25 below summarizes the ranking of different sources of finance, where 1 is the most important source. It shows that 82.1 percent of those enterprises that use personal cash as a source of finance have ranked it their most important source.

Table 3.25 Enterprises by the ranking of their source of finance, 1 is the most important

Source of Financing/Rank	1	2	3	4	5	6	Total	Freq.
Personal cash	82.1	16.8	1.1	0.0	0.0	0.0	100.0	11,190
Parent company in Rwanda	11.8	74.1	13.8	0.0	0.0	0.3	100.0	344
Loans from Rwanda	28.1	70.3	1.4	0.1	0.0	0.0	100.0	4,447
Loans from outside Rwanda	15.1	76.5	7.9	0.2	0.0	0.2	100.0	456
Government	69.9	27.1	2.2	0.8	0.0	0.1	100.0	2,158
NPISHs	54.0	37.5	7.6	0.2	0.7	0.1	100.0	1,538
Others	24.0	59.4	15.7	1.0	0.0	0.1	100.0	1,821

Source: NISR, IBES 2017 Survey

Table 3.26 below illustrates that short and medium term bank loans were the most financial sources that were received in totality as requested by enterprises.

Table 3.26 Enterprises that received 100.0 percent of finance by negotiated source of finance

Financial source	2012	2013	2014	2015	2016	2017
Short and medium term bank loan	602	604	869	937	1,008	1,875
Long term bank loan	202	217	276	374	294	1,135
Credit line or card or overdraft	261	361	419	431	435	674
Trade credit	180	226	262	279	294	225

Source: NISR, IBES 2017 Survey

CHAPTER 4: BUSINESS PERFORMANCE

4.1 Overview of sector performance

This chapter comprises survey results of the formal sector. The main activities have been analysed and key highlighted aggregates are: income, expenditure, balance sheet, and disposal of fixed assets. All data have been presented for the following sectors: Industry, Finance, Education, Health, Non Profit Institutions Serving Households (NPISHs) and Other Services.

The industry sector is made of the following five economic sectors: Mining and quarrying, Manufacturing, Electricity, gas, steam and air conditioning supply, Water supply; sewerage, waste management and remediation activities, and Construction. The Financial and insurance activities include financial service activities, insurance, reinsurance and pension funding activities and activities to support financial services. It also includes the activities of holding assets, such as activities of holding companies and the activities of trusts, funds and similar financial entities.

In addition, the education sector includes education at any level or for any profession, oral or written as well as by radio and television or other means of communication. It includes education by the different institutions in the regular school system at its different levels as well as adult education, literacy programs etc. Also included are military schools and academies, prison schools etc. at their respective levels. For each level of initial education, the classes include special education for physically or mentally handicapped pupils. This section also includes instruction primarily concerned with sport and recreational activities such as bridge or golf and education support activities.

Health sector includes the provision of health and social work activities. Activities include a wide range of activities, starting from health care provided by trained medical professionals in hospitals and other facilities, over residential care activities that still involve a degree of health care activities to social work activities without any involvement of health care professionals.

Non-profit institutions are legal or social entities, created for the purpose of producing goods and services, whose status does not permit them to be a source of income, profit or other financial gain for the units that establish, control or finance them. In practice, their productive activities are bound to generate either surpluses or deficits but any surpluses they happen to make cannot be appropriated by other institutional units. The articles of association by which they are established are drawn up in such a way that the institutional units that control or manage them are not entitled to a share in any profits or other income they receive. For this reason, they are frequently exempted from various kinds of taxes. IBES excludes all NPISH created by the government.

Finally, the services sector is made of trade, transportation, accommodation, information and communication, real estate activities, professional, scientific and technical services,

administrative and support services, arts, and other services except financial, education, and health.

4.2 Income and expenditure

Table 4.1 below highlights the distribution of income and expenditure by economic sectors. For income, the results show that others services yielded more income of Frw 3,222 billion. On the second position is the industry sector which produced Frw 1,565 billion of revenue. For expenditure, other services registered expenditure of Frw 3,203 billion. On the second position is the industry sector which registered expenditure of Frw 1,502 billion.

Table 4.1. Income and expenditure statement by Sector (Billion, FRW)

Description	Total income	Total expenditure
Industry	1,565	1,502
Finance	491	438
Education	205	208
Health	146	139
NPISHs	190	204
Other services	3,222	3,203
Total	5,819	5,694

Source: NISR, IBES 2017 Survey

Table 4.2 below highlights the distribution of income and expenditure by enterprise size. For income, the results show that big enterprises have produced more income of Frw 2,374 billion. Small enterprises have produced income of Frw 1,715 billion. For expenditure, big enterprises registered expenditure of Frw 2,301 billion against Frw 1,637 billion of small enterprises.

Table 4.2. Income and expenditure statement by Size (Billion, FRW)

Enterprise size	Total income	Total expenditure
Micro	522	515
Small	1,715	1,637
Medium	1,208	1,241
Big	2,374	2,301
Total	5,819	5,694

Source: NISR, IBES 2017 Survey

4.3 Balance sheet

Survey results show that total assets of all economic sectors were Frw 9,889 billion. Other services have scored more assets valued at Frw 3,931 billion, of which non-current and current assets were Frw 3,931 billion and Frw 1,253 billion respectively. Finance sector's total assets were Frw 2,889 billion, of which non-current and current assets were Frw 148 billion and Frw 2,741 billion respectively while the total assets of health sector were Frw 53 billion of which non-current and current assets were Frw 19 billion and Frw 34 billion respectively. Table 4.3 below provides aggregates of assets by economic sectors.

Table 4.3. Balance sheet assets by sector in billion Frw

Description	Total non-current assets	Total current assets	Total assets
Industry	1,734	988	2,721
Finance	148	2,741	2,889
Education	152	41	192
Health	19	34	53
NPISHs	74	29	103
Other services	2,678	1,253	3,931
Total	4,804	5,085	9,889

Source: NISR, IBES 2017 Survey

Total assets of all sectors stood at Frw 9,889 billion. Big enterprises owned more assets of Frw 6,033 billion, of which non-current and current assets were Frw 2,498 billion and Frw 3,535 billion respectively; while micro enterprises owned less assets of Frw 286 billion, of which non-current and current assets were Frw 152 billion and Frw 134 billion respectively. Table 4.4 below shows types of assets by enterprise size.

Table 4.4. Balance sheet assets by size in billion Frw

Description	Total non-current assets	Total current assets	Total assets
Micro	152	134	286
Small	1,041	705	1,746
Medium	1,114	710	1,824
Big	2,498	3,535	6,033
Total	4,804	5,085	9,889

Source: NISR, IBES 2017 Survey

Table 4.5 below displays the owners' equity and liabilities by economic sectors. Other services had more total equity and liabilities of Frw 9,889 billion, of which equity and liabilities were Frw 1,137 billion and Frw 2,794 billion respectively. On the second position was the finance sector which had total equity and liabilities of Frw 2,889 billion, of which equity and liabilities were Frw 542 billion and Frw 2,347 billion respectively.

Table 4.5. Equity and liabilities by sector in billion Frw

Description	Total equity	Total liabilities	Total
Industry	786	1,935	2,721
Finance	542	2,347	2,889
Education	128	64	192
Health	28	25	53
NPISHs	71	31	103
Other services	1,137	2,794	3,931
Total	2,692	7,197	9,889

Source: NISR, IBES 2017 Survey

Table 4.6 below shows the distribution of equity and liabilities by enterprise size. Big companies had more of equity and liabilities than other enterprises.

Table 4.6. Balance sheet liabilities by size in billion Frw

Description	Total equity	Total liabilities	Total
Micro	57	229	286
Small	814	932	1,746
Medium	540	1,285	1,824
Big	1,281	4,752	6,033
Total	2,692	7,197	9,889

Source: NISR, IBES 2017 Survey

Table 4.7 in appendices summarizes the assets of the industry sector of which Manufacturing and Construction sectors had the most assets in 2017; Frw 1,084 billion and Frw 869.7 billion respectively.

4.4 Acquisition and disposal of fixed assets

All goods, except minor tools and equipment, expected to have a productive life of more than one year and intended for use by the establishment (land, mineral deposits, timber tracts, buildings, machinery, equipment and vehicles) are considered capital goods or fixed assets. Also included in this category are additions, modifications and improvements to existing fixed assets that extend their normal economic life or increase their productivity. Fixed assets may either be purchased or produced by the unit's own labour. In the latter case, the value of the asset is also given as an output. Also included are fixed assets purchased under financial lease, that is, where lease payments over the contract life will equal the asset's value.

Table 4.7 below depicts opening and closing values of fixed assets by economic sectors for all companies who have managed to provide information on their fixed assets. Other services had more opening and closing values of fixed assets: Frw 1,533 billion and Frw 1,790 billion respectively. The industry sector had registered opening and closing of Frw 1,055 billion and Frw 1,057 billion respectively.

Table 4.7. Acquisition and disposal of fixed assets by sector in billion Frw

Description	Opening value	Closing value
Industry	1,055	1,057
Finance	376	315
Education	135	143
Health	14	13
NPISHs	63	63
Other services	1,533	1,790
Total	3,176	3,381

Source: NISR, IBES 2017 Survey

Appendices

Appendix I: Survey findings

Table 1.1: Calculation of final weights for sampled strata (IBES formal panel)

Activity	Original sampled population	Sample in IBES	Achieved sample weights	Completed	Closed	Refused	Missing	Not eligible	Valid population	Valid sample	Adjusted design weights	Final weights
Mining and quarrying	40	13	3.1	8	1	0	1	3	36	9	4	4.5
Manufacturing	503	45	11.2	23	0	0	1	21	482	24	20	20.9
Electricity, gas, steam and air conditioning supply	13	2	6.5	0	0	0	0	2	11	0		1.0
Water supply; sewerage, waste management and remediation activities	9	4	2.3	2	1	0	0	1	7	2	4	3.6
Construction	94	13	7.3	13	0	0	0	0	94	13	7	7.3
Wholesale and retail trade; repair of motor vehicles and motorcycles	3473	204	17.0	93	1	2	2	89	3366	97	35	36.2
Transportation and storage	67	9	7.5	5	0	1	1	2	65	7	9	13.0
Accommodation and food service activities	793	61	13.0	30	4	0	0	27	762	30	25	25.4
Information and communication	97	4	24.2	3	0	0	0	1	96	3	32	31.9
Financial and insurance activities	686	62	11.1	38	1	0	0	23	662	38	17	17.4
Real estate activities	48	4	12.1	4	0	0	0	0	48	4	12	12.1
Professional, scientific and technical activities	375	28	13.4	20	2	0	0	6	367	20	18	18.3
Administrative and support service activities	138	16	8.6	3	1	0	0	12	125	3	42	41.7
Education	1501	97	15.5	92	2	0	0	3	1496	92	16	16.3
Human health and social work activities	470	82	5.7	72	1	1	0	8	461	73	6	6.4
Arts, entertainment and recreation	23	7	3.4	6	0	0	0	1	22	6	4	3.8
Other service activities	1579	200	8.0	141	5	1	1	52	1522	143	11	10.8

Source: NISR

Table 1.2: Calculation of final weights for sampled formal enterprises from EC2017

Activity	Original sampled	Sample in IBES	Achieved sample weights	Completed	Closed	Refused	Missing	Not eligible	Valid population	Valid sample	Adjusted design weights	Final weights	Final average weights
Mining and quarrying	28	12	2.3	6	2	0	0	4	22	6	3.7	3.7	2.3
Manufacturing	501	130	3.9	57	7	0	2	64	430	59	7.3	7.5	7.9
Electricity, gas, steam and air conditioning supply	20	7	2.9	3	0	0	0	4	16	3	5.3	5.3	1.8
Water supply; sewerage, waste management and remediation activities	22	9	2.4	4	1	0	0	4	17	4	4.3	4.3	2.2
Construction	61	19	3.2	13	0	1	2	3	58	16	3.6	4.5	3.3
Wholesale and retail trade; repair of motor vehicles and motorcycles	4365	153	28.5	47	5	1	6	94	4266	54	79.0	90.8	35.3
Transportation and storage	79	26	3.0	18	1	0	0	7	71	18	3.9	3.9	4.7
Accommodation and food service activities	1076	71	15.2	21	3	0	1	46	1027	22	46.7	48.9	20.6
Information and communication	94	30	3.1	12	2	0	2	14	78	14	5.6	6.5	10.7
Financial and insurance activities	588	52	11.3	39	0	0	1	12	576	40	14.4	14.8	8.9
Real estate activities	59	13	4.5	10	0	0	1	2	57	11	5.2	5.7	4.9
Professional, scientific and technical activities	349	59	5.9	31	2	3	0	23	324	34	9.5	10.5	8.0
Administrative and support service activities	211	45	4.7	17	3	0	0	25	183	17	10.8	10.8	14.6
Education	761	32	23.8	30	1	0	0	1	759	30	25.3	25.3	11.6
Human health and social work activities	600	40	15.0	31	2	0	0	7	591	31	19.1	19.1	7.1
Arts, entertainment and recreation	24	10	2.4	3	0	0	2	5	19	5	3.8	6.3	2.8
Other service activities	387	43	9.0	19	0	1	1	22	365	21	17.4	19.2	8.3

Source: NISR

Table 1.3: Weights of formal business data

Economic activity	Frame (Frw billion)	Sample (Frw billion)	Weight
Mining and quarrying	12,482	5,316	2.4
Manufacturing	84,673	18,134	4.7
Electricity, gas, steam and air conditioning supply	8,579	979	8.8
Water supply; sewerage, waste management and remediation activities	1,153	573	2.0
Construction	87,720	14,964	5.9
Wholesale and retail trade; repair of motor vehicles and motorcycles	609,979	61,993	9.8
Transportation and storage	46,670	11,206	4.2
Accommodation and food service activities	61,492	23,515	2.6
Information and communication	35,554	3,089	11.5
Financial and insurance activities	29,791	2,950	10.1
Real estate activities	13,882	2,533	5.5
Professional, scientific and technical activities	48,013	6,644	7.2
Administrative and support service activities	24,274	3,876	6.3
Education	49,296	34,460	1.4
Human health and social work activities	44,847	31,833	1.4
Other service activities	195,180	76,534	2.6

Source: NISR

Table 2.1: Estimated number of enterprises by economic activity

Main Economic Activity	Formal		Informal	
	Frequency	Percent	Frequency	Percent
Mining and quarrying	108	0.8	120	0.1
Manufacturing	744	5.6	8,910	6.6
Electricity, gas, steam and air conditioning supply	14	0.1	4	0
Water supply; sewerage, waste management and remediation activities	38	0.3	263	0.2
Construction	173	1.3	329	0.2
Wholesale and retail trade; repair of motor vehicles and motorcycles	5,070	38.3	74,682	55.2
Transportation and storage	173	1.3	116	0.1
Accommodation and food service activities	993	7.5	31,894	23.6
Information and communication	133	1.0	752	0.6
Financial and insurance activities	770	5.8	195	0.1
Real estate activities	106	0.8	208	0.2
Professional, scientific and technical activities	492	3.7	735	0.5
Administrative and support service activities	299	2.3	986	0.7
Education	1,883	14.2		
Human health and social work activities	1,059	8.0		
Arts, entertainment and recreation	14	0.1	61	0
Other service activities	1,175	8.9	15,960	11.8
Total	13,244	100.0	135,216	100

Source: NISR, IBES 2017 Survey

Table 3.1 Ranking of factors by the level of their impact on formal businesses

Factor	No problem	Minor problem	Serious problem	Very serious problem	Not applicable	Total
Availability of affordable finance or bank loans	75.2	13.4	6.4	1.6	3.4	100.0
Availability of tools and machinery	70.3	17.8	6.0	1.4	4.6	100.0
Availability of working space	77.5	13.8	6.8	1.9	0.0	100.0
Availability of skilled or technical labour	25.5	6.9	2.0	1.5	64.1	100.0
Availability of electricity	80.3	12.8	3.0	3.8	0.1	100.0
Availability of water	75.0	10.3	6.4	6.2	2.1	100.0
Availability of land	50.7	11.8	7.6	3.2	26.7	100.0
Availability of input materials	7.7	2.6	0.7	0.4	88.6	100.0
Availability of transport facilities and infrastructures	71.1	14.0	10.1	3.5	1.2	100.0
Regulatory environment	87.0	7.3	4.0	1.5	0.2	100.0
Marketing problems	60.8	21.3	5.4	1.9	10.6	100.0
Telecommunications	83.1	12.6	2.9	1.1	0.3	100.0
Internet connection	53.9	16.1	10.7	6.8	12.5	100.0
Total	62.9	12.4	5.5	2.7	16.5	100.0

Source: NISR, IBES 2017 Survey

Table 3.2: Average number of employees using a computer by economic activity, formal sector

Activity	Computer use mean	Staff mean	Companies
Mining and quarrying	4	162	108
Manufacturing	9	117	744
Electricity, gas, steam and air conditioning supply	140	168	14
Water supply; sewerage, waste management and remediation activities	16	61	38
Construction	20	188	173
Wholesale and retail trade; repair of motor vehicles and motorcycles	3	11	5,070
Transportation and storage	11	65	173
Accommodation and food service activities	5	31	993
Information and communication	34	44	133
Financial and insurance activities	23	27	770
Real estate activities	3	10	106
Professional, scientific and technical activities	10	20	492
Administrative and support service activities	11	247	299
Education	8	32	1,883
Human health and social work activities	13	34	1059
Arts, entertainment and recreation	50	107	14
Other service activities	4	19	1,175
Total	9	41	13,244

Source: NISR, IBES 2017 Survey

Table 3.3: Distribution of enterprises with internet connection by size, formal sector

Enterprise size	Yes	No	Total	Companies
Micro	44.1	55.9	100.0	3,662
Small	77.9	22.1	100.0	8,056
Medium	83.7	16.3	100.0	1173
Big	97.7	2.3	100.0	352
Total	69.6	30.4	100.0	13,244

Source: NISR, IBES 2017 Survey

Table 3.4: Capacity utilization mean in production units by economic activity, formal sector

Activity	Utilization mean	Companies
Mining and quarrying	65	71
Manufacturing	70	660
Utilities	89	13
Total	70	744

Source: NISR, IBES 2017 Survey

Table 3.5: Reasons of capacity underutilization, formal sector

Reasons of underutilization	Yes	No	Total
Low Demand	61.7	38.4	100.0
Unreliable supply of power	18.8	81.2	100.0
Unreliable supply of inputs	33.9	66.2	100.0
Lack of skilled workers	17.6	82.4	100.0
Bottleneck in the production line	10.2	89.8	100.0
Lack of working capital	37.0	63.0	100.0
Labor market regulations	17.2	82.8	100.0
Lack of necessary specialized technology, machinery & spare parts	30.6	69.5	100.0
Old equipment	13.1	86.9	100.0
Other	15.1	84.9	100.0
Total	25.5	74.5	100.0

Source: NISR, IBES 2017 Survey

Table 3.6: Distribution of enterprises that are underutilizing their capacity by economic activity, formal sector

Activity	Yes	No	Total	Companies
Mining and quarrying	79.0	21.1	100.0	71
Manufacturing	76.0	24.0	100.0	660
Utilities(water & electricity)	68.5	31.5	100.0	13
Total	76.2	23.8	100.0	744

Source: NISR, IBES 2017 Survey

Table 3.7 Percentage distribution of enterprises economic activity and scraps or waste possession, formal sector

Activity	Yes	No	Companies
Mining and quarrying	86.3	13.7	108
Manufacturing	91.9	8.1	744
Electricity, gas, steam and air conditioning supply	100.0	0.0	14
Water supply; sewerage, waste management and remediation activities	81.5	18.5	38
Construction	96.4	3.6	173
Wholesale and retail trade; repair of motor vehicles and motorcycles	95.3	4.7	5,070
Transportation and storage	99.4	0.6	173
Accommodation and food service activities	100.0	0.0	993
Information and communication	100.0	0.0	133
Financial and insurance activities	98.6	1.4	770
Real estate activities	89.7	10.3	106
Professional, scientific and technical activities	81.1	18.9	492
Administrative and support service activities	99.3	0.7	299
Education	99.3	0.7	1,883
Human health and social work activities	97.4	2.6	1,059
Arts, entertainment and recreation	100.0	0.0	14
Other service activities	96.7	3.3	1,175
Total	96.0	4.0	13,244

Source: NISR, IBES 2017 Survey

Table 3.8: Distribution of enterprises by economic activity and whether they store water or not, formal sector

Activity	Yes	No	Total	Frequency
Mining and quarrying	57.5	42.5	100.0	108
Manufacturing	50.6	49.4	100.0	744
Electricity, gas, steam and air conditioning supply	27.9	72.1	100.0	14
Water supply; sewerage, waste management and remediation activities	37.9	62.1	100.0	38
Construction	26.3	73.7	100.0	173
Wholesale and retail trade; repair of motor vehicles and motorcycles	10.2	89.8	100.0	5,070
Transportation and storage	24.1	75.9	100.0	173
Accommodation and food service activities	81.5	18.5	100.0	993
Information and communication	20.6	79.4	100.0	133
Financial and insurance activities	46.8	53.2	100.0	770
Real estate activities	58.7	41.4	100.0	106
Professional, scientific and technical activities	16.5	83.5	100.0	492
Administrative and support service activities	13.1	86.9	100.0	299
Education	81.2	18.8	100.0	1,883
Human health and social work activities	86.1	13.9	100.0	1,059
Arts, entertainment and recreation	33.3	66.7	100.0	14
Other service activities	48.0	52.0	100.0	1,175
Total	41.2	58.8	100.0	13,244

Source: NISR, IBES 2017 Survey

Table 3.9: Distribution of enterprises by economic activity and firewood use

Activity	Informal Sector				Formal sector			
	Yes	No	Total	Companies	Yes	No	Total	Companies
Mining and quarrying	11.6	88.4	100.0	120	49.8	50.2	100.0	108
Manufacturing	52.5	47.5	100.0	8,910	19.2	80.8	100.0	744
Electricity, gas, steam and air conditioning supply	0.0	100.0	100.0	4	0.0	100.0	100.0	14
Water supply; sewerage, waste management and remediation activities	0.0	100.0	100.0	263	0.0	100.0	100.0	38
Construction	0.0	100.0	100.0	329	0.0	100.0	100.0	173
Wholesale and retail trade; repair of motor vehicles and motorcycles	1.9	98.1	100.0	74,682	0.0	100.0	100.0	5,070
Transportation and storage	0.0	100	100.0	116	0.0	100.0	100.0	173
Accommodation and food service activities	12.9	87.1	100.0	31,894	29.9	70.1	100.0	993
Information and communication	0.0	100	100.0	752	0.0	100.0	100.0	133
Financial and insurance activities	0.0	100	100.0	195	0.0	100.0	100.0	770
Real estate activities	0.0	100	100.0	208	0.0	100.0	100.0	106
Professional, scientific and technical activities	0.1	99.9	100.0	735	0.0	100.0	100.0	492
Administrative and support service activities	0.2	99.8	100.0	986	0.0	100.0	100.0	299
Education					48.5	51.5	100.0	1,883
Human health and social work activities					23.4	76.6	100.0	1,059
Arts, entertainment and recreation	0.0	100.0	100.0	61	0.0	100.0	100.0	14
Other service activities	2.1	97.9	100.0	15,960	22.4	77.6	100.0	1,175
Total	7.8	92.2	100.0	135,216	14.5	85.5	100.0	13,244

Source: NISR, IBES 2017 Survey

Table 3.10: Distribution of enterprises by the type of start-up finance used, formal sector

Financial source	Yes	No	Total	Freq.
Equity capital	96.0	4.0	100.0	13,244
Bank overdraft	4.0	96.0	100.0	13,244
Credit card	0.0	100.0	100.0	13,244
Subsidized bank loan	1.0	99.0	100.0	13,244
Short term bank loan	11.0	89.0	100.0	13,244
Long term bank loan	9.0	91.0	100.0	13,244
Microfinance loan	0.0	100.0	100.0	13,244
Trade credit	2.0	98.0	100.0	13,244
Hire-purchase agreements (leasing)	1.0	99.0	100.0	13,244
Retained earning	6.0	94.0	100.0	13,244
Sales of assets	2.0	98.0	100.0	13,244
Shareholders and related enterprises	7.0	93.0	100.0	13,244
Friends or family	4.0	96.0	100.0	13,244

Source: NISR, IBES 2017 Survey

Table 3.11: Distribution of enterprises by used source of financing, formal sector

Financial source	2012	2013	2014	2015	2016	2017
Equity capital	54.5	54.8	54.1	53.0	52.4	53.4
Bank overdraft	2.9	3.3	3.5	3.2	3.5	3.6
Credit card	0.2	0.2	0.3	0.3	0.2	0.1
Subsidized bank loan	0.1	0.3	0.2	0.3	0.4	0.4
Short term bank loan	5.5	5.0	5.9	6.2	6.4	9.6
Long term bank loan	1.9	1.7	1.9	2.1	2.0	6.6
Microfinance loan	0.5	0.5	0.5	0.6	0.6	0.5
Trade credit	1.4	1.5	1.6	1.6	1.5	1.5
Hire-purchase agreements (leasing)	0.5	0.3	0.3	0.4	0.3	0.5
Retained earning	21.5	21.3	21.2	21.7	21.8	16.5
Sales of assets	0.3	0.4	0.6	0.6	0.9	1.2
Shareholders and related enterprises	4.6	4.6	4.1	4.2	4.2	3.4
Friends or family	6.1	6.4	5.9	6.0	5.8	2.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: NISR, IBES 2017 Survey

Table 4.1: Percentage of formal enterprises by size band within each activity

Main economic activity\Enterprise size	Micro	Small	Medium	Big	Total	Freq.
Mining and quarrying	6.1	19.8	21.6	52.6	100.0	108
Manufacturing	11.1	58.6	23.3	7.0	100.0	744
Electricity, gas, steam and air conditioning supply	7.0	65.1	14.0	14.0	100.0	14
Water supply; sewerage, waste management and remediation activities	0.0	81.7	10.5	7.8	100.0	38
Construction	31.8	33.8	13.9	20.5	100.0	173
Wholesale and retail trade; repair of motor vehicles and motorcycles	55.7	42.6	1.5	0.3	100.0	5,070
Transportation and storage	17.2	62.0	12.2	8.7	100.0	173
Accommodation and food service activities	6.2	80.4	11.4	2.0	100.0	993
Information and communication	0.8	82.9	12.6	3.8	100.0	133
Financial and insurance activities	10.2	83.6	3.4	2.9	100.0	770
Real estate activities	15.9	73.4	10.7	0.0	100.0	106
Professional, scientific and technical activities	25.4	68.2	6.1	0.4	100.0	492
Administrative and support service activities	43.8	35.4	13.1	7.7	100.0	299
Education	0.6	73.2	24.8	1.4	100.0	1,883
Human health and social work activities	2.1	82.6	10.4	4.8	100.0	1,059
Arts, entertainment and recreation	0.0	58.3	27.8	13.9	100.0	14
Other service activities	18.5	76.7	2.8	2.0	100.0	1,175
Total	27.7	60.8	8.9	2.7	100.0	13,244

Source: NISR, IBES 2017 Survey

Table 4.2: Percentage of formal enterprises by activity within each size band

Main economic activity\Enterprise size	Micro	Small	Medium	Big	Total
Mining and quarrying	0.2	0.3	2.0	16.1	0.8
Manufacturing	2.3	5.4	14.8	14.7	5.6
Electricity, gas, steam and air conditioning supply	0.0	0.1	0.2	0.6	0.1
Water supply; sewerage, waste management and remediation activities	0.0	0.4	0.3	0.9	0.3
Construction	1.5	0.7	2.1	10.1	1.3
Wholesale and retail trade; repair of motor vehicles and motorcycles	77.1	26.8	6.4	3.7	38.3
Transportation and storage	0.8	1.3	1.8	4.3	1.3
Accommodation and food service activities	1.7	9.9	9.6	5.7	7.5
Information and communication	0.0	1.4	1.4	1.4	1.0
Financial and insurance activities	2.1	8.0	2.2	6.3	5.8
Real estate activities	0.5	1.0	1.0	0.0	0.8
Professional, scientific and technical activities	3.4	4.2	2.5	0.6	3.7
Administrative and support service activities	3.6	1.3	3.3	6.5	2.3
Education	0.3	17.1	39.8	7.4	14.2
Human health and social work activities	0.6	10.9	9.4	14.5	8.0
Arts, entertainment and recreation	0.0	0.1	0.3	0.6	0.1
Other service activities	5.9	11.2	2.8	6.8	8.9
Total	100.0	100.0	100.0	100.0	100.0
Freq.	3,662	8,056	1,173	352	13,244

Source: NISR, IBES 2017 Survey

Table 4.3: Distribution of formal enterprises by economic activity and ownership

Main economic activity	Government	Rwandan Resident	Foreign Resident	Non-Resident	Total
Mining and quarrying	0.2	87.4	4.4	8.0	100.0
Manufacturing	1.1	85.0	9.2	4.9	100.0
Electricity, gas, steam and air conditioning supply	28.6	42.9	0.0	28.5	100.0
Water supply; sewerage, waste management and remediation activities	2.6	73.0	21.8	2.6	100.0
Construction	0.6	76.2	15.3	7.9	100.0
Wholesale and retail trade; repair of motor vehicles and motorcycles	2.2	84.7	9.2	3.9	100.0
Transportation and storage	2.8	73.5	10.1	13.7	100.0
Accommodation and food service activities	0.1	95.7	3.5	0.7	100.0
Information and communication	2.1	85.0	10.0	3.0	100.0
Financial and insurance activities	5.4	90.1	1.1	3.3	100.0
Real estate activities	0.0	86.5	8.4	5.1	100.0
Professional, scientific and technical activities	0.4	83.0	9.4	7.2	100.0
Administrative and support service activities	0.7	82.6	10.2	6.5	100.0
Education	59.7	38.0	1.7	0.7	100.0
Human health and social work activities	48.1	36.0	10.4	6.2	100.0
Arts, entertainment and recreation	0.0	41.7	40.3	18.1	100.0
Other service activities	0.1	95.9	3.2	0.8	100.0
Total	13.7	75.8	7.0	3.6	100.0

Source: NISR, IBES 2017 Survey

Table 4.4: Distribution of enterprises by age and main economic activity, formal sector

Main economic activity	Year of business commencement						Total	Freq.
	<= 5 Years	>5-10 Years	>10-15 Years	>15-20 Years	20+ Years			
Mining and quarrying	74.7	21.4	4.0	0.0	0.0	100.0	108	
Manufacturing	49.7	32.8	5.8	2.8	9.0	100.0	745	
Electricity, gas, steam and air conditioning supply	27.9	72.1	0.0	0.0	0.0	100.0	14	
Water supply; sewerage, waste management and remediation activities	40.5	37.3	22.3	0.0	0.0	100.0	36	
Construction	39.1	14.7	35.6	4.2	6.4	100.0	175	
Wholesale and retail trade; repair of motor vehicles and motorcycles	56.3	30.5	8.9	1.8	2.5	100.0	5,076	
Transportation and storage	41.2	36.8	14.7	4.5	2.9	100.0	173	
Accommodation and food service activities	48.0	37.9	4.8	2.5	6.8	100.0	993	
Information and communication	51.7	12.7	34.2	1.5	0.0	100.0	134	
Financial and insurance activities	5.2	78.6	12.3	1.9	2.0	100.0	734	
Real estate activities	73.7	21.1	0.9	0.0	4.3	100.0	114	
Professional, scientific and technical activities	39.7	34.0	17.7	3.8	4.8	100.0	501	
Administrative and support service activities	35.4	43.2	20.0	0.7	0.7	100.0	299	
Education	15.4	13.4	14.5	15.0	41.8	100.0	1,883	
Human health and social work activities	21.0	14.8	9.2	8.8	46.2	100.0	1,059	
Arts, entertainment and recreation	93.1	6.9	0.0	0.0	0.0	100.0	14	
Other service activities	28.9	16.8	5.2	14.9	34.1	100.0	1,185	
Total	40.1	28.9	10.3	5.6	15.1	100.0	13,244	

Source: NISR, IBES 2017 Survey

Table 4.5: Income statement for industry sector, Frw billion

Income components	Mining and quarrying	Manufacturing	Electricity, gas, steam and air condition	Water supply; sewerage, waste management	Construction	Total
Sales of goods in the same condition as purchased	-	21.8	-	-	2.5	24.3
Sales of manufactured, mined or quarried products	90.7	716.9	3.1	1.0	4.5	816.2
Sales of electricity	0.4	5.6	106.3	0.1	-	112.4
Sales of water by pipe or bouser	-	-	-	15.8	-	15.8
Construction work done	-	0.3	-	-	465.4	465.8
Delivery charges if invoiced separately	-	0.1	-	-	-	0.1
Transport, storage and travel services rendered	-	7.9	-	-	-	7.9
Hotel & catering services	-	0.8	-	-	0.2	1.0
Sales of professional & scientific services	-	4.5	2.4	-	1.4	8.3
Rent of buildings received / receivable	-	1.9	-	-	0.2	2.1
Dividends or other profits realized	0.0	1.0	-	-	0.7	1.7
All other income	2.2	26.5	40.4	8.9	28.7	106.7
Total	93.3	787.4	152.2	25.8	503.6	1,562.3

Source: NISR, IBES 2017 Survey

Table 4.6: Expenditure statement for industry sector in billion Frw, formal sector

Expenditure components	Mining and quarrying	Manufacturing	Electricity, gas, steam and air condition	Water supply, sewerage, waste management	Construction	Total
Purchases of goods for resale	-	18.8	-	-	1.7	20.5
Purchases of raw materials, supplies, etc., used in manufacturing	52.3	439.5	-	1.7	3.7	497.2
Fuel used for manufacturing, mining & quarrying	8.7	9.6	0.0	0.1	0.0	18.4
Construction sub-contracts, equipment hire, fuel, materials	-	0.3	-	-	295.0	295.3
Purchases of food and drinks for catering & bar services	-	0.6	-	-	0.2	0.8
Rent of land paid / payable	0.7	1.9	0.1	-	2.3	5.1
Rent of buildings paid / payable	0.5	5.5	0.6	0.6	4.2	11.4
Other goods & services purchased	13.4	105.7	100.0	12.1	59.9	291.1
Wages & salaries paid (Social security & other benefits included)	8.9	67.7	12.4	6.9	37.6	133.5
Interests paid (excluding other bank charges)	2.0	29.8	7.9	0.2	20.1	60.1
Business licenses, rates and fees payable to government	2.8	6.3	0.3	0.1	2.4	11.9
Depreciation charges for the year on fixed assets	2.0	60.3	11.5	3.7	43.2	120.6
Dividends paid/payable	0.0	2.4	-	0.0	0.1	2.5
All other costs, losses, provisions, etc.	1.5	37.7	5.1	5.0	12.1	61.4
Total	92.9	785.9	138.0	30.5	482.4	1,529.7

Source: NISR, IBES 2017 Survey

Table 4.7 Summary assets of the industry sector in billion Frw, formal sector

Assets	Mining and quarrying	Manufacturing	Electricity, gas, steam and air condition	Water supply; sewerage, waste management	Construction	Total
Non-current assets	27.1	711.3	476.0	107.8	411.3	1,733.6
Fixed assets	23.0	607.3	220.3	55.7	157.5	1,063.8
Land	2.1	55.9	0.0	0.8	18.0	76.7
Buildings	10.6	178.3	25.9	10.0	27.8	252.6
Vehicles and Machines	7.5	256.7	189.3	4.2	83.5	541.2
Others	2.8	116.8	4.9	40.8	28.3	193.6
Work in progress	0.1	70.7	1.3	31.1	213.9	317.2
Other investments	3.9	33.3	254.4	21.0	39.9	352.5
Current assets	49.2	372.7	76.7	30.7	458.3	987.6
Inventories	9.8	177.6	13.4	8.1	89.1	298.0
Debtors & other receivables	27.8	112.4	47.1	19.6	326.0	532.9
Cash and cash equivalents	11.6	82.7	16.2	3.0	45.8	159.3
Total assets	76.3	1,084.0	552.7	138.5	869.7	2,721.2

Source: NISR, IBES 2017 Survey

Table 4.8: Income statement for financial sector in billion Frw, formal sector

Income components	Monetary institutions	Insurance, reinsurance and pension funding, except compulsory social security	Other financial services	Total
Interest received/premiums earned	250.4	42.2	22.7	315.3
Fees & commissions/claim received	28.2	3.5	3.6	35.2
Commissions received for agents, brokerage services	32.3	3.0	1.9	37.1
Rent of land received/receivable	-	-	-	-
Rent of buildings received /receivable	-	0.9	-	0.9
Rent/lease of machinery and equipment	-	0.1	-	0.1
Interest received/receivable	-	2.3	-	2.3
Exchange dealings/Other investment	19.5	2.7	20.4	42.7
Insurance income	-	0.3	-	0.3
Dividend received/receivable	0.3	0.8	0.2	1.3
Grants received	1.4	0.2	-	1.5
Gains on the sale of fixed assets	14.9	0.0	0.0	14.9
Bad debts written back/ Revaluations on fixed assets	10.4	1.1	0.8	12.3
Other income	18.7	1.6	2.9	23.2
Total	376.1	58.5	52.5	487.1

Source: NISR, IBES 2017 Survey

Table 4.9: Expenditure statement for financial sector in billion Frw, formal sector

Expenditure component	Monetary institutions	Insurance, reinsurance and pension funding, except	Other financial services	Total
Interests /Claims paid/payable	63.4	27.9	2.7	94.0
Staff costs (Wages, salaries, social security & other benefits)	83.0	9.5	10.7	103.2
Commissions paid for financial services	8.3	2.6	2.0	13.0
Rent of land paid/payable	0.2	0.2	0.7	1.0
Rent of buildings paid/payable	12.5	0.5	0.7	13.7
Payments for rental or lease of machinery and equipment	0.4	0.1	-	0.5
Depreciation charges	23.1	7.6	1.2	31.8
Regulatory fees and licenses paid to government	1.0	3.8	0.2	5.0
Interests paid/payable on loans contracted (excluding other bank charges)	15.4	0.2	11.1	26.7
Fines, penalties & donations	1.3	0.4	0.4	2.1
Payments made for telephone, internet, postage, courier	0.5	0.0	1.7	2.2
Net impairment charge on loans and advances/Provision for bad	37.9	0.1	12.6	50.6
Loss on the sale of fixed assets	0.3	1.9	0.0	2.1
Cost of all other consumable goods & services purchased(Specify)	9.4	1.1	19.1	29.5
Total	309.3	55.9	68.1	433.3

Source: NISR, IBES 2017 Survey

Table 4.10: Income statement for Education sector, formal sector

Income components	Billion Frw
Tuition fees received	104.0
Registration fees	2.2
Boarding	2.6
Government subsidies or grant	37.5
Development partners	9.4
Meals	6.6
Uniforms	1.2
Rent of land received/ receivable	0.0
Rent of buildings received/ receivable	1.1
Rent/lease of machinery and equipment	0.0
Research income	0.5
All other types of service rendered (see B8)	2.1
Grants or subsidies received from government	28.1
Interest received/receivable	0.4
Dividends or other profits realized	0.1
All other income, revaluations, write-backs etc.	8.8
Total income	204.6

Source: NISR, IBES 2017 Survey

Table 4.11: Expenditure statement for Education sector, formal sector

Expenditure component	Billion Frw
Text books	1.8
Cost of uniforms	1.5
Cost of meals	18.2
Examination costs	2.9
Rent of land paid/payable	0.0
Rent of buildings paid/payable	2.1
Payments for rental or lease of machinery and equipment	0.1
Research expenses	1.5
All other goods and services purchased	57.8
Wages & salaries paid (Social security & other benefits included)	103.9
Interests paid / payable (not other bank charges)	2.7
Business licenses, rates and fees payable to government	0.9
Depreciation charges for the year on fixed assets	11.1
All other costs, losses, provisions, etc.	0.1
Total expenditure	204.7

Source: NISR, IBES 2017 Survey

Table 4.12: Income statement for the health sector, formal sector

Income component	Billion Frw
Income fees paid by patients or their supporters	25.3
Income fees paid by Medical insurances	52.3
Grants from international organizations & charities	14.1
Grants from local organizations & charities	6.3
Rent of land received/receivable	0.0
Rent of buildings received/receivable	0.0
Rent/lease of machinery and equipment	0.0
All other types of service rendered	2.0
Grants or subsidies received from government	44.0
Interest received/receivable	0.1
Dividends or other profits realized	0.1
All other income, revaluations, write-backs etc.	2.2
Total income	146.3

Source: NISR, IBES 2017 Survey

Table 4.13: Expenditure statement for Health sector, formal sector

Expenditure component	Billion Frw
Purchases of pharmaceuticals and medical supplies	29.2
Cleaning materials	2.4
Laboratory services paid/payable	3.9
Rent of land paid/payable	0.0
Rent of buildings paid/payable	1.0
Payments for rental or lease of machinery and equipment	1.3
All other goods and services purchased	36.9
Wages & salaries paid (Social security & other benefits included)	63.5
Interests paid / payable (no other bank charges)	0.8
Business licenses, rates and fees payable to government	0.8
Depreciation charges for the year on fixed assets	1.2
All other costs, losses, provisions, etc.	0.1
Total expenditures for the year	144.0

Source: NISR, IBES 2017 Survey

Table 4.14: Income statement for service sector in billion Frw, formal sector

Income components	Wholesale and retail trade; repair of motor vehicles	Transportation and storage	Accommodation and food service activities	Information and communication	Real estate activities	Professional, scientific and technical	Administrative and support service activities	Arts, entertainment and recreation	Other service activities	Total
Sales of goods in the same condition as purchased	2,236.8	2.8	1.4	-	-	0.1	2.5	0.1	1.0	2,244.6
Sales of manufactured, mined or quarried products	9.9	-	0.4	0.3	-	0.2	0.6	-	1.3	12.7
Sales of electricity	-	-	-	-	-	-	-	-	-	-
Sales of water by pipe or bouser	-	-	-	-	-	-	-	-	-	-
Construction work done	2.1	0.2	0.3	-	-	0.7	-	-	-	3.3
Value of completed projects on own account	-	-	-	-	-	-	-	-	-	-
Delivery charges if invoiced separately	0.1	-	-	-	-	-	-	-	-	0.1
Transport, storage and travel services rendered	6.4	205.9	0.2	-	-	0.0	9.7	-	0.5	222.8
Hotel & catering services	1.5	-	144.0	-	-	-	-	-	0.7	146.2
Telecommunication & internet connections	-	-	-	77.9	-	-	-	-	-	77.9
Sales of professional & scientific services	1.1	6.7	-	3.8	-	67.4	1.5	-	6.7	87.2
Rent of land receivable	0.1	-	0.0	-	-	4.6	-	-	0.1	4.9
Rent of buildings received / receivable	1.8	1.2	1.6	0.0	0.8	0.1	0.0	-	0.2	5.8
Dividends or other profits realized	0.4	-	-	-	-	0.0	0.0	-	0.1	0.5
All other income	50.7	91.7	4.0	30.4	39.8	22.7	82.5	44.2	35.0	401.0
Total income	2,311.0	308.6	151.8	112.4	40.6	95.9	96.9	44.3	45.6	3,207.0

Source: NISR, IBES 2017 Survey

Table 4.15: Expenditure statement for other services sector in billion Frw, formal sector

Expenditure components	Wholesale and retail trade; repair of motor vehicles	Transportation and storage	Accommodation and food service activities	Information and communication	Real estate activities	Professional, scientific and technical	Administrative and support service activities	Arts, entertainment and recreation	Other service activities	Total
Purchases of goods for resale	2,016.8	1.7	1.0	-	-	0.1	2.0	0.0	0.0	2,021.7
Purchases of raw materials, etc., used in manufacturing	3.7	-	0.2	0.1	-	0.1	-	-	0.4	4.5
Fuel used for mining & quarrying	1.4	-	0.1	-	-	-	-	-	-	1.4
Construction sub-contracts, equipment hire, fuel, materials	1.3	0.1	0.3	-	-	0.6	-	-	-	2.2
Purchases of food and drinks for catering & bar services	1.5	-	59.9	-	-	-	-	-	0.4	61.8
Rent of land paid / payable	0.9	0.2	0.0	-	0.5	0.0	0.1	-	0.0	1.8
Rent of buildings paid / payable	20.0	2.3	3.6	12.1	0.4	3.5	1.6	1.3	0.9	45.7
Other goods & services purchased (not interest, etc see below)	119.2	110.3	46.2	45.5	9.7	46.1	40.4	3.3	29.7	450.4
Wages & salaries paid (Social security & other benefits included)	60.1	25.5	35.1	23.0	2.4	32.3	29.4	3.0	6.0	216.9
Interests paid (excluding other bank charges)	26.7	14.4	25.6	8.9	20.0	1.3	1.5	0.2	3.8	102.3
Business licenses, rates and fees payable to government	5.0	2.0	1.4	14.8	1.2	0.7	0.3	0.6	0.5	26.5
Depreciation charges for the year on fixed assets	24.3	31.1	35.7	25.6	9.0	4.3	4.9	1.0	6.9	142.8
Dividends paid/payable	0.1	0.0	0.1	-	-	0.7	0.0	0.0	0.0	0.9
All other costs, losses, provisions, etc.	13.8	112.0	3.1	6.3	7.2	2.9	5.5	2.2	0.5	153.4
Total expenditure	2,294.7	299.6	212.2	136.2	50.2	92.6	85.7	11.7	49.1	3,232.1

Source: NISR, IBES 2017 Survey

Appendix II: Rwanda Classification of Products by Activity, Level 2

<i>RCPA</i>	<i>Rwanda Classification of products by Activity</i>	<i>RCPA</i>	<i>Rwanda Classification of products by Activity</i>
A1	Food crops	H1	Land transport
A2	Export crops	H2	Air transport
A3	Livestock & livestock products	H3	Other transport & postal services
A4	Forestry	I0	Hotels & restaurants
A5	Fishing	J1	Publishing & broadcasting activities
B0	Mining & quarrying	J2	Telecommunication
C1	Manufacturing of food	J3	Information technology services
C2	Manufacturing of beverages & tobacco	K0	Financial services
C3	Manufacturing of textiles, clothing & leather goods	L0	Real estate activities
C4	Manufacturing of wood & paper; printing	M0	Professional, scientific and technical activities
C5	Manufacturing of chemicals, rubber & plastic products	N0	Administrative and support service activities
C6	Manufacturing of non-metallic mineral products	O0	Public administration and defense; compulsory social security
C7	Manufacturing of metal products, machinery & equipment	P0	Education
C8	Furniture & other manufacturing	Q0	Human health and social work activities
D0	Electricity	R0	Arts, entertainment and recreation
E0	Water & waste management	S0	Other service activities
F0	Construction	T0	Domestic services
G1	Maintenance and repair of motor vehicles	V0	Travel debits & credits
G2	Wholesale & retail trade	X0	Unallocated products

Appendix III: IBES 2017 survey staff

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