

# Firm-level Adoption of Technology Survey

The World Bank

2020

## INTRODUCTION

This survey is being conducted by \_\_\_\_\_ on behalf of \_\_\_\_\_.

The goal of this survey is to gather information about technologies adopted by firms in **Burkina Faso**. The information gathered here will help the World Bank to develop new policies and programs that enhance employment, economic growth and shared prosperity.

The information obtained here will be anonymized. Neither your name nor the name of your business will be used in any document based on this survey.

**INTERVIEWER: WE DEFINE TECHNOLOGY AS MACHINERY, EQUIPMENT, SOFTWARE, OR PROCESS USED BY THE FIRM TO PRODUCE SOMETHING.**

Structure of the questionnaire

- A. GENERAL INFORMATION AND FIRM CHARACTERISTICS
- B. GENERAL BUSINESS FUNCTIONS
- C. SECTOR SPECIFIC TECHNOLOGIES
- D. DRIVERS AND BARRIERS FOR ADOPTION
- E. BALANCE SHEET AND PERFORMANCE

**QUESTIONS BEGIN HERE**

**A. CONTROL AND GENERAL INFORMATION**

TO BE COMPLETED AT THE TIME OF THE INTERVIEW  
 TO BE MERGED WITH THE SCREENING QUESTIONNAIRE

COVER [TO BE COMPLETED FROM SCREENER BEFORE INTERVIEW]

Screener Information	
Module	<b>s5</b>
Screener size	<b>s7</b>
Multi-establishment firm	<b>s4</b>

**A.2 SCREENER**

<b>S.4</b>	Is this establishment part of a multi-establishment firm? (that is, a firm with several establishments, each with its own location, management, activity, and financial statements).
------------	--

Yes	1	<b>IF S.4=2, GO TO S.5</b>
No	2	
		<b>s4</b>

<b>S.4b</b>	Is this establishment the headquarters location?
-------------	--

Yes	1	<b>IF S.4b=2, GO TO S.4f</b>
No	2	
		<b>s4b</b>

<b>S.4c</b>	Are the financial statements of the headquarters location separate from the rest of the other establishments?
-------------	---

Questions

Yes	1	
No	2	
		<b>s4c</b>

<b>S.4d</b>	Does this headquarters location engage in production or sales at this location?
-------------	---

Yes	1	<b>IF S.4d=1, GO TO S.5</b>
No	2	

**s4d**

<b>S.4f</b>	Are this establishment's financial statements prepared separately from headquarters' statements?
-------------	--

Yes	1
No	2

**CONTACT HQ TO INTERVIEW THE ESTABLISHMENT THAT REPRESENTS THE LARGEST SHARE OF PRODUCTION OR SALES: GO BACK TO S.4e**

**s4f**

**A.1 Time interview begins:**

<b>Day (dd)</b>	<b>Month (mm)</b>	<b>Year (yyyy)</b>	<b>Hour (00 to 23)</b>	<b>Minutes (00 to 59)</b>
<b>a1a</b>	<b>a1b</b>	<b>a1c</b>	<b>a1d</b>	<b>a1e</b>

**READ OUT THE FOLLOWING INTRODUCTORY SENTENCE ONLY IF s4= 1 (yes):  
The first few questions apply to the firm which this establishment is part of.**

**A.3 Ownership**

What percentage of this firm is owned by each of the following:  SHOW CARD 1	<b>Share</b>	<b>DON'T KNOW (SPONTANEOUS)</b>
Private domestic individuals, companies or organizations	<b>a3a%</b>	<b>-9</b>
Private foreign individuals, companies or organizations	<b>a3b%</b>	<b>-9</b>
Government or state	<b>a3c%</b>	<b>-9</b>

Question	Variable	Answer
Is this firm owned by the founder or someone of her/his family?	<b>a4b</b>	1 = Yes. By the founder. 2 = Yes. By the founder's family (2nd generation or more) 3 = No -9 = Don't know -7 = Not applicable

Amongst the owners of the firm, are there any females?	<b>a4e</b>	1 = Yes 2 = No	-9 = Don't know
--	------------	-------------------	-----------------

**READ ONLY IF s4=1 (yes)**

**I want to proceed by asking you about this establishment only.**

<b>A5</b>	Over the year [2019], please tell me what type of product or service represents this establishment's greatest share of annual sales?  INTERVIEWER: PLEASE RECORD THE DESCRIPTION OF THE ACTIVITY AND PRODUCT IN DETAIL, FOR EXAMPLE, "RETAIL SALE OF WOMEN'S OUTDOOR CLOTHING" NOT JUST "CLOTHING".
-----------	---

	<b>a5a</b>	<b>DETAILED DESCRIPTION OF MAIN ACTIVITY AND PRODUCT</b>	<b>a5c</b> What sector specific questionnaire should be used ?  <b>IF a5c IS DIFFERENT FROM s6b, PLEASE DOUBLE CHECK THE INFORMATION.</b>  <b>CONDITION: IF a5c=0 SKIP SECTION C.</b>
Agriculture (except Livestock)	1	<b>a5b</b>	1
Livestock	2		2
Food Processing	3		3
Wholesale or retail	7		7
Land transport	9		9
Other manufacturing	101		0
Other Services or Construction	102		0

Question	Variable	Answer
In what year did this establishment begin operations?	<b>a6</b>	(year) Year the establishment began operations -9 = Don't know

**INTERVIEWER: PROVIDE FOUR DIGITS FOR YEAR**

Question	Variable	Answer
How many years of experience working in this sector does the Top Manager have?	<b>a7a</b>	(Number of years) 1 = If less than a year -9 = Don't know
Is the Top Manager female?	<b>a7b</b>	1 = Yes 2 = No -9 = Don't know
What is the highest level of education of the Top Manager? SHOW CARD 2	<b>a7c</b>	1 = Primary school 2 = Secondary school 3 = Complete high-school 4 = College degree 5 = Post-Graduation (MBA, Master or PhD) 6 = Vocational training -9 = Don't know
Did the Top Manager study abroad for more than a month?	<b>a7d</b>	1 = Yes 2 = No -9 = Don't know

---

## B. GENERAL BUSINESS FUNCTIONS

---

**READ THE FOLLOWING TO THE RESPONDENT BEFORE PROCEEDING:**

The next topic to be covered is about use of water, electricity, telecommunications, and internet for business purpose.

### TECHNOLOGY ENABLERS

#### B.1 Use of electrical energy

Does this establishment have <b>an</b> electrical connection from the grid? [SKIP: IF <b>b1a</b> =2 OR <b>b1a</b> =-9, GO TO <b>b2a</b> ]	<b>b1a</b> 1 = Yes 2 = No -9 = Don't know
Over the year [2018] did this establishment experience power outages? [SKIP: IF <b>b1b</b> =2, GO TO <b>b2a</b> ]	<b>b1b</b> 1 = Yes 2 = No
In a typical month, over the year [2018], how many power outages did this establishment experience?	<b>b1c</b> (Number of power outages in a typical month) 1 = Less than one per month -9 = Don't know
How many hours did these power outages last on average?	<b>b1d</b> (Hours) -9 = Don't know

## B.2 Use of generators

Over the year [2020], did this establishment own or share a generator? [SKIP: IF <b>b2a=2</b> OR <b>b2a=-9</b> , GO TO <b>b2a</b> ]	<b>b2a</b> 1 = Yes 2 = No -9 = Don't know
What is the main source of energy used by this establishment owned or shared generator?  SHOW CARDS 3	<b>b2c</b> 1 = Solar power 2 = Fuel 3 = Grid or Battery-stored backup 4 = Wind power 5 = Other

## B.3 Mobile phone coverage

How many telephone landline does this establishment use for business purpose? INTERVIEWER: IT INCLUDES EQUIVALENT NUMBER OF LANDLINE SUBSCRIPTION PLANS PAID	<b>b3a</b> (number of telephone lines) -9 = Don't know
How many mobile phone lines does this establishment use for business purpose? INTERVIEWER: IT INCLUDES OWNED DEVICES AND COVERAGE PLANS PAID TO EMPLOYEES	<b>b3b</b> (number of cell phone lines) -9 = Don't know

## B.4 Computer coverage

How many desktop or laptop computers does this establishment use for business purpose? INTERVIEWER: IT INCLUDES OWNED OR RENTED COMPUTERS	<b>b4a</b> (number of computers) -9 = Don't know
How many tablets or smartphones does this establishment use for business purpose? INTERVIEWER: IT INCLUDES OWNED OR RENTED DEVICES	<b>b4b</b> (number) -9 = Don't know

## B.5 Internet service and coverage

Does this establishment have an Internet connection?	<b>b5a</b> YES = 1, NO = 2	
What is the fastest type of Internet connection does this establishment has?  SHOW CARDS 4	<b>b5b</b> 1 = Dial up 2 = DSL or Fiber 3 = Wireless or Satellite 4 = BPL 5 = Other	
In a typical month, over fiscal year [2020], how many times was the Internet service down in this establishment? [SKIP: IF <b>b5c=0</b> OR <b>b5c=-9</b> , GO TO <b>b5f</b> ]	<b>b5c</b> (number of times) 1 = Less than one -100 = Too many to count -9 = Don't know	
How many hours did the Internet service down last on average?	<b>b5d</b> (Hours) -9 = Don't know	<b>b5e</b> (Min)

		1 = Less than one minute -9 = Don't know
At the present time, does this establishment (or firm) have its own website?	<b>b5f</b>	YES = 1, NO = 2 -9 = Don't know
At the present time, does this establishment (or firm) use an account on an online social media for business purpose?	<b>b5g</b>	YES = 1, NO = 2 -9 = Don't know
Does this establishment (or firm) use cloud computer services for business purpose?	<b>b5h</b>	YES = 1, NO = 2 -9 = Don't know

### B.6 Water

Does this establishment have water connection to the network?	<b>b6a</b>	YES = 1, NO = 2 -9 = Don't know
---	------------	------------------------------------

## READ THE FOLLOWING TO THE RESPONDENT BEFORE PROCEEDING:

Now, we turn to questions about methods and procedures to perform general business functions

## TECHNOLOGY ADOPTION

### B.7 Self-evaluation on this establishment level of adoption

Question	Answer
In a scale from 1 to 10, where 10 means that the establishment is using the most advanced production processes available in its sector, where do you think this establishment stands with respect to:	
other firms in [ADD COUNTRY NAME]?	<b>b7a</b> score (1-10)
most advanced firms in the world?	<b>b7b</b> score (1-10)

### B.8 Business administration

Question: Does this establishment use any of the following methods for managing finance, accounting, and HR processes?	Variable	Answer
Handwritten processes	<b>b8a1</b>	1 = Yes 2 = No -9 = Don't know
Computers with standard software such as Excel or equivalent	<b>b8a2</b>	1 = Yes 2 = No -9 = Don't know
Mobile Apps or digital platforms	<b>b8a3</b>	1 = Yes 2 = No -9 = Don't know
Computers with specialized software	<b>b8a4</b>	1 = Yes -9 = Don't know

		2 = No	
Enterprise Resource Planning (ERP) or equivalent software integrated with other back office functions	<b>b8a5</b>	1 = Yes 2 = No	-9 = Don't know
Other	<b>b8a6</b>	1 = Yes 2 = No	-9 = Don't know

Question:	Variable	Answer
<p>What is the method used more often by this establishment for managing finance, accounting, and HR processes?</p> <p>[CONDITION: ASK ONLY IF THE ANSWER IS YES FOR MORE THAN ONE OF THE <b>b8a</b> VARIABLES]</p> <p>SHOW CARDS 5</p>	<b>b8b</b>	<p>1 = Handwritten processes</p> <p>2 = Computers with standard software</p> <p>3 = Mobile Apps or digital platforms</p> <p>4 = Computers with specialized software</p> <p>5 = Enterprise Resource Planning (ERP)</p> <p>6 = Other</p> <p>-9 = Don't know</p>

Question	Variable	Answer
<p>For how many years has this establishment been using specialized or ERP software for managing HR processes, finance, and accounting?</p> <p>[CONDITION: ASK ONLY IF <b>b8a4=1</b> OR <b>b8a5=1</b>]</p>	<b>b8c</b>	<p>(Number of years)</p> <p>1= If less than a year</p> <p>-9 = Don't know</p>

### B.9 Production or service operations planning

Question: Does this establishment use any of the following methods for production or service operations planning?	Variable	Answer
Handwritten processes	<b>b9a1</b>	1 = Yes 2 = No -9 = Don't know
Computers with standard software such as Excel or equivalent	<b>b9a2</b>	1 = Yes 2 = No -9 = Don't know
Mobile Apps or digital platforms	<b>b9a3</b>	1 = Yes 2 = No -9 = Don't know
Specialized software for production or service operations planning and demand forecast	<b>b9a4</b>	1 = Yes 2 = No -9 = Don't know
Enterprise Resource Planning (ERP) software integrated with other administrative functions	<b>b9a5</b>	1 = Yes 2 = No -9 = Don't know
Other	<b>b9a6</b>	1 = Yes 2 = No -9 = Don't know

Question:	Variable	Answer
-----------	----------	--------

<p>What is the method used more often by this establishment for production planning?</p> <p>[CONDITION: ASK ONLY IF THE ANSWER IS YES FOR MORE THAN ONE OF THE <b>b9a</b> VARIABLES]</p> <p>SHOW CARDS 7pec</p>	<p><b>b9b</b></p>	<p>1 = Handwritten production planning  2 = Computers with standard software such as Excel or equivalent  3 = Mobile Apps or digital platforms  4 = Specialized software for production planning and demand forecast  5 = Enterprise Resource Planning (ERP) integrated with other administrative functions  6 = Other  -9 = Don't know</p>
---	-------------------	---

### B.10 Sourcing, Procurement, and Supply Chain Management

Question: Does this establishment use any of the following procedures to select and manage suppliers and purchase materials and services?	Variable	Answer	
Manual search of suppliers, including personal visit or phone calls	<b>b10a1</b>	1 = Yes 2 = No	-9 = Don't know
Management of supply chain information using PCs, manually updated (e.g. Microsoft Excel)	<b>b10a2</b>	1 = Yes 2 = No	-9 = Don't know
Online social media, specialized Apps or digital platforms	<b>b10a3</b>	1 = Yes 2 = No	-9 = Don't know
Supplier Relation Management (SRM) specialized software ( <b>not</b> integrated with production planning)	<b>b10a4</b>	1 = Yes 2 = No	-9 = Don't know
Supplier Relation Management (SRM) specialized software (integrated with production planning)	<b>b10a5</b>	1 = Yes 2 = No	-9 = Don't know
Other	<b>B10a6</b>	1 = Yes 2 = No	-9 = Don't know

Question	Variable	Answer
<p>What is the procedure used more often by this establishment to select and manage suppliers and purchase materials and services?</p> <p>[CONDITION: ASK ONLY IF THE ANSWER IS YES FOR MORE THAN ONE OF THE <b>b10a</b> VARIABLES]</p> <p>SHOW CARDS 8</p>	<p><b>b10b</b></p>	<p>1 = Manual search of suppliers, including personal visit or phone calls.  2= Management of supply chain information using PCs, manually updated (e.g. Microsoft Excel)  3 = Online social media, specialized Apps or digital platforms  4 = Supplier Relation Management (SRM) specialized software not integrated with production planning  5 = Supplier Relation Management (SRM) specialized software integrated with production planning  6 = Other  -9 = Don't know</p>

### B.11 Marketing and product development

Question: Does this establishment uses any of the following methods to collect and analyze information from customers for marketing purposes or product development?	Variable	Answer	
Face-to-face chat	<b>b11a1</b>	1 = Yes 2 = No	-9 = Don't know
Online chat (e.g. Whatsapp or Internet)	<b>b11a2</b>	1 = Yes 2 = No	-9 = Don't know
Structured surveys by phone, face-to-face, online, or focus groups	<b>b11a3</b>	1 = Yes 2 = No	-9 = Don't know
Customer Relationship Management software (CRM) or equivalent specialized software	<b>b11a4</b>	1 = Yes 2 = No	-9 = Don't know
Big data Analytics or Machine learning algorithms (Artificial Intelligence) with Big Data	<b>b11a5</b>	1 = Yes 2 = No	-9 = Don't know
Other	<b>b11a6</b>	1 = Yes 2 = No	-9 = Don't know

Question:	Variable	Answer	
<p>What is the method used more often by this establishment to collect and analyze information from customers?</p> <p>[CONDITION: ASK ONLY IF THE ANSWER IS YES FOR MORE THAN ONE OF THE <b>b11a</b> VARIABLES]</p>	<b>b11b</b>	<p>1= Face-to-face chat                  2 = Online chat (e.g. Whatsapp or Internet)                  3 = Structured customer surveys by phone, face-to-face, online, or focus groups                  4 = Customer Relationship Management software (CRM) or other equivalent specialized software                  5 = Big data Analytics or Machine learning algorithms (Artificial Intelligence) with Big Data                  6 = Other                  -9 = Don't know</p>	

### B.12 Fabrication [MANUFACTURING ONLY]

[CONDITION: ASK B.12 QUESTIONS ONLY IF **a5a =3 OR a5a =4 OR a5a =5 OR a5a =6 OR a5a =11 OR a5a = 101**]

Question: Does this establishment use any of the following processes for assembling and production? SHOW CARDS 10	Variable	Answer	
Manual processes	<b>b12a1</b>	1 = Yes 2 = No	-9 = Don't know

Machines controlled by operators without computers	<b>b12a2</b>	1 = Yes 2 = No	-9 = Don't know
Computer numerical controlled machine or other machines controlled by computers	<b>b12a3</b>	1 = Yes 2 = No	-9 = Don't know
Robots	<b>b12a4</b>	1 = Yes 2 = No	-9 = Don't know
Additive manufacturing including rapid prototyping and 3D printers	<b>b12a5</b>	1 = Yes 2 = No	-9 = Don't know
Other advanced manufacturing processes (e.g. as laser, plasma sputtering, high speed machine, E-beam, micromachining)	<b>b12a6</b>	1 = Yes 2 = No	-9 = Don't know
Other	<b>b12a7</b>	1 = Yes 2 = No	-9 = Don't know

Question:	Variable	Answer
<p>What is the assembling and production process used more often by this establishment?</p> <p>[CONDITION: ASK ONLY IF THE ANSWER IS YES FOR MORE THAN ONE OF THE <b>b12a</b> VARIABLES]</p>	<b>b12b</b>	<p>1 = Manual processes</p> <p>2 = Machines controlled by operators without computers</p> <p>3 = Computer numerical controlled machine or other machines controlled by computers</p> <p>4 = Robot(s)</p> <p>5 = Additive manufacturing/3D printers</p> <p>6 = Other advanced manufacturing</p> <p>7 = Other</p> <p>-9 = Don't know</p>

Question	Variable	Answer
<p>For how many years has this establishment been using computer numerical controlled machine, robots, 3D printers, or other advanced manufacturing?</p> <p>[CONDITION: ASK THIS QUESTION ONLY IF <b>b12a3=1 OR b12a4=1 OR b12a5=1 OR b12a6=1</b>]</p>	<b>b12c</b>	<p>(Number of years)</p> <p>1 = If less than a year</p> <p>-9 = Don't know</p>

### B.13 Sales methods

Question:	Variable	Answer
Does this establishment sell some or all of its products directly to final consumers?	<b>b13a</b>	<p>1 = Yes</p> <p>2 = No</p> <p>-9 = Don't know</p>

Question: Does this establishment use any of the following sale methods?	Variable	Answer	
Sales at the establishment's premises	<b>b13b1</b>	1 = Yes 2 = No	-9 = Don't know
Sales by phone, email orders, or sales representatives	<b>b13b2</b>	1 = Yes 2 = No	-9 = Don't know
Sales through social media platforms or apps	<b>b13b3</b>	1 = Yes 2 = No	-9 = Don't know
Online sales using external digital platforms (ex. Amazon, eBay, Alibaba)	<b>b13b4</b>	1 = Yes 2 = No	-9 = Don't know
Online sales (e-commerce) using its own website	<b>b13b5</b>	1 = Yes 2 = No	-9 = Don't know
Electronic orders integrated to specialized supply chain management systems	<b>b13b6</b>	1 = Yes 2 = No	-9 = Don't know

Question:	Variable	Answer	
<p>What is the sale method used more often by this establishment?</p> <p>[CONDITION: ASK ONLY IF THE ANSWER IS YES FOR MORE THAN ONE OF THE <b>b13b</b> VARIABLES]</p>	<b>b13c</b>	<p>1 = Direct sales at the establishment's premises</p> <p>2 = Direct sales by phone, email orders, or sales representatives</p> <p>3 = Sales through social media platforms or apps</p> <p>4 = On line sales using external digital platforms</p> <p>5 = On line sales using using its own website</p> <p>6 = Electronic orders</p> <p>7 = Other</p> <p>-9 = Don't know</p>	

Question	Variable	Answer
<p>For how many years has this establishment been using online sales or electronic orders?</p> <p>[CONDITION: ASK THIS QUESTION ONLY IF <b>b13b4=1</b> OR <b>b13b5=1</b> OR <b>b13b6=1</b>]</p>	<b>b13d</b>	<p>(Number of years)</p> <p>1 = If less than a year</p> <p>-9 = Don't know</p>

Question:	Variable	Answer
<p>What was the share of online sales in total sales in 2019?</p> <p>[CONDITION: ASK THIS QUESTION ONLY IF <b>b13b4=1</b> OR <b>b13b5=1</b> OR <b>b13b6=1</b>]</p>	<b>b13e1</b>	<p>(Share)</p> <p>-9 = Don't know</p>
<p>What was the share of online sales in total sales in 2020?</p>	<b>b13e2</b>	(Share)

[CONDITION: ASK THIS QUESTION ONLY IF <b>b13b4=1 OR b13b5=1 OR b13b6=1</b> ]		-9 = Don't know
Electronic orders integrated to specialized supply chain management systems [CONDITION: ASK THIS QUESTION ONLY IF <b>b13b6=1</b> ]	<b>b13e3</b>	(Share) -9 = Don't know

#### B.14 Payment methods

Question: Does this establishment use any of the following payment methods? SHOW CARDS 12	Variable	Answer	
Exchange of goods	<b>b14a1</b>	1 = Yes 2 = No	-9 = Don't know
Cash	<b>b14a2</b>	1 = Yes 2 = No	-9 = Don't know
Cheque, voucher, or bank wire at the branch	<b>b14a3</b>	1 = Yes 2 = No	-9 = Don't know
Prepaid card, Debit card, or Credit card	<b>b14a4</b>	1 = Yes 2 = No	-9 = Don't know
Online or electronic payment through a bank wire	<b>b14a5</b>	1 = Yes 2 = No	-9 = Don't know
Online payment through platform (including mobile money, mobile wallet, PayPal or similar App-based payment service)	<b>b14a6</b>	1 = Yes 2 = No	-9 = Don't know
Virtual or Cryptocurrency (e.g. Bitcoin, Ether, or others)	<b>b14a7</b>	1 = Yes 2 = No	-9 = Don't know

**"INTERVIEWER: <DO NOT READ> When in doubt please explain that the question is about how the clients can pay. "**

Question:	Variable	Answer
What is the payment method used more often by this establishment?  [CONDITION: ASK ONLY IF THE ANSWER IS YES FOR MORE THAN ONE OF THE <b>b14a</b> VARIABLES]	<b>b14b</b>	1 = Exchange of goods 2 = Cash 3 = Cheque, voucher, or bank wire at the branch 4 = Prepaid card, Debit card, or Credit card 5 = Online or electronic payment through a bank wire 6 = Online payment through platform 7 = Virtual or Cryptocurrency 8 = Other -9 = Don't know

**"INTERVIEWER: <DO NOT READ> When in doubt please explain that the question is about how the clients can pay. "**

Question	Variable	Answer
----------	----------	--------

For how many years has this establishment been using online or electronic payment methods?  [CONDITION: ASK THIS QUESTION ONLY IF b14a5=1 OR b14a6=1 or b14a7=1]	<b>b14c</b>	(Number of years) 1 = If less than a year -9 = Don't know
--	-------------	---

**B.15 Quality control inspection**

Question: Does this establishment use any of the following quality control inspection methods? SHOW CARDS 13	Variable	Answer	
Manual, visual, or written processes	<b>b15a1</b>	1 = Yes 2 = No	-9 = Don't know
Human inspection with the support of computers or phones	<b>b15a2</b>	1 = Yes 2 = No	-9 = Don't know
Statistical process control with software monitoring and data management	<b>b15a3</b>	1 = Yes 2 = No	-9 = Don't know
Automated systems for inspection such as laser-based, sensor-based, voice-control	<b>b15a4</b>	1 = Yes 2 = No	-9 = Don't know

**"INTERVIEWER: <NO NOT READ> Quality refers to quality of products, services and processes."**

Question:	Variable	Answer	
What is the quality control method used more often by this establishment?  [CONDITION: ASK ONLY IF THE ANSWER IS YES FOR MORE THAN ONE OF THE b15a VARIABLES]	<b>b15b</b>	1 = Manual, visual, or written processes 2 = Human inspection with the support of computers or phones 3 = Statistical process control 4 = Automated systems for inspection 5 = Other -9 = Don't know	

**"INTERVIEWER: <NO NOT READ> Quality refers to quality of products, services and processes."**

---

## C. SECTOR SPECIFIC TECHNOLOGIES

**READ THE FOLLOWING TO THE RESPONDENT BEFORE PROCEEDING:**

**Now, we turn to questions about methods and procedures to perform sector specific business functions**

ADD SECTOR SPECIFIC QUESTIONNAIRE – SEPARATED DOCUMENT

INTERVIEWER: ASK THESE QUESTIONS ONLY FOR FIRMS THAT BELONG

TO THE SECTORS FOR WHICH SECTOR SPECIFIC QUESTIONS ARE AVAILABLE.

IF THE FIRM DO NOT BELONG TO THOSE, SKIP THIS SECTION AND GO TO SECTION D.

Agriculture (except Livestock)	C1
Livestock	C2
Food Processing	C3
Wholesale or retail	C7
Land transport	C9

## D. DRIVERS OF TECHNOLOGY ADOPTION

INTERVIEWER: The next questions aim to understand the main drivers of technology adoption.

### D.1 Acquisition of machines, equipments, and software

Question: Over the years [2018, 2019, and 2020], did this establishment: READ OUT	Answer
Purchase or lease new or second-hand equipment or machines?	<b>d1a</b> 1 = Yes, new 2 = Yes, second hand 3 = Yes, both (new and second hand) 4 = No -9 = Don't know
Purchase or lease licence for software?	<b>d1b</b> 1 = Yes 2 = No -9 = Don't know
Develop, customize, or significantly modify any equipment, machine, or software?	<b>d1c</b> 1 = Yes 2 = No -9 = Don't know

### D.2 Awareness and information

What was the source of information more often used by this establishment to make decisions about the acquisition of new machines, equipments, or software?  SHOW CARDS 15	<b>d2a</b> 1 = Other firms 4 = Industrial or trade associations 5 = Public technology extension services 6 = Private consultants 7 = Fairs, events, and missions 8 = Other -9 = Don't know
Over the years [2018, 2019, and 2020], did this establishment have business, as a supplier or a buyer, with a multinational firm?	<b>d2d</b> 1 = Yes 2 = No -9 = Don't know
Does the CEO or top manager of this establishment have previous experience working in a multinational or a national firm with more than 50 employees in the same sector?	<b>d2e</b> 1 = Yes 2 = No -9 = Don't know

### D.3 Access to finance

Over the years [2018, 2019, and 2020], has this establishment got a loan for purchasing machines, equipment, or licensing software or processes?	<b>d3a</b> 1 = Yes 2 = No -9 = Don't know
Over the years [2018, 2019, and 2020], how many times this establishment needed to borrow money to expand production, but could not get it?	<b>d3c</b> Number of times

### D.4 Management

Question	Answers
Does this establishment provide formal incentives for workers in the form of money, gift, or recognition to suggest and/or use better ways to produce goods or provide services?	<b>d4a</b> 1 = Yes 2 = No -9 = Don't know
In the year [2020], how many key performance indicators were monitored at this establishment? Examples: Metrics on production, cost, waste, quality, inventory, energy, absenteeism and deliveries on time (mark one option):	<b>d4b</b> <b>1 = 1-2 key performance indicators</b> <b>2 = 3-9 key performance indicators</b> <b>3 = 10 or more key performance indicators</b> <b>4 = No key performance indicators</b>

### D.6 Trade barriers and uncertainty of demand

Question	Answers
Over the years [2018, 2019, and 2020], did this establishment export?	<b>d6a</b> 1 = Yes 2 = No -9 = Don't know
In the year [2020], what percentage of this establishment's sales were direct exports?  [CONDITION: ASK THIS QUESTION ONLY IF <b>d6a=1</b> ]	<b>d6b</b> (Percent)
Over the years [2018, 2019, and 2020], has this establishment imported material inputs, machines, or equipment directly?	<b>d6c</b> 1 = Yes 2 = No -9 = Don't know

### D.7 Government support

Are you aware of any government support program or subsidy in relation to the adoption of a new machines, equipment or software that could benefit this establishment?	<b>d7a</b> 1 = Yes 2 = No -9 = Don't know
--	--

<p>Over the years [2018, 2019, and 2020], has this establishment benefited from any government support program or subsidy in relation to the adoption of a new machine, equipment, or software?</p>	<p style="text-align: right;"><b>d7b</b></p> <p>1 = Yes 2 = No -9 = Don't know</p>
<p>Which kind of government support in the adoption of a new technology has this establishment received?</p> <p>[CONDITION: ASK ONLY IF <b>d7b=1</b>]</p> <p>SHOW CARD 21</p>	<p style="text-align: right;"><b>d7c</b></p> <p>1 = Information 2 = Technical assistance 3 = Tax incentive 4 = Grant 5 = Loan 6 = Other</p>

**D.8 Obstacles and Drivers - ranking**

<p>Please select three of the major obstacles faced by this establishment to adopt new equipment, machine, software, or process?</p> <p>SHOW CARDS 22</p> <p>CONDITION: SAME OPTION CANNOT BE REPEATED ACROSS VARIABLES</p>	<p style="text-align: center;"><b>d8a</b></p> <p style="text-align: center;">1<sup>st</sup> obstacle</p>	<p style="text-align: center;"><b>d8b</b></p> <p style="text-align: center;">2<sup>nd</sup> obstacle</p>	<p style="text-align: center;"><b>d8c</b></p> <p style="text-align: center;">3<sup>rd</sup> obstacle</p>
<p>1 = Lack of information, knowledge, or technical capacity 2 = Lack or uncertainty of demand 3 = Cost 4 = Lack of finance 5 = Government regulations 6 = Lack of infrastrucutre 7 = Other 8 = No obstacles or need to adopt -9 = Don't know -7 = not applicable</p>			

<p>Please select three of the major reasons for the acquisition of new equipment, machine, or software by this establishment?</p> <p>SHOW CARDS 23</p> <p>CONDITION: SAME OPTION CANNOT BE REPEATED ACROSS VARIABLES</p>	<p style="text-align: center;"><b>d8d</b></p> <p style="text-align: center;">1<sup>st</sup> reason</p>	<p style="text-align: center;"><b>d8e</b></p> <p style="text-align: center;">2<sup>nd</sup> reason</p>	<p style="text-align: center;"><b>d8f</b></p> <p style="text-align: center;">3<sup>rd</sup> reason</p>
<p>1 = Depreciation or replacement 2 = Competition 3 = Other firms adopted 4 = Produce new products 5 = Access new markets 6 = Reduce costs 7 = Adjust to regulations 8 = Other -9 = Don't know -7 = not applicable</p>			

## E. LABOR, BALANCE SHEET AND PERFORMANCE

### LABOR

**READ THE FOLLOWING TO THE RESPONDENT BEFORE PROCEEDING:**

Now I would like to ask you a few questions about this establishment's labor force and performance

<b>E.1</b>	How many paid workers (full-time and part-time) does this establishment have currently, by the end of 2020, 2019, and 2018? Please include all employees and managers. <b>(INTERVIEWER: INCLUDE INTERVIWEE IF APPLICABLE).</b>
------------	---

	<b>Number</b>
Total number of workers by the end of the year [2020]	<b>e1a</b>
Total number of workers by the end of the year [2019]	<b>e1</b>
Total number of workers by the end of the year [2018]	<b>e2</b>
<b>DON'T KNOW (SPONTANEOUS)</b>	<b>-9</b>

What was the total share of female workers by the end of the year [2020]?	<b>e1f</b> (share) -9 = Don't know
---	--

<b>E.3</b>	<p>At the end of the year [2018], how many individuals were working in this establishment according to their main occupation?</p> <p><b>(INTERVIEWER: READ EACH CATEGORY)</b></p> <p>Professionals are highly skilled workers with university degree working on their field, such as science and engineering, architecture, finance, IT, and law.</p> <p>Technicians are skilled workers with technical training working on their field associated with professionals, such as science and engineering or financial technicians.</p> <p>Other production employees are workers directly involved in the production process, excluding professionals and technicians.</p>
------------	--

	<b>Number</b>	<b>DON'T KNOW</b>
CEOs and Managers	<b>e3a</b>	<b>-9</b>
Professionals	<b>e3b</b>	<b>-9</b>
Technicians	<b>e3c</b>	<b>-9</b>
Clerical support workers [e.g. administrative support]	<b>e3d</b>	<b>-9</b>
Production workers (directly involved in the production process)	<b>e3e</b>	<b>-9</b>
Service or sales workers	<b>e3f</b>	<b>-9</b>

**E.4** At the end of the year [2016], how many individuals were working in this establishment according to their main occupation: **(INTERVIEWER: READ EACH CATEGORY)**  
**[SKIP: IF e2a = -7 GO TO e5a]**

	Number	DON'T KNOW
CEOs and Managers	e4a	-9
Professionals	e4b	-9
Technicians	e4c	-9
Clerical support workers [e.g. administrative support]	e4d	-9
Production workers (directly involved in the production process)	e4e	-9
Service or sales workers	e4f	-9

**E.5** What is the percentage of workers who completed the following degrees as maximum level of schooling achievement?

	Share (%)	DON'T KNOW
Completed primary school (about 9 years of education)	e5a	-9
Completed secondary school (about 12 years of education)	e5b	-9
Vocational training (about 12 years of education)	e5c	-9
Completed college degree or more (15+ years of education)	e5d	-9

What is the number of workers with colleged degree in Engineering or applied science; and Master or Doctoral degrees?

	Number	DON'T KNOW
Engineering or applied science	e5e	-9
MBA, Master or Doctoral degree	e5f	-9

## BALANCE SHEET

**READ THE FOLLOWING TO THE RESPONDENT BEFORE PROCEEDING:**

Now, we would like to ask you a few questions about the financial results of this establishment. It is important that this information be as accurate as possible. The individual data are treated as confidential. The identity of this establishment will not be revealed at any point.

**E.6** What were this establishment's total annual sales for **ALL** products and services?

	LCUs
Complete year [2020] total sales	e6a
Complete year [2018] total sales	e6b
<b>DON'T KNOW (SPONTANEOUS)</b>	-9

**E.7** From this establishment's Income Statement or book records for the fiscal year [2020], please provide the following information:

	INR in Lakhs	DON'T KNOW
Total annual cost of labor including wages, salaries, bonuses, social security payments	e7a	-9
Total annual cost of raw materials and intermediate goods used in production or materials purchased to resell	e7b	-9
Total annual cost of electricity	e7c	-9
<b>TOTAL COST OF OF PRODUCTION SHOULD INCLUDE ALL ABOVE COSTS AND OTHER COSTS NOT LISTED ABOVE</b>		
Total cost of production or service operations (it also includes costs of marketing, distribution, and others not listed above)	e7d	-9

**E.8** Hypothetically, if this establishment were to purchase all the machinery, vehicles, equipment, and buildings it **uses now**, in their current condition and regardless of whether the establishment owns them or not, how much would they cost, independently of whether they are owned, rented or leased?

	LCUs	DON'T KNOW
Machinery, vehicles, and equipment	e8a	-9
Buildings	e8b	-9

**E.9** What is the total expenditure on R&D (external and internal) by this establishment in 2024?

	LCUs	DON'T KNOW
Total expenditure on R&D	e9rd	-9

E5c What is the percentage of employees who have obtained diplomas for certification? **e10** % Percentage  
-9 Don'tknow

<b>E11. In which range was your turnover in 2020?</b>	<b>e11</b>	1 = <15 millions de FCFA
		2 = 15-50 millions de FCFA
		3= 50-150 millions de FCFA
		4= 151-400 millions de FCFA
		5= 401-1000 millions de FCFA
		6= 1001-3000 millions de FCFA
		7= > 3000 millions de FCFA

**CONTROL QUESTIONS**

**INTERVIEWER READ AT THE END OF THE INTERVIEW:**

The survey ends here. I would like to gather a few final details. Thank you for your time and cooperation.

A.9 Time face-to-face interview ends:

<b>Day (dd)</b>	<b>Month (mm)</b>	<b>Year (yyyy)</b>	<b>Hour (00 to 23)</b>	<b>Minutes (00 to 59)</b>
<b>a9d</b>	<b>a9m</b>	<b>a9y</b>	<b>a9h</b>	<b>a9min</b>

**A.10** Please indicate which option best describes the main respondents position:

Owner	1
President, Executive Director, or CEO	2
Chief Financial, Chief Operational Officer (CFO/COO)	3
Operational or plant manager	4
Sales or marketing manager	5
Accountant	6
Lawyer	7
Other Administrative	8
Other Management	9
Other (Specify) - <b>a10b</b>	10

**a10a**

A.11 Please complete the following information about the interviewee(s)

	<b>Years with the establishment</b>	<b>Gender</b>	<b>Email</b>
<b>Main respondent</b>	<b>a11a</b>	<b>a11b</b>	<b>a11c</b>

**A.12** The responses to the questions regarding figures (productivity and employment numbers) were:

Taken directly from establishment records	1
Estimates computed with some precision	2
Arbitrary and unreliable numbers	3
In some case taken from books and in some case estimates	4

**a12**

INTERVIEWER COMMENTS: (IF DONE BY PHONE)

a13
-----

(Problems occurred/extraordinary circumstances which could influence results)

<b>A.14</b>	This questionnaire was completed in:
-------------	--------------------------------------

One call interview with one person	1	<b>STOP HERE</b>
One call interview with different managers/staff	2	
Several calls	3	

a14
-----

<b>A.15</b>	If option 2 or 3 in <b>A.14</b> , estimate duration of the whole interview
-------------	--

Hour	Minutes

a15h      a15m