

# **Firm-level Adoption of Technology Survey**

**The World Bank**

**2019**

## **INTRODUCTION**

**This survey is being conducted by Org-Quest Research Limited on behalf of World Bank.**

**The goal of this survey is to gather information about technologies adopted by firms in [Bangladesh](#). 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

# Firm-level Adoption of Technology Survey

## The World Bank

Frame level

FIELDWORK SUPERVISORS AND MANAGEMENT ARE RESPONSIBLE FOR THE ACCURACY OF THIS SECTION.

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### INFORMATION ACQUIRED PRIOR TO SCREENING:

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| <b>Sampling Information [CODES FROM WBG PROGRESS REPORT]</b> |            |
|--|------------|
| Sampling sector  | <b>s1a</b> |
| Sampling size  | <b>s1b</b> |
| Sampling location  | <b>s1c</b> |

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### COVER [TO BE COMPLETED FROM SCREENER BEFORE INTERVIEW]

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| <b>Screener Information</b> |            |
|-----------------------------|------------|
| Screener sector             | <b>s6a</b> |
| Module                      | <b>s5</b>  |
| Screener region             | <b>s2e</b> |
| Name of City/town/village   | <b>s2d</b> |
| Screener size               | <b>s7</b>  |
| Multi-establishment firm    | <b>s4</b>  |
| Language                    | <b>s2j</b> |

**QUESTIONS BEGIN HERE**

**A. CONTROL AND GENERAL INFORMATION**

TO BE COMPLETED AT THE TIME OF THE INTERVIEW

**A.1 Time face-to-face interview begins:**

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

|            |  |
|------------|--|
| <b>A.2</b> | On which calendar date did the last completed fiscal year end? |
|------------|--|

|            |            |            |
|------------|------------|------------|
| Year       | Month      | Day        |
| <b>a2a</b> | <b>a2b</b> | <b>a2c</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:<br>SHOW CARD 1 | Share        | DON'T KNOW<br>(SPONTANEOUS) |
|--|--------------|-----------------------------|
| Private domestic individuals, companies or organizations                       | <b>a3a</b> % | -9                          |
| Private foreign individuals, companies or organizations                        | <b>a3b</b> % | -9                          |
| Government or state  | <b>a3c</b> % | -9                          |
| Other  | <b>a3d</b> % | -9                          |
|  | <b>100%</b>  |                             |

INTERVIEWER: CHECK THAT TOTAL SUMS TO 100% (UNLESS DON'T KNOW)

| Question  | Variable   | Answer  |                 |
|---|------------|---|-----------------|
| Is this a shareholding company with shares publicly traded in the stock market?<br><b>SKIP: IF a4a =1 GO TO a4c</b> | <b>a4a</b> | 1 = Yes<br>2 = No   | -9 = Don't know |
| Is this firm owned by the founder or someone of her/his family?   | <b>a4b</b> | 1 = Yes. By the founder.<br>2 = Yes. By the founder's family (2nd generation or more)<br>3 = No<br>-9 = Don't know<br>-7 = Not applicable |                 |
| Is the founder or her/his family member also the top manager?   | <b>a4c</b> | 1 = Yes. The founder.<br>2 = Yes. A founder's family member (2nd generation or more)<br>3 = No<br>-9 = Don't know                         |                 |

|   |            |   |                 |
|---|------------|---|-----------------|
|   |            | -7 = Not applicable                       |                 |
| Is the largest owner of the firm also the top manager?                                  | <b>a4d</b> | 1 = Yes<br>2 = No                         | -9 = Don't know |
| Amongst the owners of the firm, are there any females?                                  | <b>a4e</b> | 1 = Yes<br>2 = No                         | -9 = Don't know |
| What percentage of the firm is owned by females?<br><b>CONDITION: ASK ONLY IF a4e=1</b> | <b>a4f</b> | (share)<br>Percentage of female ownership | -9 = Don't know |

**READ ONLY IF s4=1 (yes)**  
**I want to proceed by asking you about this establishment only.**

**A5** Over the year [2018], 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><br><b>a5b</b> | <b>a5c</b><br>What sector specific questionnaire should be used?<br><br><b>IF a5c IS DIFFERENT FROM s6b, PLEASE DOUBLE CHECK THE INFORMATION .</b> |
|--------------------------|------------|--|--|
| Food Processing          | 3          |  | 3  |
| Wearing apparel          | 4          |  | 4  |
| Pharmaceuticals          | 6          |  | 6  |
| Leather Goods & Footwear | 11         |  | 11   |
| Other manufacturing      | 101        |  | 0  |

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

|   |           |  |
|---|-----------|--|
| In what year did this establishment begin operations? | <b>a6</b> | (year)<br>Year the establishment began operations<br>-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)<br>1 = If less than a year<br>-9 = Don't know  |
| Is the Top Manager female?   | <b>a7b</b> | 1 = Yes<br>2 = No<br>-9 = Don't know   |
| What is the highest level of education of the Top Manager?<br>SHOW CARD 2      | <b>a7c</b> | 1 = Primary school (Class 1-V)<br>2 = Secondary school (Class VI-X)<br>3 = SSC/HSC/ Diploma<br>4 = College degree<br>5 = Post-Graduation (MBA, Master or PhD)<br>-9 = Don't know |
| Did the Top Manager study abroad for more than a month?                        | <b>a7d</b> | 1 = Yes<br>2 = No<br>-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?<br>[SKIP: IF <b>b1a</b> =2 OR <b>b1a</b> =-9, GO TO <b>b2a</b> ] | <b>b1a</b><br>1 = Yes<br>2 = No<br>-9 = Don't know   |  |
| Over the year [2018] did this establishment experience power outages?<br>[SKIP: IF <b>b1b</b> =2, GO TO <b>b2a</b> ]                         | <b>b1b</b><br>1 = Yes<br>2 = No  |  |
| In a typical month, over the year [2018], how many power outages did this establishment experience?  | <b>b1c</b><br>(Number of power outages in a typical month)<br>1 = Less than one per month<br>-9 = Don't know |  |
| How many hours did these power outages last on average?  | <b>b1d</b><br>(Hours)<br>-9 = Don't know   | <b>b1e</b><br>(Min)<br>1 = Less than one minute<br>-9 = Don't know |

#### B.2 Use of generators

|   |   |  |
|---|---|--|
| Over the year [2018], did this establishment own or share a generator?<br>[SKIP: IF <b>b2a</b> =2 OR <b>b2a</b> =-9, GO TO <b>b2a</b> ] | <b>b2a</b><br>1 = Yes<br>2 = No<br>-9 = Don't know  |  |
| Over the year [2018], what percentage of this establishment's electricity came from a generator that the establishment owned or shared? | <b>b2b</b><br>(share %)   |  |
| What is the main source of energy used by this establishment owned or shared generator?<br><br>SHOW CARDS 3                             | <b>b2c</b><br>1 = Solar power<br>2 = Fuel<br>3 = Grid or Battery-stored backup<br>4 = Wind power<br>5 = Other |  |

#### B.3 Mobile phone coverage

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

### B.4 Computer coverage

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

### B.5 Internet service and coverage

|   |   |  |
|---|---|--|
| Does this establishment have an Internet connection?  | <b>b5a</b><br>YES = 1, NO = 2   |  |
| What is the fastest type of Internet connection does this establishment has?<br><br>SHOW CARDS 4  | <b>b5b</b><br>1 = Dial up<br>2 = DSL or Fiber<br>3 = Wireless or Satellite<br>4 = BPL<br>5 = Other<br>-9 = Don't know |  |
| In a typical month, over fiscal year [2018], how many times was the Internet service down in this establishment?<br>[SKIP: IF <b>b5c</b> =0 OR <b>b5c</b> =-9, GO TO <b>b5f</b> ] | <b>b5c</b><br>(number of times)<br>1 = Less than one<br>-100 = To many to count<br>-9 = Don't know                    |  |
| How many hours did the Internet service down last on average?   | <b>b5d</b><br>(Hours)<br>-9 = Don't know  | <b>b5e</b><br>(Min)<br>1 = Less than one minute<br>-9 = Don't know |
| At the present time, does this establishment have its own website?  | <b>b5f</b><br>YES = 1, NO = 2<br>-9 = Don't know  |  |
| At the present time, does this establishment use an account on an online social media for business purpose?   | <b>b5g</b><br>YES = 1, NO = 2<br>-9 = Don't know  |  |
| Does this establishment use cloud computer services for business purpose?   | <b>b5f</b><br>YES = 1, NO = 2<br>-9 = Don't know  |  |

### B.6 Water

|   |  |
|---|--|
| Does this establishment have water connection to the network? | <b>b6a</b><br>YES = 1, NO = 2<br>-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><br>score (1-10) |
| most advanced firms in the world?   | <b>b7b</b><br>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<br>2 = No | -9 = Don't know |
| Computers with standard software such as Excel or equivalent   | <b>b8a2</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Mobile Apps or digital platforms   | <b>b8a3</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Computers with specialized software  | <b>b8a4</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Enterprise Resource Planning (ERP) or equivalent software integrated with other back office functions                  | <b>b8a5</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Other  | <b>b8a6</b> | 1 = Yes<br>2 = No | -9 = Don't know |

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

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

### 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<br>2 = No | -9 = Don't know |
| Computers with standard software such as Excel or equivalent  | <b>b9a2</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Mobile Apps or digital platforms  | <b>b9a3</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Specialized software for production or service operations planning and demand forecast                            | <b>b9a4</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Enterprise Resource Planning (ERP) software integrated with other administrative functions                        | <b>b9a5</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Other   | <b>b9a6</b> | 1 = Yes<br>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 7</p> | <b>b9b</b> | <p>1 = Handwritten production planning</p> <p>2 = Computers with standard software such as Excel or equivalent</p> <p>3 = Mobile Apps or digital platforms</p> <p>4 = Specialized software for production planning and demand forecast</p> <p>5 = Enterprise Resource Planning (ERP) integrated with other administrative functions</p> <p>6 = Other</p> <p>-9 = Don't know</p> |

| Question   | Variable   | Answer   |
|--|------------|--|
| <p>For how many years this establishment has been using a specialized software for production planning?</p> <p>[CONDITION: ASK THIS QUESTION ONLY IF <b>b9a4=1</b> OR <b>b9a5=1</b>]</p> | <b>b9c</b> | <p>(Number of years)</p> <p>1 = If less than a year</p> <p>-9 = Don't know</p> |

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

| Question  | Variable    | Answer  |
|---|-------------|---|
| What is the procedure used more often by this establishment to select and | <b>b10a</b> | 1 = Manual search of suppliers, including personal visit or phone calls, without stored supplier's information in centralized database. |

|  |             |  |
|--|-------------|--|
| manage suppliers and purchase materials and services?<br><br>SHOW CARDS 8  |             | 2= Management of supply chain information using PCs, manually updated (e.g. Microsoft Excel)<br>3 = Online social media, specialized Apps or digital platforms<br>4 = Supplier Relation Management (SRM) or other specialized software not integrated with production planning<br>5 = Supplier Relation Management (SRM) integrated with production planning<br>6 = Other<br>-9 = Don't know |
| What procedure does this establishment use most often when searching for new employees or collaborators?<br><br>SHOW CARDS 9         | <b>b10b</b> | 1 = Direct reference from employees and colleagues face-to-face or using phone, Whatsapp, SMS or email<br>2 = Job search announcements in newspapers or magazines<br>3 = Use of job search online networks (e.g. LinkedIn, Xing,..) or digital platforms (e.g. Facebook)<br>4 = Job search announcements in their own website<br>5 = Recruitment agencies<br>6 = Other<br>-9 = Don't know    |
| For how many years has this establishment been using SRM for supply chain management?<br>[CONDITION: ASK ONLY IF b10a4=1 OR b10a5=1] | <b>b10c</b> | (Number of years)<br>1= If less than a year<br>-9 = Don't know   |

### 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<br>2 = No | -9 = Don't know |
| Online chat (e.g. Whatsapp or Internet)  | <b>b11a2</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Structured surveys by phone, face-to-face, online, or focus groups   | <b>b11a3</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Customer Relationship Management software (CRM) or equivalent specialized software   | <b>b11a4</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Big data Analytics or Machine learning algorithms (Artificial Intelligence) with Big Data  | <b>b11a5</b> | 1 = Yes<br>2 = No | -9 = Don't know |

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

| Question   | Variable    | Answer  |
|--|-------------|---|
| For how many years has this establishment been using a specialized software to analyze customer information?<br><br>[CONDITION: ASK THIS QUESTION ONLY IF <b>b11a4=1 OR b11a5= 1</b> ] | <b>b11c</b> | (Number of years)<br>1 = If less than a year<br>-9 = Don't know |

### B.12 Fabrication [MANUFACTURING ONLY]

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

| Question: Does this establishment use any of the following processes for assembling and production?<br>SHOW CARDS 10  | Variable     | Answer            |                 |
|---|--------------|-------------------|-----------------|
| Manual processes  | <b>b12a1</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Machines controlled by operators without computers  | <b>b12a2</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Computer numerical controlled machine or other machines controlled by computers                                       | <b>b12a3</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Robots  | <b>b12a4</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Additive manufacturing including rapid prototyping and 3D printers  | <b>b12a5</b> | 1 = Yes<br>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<br>2 = No | -9 = Don't know |
| Other   | <b>b12a7</b> | 1 = Yes<br>2 = No | -9 = Don't know |

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

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

### B.13 Sales methods

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

| Question: Does this establishment use any of the following sale methods?<br>SHOW CARDS 11 | Variable     | Answer                               |
|---|--------------|--------------------------------------|
| Sales at the establishment's premises   | <b>b13b1</b> | 1 = Yes<br>2 = No<br>-9 = Don't know |
| Sales by phone, email orders, or sales representatives                                    | <b>b13b2</b> | 1 = Yes<br>2 = No<br>-9 = Don't know |
| Sales through social media platforms or apps  | <b>b13b3</b> | 1 = Yes<br>2 = No<br>-9 = Don't know |
| Online sales using external digital platforms (ex. Amazon, eBay, Alibaba)                 | <b>b13b4</b> | 1 = Yes<br>2 = No<br>-9 = Don't know |
| Online sales (e-commerce) using its own website   | <b>b13b5</b> | 1 = Yes<br>2 = No<br>-9 = Don't know |
| Electronic orders integrated to specialized supply chain management systems               | <b>b13b6</b> | 1 = Yes<br>2 = No<br>-9 = Don't know |

|       |              |                   |                 |
|-------|--------------|-------------------|-----------------|
| Other | <b>b13b7</b> | 1 = Yes<br>2 = No | -9 = Don't know |
|-------|--------------|-------------------|-----------------|

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

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

| Question: What is the share of sales of this establishment by this method?  | Variable     | Answer                     |
|---|--------------|----------------------------|
| Online sales using external digital platforms (ex. Amazon, eBay, Alibaba)<br>[CONDITION: ASK THIS QUESTION ONLY IF <b>b13b4=1</b> ]   | <b>b13e1</b> | (Share)<br>-9 = Don't know |
| Online sales (e-commerce) using its own website<br>[CONDITION: ASK THIS QUESTION ONLY IF <b>b13b5=1</b> ]                             | <b>b13e2</b> | (Share)<br>-9 = Don't know |
| Electronic orders integrated to specialized supply chain management systems<br>[CONDITION: ASK THIS QUESTION ONLY IF <b>b13b6=1</b> ] | <b>b13e3</b> | (Share)<br>-9 = Don't know |

#### B.14 Payment methods

| Question: Does this establishment use any of the following payment methods?<br>SHOW CARDS 12 | Variable | Answer |
|--|----------|--------|
|  |          |        |

|  |              |                   |                 |
|--|--------------|-------------------|-----------------|
| Exchange of goods  | <b>b14a1</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Cash   | <b>b14a2</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Cheque, voucher, or bank wire at the branch  | <b>b14a3</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Prepaid card, Debit card, or Credit card   | <b>b14a4</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Online or electronic payment through a bank wire   | <b>b14a5</b> | 1 = Yes<br>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<br>2 = No | -9 = Don't know |
| Virtual or Cryptocurrency (e.g. Bitcoin, Ether, or others)   | <b>b14a7</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Other  | <b>b14a8</b> | 1 = Yes<br>2 = No | -9 = Don't know |

| Question:  | Variable    | Answer   |
|--|-------------|--|
| What is the payment method used more often by this establishment?<br><br>[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<br>2 = Cash<br>3 = Cheque, voucher, or bank wire at the branch<br>4 = Prepaid card, Debit card, or Credit card<br>5 = Online or electronic payment through a bank wire<br>6 = Online payment through platform<br>7 = Virtual or Cryptocurrency<br>8 = Other<br>-9 = Don't know |

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

### B.15 Quality control inspection

| Question: Does this establishment use any of the following quality control inspection methods? | Variable | Answer |
|--|----------|--------|
|  |          |        |

| SHOW CARDS 13   |              |                   |                 |
|---|--------------|-------------------|-----------------|
| Manual, visual, or written processes  | <b>b15a1</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Human inspection with the support of computers or phones                          | <b>b15a2</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Statistical process control with software monitoring and data management          | <b>b15a3</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Automated systems for inspection such as laser-based, sensor-based, voice-control | <b>b15a4</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Other   | <b>b15a5</b> | 1 = Yes<br>2 = No | -9 = Don't know |

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

| Question   | Variable    | Answer   |
|--|-------------|--|
| <p>For how many years has this establishment been using statistical process control with software monitoring and data management or automated systems for inspection as a quality control method?</p> <p>[CONDITION: ASK THIS QUESTION ONLY IF <b>b15a3=1</b> OR <b>b15a4=1</b>]</p> | <b>b15c</b> | (Number of years)<br>1= If less than a year<br>-9 = Don't know |

| Question: Does this establishment use any of the following quality management practices? | Variable     | Answer                               |
|--|--------------|--------------------------------------|
| Business certification – ISO 9000 or other equivalent                                    | <b>b15c1</b> | 1 = Yes<br>2 = No<br>-9 = Don't know |
| Six sigma  | <b>b15c2</b> | 1 = Yes<br>2 = No<br>-9 = Don't know |
| Total Quality Management (TQM)   | <b>b15c3</b> | 1 = Yes<br>2 = No<br>-9 = Don't know |

|  |              |                   |                 |
|--|--------------|-------------------|-----------------|
| Lean manufacturing, Just-in-Time, or Kaizen method | <b>b15c4</b> | 1 = Yes<br>2 = No | -9 = Don't know |
|--|--------------|-------------------|-----------------|

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## C. SECTOR SPECIFIC TECHNOLOGIES

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**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.

|                      |     |
|----------------------|-----|
| Food Processing      | C3  |
| Wearing apparel      | C4  |
| Pharmaceuticals      | C6  |
| Leather and Footwear | C11 |

### 3. Food processing (manufacturing)

#### C3.0 Screening questions

| Question  | Variable      | Answer  |
|---|---------------|---|
| Is this establishment regulated and inspected by a government agency related to food processing?        | <b>c3_0a1</b> | 1 = Yes<br>0 = No<br>-9 = Don't know<br>-7 = Not applicable |
| What is the main agency that regulates this establishment?<br>[CONDITION: ask only if <b>c3_0a1=1</b> ] | <b>c3_0a2</b> | Name of the agency  |

| Question   | Variable      | Answer  |
|--|---------------|---|
| Are the finished products made by this establishment shelf stable?     | <b>c3_0b1</b> | 1 = Yes<br>0 = No<br>-9 = Don't know<br>-7 = Not applicable |
| Are the finished products made by this establishment fresh/perishable? | <b>c3_0b2</b> | 1 = Yes<br>0 = No<br>-9 = Don't know<br>-7 = Not applicable |

#### C3.1 Input testing

| Question   | Variable      | Answer  |
|--|---------------|---|
| Does this establishment conduct input testing in house?<br>[SKIP: If <b>c3_1a1=1</b> go to question <b>c3_1b1</b> ]  | <b>c3_1a1</b> | 1 = Yes<br>2 = No   |
| Is this task outsourced to another unit of the same firm?<br>[CONDITION: Only for multi-establishment firms ( <b>s4=1</b> )]<br>[SKIP: If <b>c3_1a2=1</b> go to question <b>c3_1b1</b> ] | <b>c3_1a2</b> | 1 = Yes<br>2 = No<br>-9 = Don't know                        |
| Is this task outsourced to another firm?<br>[SKIP: Go to question <b>c3_2a1</b> ]  | <b>c3_1a3</b> | 1 = Yes<br>2 = No<br>-9 = Don't know<br>-7 = Not applicable |

| Question: Does this establishment use any of the following input testing mechanisms? | Variable      | Answer            |                 |
|--|---------------|-------------------|-----------------|
| Sensory systems (e.g. visual, smell, tactile, color)                                 | <b>c3_1b1</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Review of supplier testing on Certificate of Analysis                                | <b>c3_1b2</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Non-computer-controlled testing kits   | <b>c3_1b3</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Computer testing such as chromatography or spectroscopy                              | <b>c3_1b4</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Other  | <b>c3_1b5</b> | 1 = Yes<br>2 = No | -9 = Don't know |

| Question: What is the input testing mechanism used more often by this establishment?<br>[CONDITION: Ask only if the answer is YES for more than one option among <b>c3_1b</b> variables] | Variable<br><b>c3_1c</b> | Answer   |
|--|--------------------------|--|
|  |                          | 1 = Sensory (visual, smell, color, etc.)<br>2 = Review of supplier testing on Certificate of Analysis<br>3 = Non-computer-controlled testing kits<br>4 = Computer testing such as chromatography or spectroscopy<br>5 = Other<br>-9 = Don't know |

| Question   | Variable     | Answer            |
|--|--------------|-------------------|
| For how many years has this establishment been using computer testing for input testing?<br>[CONDITION: ask this question only if <b>c3_1b3=1</b> or <b>c3_1b4=1</b> ] | <b>c3_1d</b> | (Number of years) |

### C3.2 Mixing/blending/cooking

| Question  | Variable      | Answer  |
|---|---------------|---|
| Does this establishment process food preparation such as mixing, blending, or cooking in house?<br>[SKIP: If <b>c3_2a1=1</b> go to question <b>c3_2b1</b> ]                             | <b>c3_2a1</b> | 1 = Yes<br>2 = No   |
| Is this task outsourced to another unit of the same firm?<br>[CONDITION: Only for multi-establishment firms ( <b>s4=1</b> )<br>[SKIP: If <b>c3_2a2=1</b> go to question <b>c3_2b1</b> ] | <b>c3_2a2</b> | 1 = Yes<br>2 = No<br>-9 = Don't know                        |
| Is this task outsourced to another firm?<br>[SKIP: Go to question <b>c3_3a1</b> ]   | <b>c3_2a3</b> | 1 = Yes<br>2 = No<br>-9 = Don't know<br>-7 = Not applicable |

| Question: Does this establishment use any of the following food preparation methods such as mixing, blending? | Variable      | Answer            |                 |
|---|---------------|-------------------|-----------------|
| Manual process  | <b>c3_2b1</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Mechanical equipment requiring human force to operate   | <b>c3_2b2</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Power equipment requiring routine human interaction   | <b>c3_2b3</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Power equipment controlled by computers or robotics, with minimal human interaction                           | <b>c3_2b4</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Other   | <b>c3_2b5</b> | 1 = Yes<br>2 = No | -9 = Don't know |

| Question: What is the mixing, blending or cooking method used more often in this facility?<br>[CONDITION: Ask only if the answer is YES for more than one option among c3_2b variables] | Variable     | Answer  |
|---|--------------|---|
|   | <b>c3_2c</b> | 1 = Manual process<br>2 = Mechanical equipment requiring human force to operate<br>3 = Power equipment requiring routine human interaction<br>4 = Power equipment controlled by computers or robotics, with minimal human interaction<br>5 = Other<br>-9 = Don't know |

| Question   | Variable     | Answer            |
|--|--------------|-------------------|
| For how many years has this establishment been using power equipment for mixing, blending or cooking?<br>[CONDITION: ask this question only if c3_2b3=1 or c3_2b4=1] | <b>c3_2d</b> | (Number of years) |

| Question:   | Variable        | Answer  |
|---|-----------------|---|
| What are the top two reasons for your establishment to use power equipment for mixing, blending or cooking? (choose the top 2 reasons)<br>[CONDITION: ask this question only if c3_2b3=1 or c3_2b4=1] | <b>c3_2e_bd</b> | 1 = Save on labor cost<br>2 = Save the cost/usage of land<br>3 = Upgrade machines to improve production efficiency<br>4 = Improve product quality or meet quality standard<br>5 = Ensure compliance with labor and safety standard<br>6 = Ensure compliance with environmental<br>-9 = Don't know |

| Question:   | Variable        | Answer   |
|---|-----------------|--|
| How did the ratio of the number of line supervisors and managers to the | <b>c3_2f_bd</b> | 1 = Increase (relatively more line supervisors and managers to line workers) |

|  |  |   |
|--|--|---|
| number of line workers change in the mixing, blending or cooking process in response to the adoption of power equipment?<br>[CONDITION: ask this question only if <b>c3_2b3=1</b> or <b>c3_2b4=1</b> ] |  | 2 = Decrease (relatively fewer line supervisors and managers to line workers)<br>3 = Unchanged<br>-9 = Don't know |
|--|--|---|

**INTERVIEWER: LINE WORKERS INCLUDE HELPERS AND LINE OPERATORS; LINE SUPERVISORS INCLUDE LINE SUPERVISORS AND LINE LEADERS; MANAGERS INCLUDE PRODUCTION MANAGERS, TECHNICAL EXPERTS, AND GENERAL MANAGERS.**

### C3.3 Anti-bacterial processes

| Question   | Variable      | Answer  |
|--|---------------|---|
| Does this establishment handle anti-bacterial processes in house?<br>[SKIP: If <b>c3_3a1=1</b> go to question <b>c3_3b1</b> ]  | <b>c3_3a1</b> | 1 = Yes<br>2 = No   |
| Is this task outsourced to another unit of the same firm?<br>[CONDITION: Only for multi-establishment firms ( <b>s4=1</b> )]<br>[SKIP: If <b>c3_3a2=1</b> go to question <b>c3_3b1</b> ] | <b>c3_3a2</b> | 1 = Yes<br>2 = No<br>-9 = Don't know                        |
| Is this task outsourced to another firm?<br>[SKIP: Go to question <b>c3_4a1</b> ]  | <b>c3_3a3</b> | 1 = Yes<br>2 = No<br>-9 = Don't know<br>-7 = Not applicable |

| Question: Does this establishment use any of the following anti-bacterial processes?          | Variable      | Answer            |                 |
|---|---------------|-------------------|-----------------|
| Minimal-processing preservation methods   | <b>c3_3b1</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Anti-bacterial wash or soaking  | <b>c3_3b2</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Thermal Processing Technologies   | <b>c3_3b3</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Other advanced methods such as High-pressure processing (HPP) and Pulsed electric field (PEF) | <b>c3_3b4</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Other   | <b>c3_3b5</b> | 1 = Yes<br>2 = No | -9 = Don't know |

| Question: What is the anti-bacterial process used more often in this facility? | Variable     | Answer  |
|--|--------------|---|
|  | <b>c3_3c</b> | 1 = Minimal-processing preservation methods<br>2 = Anti-bacterial wash or soaking |

|  |  |  |
|--|--|--|
| [CONDITION: Ask only if the answer is YES for more than one option among <b>c3_3b</b> variables] |  | 3 = Thermal Processing Technologies<br>4 = Other advanced methods such as High-pressure processing (HPP) and Pulsed electric field (PEF)<br>5 = Other<br>-9 = Don't know |
|--|--|--|

| Question   | Variable     | Answer            |
|--|--------------|-------------------|
| For how many years has this establishment been using <b>thermal or more advanced anti-bacterial processes</b> for anti-bacterial processes?<br>[CONDITION: ask this question only if <b>c3_3b3=1 or c3_3b4=1</b> ] | <b>c3_3d</b> | (Number of years) |

### C3.4 Packaging

| Question   | Variable      | Answer  |
|--|---------------|---|
| Does this establishment proceed with packaging in house?<br>[SKIP: If <b>c3_4a1=1</b> go to question <b>c3_4b1</b> ]   | <b>c3_4a1</b> | 1 = Yes<br>2 = No   |
| Is this task outsourced to another unit of the same firm?<br>[CONDITION: Only for multi-establishment firms ( <b>s4=1</b> )]<br>[SKIP: If <b>c3_4a2=1</b> go to question <b>c3_4b1</b> ] | <b>c3_4a2</b> | 1 = Yes<br>2 = No<br>-9 = Don't know                        |
| Is this task outsourced to another firm?<br>[SKIP: Go to question <b>c3_5a1</b> ]  | <b>c3_4a3</b> | 1 = Yes<br>2 = No<br>-9 = Don't know<br>-7 = Not applicable |

| Question: Does this establishment use any of the following packaging methods?       | Variable      | Answer            |                 |
|---|---------------|-------------------|-----------------|
| Manual packing in bags, bottles or boxes  | <b>c3_4b1</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Human operated mechanical equipment for packaging in bags, bottles or boxes         | <b>c3_4b2</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Power equipment requiring routine human interaction                                 | <b>c3_4b3</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Power equipment controlled by computers or robotics, with minimal human interaction | <b>c3_4b4</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Other   | <b>c3_4b5</b> | 1 = Yes<br>2 = No | -9 = Don't know |

| Question: What is the packaging procedure used more often in this facility?<br>[CONDITION: Ask only if the answer is YES for more than one option among <b>c3_4b</b> variables] | Variable     | Answer   |
|---|--------------|--|
|   | <b>c3_4c</b> | 1 = Manual packing in bags, bottles or boxes<br>2 = Human operated mechanical equipment for packaging in bags, bottles or boxes<br>3 = Power equipment requiring routine human interaction |

|  |  |   |
|--|--|---|
|  |  | 4 = Power equipment controlled by computers or robotics, with minimal human interaction<br>5 = Other<br>-9 = Don't know |
|--|--|---|

| Question   | Variable | Answer            |
|--|----------|-------------------|
| For how many years this establishment has been using power equipment for packaging?<br>[CONDITION: ask this question only if c3_4b3=1 or c3_4b4=1] | c3_4d    | (Number of years) |

### C3.5 Food storage

| Question   | Variable | Answer  |
|--|----------|---|
| Does this establishment store the food in house?<br>[SKIP: If c3_5a1=1 go to question c3_5b1]  | c3_5a1   | 1 = Yes<br>2 = No   |
| Is this task outsourced to another unit of the same firm?<br>[CONDITION: Only for multi-establishment firms (s4=1)]<br>[SKIP: If c3_5a2=1 go to question c3_5b1] | c3_5a2   | 1 = Yes<br>2 = No<br>-9 = Don't know                        |
| Is this task outsourced to another firm?<br>[SKIP: Go to question D1]  | c3_5a3   | 1 = Yes<br>2 = No<br>-9 = Don't know<br>-7 = Not applicable |

| Question: Does this establishment use any of the following food storage conditions? | Variable | Answer            |                 |
|---|----------|-------------------|-----------------|
| Minimal protection with some exposure to outside elements                           | c3_5b1   | 1 = Yes<br>2 = No | -9 = Don't know |
| Ambient conditions in closed building   | c3_5b2   | 1 = Yes<br>2 = No | -9 = Don't know |
| Some climate control in secured building (e.g. partial or seasonal control)         | c3_5b3   | 1 = Yes<br>2 = No | -9 = Don't know |
| Fully automated climate and security-controlled building                            | c3_5b4   | 1 = Yes<br>2 = No | -9 = Don't know |
| Other   | c3_5b5   | 1 = Yes<br>2 = No | -9 = Don't know |

| Question: What are the food storage conditions more often observed in this facility?<br>[CONDITION: Ask only if the answer is YES for more than one option among c3_5b variables] | Variable | Answer  |
|---|----------|---|
|   | c3_5c    | 1 = Minimal protection with some exposure to outside elements<br>2 = Ambient conditions in closed building<br>3 = Some climate control in secured building (e.g. partial or seasonal control) |

|  |  |  |
|--|--|--|
|  |  | 4 = Fully automated climate and security-controlled building<br>5 = Other<br>-9 = Don't know |
|--|--|--|

| Question  | Variable     | Answer            |
|---|--------------|-------------------|
| For how many years this establishment has been using climate control in secured building for food storage?<br>[CONDITION: ask this question only if c3_5b3=1 or c3_5b4=1] | <b>c3_5d</b> | (Number of years) |

#### 4. Wearing apparel (manufacturing)

| Question: What material does this establishment use to start production? | Variable      | Answer            |                 |
|--|---------------|-------------------|-----------------|
| Printed fabric (e.g. this establishment assembled the provided fabric)   | <b>c4_0a1</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| White fabric (e.g. this establishment die the fabric)                    | <b>c4_0a2</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Fabric threads (e.g. this establishment weave the fabric)                | <b>c4_0a3</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Other  | <b>c4_0a4</b> | 1 = Yes<br>2 = No | -9 = Don't know |

| Question: What garments are produced by this establishment? | Variable      | Answer            |                 |
|---|---------------|-------------------|-----------------|
| Basic: TShirt, shorts, cotton, poly, denim                  | <b>c4_0b1</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Fashion: Complex cuts and stich, material mix               | <b>c4_0b2</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Sports: alternative finishes such as waterproof, reflective | <b>c4_0b3</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Protective apparel: including padding, TPR                  | <b>c4_0b4</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Other   | <b>c4_0b5</b> | 1 = Yes<br>2 = No | -9 = Don't know |

| Question: What finishes are available in this establishment? | Variable      | Answer            |                 |
|--|---------------|-------------------|-----------------|
| Silk screen  | <b>c4_0c1</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Embroidery   | <b>c4_0c2</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Washing  | <b>c4_0c3</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Waterproofing  | <b>c4_0c4</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Other  | <b>C4_0c5</b> | 1 = Yes<br>2 = No | -9 = Don't know |

## C4.1 Design

|  |               |                   |
|--|---------------|-------------------|
| Do clients provide files for design to this establishment?<br>[SKIP: If <b>c4_1a1=2</b> go to question <b>c4_1a3</b> ] | <b>c4_1a1</b> | 1 = Yes<br>2 = No |
|--|---------------|-------------------|

|  |                           |  |
|--|---------------------------|--|
| Question: What is the most common file provided by clients for design? | Variable<br><b>c4_1a2</b> | Answer<br>1 = Graded file of all sizes ready to cut<br>2 = A prototype cutting file for grading<br>3 = Hand drawing of the design<br>4 = Computer drawing of the design<br>5 = 3D file of the design<br>6 = Other<br>-9 = Don't know |
|--|---------------------------|--|

| Question   | Variable      | Answer  |
|--|---------------|---|
| Does this establishment do design drawing in house?<br>[SKIP: If <b>c4_1a3=1</b> go to question <b>c4_1b1</b> ]  | <b>c4_1a3</b> | 1 = Yes<br>2 = No   |
| Is this task outsourced to another unit of the same firm?<br>[CONDITION: Only for multi-establishment firms ( <b>s4=1</b> )]<br>[SKIP: If <b>c4_1a4=1</b> go to question <b>c4_1b1</b> ] | <b>c4_1a4</b> | 1 = Yes<br>2 = No<br>-9 = Don't know                        |
| Is this task outsourced to another firm?<br>[SKIP: Go to question <b>c4_2a1</b> ]  | <b>c4_1a5</b> | 1 = Yes<br>2 = No<br>-9 = Don't know<br>-7 = Not applicable |

| Question: Does this establishment use any of the following design drawing processes? | Variable      | Answer            |                 |
|--|---------------|-------------------|-----------------|
| Manual design and hand drawing   | <b>c4_1b1</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Digital or semi-digital design using specialized 2D drawing software                 | <b>c4_1b2</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Computer Aided Design (CAD), 3D design, virtual prototyping                          | <b>c4_1b3</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Other  | <b>c4_1b4</b> | 1 = Yes<br>2 = No | -9 = Don't know |

|   |                          |   |
|---|--------------------------|---|
| Question: What is the design drawing process used more often by this establishment?<br>[CONDITION: Ask only if the answer is YES for more than one option among <b>c4_1b</b> variables] | Variable<br><b>c4_1c</b> | Answer<br>1 = Manual design and hand drawing<br>2 = Digital or semi-digital design using specialized 2D drawing software<br>3 = Computer Aided Design (CAD), 3D design, virtual prototyping<br>4 = Other<br>-9 = Don't know |
|---|--------------------------|---|

| Question   | Variable     | Answer            |
|--|--------------|-------------------|
| For how many years this establishment has been using specialized software, 3D design, or virtual prototyping?<br>[CONDITION: ask this question only if c4_1b2=1 or c4_1b3=1] | <b>c4_1d</b> | (Number of years) |

## C4.2 Cutting

| Question  | Variable      | Answer  |
|---|---------------|---|
| Does this establishment handle cut process in house?<br>[SKIP: If c4_2a1=1 go to question c4_2b1]   | <b>c4_2a1</b> | 1 = Yes<br>2 = No   |
| Is this task outsourced another unit of the same firm?<br>[CONDITION: Only for multi-establishment firms (s4=1)]<br>[SKIP: If c4_2a2=1 go to question c4_2b1] | <b>c4_2a2</b> | 1 = Yes<br>2 = No<br>-9 = Don't know                        |
| Is this task outsourced to another firm?<br>[SKIP: Go to question c4_3a1]   | <b>c4_2a3</b> | 1 = Yes<br>2 = No<br>-9 = Don't know<br>-7 = Not applicable |

| Question: Does this establishment use any of the following cutting methods?       | Variable      | Answer            |                 |
|---|---------------|-------------------|-----------------|
| Manual cutting  | <b>c4_2b1</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Cutting machine manually operated   | <b>c4_2b2</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Semi-Automatic cutting machine (straight knife, round knife, die cutting machine) | <b>c4_2b3</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Automatic or Computerized cutting machine (no Laser: water jet, knife, other)     | <b>c4_2b4</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Automatic/Computerized cutting machine (Laser)                                    | <b>c4_2b5</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Other   | <b>c4_2b6</b> | 1 = Yes<br>2 = No | -9 = Don't know |

| Question: What is the cutting method used more often in this facility?<br>[CONDITION: Ask only if the answer is YES for more than one option among c4_2b variables] | Variable     | Answer  |
|---|--------------|---|
|   | <b>c4_2c</b> | 1 = Manual cutting<br>2 = Cutting machine manually operated<br>3 = Semi-Automatic cutting machine (straight knife, round knife, die cutting machine)<br>4 = Automatic or Computerized cutting machine (no Laser: water jet, knife, other)<br>5 = Automatic/Computerized cutting machine (Laser)<br>6 = Other<br>-9 = Don't know |

| Question   | Variable | Answer            |
|--|----------|-------------------|
| For how many years this establishment has been using automatic cutting machines and lasers?<br>[CONDITION: ask this question only if c4_2b4=1 or c4_2b5=1] | c4_2d    | (Number of years) |

### C4.3 Sewing and Joining Parts

| Question   | Variable | Answer  |
|--|----------|---|
| Does this establishment handle sew process in house?<br>[SKIP: If c4_3a1=1 go to question c4_3b1]  | c4_3a1   | 1 = Yes<br>2 = No   |
| Is this task outsourced to another unit of the same firm?<br>[CONDITION: Only for multi-establishment firms (s4=1)]<br>[SKIP: If c3a2=1 go to question c3b1] | c4_3a2   | 1 = Yes<br>2 = No<br>-9 = Don't know                        |
| Is this task outsourced to another firm?<br>[SKIP: Go to question c4_4a1]  | c4_3a3   | 1 = Yes<br>2 = No<br>-9 = Don't know<br>-7 = Not applicable |

| Question: Does this establishment use any of the following sewing methods? | Variable | Answer            |                 |
|--|----------|-------------------|-----------------|
| Manually sewing  | c4_3b1   | 1 = Yes<br>2 = No | -9 = Don't know |
| Machine sewing manually operated   | c4_3b2   | 1 = Yes<br>2 = No | -9 = Don't know |
| Semi-automated sewing machines   | c4_3b3   | 1 = Yes<br>2 = No | -9 = Don't know |
| Automated sewing machines  | c4_3b4   | 1 = Yes<br>2 = No | -9 = Don't know |
| 3D Knitting  | c4_3b5   | 1 = Yes<br>2 = No | -9 = Don't know |
| Other  | c4_3b6   | 1 = Yes<br>2 = No | -9 = Don't know |

| Question: What is the sewing method used more often in this facility?<br>[CONDITION: Ask only if the answer is YES for more than one option among c4_3b variables] | Variable | Answer   |
|--|----------|--|
|  | c4_3c    | 1 = Manually sewing<br>2 = Machine sewing manually operated<br>3 = Semi-automated sewing machines<br>4 = Automated sewing machines<br>5 = 3D Knitting machines<br>6 = Other<br>-9 = Don't know |

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

|   |              |                   |
|---|--------------|-------------------|
| For how many years this establishment has been using semi-automated sewing machines or automated sewing machines or 3D knitting?<br>[CONDITION: ask this question only if c4_3b3=1 or c4_3b4=1 or c4_3b5=1] | <b>c4_3d</b> | (Number of years) |
|---|--------------|-------------------|

| Question   | Variable                               | Answer   |
|--|--|--|
| What are the top two reasons for your establishment to use semi-automated sewing machines or automated sewing machines or 3D knitting? (choose the top 2 reasons)<br>[CONDITION: ask this question only if c4_3b3=1 or c4_3b4=1 or c4_3b5=1] | <b>c4_3e_bd_a</b><br><b>c4_3e_bd_b</b> | 1 = Save on labor cost<br>2 = Save the cost/usage of land<br>3 = Upgrade machines to improve production efficiency<br>4 = Improve product quality or meet quality standard<br>5 = Ensure compliance with labor and safety standard<br>6 = Ensure compliance with environmental standard<br>-9 = Don't know |

| Question  | Variable        | Answer  |
|---|-----------------|---|
| How did the ratio of the number of line supervisors and managers to the number of line workers change in the Sewing and Joining Parts process in response to the adoption of semi-automated sewing machines or automated sewing machines or 3D knitting?<br>[CONDITION: ask this question only if c4_3b3=1 or c4_3b4=1 or c4_3b5=1] | <b>c4_3f_bd</b> | 1 = Increase (relatively more line supervisors and managers to line workers)<br>2 = Decrease (relatively fewer line supervisors and managers to line workers)<br>3 = Unchanged<br>-9 = Don't know |

INTERVIEWER: LINE WORKERS INCLUDE HELPERS AND LINE OPERATORS; LINE SUPERVISORS INCLUDE LINE SUPERVISORS AND LINE LEADERS; MANAGERS INCLUDE PRODUCTION MANAGERS, TECHNICAL EXPERTS, AND GENERAL MANAGERS.

#### C4.4 Finishing – Ironing

| Question  | Variable      | Answer                               |
|---|---------------|--------------------------------------|
| Does this establishment handle finishing and ironing process in house?<br>[SKIP: If c4_4a1=1 go to question c4_4b1]   | <b>c4_4a1</b> | 1 = Yes<br>2 = No                    |
| Is this task outsourced another unit of the same firm?<br>[CONDITION: Only for multi-establishment firms (s4=1)]<br>[SKIP: If c4_4a2=1 go to question c4_4b1] | <b>c4_4a2</b> | 1 = Yes<br>2 = No<br>-9 = Don't know |

|   |               |   |
|---|---------------|---|
| Is this task outsourced to another firm?<br>[SKIP: Go to question D1] | <b>c4_4a3</b> | 1 = Yes<br>2 = No<br>-9 = Don't know<br>-7 = Not applicable |
|---|---------------|---|

| Question: Does this establishment use any of the following finishing and ironing methods? | Variable      | Answer            |                 |
|---|---------------|-------------------|-----------------|
| Basic manual ironing  | <b>c4_4b1</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Electric high-pressure steam iron   | <b>c4_4b2</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Tunnel finisher   | <b>c4_4b3</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Form finishing machine  | <b>c4_4b4</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| High tech pressing machine  | <b>c4_4b5</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Other   | <b>c4_4b6</b> | 1 = Yes<br>2 = No | -9 = Don't know |

|  |                          |  |
|--|--------------------------|--|
| Question: What is the finishing and ironing method used more often in this facility?<br>[CONDITION: Ask only if the answer is YES for more than one option among <b>c4_4b</b> variables] | Variable<br><b>c4_4c</b> | Answer<br>1 = Basic manual ironing<br>2 = Electric high-pressure steam iron<br>3 = Tunnel finisher<br>4 = Form finishing machine<br>5 = High tech pressing machine<br>6 = Other<br>-9 = Don't know |
|--|--------------------------|--|

| Question  | Variable     | Answer            |
|---|--------------|-------------------|
| For how many years this establishment has been using form finishing machines or high-tech pressing machines?<br>[CONDITION: ask this question only if <b>c4_4b3=1</b> or <b>c4_4b4=1</b> or <b>c4_4b5=1</b> ] | <b>c4_4d</b> | (Number of years) |

## 6. Pharmaceutical Processing (manufacturing)

| Question: What sort of drugs this establishment produce? | Variable      | Answer            |                 |
|--|---------------|-------------------|-----------------|
| Tablets and capsules                                     | <b>c6_0a1</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Creams and ointments                                     | <b>c6_0a2</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Eye and ear solutions                                    | <b>c6_0a3</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Syrups and dry powders                                   | <b>c6_0a4</b> | 1 = Yes<br>2 = No | -9 = Don't know |

| Question: What is the main product produced by this establishment?<br>[CONDITION: Ask only if the answer is YES for more than one option among c6_0a variables] | Variable      | Answer  |
|---|---------------|---|
|   | <b>c6_0b1</b> | 1 = Tablets and capsules<br>2 = Creams and ointments<br>3 = Eye and ear solutions<br>4 = Syrups and dry powders |

|  | Variable      | Answer             |                 |
|--|---------------|--------------------|-----------------|
| Does this establishment conduct research associated with new-drug discovery?<br>[SKIP: If c6_0c1=2 go to section c6_1a1] | <b>c6_0c1</b> | 1 = Yes<br>2 = No  | -9 = Don't know |
| Are the lead researchers of these projects mostly direct employees of this establishment?                                | <b>c6_0c2</b> | 1 = Yes<br>2 = No. | -9 = Don't know |

### C6.1 Facilities

| Question   | Variable      | Answer  |
|--|---------------|---|
| Does this establishment use its facilities to mix raw material and compounding in house?<br>[SKIP: If c6_1a1=1 go to question c6_1b1]                            | <b>c6_1a1</b> | 1 = Yes<br>2 = No   |
| Is this task outsourced to another unit of the same firm?<br>[CONDITION: Only for multi-establishment firms (s4=1)]<br>[SKIP: If c6_1a2=1 go to question c6_1b1] | <b>c6_1a2</b> | 1 = Yes<br>2 = No<br>-9 = Don't know                        |
| Is this task outsourced to another firm?<br>[SKIP: Go to question c6_2b1]  | <b>c6_1a3</b> | 1 = Yes<br>2 = No<br>-9 = Don't know<br>-7 = Not applicable |

| Question: Does this establishment use any of the following air filtration systems? | Variable      | Answer            |                 |
|--|---------------|-------------------|-----------------|
| Unfiltered air in filling space  | <b>c6_1b1</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Basic air filtration   | <b>c6_1b2</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| HEPA air filtration  | <b>c6_1b3</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Ultra HEPA air, pressurization control   | <b>c6_1b4</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Other  | <b>c6_1b5</b> | 1 = Yes<br>2 = No | -9 = Don't know |

| Question: What is the air filtration system used more often in these facilities?<br>[CONDITION: Ask only if the answer is YES for more than one option among c6_1b variables] | Variable     | Answer   |
|---|--------------|--|
|   | <b>c6_1c</b> | 1 = Unfiltered air in filling space<br>2 = Basic air filtration<br>3 = HEPA air filtration<br>4 = Ultra HEPA air, pressurization control<br>5 = Other<br>-9 = Don't know |

| Question  | Variable     | Answer            |
|---|--------------|-------------------|
| For how many years this establishment has been using HEPA air filtration or ultra HEPA air, pressurization control for raw material weighing and dispensing in these facilities?<br>[CONDITION: ask this question only if c6_1b3=1 or c6_1b4=1] | <b>c6_1d</b> | (Number of years) |

## C6.2 Raw Material Weighing & Dispensing

| Question: Does this establishment use any of the following weighting scale systems? | Variable      | Answer            |                 |
|---|---------------|-------------------|-----------------|
| Beam Scales   | <b>c6_2b1</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Analog Scales   | <b>c6_2b2</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Electronic Scales   | <b>c6_2b3</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Automated Weighing Systems  | <b>c6_2b4</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Other   | <b>c6_2b5</b> | 1 = Yes<br>2 = No | -9 = Don't know |

|   |                          |   |
|---|--------------------------|---|
| Question: What is the weighting scale system used more often by this establishment?<br>[CONDITION: Ask only if the answer is YES for more than one option among <b>c6_2b</b> variables] | Variable<br><b>c6_2c</b> | Answer<br>1 = Beam Scales<br>2 = Analog Scales<br>3 = Electronic Scales<br>4 = Automated Weighing Systems<br>5 = Other<br>-9 = Don't know |
|---|--------------------------|---|

| Question   | Variable     | Answer            |
|--|--------------|-------------------|
| For how many years this establishment has been <b>automated weighing systems</b> for raw material and weighing?<br>[CONDITION: ask this question only if <b>c6_2b4=1</b> ] | <b>c6_2d</b> | (Number of years) |

### C6.3 Mixing and Compounding

| Question: Does this establishment use any of the following mixing and compounding systems? | Variable      | Answer            |                 |
|--|---------------|-------------------|-----------------|
| Manual Mixing  | <b>c6_3b1</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Planetary Mixers OR homogenizers   | <b>c6_3b2</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| High Speed, High Shear Granulators   | <b>c6_3b3</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Fluid Bed Processors (not with syrups)   | <b>c6_3b4</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Fully Automated Compounding  | <b>c6_3b5</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Other  | <b>c6_3b6</b> | 1 = Yes<br>2 = No | -9 = Don't know |

|  |                          |  |
|--|--------------------------|--|
| Question: What is the mixing and compounding system used more often by this establishment?<br>[CONDITION: Ask only if the answer is YES for more than one option among <b>c6_3b</b> variables] | Variable<br><b>c6_3c</b> | Answer<br>1 = Manual Mixing<br>2 = Planetary Mixers OR homogenizers<br>3 = High Speed, High Shear Granulators<br>4 = Fluid Bed Processors (not with syrups)<br>5 = Fully Automated Compounding<br>6 = Other<br>-9 = Don't know |
|--|--------------------------|--|

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

|  |              |                   |
|--|--------------|-------------------|
| For how many years this establishment has been using high speed, high shear granulators, fluid bed processors or automated compounding?<br>[CONDITION: ask this question only if c6_3b3=1 or c6_3b4=1 or c6_3b5=1] | <b>c6_3d</b> | (Number of years) |
|--|--------------|-------------------|

| Question:   | Variable        | Answer  |
|---|-----------------|---|
| What are the top two reasons for your establishment to use high speed, high shear granulators, fluid bed processors or automated compounding? (choose the top 2 reasons)<br>[CONDITION: ask this question only if c6_3b3=1 or c6_3b4=1 or c6_3b5=1] | <b>c6_3e_bd</b> | 1 = Save on labor cost<br>2 = Save the cost/usage of land<br>3 = Upgrade machines to improve production efficiency<br>4 = Improve product quality or meet quality standard<br>5 = Ensure compliance with labor and safety standard<br>6 = Ensure compliance with environmental standard<br>-9 = Do not know |

| Question:<br>প্রশ্ন  | Variable<br>ভ্যারিয়েবল | Answer<br>উত্তর   |
|--|-------------------------|---|
| How did the ratio of the number of line supervisors and managers to the number of line workers change in the mixing and compounding process in response to the adoption of high speed, high shear granulators, fluid bed processors or automated compounding?<br>[CONDITION: ask this question only if c6_3b3=1 or c6_3b4=1 or c6_3b5=1] | <b>c6_3f_bd</b>         | 1 = Increase (relatively more line supervisors and managers to line workers)<br>2 = Decrease (relatively fewer line supervisors and managers to line workers)<br>3 = Unchanged<br>-9 = Don't know |

INTERVIEWER: LINE WORKERS INCLUDE HELPERS AND LINE OPERATORS; LINE SUPERVISORS INCLUDE LINE SUPERVISORS AND LINE LEADERS; MANAGERS INCLUDE PRODUCTION MANAGERS, TECHNICAL EXPERTS, AND GENERAL MANAGERS.

#### C6.4 Compression and Encapsulation

[SKIP: If c6\_0b1=3 OR c6\_0b1=4 go to question c6\_5a1]

| Question  | Variable      | Answer            |
|---|---------------|-------------------|
| Does this establishment employ compression or encapsulation methods for production in house?<br>[SKIP: If c6_4a1=1 go to question c6_4b1] | <b>c6_4a1</b> | 1 = Yes<br>2 = No |

|  |               |   |
|--|---------------|---|
| Is this task outsourced to another unit of the same firm?<br>[CONDITION: Only for multi-establishment firms (s4=1)]<br>[SKIP: If c6_4a2=1 go to question c6_4b1] | <b>c6_4a2</b> | 1 = Yes.<br>2 = No<br>-9 = Don't know                       |
| Is this task outsourced to another firm?<br>[SKIP: Go to question c6_5a1]  | <b>c6_4a3</b> | 1 = Yes<br>2 = No<br>-9 = Don't know<br>-7 = Not applicable |

| Question: Does this establishment use any of the following compression or encapsulation methods? | Variable      | Answer            |                 |
|--|---------------|-------------------|-----------------|
| Manual Compression, Encapsulation with dosing dies   | <b>c6_4b1</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Motorized Compression, Encapsulation   | <b>c6_4b2</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Automated Compression, Encapsulation   | <b>c6_4b3</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Integrated Compression, Encapsulation  | <b>c6_4b4</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Other  | <b>c6_4b5</b> | 1 = Yes<br>2 = No | -9 = Don't know |

|   |                          |   |
|---|--------------------------|---|
| Question: What is the compression or encapsulation method used more often by this establishment?<br>[CONDITION: Ask only if the answer is YES for more than one option among c6_4b variables] | Variable<br><b>c6_4c</b> | Answer<br>1 = Manual Compression, Encapsulation with dosing dies<br>2 = Motorized Compression, Encapsulation<br>3 = Automated Compression, Encapsulation<br>4 = Integrated Compression, Encapsulation<br>5 = Other<br>-9 = Don't know |
|---|--------------------------|---|

| Question  | Variable     | Answer            |
|---|--------------|-------------------|
| For how many years this establishment has been using automate compression or integrated compression for compression?<br>[CONDITION: ask this question only if c6_4b3=1 or c6_4b4=1] | <b>c6_4d</b> | (Number of years) |

### C6.5 Quality Control

| Question   | Variable      | Answer                                |
|--|---------------|---------------------------------------|
| Does this establishment have an in-house quality control system?<br>[SKIP: If c6_5a1=1 go to question c6_5b1]  | <b>c6_5a1</b> | 1 = Yes<br>2 = No                     |
| Is this task outsourced to another unit of the same firm?<br>[CONDITION: Only for multi-establishment firms (s4=1)]<br>[SKIP: If c6_5a2=1 go to question c6_5b1] | <b>c6_5a2</b> | 1 = Yes.<br>2 = No<br>-9 = Don't know |

|   |               |   |
|---|---------------|---|
| Is this task outsourced to another firm?<br>[SKIP: Go to question <b>c6_6b1</b> ] | <b>c6_5a3</b> | 1 = Yes<br>2 = No<br>-9 = Don't know<br>-7 = Not applicable |
|---|---------------|---|

| Question: Does this establishment use any of the following quality control systems? | Variable      | Answer            |                 |
|---|---------------|-------------------|-----------------|
| Manual, titrimetric/ chromatographic analyses                                       | <b>c6_5b1</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Electronic chromatography   | <b>c6_5b2</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Electronic chromatography with data acquisition                                     | <b>c6_5b3</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Other   | <b>c6_5b4</b> | 1 = Yes<br>2 = No | -9 = Don't know |

|   |                          |   |
|---|--------------------------|---|
| Question: What is the quality control system used more often by this establishment?<br>[CONDITION: Ask only if the answer is YES for more than one option among <b>c6_5b</b> variables] | Variable<br><b>c6_5c</b> | Answer<br>1 = Manual, titrimetric/ chromatographic analyses<br>2 = Electronic chromatography<br>3 = Electronic chromatography with data acquisition<br>4 = Other<br>-9 = Don't know |
|---|--------------------------|---|

| Question   | Variable     | Answer            |
|--|--------------|-------------------|
| For how many years this establishment has been using <b>electronic chromatography</b> or <b>electronic chromatography with data acquisition</b> for quality control?<br>[CONDITION: ask this question only if <b>c6_5b2=1</b> or <b>c6_5b3=1</b> ] | <b>c6_5d</b> | (Number of years) |

### C6.6 Packaging

| Question   | Variable      | Answer  |
|--|---------------|---|
| Does this establishment package products in house?<br>[SKIP: If <b>c6_6a1=1</b> go to question <b>c6_6b1</b> ]   | <b>c6_6a1</b> | 1 = Yes<br>2 = No   |
| Is this task outsourced to another unit of the same firm?<br>[CONDITION: Only for multi-establishment firms ( <b>s4=1</b> )]<br>[SKIP: If <b>c6_6a2=1</b> go to question <b>c6_6b1</b> ] | <b>c6_6a2</b> | 1 = Yes.<br>2 = No<br>-9 = Don't know                       |
| Is this task outsourced to another firm?<br>[SKIP: Go to question <b>D1</b> ]  | <b>c6_6a3</b> | 1 = Yes<br>2 = No<br>-9 = Don't know<br>-7 = Not applicable |

| Question: Does this establishment use any of the following packaging methods?                                      | Variable      | Answer            |                 |
|--|---------------|-------------------|-----------------|
| Manual filling of pills in bottles OR placement of syrups, powders in bottles or pouches                           | <b>c6_6b1</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| For pills: Slat Counters, Cottoners, Cappers, Labelers OR machine filling of syrups, powders in bottles or pouches | <b>c6_6b2</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Automated, Integrated Packaging Lines  | <b>c6_6b3</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Other  | <b>c6_6b4</b> | 1 = Yes<br>2 = No | -9 = Don't know |

| Question: What is the packaging method used more often by this establishment?<br>[CONDITION: Ask only if the answer is YES for more than one option among <b>c6_6b</b> variables] | Variable     | Answer  |
|---|--------------|---|
|   | <b>c6_6c</b> | 1 = Manual filling of pills in bottles OR placement of syrups, powders in bottles or pouches<br>2 = For pills: Slat Counters, Cottoners, Cappers, Labelers OR machine filling of syrups, powders in bottles or pouches<br>3 = Automated, Integrated Packaging Lines<br>4 = Other<br>-9 = Don't know |

| Question   | Variable     | Answer            |
|--|--------------|-------------------|
| For how many years this establishment has been using Slat counters, Cottoners, Cappers, Labelers OR machine filling automated, integrated packaging lines for packaging?<br>[CONDITION: ask this question only if <b>c6_6b2=1</b> or <b>c6_6b3=1</b> ] | <b>c6_6d</b> | (Number of years) |

## 11. Footwear and Leather goods (manufacturing)

| Question: What of the following material does this establishment use to start production? | Variable       | Answer         |                 |
|---|----------------|----------------|-----------------|
| Finished natural Leather  | <b>c11_01a</b> | 1 = Yes 2 = No | -9 = Don't know |
| Man-made leather/ Synthetic   | <b>c11_01b</b> | 1 = Yes 2 = No | -9 = Don't know |
| Textile (i.e, Mesh/ engineering mesh/ canvas etc)   | <b>c11_01c</b> | 1 = Yes 2 = No | -9 = Don't know |
| Synthetic + Textile (mix-components man made)   | <b>c11_01d</b> | 1 = Yes 2 = No | -9 = Don't know |
| Synthetic + Textile + Leather (mix components-natural and man-made)                       | <b>c11_01e</b> | 1 = Yes 2 = No | -9 = Don't know |
| Other   | <b>c11_01f</b> | 1 = Yes 2 = No | -9 = Don't know |

| Question: What of the following footwear/ Leather goods is produced by this establishment?                             | Variable       | Answer         |                 |
|--|----------------|----------------|-----------------|
| Basic (i.e: Footwear> oxford/ derby/ moccasin etc/ wallet/ carry bags etc)   | <b>c11_02a</b> | 1 = Yes 2 = No | -9 = Don't know |
| Fashion (fashion shoe, fashion accessories/ sling bag, vanity bag etc.)  | <b>c11_02b</b> | 1 = Yes 2 = No | -9 = Don't know |
| Sports or specific purpose (travel bags, sports bags, summer sandal, running shoe, hiking shoe, water sports shoe etc) | <b>c11_02c</b> | 1 = Yes 2 = No | -9 = Don't know |
| Protective shoes (industrial use)  | <b>c11_02d</b> | 1 = Yes 2 = No | -9 = Don't know |
| Other  | <b>c11_02e</b> | 1 = Yes 2 = No | -9 = Don't know |

| Question: What of the following finishes are available in this establishment? | Variable       | Answer         |                 |
|---|----------------|----------------|-----------------|
| Screen print/ heat transfer   | <b>c11_03a</b> | 1 = Yes 2 = No | -9 = Don't know |
| Embroidery  | <b>c11_03b</b> | 1 = Yes        | -9 = Don't know |

|                      |                |                   |                 |
|----------------------|----------------|-------------------|-----------------|
|                      |                | 2 = No            |                 |
| Seamless (no stitch) | <b>c11_03c</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Ink or Wax Polishing | <b>c11_03d</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Waterproofing        | <b>c11_03e</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Other                | <b>c11_03f</b> | 1 = Yes<br>2 = No | -9 = Don't know |

### C11.1 Design

|  |                |                   |
|--|----------------|-------------------|
| Do clients provide files for design to this establishment?<br>[SKIP: If <b>c11_1a1=2</b> go to question <b>c11_1a3</b> ] | <b>c11_1a1</b> | 1 = Yes<br>2 = No |
|--|----------------|-------------------|

|  |                            |  |
|--|----------------------------|--|
| Question: What is the most common file provided by clients for design? | Variable<br><b>c11_1a2</b> | Answer<br>1 = Graded file of all sizes ready to cut<br>2 = A prototype cutting file for grading<br>3 = Hand drawing of the design<br>4 = Computer drawing of the design<br>5 = 3D file of the design<br>6 = Other<br>-9 = Don't know |
|--|----------------------------|--|

| Question   | Variable       | Answer  |
|--|----------------|---|
| Does this establishment do design drawing in house?<br>[SKIP: If <b>c11_1a3=1</b> go to question <b>c11_1b1</b> ]  | <b>c11_1a3</b> | 1 = Yes<br>2 = No<br>-7 = Not applicable                    |
| Is this task outsourced to another unit of the same firm?<br>[CONDITION: Only for multi-establishment firms ( <b>s4=1</b> )]<br>[SKIP: If <b>c11_1a4=1</b> go to question <b>c11_1b1</b> ] | <b>c11_1a4</b> | 1 = Yes.<br>2 = No<br>-9 = Don't know                       |
| Is this task outsourced to another firm?<br>[SKIP: Go to question <b>c11_2a1</b> ]   | <b>c11_1a5</b> | 1 = Yes<br>2 = No<br>-9 = Don't know<br>-7 = Not applicable |

|  |                |                                      |
|--|----------------|--------------------------------------|
| Question: Does this establishment use any of the following design drawing processes? | Variable       | Answer                               |
| Manual design and hand drawing   | <b>c11_1b1</b> | 1 = Yes<br>2 = No<br>-9 = Don't know |

|  |                |                   |                 |
|--|----------------|-------------------|-----------------|
| Digital or semi-digital design using specialized 2D drawing software | <b>c11_1b2</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Computer Aided Design (CAD), 3D design, virtual prototyping          | <b>c11_1b3</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Other  | <b>c11_1b4</b> | 1 = Yes<br>2 = No | -9 = Don't know |

|  |                           |  |
|--|---------------------------|--|
| Question: What is the most used design drawing process by this establishment?<br>[CONDITION: Ask only if the answer is YES for more than one option among <b>c11_1b</b> variables] | Variable<br><b>c11_1c</b> | Answer<br>1 = Manual design and hand drawing<br>2 = Digital or semi-digital design using specialized 2D drawing software<br>3 = Computer Aided Design (CAD), 3D design, virtual prototyping<br>-9 = Don't know |
|--|---------------------------|--|

| Question  | Variable      | Answer            |
|---|---------------|-------------------|
| For how many years this establishment has been using specialized software, 3D design, or virtual prototyping?<br>[CONDITION: ask this question only if <b>c11_1b2=1</b> or <b>c11_1b3=1</b> ] | <b>c11_1d</b> | (Number of years) |

### C11.2 Cutting

| Question  | Variable       | Answer  |
|---|----------------|---|
| Does this establishment handle cutting process in house?<br>[SKIP: If <b>c11_2a1=1</b> go to question <b>c11_2b1</b> ]  | <b>c11_2a1</b> | 1 = Yes.<br>2 = No<br>-7 = Not applicable                   |
| Is this task outsourced another unit of the same firm?<br>[CONDITION: Only for multi-establishment firms ( <b>s4=1</b> )]<br>[SKIP: If <b>c11_2a2=1</b> go to question <b>c11_2b1</b> ] | <b>c11_2a2</b> | 1 = Yes<br>2 = No<br>-9 = Don't know                        |
| Is this task outsourced to another firm?<br>[SKIP: Go to question <b>c11_3a1</b> ]  | <b>c11_2a3</b> | 1 = Yes<br>2 = No<br>-9 = Don't know<br>-7 = Not applicable |

| Question: Does this establishment use any of the following cutting methods? | Variable       | Answer            |                 |
|---|----------------|-------------------|-----------------|
| Manual cutting  | <b>c11_2b1</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Cutting machine manually operated   | <b>c11_2b2</b> | 1 = Yes<br>2 = No | -9 = Don't know |

|   |                |                   |                 |
|---|----------------|-------------------|-----------------|
| Semi-Automatic cutting machine (straight knife, round knife, die cutting machine) | <b>c11_2b3</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Automatic or Computerized cutting machine (no Laser: water jet, knife, other)     | <b>c11_2b4</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Automatic/Computerized cutting machine (Laser)                                    | <b>c11_2b5</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Other   | <b>c11_2b6</b> | 1 = Yes<br>2 = No | -9 = Don't know |

|   |                           |   |
|---|---------------------------|---|
| Question: What is the most used cutting method in this facility?<br>[CONDITION: Ask only if the answer is YES for more than one option among <b>c11_2b</b> variables] | Variable<br><b>c11_2c</b> | Answer<br>1 = Manual cutting<br>2 = Cutting machine manually operated<br>3 = Semi-Automatic cutting machine (straight knife, round knife, die cutting machine)<br>4 = Automatic or Computerized cutting machine (no Laser: water jet, knife, other)<br>5 = Automatic/Computerized cutting machine (Laser)<br>6 = Other<br>-9 = Don't know |
|---|---------------------------|---|

| Question  | Variable      | Answer            |
|---|---------------|-------------------|
| For how many years this establishment has been using automatic cutting machines and lasers?<br>[CONDITION: ask this question only if <b>c11_2b4=1</b> or <b>c11_2b5=1</b> ] | <b>c11_2d</b> | (Number of years) |

### C11.3 Sewing and Joining Parts

| Question   | Variable       | Answer   |
|--|----------------|--|
| Does this establishment handle sewing process in house?<br>[SKIP: If <b>c11_3a1=1</b> go to question <b>c11_3b1</b> ]  | <b>c11_3a1</b> | 1 = Yes<br>2 = No<br>-7 = Not applicable                     |
| Is this task outsourced to another unit of the same firm?<br>[CONDITION: Only for multi-establishment firms ( <b>s4=1</b> )]<br>[SKIP: If <b>c11_3a2=1</b> go to question <b>c11_3b1</b> ] | <b>c11_3a2</b> | 1 = Yes.<br>2 = No<br>-9 = Don't know                        |
| Is this task outsourced to another firm?<br>[SKIP: Go to question <b>c11_4a1</b> ]   | <b>c11_3a3</b> | 1 = Yes.<br>2 = No<br>-9 = Don't know<br>-7 = Not applicable |

| Question: What sewing method is used by this establishment? | Variable       | Answer            |                 |
|---|----------------|-------------------|-----------------|
| Manually sewing   | <b>c11_3b1</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Machine sewing manually operated                            | <b>c11_3b2</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Semi-automated sewing machines                              | <b>c11_3b3</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Automated sewing machines                                   | <b>c11_3b4</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| 3D Knitting   | <b>c11_3b5</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Other (non-sewing/ seamless)                                | <b>c11_3b6</b> | 1 = Yes<br>2 = No | -9 = Don't know |

| Question: What is the most used sewing method in this facility?<br>[CONDITION: Ask only if the answer is YES for more than one option among <b>c11_3b</b> variables] | Variable<br><b>c11_3c</b> | Answer  |
|--|---------------------------|---|
|  |                           | 1 = Manually sewing<br>2 = Machine sewing manually operated<br>3 = Semi-automated sewing machines<br>4 = Automated sewing machines<br>5 = 3D Knitting machines 3D<br>6 = Other<br>-9 = Don't know |

| Question   | Variable      | Answer            |
|--|---------------|-------------------|
| For how many years this establishment has been using semi-automated sewing machines or automated sewing machines or 3D knitting?<br>[CONDITION: ask this question only if <b>c11_3b3=1</b> or <b>c11_3b4=1</b> or <b>c11_3b5=1</b> ] | <b>c11_3d</b> | (Number of years) |

| Question<br>প্রশ্ন  | Variable<br>ভ্যারিয়েবল                | Answer<br>উত্তর   |
|---|--|---|
| What are the top two reasons for your establishment to use semi-automated sewing machines or automated sewing machines or 3D knitting? (choose the top 2 reasons)<br>[CONDITION: ask this question only if <b>c11_3b3=1</b> or <b>c11_3b4=1</b> or <b>c11_3b5=1</b> ] | <b>c11_3e1_bd</b><br><b>c11_3e2_bd</b> | 1 = Save on labor cost<br>2 = Save the cost/usage of<br>3 = Upgrade machines to improve production efficiency<br>4 = Improve product quality or meet quality standard<br>5 = Ensure compliance with labor and safety standard<br>6 = Ensure compliance with environmental standard<br>-9 = Don't know |

| Question<br>প্রশ্ন  | Variable<br>ভ্যারিয়েবল | Answer<br>উত্তর   |
|---|-------------------------|---|
| How did the ratio of the number of line supervisors and managers to the number of line workers change in the <b>Sewing and Joining Parts</b> process in response to the adoption of semi-automated sewing machines or automated sewing machines or 3D knitting?<br>[CONDITION: ask this question only if <b>c11_3b3=1</b> or <b>c11_3b4=1</b> or <b>c11_3b5=1</b> ] | <b>c11_3f_bd</b>        | 1 = Increase (relatively more line supervisors and managers to line workers)<br>2 = Decrease (relatively fewer line supervisors and managers to line workers)<br>3 = Unchanged<br>-9 = Don't know |

INTERVIEWER: LINE WORKERS INCLUDE HELPERS AND LINE OPERATORS; LINE SUPERVISORS INCLUDE LINE SUPERVISORS AND LINE LEADERS; MANAGERS INCLUDE PRODUCTION MANAGERS, TECHNICAL EXPERTS, AND GENERAL MANAGERS.

#### C11.4 Assembly – Finishing

| Question   | Variable       | Answer  |
|--|----------------|---|
| Does this establishment handle assembly and finishing process in house?<br>[SKIP: If <b>c11_4a1=1</b> go to question <b>c11_4b1</b> ]  | <b>c11_4a1</b> | 1 = Yes.<br>2 = No<br>-7 = Not applicable                   |
| Is this task outsourced another to unit of the same firm?<br>[CONDITION: Only for multi-establishment firms ( <b>s4=1</b> )]<br>[SKIP: If <b>c11_4a2=1</b> go to question <b>c11_4b1</b> ] | <b>c11_4a2</b> | 1 = Yes.<br>2 = No<br>-9 = Don't know                       |
| Is this task outsourced to another firm?<br>[SKIP: Go to question <b>D1</b> ]  | <b>c11_4a3</b> | 1 = Yes<br>2 = No<br>-9 = Don't know<br>-7 = Not applicable |

| Question: What assembly and finishing method is used by this establishment?          | Variable       | Answer            |                 |
|--|----------------|-------------------|-----------------|
| Manual one station-based finishing and assembly method                               | <b>c11_4b1</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Conveyor based finishing and assembly method (Static/semi-automated conveyor system) | <b>c11_4b2</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Conveyor based finishing and assembly method (Dynamic/automated conveyor system)     | <b>c11_4b3</b> | 1 = Yes<br>2 = No | -9 = Don't know |

|   |                |                   |                 |
|---|----------------|-------------------|-----------------|
| Injection machine & finishing line- DIP | <b>c11_4b4</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| 3D printing / assembly                  | <b>c11_4b5</b> | 1 = Yes<br>2 = No | -9 = Don't know |
| Other                                   | <b>c11_4b6</b> | 1 = Yes<br>2 = No | -9 = Don't know |

|   |                                   |   |
|---|-----------------------------------|---|
| <p>Question: What is the most used assembly and finishing method in this facility?<br/> [CONDITION: Ask only if the answer is YES for more than one option among <b>c11_4b</b> variables]</p> | <p>Variable<br/><b>c11_4c</b></p> | <p>Answer<br/> 1 = Manual one station based finishing and assembly method<br/> 2 = Conveyor based finishing and assembly method (Static/semi-automated conveyor system)<br/> 3 = Conveyor based finishing and assembly method (Dynamic/automated conveyor system)<br/> 4 = Injection machine &amp; finishing line- DIP (industry 3.0 fully or partially)<br/> 5 = 3D printing / assembly 3D<br/> 5 = Other<br/> -9 = Don't know</p> |
|---|-----------------------------------|---|

| Question  | Variable      | Answer            |
|---|---------------|-------------------|
| <p>For how many years this establishment has been using dynamic/automated conveyor-based finishing and assembly method, injection machine &amp; finishing line, or 3D/printing/assembly?<br/> [CONDITION: ask this question only if <b>c11_4b3=1</b> or <b>c11_4b4=1</b> or <b>c11_4b5=1</b>]</p> | <b>c11_4d</b> | (Number of years) |

INTERVIEWER: The next questions aim to understand the sewing machines used in your production process.

| Question  | Variable         | Answer                               |
|---|------------------|--------------------------------------|
| <p>Do you use sewing machines in your production?<br/> [SKIP: If <b>c12_5a=2</b>, go to <b>d1a</b>]</p> | <b>c11_5a_bd</b> | 1 = Yes<br>2 = No<br>-9 = Don't know |
| <p>How many sewing machines does the the establishment currently use?</p>                               | <b>c11_5b_bd</b> | (Number of Sewing Machines)          |
| <p>Of the sewing machines that this establishment currently uses, how many have:</p>                    |                  |                                      |

|  |                   |                             |  |
|--|-------------------|-----------------------------|--|
|  |                   |                             |  |
| No motor (that is, fully manually operated)                                    | <b>c11_5c1_bd</b> | (Number of Sewing Machines) |  |
| Motor externally attached to a machine that used to be a non-motorized machine | <b>c11_5c2_bd</b> | (Number of Sewing Machines) |  |
| Clutch motor   | <b>c11_5c3_bd</b> | (Number of Sewing Machines) |  |
| Servo motor  | <b>c11_5c4_bd</b> | (Number of Sewing Machines) |  |

| Question   |  | Variable                                      | Answer                      | Variable  | Answer                      |
|--|--|---|-----------------------------|---|-----------------------------|
| Of the sewing machines that this establishment currently uses, please list when they were purchased and in which condition (new or secondhand) |  | Number of machines purchased in new condition |                             | Number of machines purchased in second hand condition |                             |
|  | Purchased in the year 2019, 2018, 2017 or 2016 | <b>c11_5da1_bd</b>                            | (Number of Sewing Machines) | <b>c11_5db1_bd</b>                                    | (Number of Sewing Machines) |
|  | Purchased in the year 2015, 2014, 2013 or 2012 | <b>c11_5da2_bd</b>                            | (Number of Sewing Machines) | <b>c11_5db2_bd</b>                                    | (Number of Sewing Machines) |
|  | Purchased in the year 2011 or before           | <b>c11_5da3_bd</b>                            | (Number of Sewing Machines) | <b>c11_5db3_bd</b>                                    | (Number of Sewing Machines) |

|  | Variable          | Answer                                  |                 |
|--|-------------------|---|-----------------|
| In a typical month over the year [2018], how much units of electricity did this establishment consume from the grid? | <b>c11_5e1_bd</b> | (Number of units of electricity)        | -9 = Don't know |
| In a typical month over the year [2018], how much did this establishment pay per unit for electricity from the grid? | <b>c11_5e2_bd</b> | (cost, in BDT, per unit of electricity) | -9 = Don't know |

|   |                   |   |   |
|---|-------------------|---|---|
| In a typical month over the year [2018], approximately how much units of electricity did this establishment generate on its own using a generator?    | <b>c11_5e3_bd</b> | (Number of units of electricity)        | -9 = Don't know   |
| In a typical month over the year [2018], approximately how much did it cost your establishment to generate one unit of electricity using a generator? | <b>c11_5e4_bd</b> | (cost, in BDT, per unit of electricity) | -9 = Don't know   |
| For the sewing machines in this establishment that have a clutch motor, do you believe that the clutch motor can be replaced by a servo motor?        | <b>c11_5f_bd</b>  | 1 = Yes<br>2 = No                       | -9 = Don't know -<br>11= Does not apply (No sewing machines with clutch motor in establishment) |
| Do you know a technician in-house or outside the establishment who can replace motors in a sewing machine?  | <b>c11_5g_bd</b>  | 1 = Yes<br>2 = No                       | -9 = Don't know   |
| In the last three years, did your establishment ever subcontract for bigger firms in the leather goods and footwear industry?                         | <b>c11_5h_bd</b>  | 1 = Yes<br>2 = No                       | -9 = Don't know   |
| Did the factory manager of this establishment graduate from ILET (Institute of Leather Engineering and Technology, University of Dhaka)?              | <b>c11_5i_bd</b>  | 1 = Yes<br>2 = No                       | -9 = Don't know   |

## 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 [2016, 2017, and 2018], did this establishment:<br>READ OUT   | Answer   |
|--|--|
| Purchase or lease new or second-hand equipment or machines?  | <b>d1a</b><br>1 = Yes, new<br>2 = Yes, second hand<br>3 = Yes, both (new and second hand)<br>4 = No<br>-9 = Don't know |
| Purchase or lease licence for software?  | <b>d1b</b><br>1 = Yes<br>2 = No<br>-9 = Don't know   |
| Develop, customize, or significantly modify any equipment, machine, or software?   | <b>d1c</b><br>1 = Yes<br>2 = No<br>-9 = Don't know   |
| Was the development, customizaiton, or modification of equipments, machine, or software done in partnership with other institutions or with other firms?<br>[CONDITION: ASK ONLY IF <b>d1c=1</b> ]         | <b>d1d</b><br>1 = Yes<br>2 = No<br>-9 = Don't know   |
| Which one was the partner that contributed the most in developping, customizing, or significantly modifying any equipment, machine, or software?<br>SHOW CARD 14<br>[CONDITION: ASK ONLY IF <b>d1d=1</b> ] | <b>d1e</b><br>1 = Academic or research organization<br>2 = Other enterprises<br>3 = Both<br>-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?<br><br>SHOW CARDS 15 | <b>d2a</b><br>1 = Other firms in the sector<br>2 = Other firms in the locality, but different sector<br>3 = Suppliers or buyers<br>4 = Industrial or trade associations<br>5 = Public technolgy extension services<br>6 = Private consultants<br>7 = Fairs, events, and missions<br>8 = Other |
|---|---|

|  |  |
|--|--|
|  | -9 = Don't know  |
| <p>What type of firms is the source of information most often used by this establishment to make decisions about the acquisition of new machines, equipments, or software.</p> <p>[CONDITION: ASK ONLY IF <b>d2a=1</b> OR <b>d2a=2</b>, OR <b>d2a=3</b>]</p> | <p><b>d2a1_bd</b></p> <p>1 = Domestic firms in the same sector (Domestic Competitors)</p> <p>2 = Foreign firms in the same sector (Foreign Competitors)</p> <p>3 = Domestic firms in the downstream (Domestic Buyers / Customers)</p> <p>4 = Foreign firms in the downstream (Foreign Buyers / Customers)</p> <p>5 = Domestic firms in the upstream (Domestic Suppliers)</p> <p>6 = Foreign firms in the upstream (Foreign Suppliers)</p> <p>7 = Other Firms</p> |
| <p>Is there any firm with more than 50 employees in the range of 50 kilometers from this establishment producing similar products or offering similar services as this establishment?</p>  | <p><b>d2b</b></p> <p>1 = Yes</p> <p>2 = No</p> <p>-9 = Don't know</p>  |
| <p>Over the years [2016, 2017, and 2018], did this establishment have any business relationship, either as a supplier or as a buyer, with a firm with more than 50 employees in the range of 50 kilometers from this establishment.</p>                      | <p><b>d2c</b></p> <p>1 = Yes</p> <p>2 = No</p> <p>-9 = Don't know</p>  |
| <p>Over the years [2016, 2017, and 2018], did this establishment have business, as a supplier or a buyer, with a multinational firm?</p>   | <p><b>d2d</b></p> <p>1 = Yes</p> <p>2 = No</p> <p>-9 = Don't know</p>  |
| <p>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?</p>  | <p><b>d2e</b></p> <p>1 = Yes</p> <p>2 = No</p> <p>-9 = Don't know</p>  |

### D.3 Access to finance

|   |   |
|---|---|
| <p>Over the years [2016, 2017, and 2018], has this establishment got a loan for purchasing machines, equipment, or licensing software or processes?</p> | <p><b>d3a</b></p> <p>1 = Yes</p> <p>2 = No</p> <p>-9 = Don't know</p>               |
| <p>What was the interest rate faced by the establishment for this loan?</p> <p>INTERVIEWER: IF MORE THAN ONE INTEREST RATE, PLEASE ADD THE</p>          | <p><b>d3b</b></p> <p>Interest rate (average annual rate)</p> <p>-9 = Don't know</p> |

|   |                               |
|---|-------------------------------|
| HIGHEST AVERAGE. NOMINAL INTEREST RATE  |                               |
| [CONDITION: ASK ONLY IF d3a=1]  |                               |
| Over the years [2016, 2017, and 2018], how many times this establishment needed to borrow money to expand production, but could not get it? | <b>d3c</b><br>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><br>1 = Yes<br>2 = No<br>-9 = Don't know   |
| In the year [2018], 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):<br>[SKIP: IF d4b=4 GO TO d4d] | <b>d4b</b><br>1 = 1-2 key performance indicators<br>2 = 3-9 key performance indicators<br>3 = 10 or more key performance indicators<br>4 = No key performance indicators   |
| In the year [2018], how frequently were the key performance indicators reviewed by managers at this establishment?  | <b>d4c</b><br>1 = Yearly<br>2 = Quarterly<br>3 = Monthly<br>4 = Weekly<br>5 = Daily<br>6 = Hourly or more frequently<br>7 = Never  |
| In the year [2018], what best describes the time frame of production targets at this establishment? Examples of production targets are: production, quality, efficiency, waste, on-time delivery.<br><br>SHOW CARD 16                                       | <b>d4d</b><br>1 = Main focus was on short-term (less than one year) production targets<br>2 = Main focus was on long-term (more than one year) production targets<br>3 = Combination of short-term and long-term production targets<br>4 = No production targets |

#### D.5 Availability of human capital

| Question   | Answers   |
|--|---|
| Over the years [2016, 2017, and 2018], has this establishment hired or tried to hire engineers, computer programmers, or equivalent professionals? | <b>d5a</b><br>1 = Yes. It hired.<br>2 = Yes. It tried it, but not hired.<br>3 = No<br>-9 = Don't know |

|  |  |
|--|--|
| <p>What was the main challenge faced by this establishment when hiring engineers, computer programmers, or equivalent professionals?<br/> <b>[CONDITION: ASK ONLY IF d5a=1 OR d5a=2]</b></p> <p>SHOW CARD 17</p>         | <p style="text-align: right;"><b>d5b</b></p> <p>1 = No challenges<br/> 2 = Lack of availability of professionals<br/> 3 = Lack of availability of high-skills professionals<br/> 4 = High salaries required<br/> -9 = Don't know</p>   |
| <p>Over the years [2016, 2017, and 2018], has this establishment used any external consultants or organizations to help select, adapt, or use new machines, equipment, software, or production process?</p>              | <p style="text-align: right;"><b>d5c</b></p> <p>1 = Yes<br/> 2 = No<br/> -9 = Don't know</p>   |
| <p>What was the main source of external consultants or organizations used by this establishment?<br/> <b>[CONDITION: ASK THIS QUESTION ONLY IF d5c=1]</b></p> <p>SHOW CARD 18</p>  | <p style="text-align: right;"><b>d5d</b></p> <p>1 = Universities<br/> 2 = Government agency<br/> 3 = Other local companies<br/> 4 = Foreign company<br/> 5 = Business associations<br/> 6 = Other sources<br/> -9 = Don't know</p>   |
| <p>Why did this establishment not use any consultants or organizations to help with adoption machines, equipment, software, or process?<br/> <b>[CONDITION: ASK THIS QUESTION ONLY IF d5c=2]</b></p> <p>SHOW CARD 19</p> | <p style="text-align: right;"><b>d5e</b></p> <p>1 = I don't know any consultant or organization<br/> 2 = Lack of trust in the quality of the services they provide<br/> 3 = Too costly or not convinced of the economic benefit<br/> 4 = There was no need<br/> 5 = Other<br/> -9 = Don't know</p>   |
| <p>How did this firm adjust labor when acquiring a new machine, equipment, or software?<br/> SHOW CARD 20</p>  | <p style="text-align: right;"><b>d5f</b></p> <p>0 = Did not do any changes to the number on workers<br/> 1 = Used same workers and offered some specialized training<br/> 2 = Fired some workers and did not replace them<br/> 3 = Hire more workers with same skills<br/> 4 = Hire more workers with more specialized skills<br/> -9 = Don't know</p> |

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

| Question | Answers |
|----------|---------|
|----------|---------|

|   |  |
|---|--|
| Over the years [2016, 2017, and 2018], did this establishment export?   | <b>d6a</b><br>1 = Exported directly<br>2 = Exported through trading firms<br>3 = Did not export<br>-9 = Don't know |
| In the year [2018], what percentage of this establishment's sales were direct exports?<br><br>[CONDITION: ASK THIS QUESTION ONLY IF <b>d6a=1</b> ]  | <b>d6b</b><br>(Percent)  |
| Over the years [2016, 2017, and 2018], has this establishment imported material inputs, machines, or equipment directly?  | <b>d6c</b><br>1 = Yes<br>2 = No<br>-9 = Don't know   |
| If the vendor price of an imported input, machines, or equipment is 100, what is the average final price paid for this establishment, including tariffs, tax, storage, and transportation cost?<br><br>[CONDITION: ASK THIS QUESTION ONLY IF <b>d6c=1</b> ]   | <b>d6d</b><br>(Value above 100)<br>-9 = Don't know   |
| How many days did it take on average from the time these goods arrived to their point of entry (e.g. port, airport) until the time these goods could be claimed from customs?<br>[CONDITION: ASK THIS QUESTION ONLY IF <b>d6c=1</b> ]   | <b>d6e</b><br>(Number of days)<br>-9 = Don't know  |
| Over the years [2016, 2017, and 2018], when this establishment exported goods directly, how many days did it take on average from the time this establishment's goods arrived at their main point of exit, (e.g. port, airport) until the time these goods cleared customs?<br>[CONDITION: ASK ONLY IF <b>d6a=1</b> ] | <b>d6a1_bd</b><br>Number of days<br>1 = Less than a day<br>-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><br>1= Yes<br>2= No<br>-9 = Don't know   |
| Has this establishment benefited from any government support program or subsidy in relation to the adoption of a new machine, equipment, or software?                  | <b>d7b</b><br>1 = Yes<br>2 = No<br>-9 = Don't know |

|   |  |
|---|--|
| <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<br/> 2 = Technical assistance<br/> 3 = Tax incentive<br/> 4 = Grant<br/> 5 = Loan<br/> 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 to improve its performance?</p> <p>SHOW CARDS 22</p> <p>CONDITION: SAME OPTION CANNOT BE REPEATED ACROSS VARIABLES</p>  | <p style="text-align: center;"><b>d8a</b><br/>1<sup>st</sup> obstacle</p> | <p style="text-align: center;"><b>d8b</b><br/>2<sup>nd</sup> obstacle</p> | <p style="text-align: center;"><b>d8c</b><br/>3<sup>rd</sup> obstacle</p> |
| <p>1 = Lack of information on what is available<br/> 2 = Uncertainty of demand<br/> 3 = Too costly or not convinced of the economic benefit<br/> 4 = Lack of technical skills required to support this equipment.<br/> 5 = Consumer preferences do not value quality of products<br/> 6 = Difficulty in obtaining financing<br/> 7 = Lack of knowledge on how to acquire it<br/> 8 = It is difficult or costly to comply with government regulations<br/> 9 = Electricity, water, or Internet connection are too expensive<br/> 10 = Other<br/> -9 = Don't know</p> |   |   |   |

|   |   |   |   |
|---|---|---|---|
| <p>Please select three of the major reasons for the acquisition of new equipment, machine, or software by this establishment to improve its performance?</p> <p>SHOW CARDS 23</p> <p>CONDITION: SAME OPTION CANNOT BE REPEATED ACROSS VARIABLES</p>   | <p style="text-align: center;"><b>d8d</b><br/>1<sup>st</sup> reason</p> | <p style="text-align: center;"><b>d8e</b><br/>2<sup>nd</sup> reason</p> | <p style="text-align: center;"><b>d8f</b><br/>3<sup>rd</sup> reason</p> |
| <p>1 = Depreciation or replacement<br/> 2 = Competition in the domestic market<br/> 3 = Competition in the external market<br/> 4 = Other firms in the same sector adopted<br/> 5 = Other firms in the locality, from other sectors, adopted<br/> 6 = Produce new products<br/> 7 = Access new markets<br/> 8 = Produce similar products more efficiently<br/> 9 = Adjust to regulations<br/> 10 = Other<br/> -9 = Don't know</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> | <p>At the end of the year [2018], how many permanent full-time, permanent part-time, temporary (or seasonal) full-time, and temporary (or seasonal) part-time individuals worked in this establishment? Please include all employees and managers.</p> <p>(Permanent full-time employees are defined as all paid employees that are contracted for a term of one or more fiscal years and/or have a guaranteed renewal of their employment contract and that work a full shift)</p> <p>(Permanent part-time employees are defined as all paid employees that are contracted for a term of one or more fiscal years and/or have a guaranteed renewal of their employment contract and that work in part-time shift, usually less than 20 hours per week)</p> <p>(Temporary or seasonal, full-time workers are all short-term, that is for less than a year, workers with no guarantee of renewal of employment and work full-time.)</p> <p>(Temporary or seasonal, part-time workers are all short-term, that is for less than a year, workers with no guarantee of renewal of employment and work usually less than 20 hours per week.)</p> <p><b>(INTERVIEWER: INCLUDE INTERVIEWEE IF APPLICABLE).</b></p> |
|------------|---|

|   | <b>Number</b> |
|---|---------------|
| Permanent workers, full-time, at the end of the year [2018]             | <b>e1a</b>    |
| Permanent workers, part-time, at the end of the year [2018]             | <b>e1b</b>    |
| Temporary or seasonal workers, full time, at the end of the year [2018] | <b>e1c</b>    |
| Temporary or seasonal workers, part-time, at the end of the year [2018] | <b>e1d</b>    |
| <b>DON'T KNOW (SPONTANEOUS)</b>   | <b>-9</b>     |

|  | <b>Months</b>                 |
|--|-------------------------------|
| What was the average length of employment of seasonal or temporary workers in the year [2018]? | <b>e1e</b><br>-9 = Don't know |

|   |  |
|---|--|
| What was the total share of female workers by the end of the year [2018]? | <b>e1f</b><br>(share)<br>-9 = Don't know |
|---|--|

|            |   |
|------------|---|
| <b>E.2</b> | At the end of the year [2016], how many permanent full-time, permanent part-time, temporary (or seasonal) full-time, and temporary (or seasonal) part-time individuals worked in this establishment? ? Please include all employees and managers <b>(INTERVIEWER: INCLUDE INTERVIWEE IF APPLICABLE)</b> . |
|------------|---|

|   | <b>Number</b> |
|---|---------------|
| Permanent, full-time workers, at the end of the year [2016]             | <b>e2a</b>    |
| Permanent, Part-time, at the end of the year [2016]                     | <b>e2b</b>    |
| Temporary or seasonal workers, full time, at the end of the year [2016] | <b>e2c</b>    |
| Temporary or seasonal workers, part-time, at the end of the year [2016] | <b>e2d</b>    |
| <b>IF ESTABLISHMENT WAS NOT IN BUSINESS THREE YEARS AGO</b>             | <b>-7</b>     |
| <b>DON'T KNOW (SPONTANEOUS)</b>   | <b>-9</b>     |

|  |                                      |
|--|--------------------------------------|
| What was the average length of seasonal or temporary workers in the year [2016]? | <b>Months</b>                        |
| Average length of seasonal or temporary employment in the year [2016], in months | <b>e2e</b><br><b>-9 = Don't know</b> |

|  |   |
|--|---|
| What was the share of female workers three complete fiscal years ago?<br><b>(INTERVIEWER: INCLUDE FULL TIME AND PART TIME)</b> . | <b>e2f</b><br><b>Percentage</b><br><b>-9 = Don't know</b> |
|--|---|

|            |  |
|------------|--|
| <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>         |

|  |                |    |
|--|----------------|----|
| Manufacturing supervisors: line leaders, line supervisors<br>(directly involved in the production process) | <b>e3c1_bd</b> | -9 |
| Other Technicians  | <b>e3c2_bd</b> | -9 |
| Clerical support workers [e.g. administrative support]   | <b>e3d</b>     | -9 |
| Production workers (directly involved in the production process)   | <b>e3e</b>     | -9 |
| Service or sales workers   | <b>e3f</b>     | -9 |

**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]**

|  | <b>Number</b>  | <b>DON'T KNOW</b> |
|--|----------------|-------------------|
| CEOs and Managers  | <b>e4a</b>     | -9                |
| Professionals  | <b>e4b</b>     | -9                |
| Manufacturing supervisors: line leaders, line supervisors<br>(directly involved in the production process) | <b>e4c1_bd</b> | -9                |
| Other Technicians  | <b>e4c2_bd</b> | -9                |
| Clerical support workers [e.g. administrative support]   | <b>e4d</b>     | -9                |
| Production workers (directly involved in the production process)   | <b>e4e</b>     | -9                |
| Service or sales workers   | <b>e4f</b>     | -9                |

**E.4. BDQuestion:** At the end of the year [2018], what was the share of individuals working in this establishment that were Female in the following categories?

|  | <b>Share of Women (%)</b> | <b>DON'T KNOW (SPONTANEOUS)</b> |
|--|---------------------------|---------------------------------|
| Production line supervisors: line leaders, line supervisors<br>(directly involved in the production process) | <b>e4g_bd</b>             | -9                              |
| Production line workers : helpers, line workers,. (directly involved in the production process)              | <b>e4h_bd</b>             | -9                              |

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

|  | <b>Share (%)</b> | <b>DON'T KNOW</b> |
|--|------------------|-------------------|
| Completed primary school (about 9 years of education)    | <b>e5a</b>       | -9                |
| Completed secondary school (about 12 years of education) | <b>e5b</b>       | -9                |
| Vocational training (about 12 years of education)        | <b>e5c</b>       | -9                |

|   |            |           |
|---|------------|-----------|
| Completed college degree or more (15+ years of education) | <b>e5d</b> | <b>-9</b> |
|---|------------|-----------|

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

|                                | <b>Number</b> | <b>DON'T KNOW</b> |
|--------------------------------|---------------|-------------------|
| Engineering or applied science | <b>e5e</b>    | <b>-9</b>         |
| MBA, Master or Doctoral degree | <b>e5f</b>    | <b>-9</b>         |

|   |  |
|---|--|
| Does this establishment have workers exclusively dedicated to Research and Development activities?  | <b>e3g</b><br>1= Yes<br>2= No<br>-9 = Don't know |
| How many workers are exclusively dedicated to Research and Development activities in this establishment?<br><b>[CONDITION: ASK ONLY IF e3g=1]</b> | <b>e3h</b><br>Numbers<br>-9 = Don't know         |

**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?

|   | <b>LCUs</b>  |
|---|--|
| Complete year [2018] total sales  | <b>e6a</b>   |
| Complete year [2016] total sales  | <b>e6b</b>   |
| <b>DON'T KNOW (SPONTANEOUS)</b>   | <b>-9</b>  |
| Is the information on annual sales in 2018 based on calendar year 2018 or fiscal year 2018?<br><b>[CONDITION: ASK ONLY IF e6a IS ANSWERED. ASK ONLY IF FISCAL YEAR DIFFERS FROM CALENDAR YEAR BASED ON A.2]</b> | <b>e6c_bd</b><br><br>1= Calendar year<br>2 = Fiscal year |
| Is the information on annual sales in 2016 based on calendar year 2016 or fiscal year 2016?<br><b>[CONDITION: ASK ONLY IF e6b IS ANSWERED.]</b>   | <b>e6d_bd</b><br><br>1= Calendar year<br>2 = Fiscal year |

**E.7** | From this establishment's Income Statement or book records for the year **[2018]**, please provide the following information:

|  |             |                   |
|--|-------------|-------------------|
|  | <b>LCUs</b> | <b>DON'T KNOW</b> |
|--|-------------|-------------------|

|  |   |           |
|--|---|-----------|
| Total annual cost of labor including wages, salaries, bonuses, social security payments  | <b>e7a</b>  | <b>-9</b> |
| Total annual cost of raw materials and intermediate goods used in production or materials purchased to resell  | <b>e7b</b>  | <b>-9</b> |
| Total annual cost of electricity   | <b>e7c</b>  | <b>-9</b> |
| <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)  | <b>e7d</b>  | <b>-9</b> |
| Is the information on annual cost based on calendar year 2018 or fiscal year 2018?<br>[CONDITION: ASK ONLY IF ANY OF THE e7 QUESTIONS ARE ANSWERED; ASK ONLY IF FISCAL YEAR DIFFERS FROM CALENDAR YEAR BASED ON A.2] | <b>e7e_bd</b><br><br>1 = Calendar year<br>2 = Fiscal year | <b>-9</b> |

**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?

|                                    | <b>LCUs</b> | <b>DON'T KNOW</b> |
|------------------------------------|-------------|-------------------|
| Machinery, vehicles, and equipment | <b>e8a</b>  | <b>-9</b>         |
| Buildings                          | <b>e8b</b>  | <b>-9</b>         |

**E.10** Currently, with respect to the main product produced by this establishment?

|   | <b>% (share)</b> | <b>DON'T KNOW</b> |
|---|------------------|-------------------|
| What is the share in total sales?   | <b>e10a</b>      | <b>-9</b>         |
| What is the average markup (the percentage over total costs to derive the final price)? | <b>e10b</b>      | <b>-9</b>         |

## F. ENTERPRISE SURVEY QUESTIONS

**INTERVIEWER: THE QUESTIONS IN THIS SECTION CONSIDERS THE OVERALL OPERATION OF THIS ESTABLISHMENT.**

| Question: Using the response options on the card, to what degree are the following factors an obstacle to the current operation of this establishment? |                    |                       |                          |                       |                             |                    |                        |
|--|--------------------|-----------------------|--------------------------|-----------------------|-----------------------------|--------------------|------------------------|
|  | No obstacle<br>= 0 | Minor obstacle<br>= 1 | Moderate obstacle<br>= 2 | Major obstacle<br>= 3 | Very severe obstacle<br>= 4 | Don't Know<br>= -9 | Does Not Apply<br>= -7 |
| Electricity<br><b>f1a_bd</b>   |                    |                       |                          |                       |                             |                    |                        |
| Access to Finance<br><b>f1b_bd</b>   |                    |                       |                          |                       |                             |                    |                        |
| Access to Land<br><b>f1c_bd</b>  |                    |                       |                          |                       |                             |                    |                        |
| Business licensing and permits<br><b>f1d_bd</b>  |                    |                       |                          |                       |                             |                    |                        |
| Corruption<br><b>f1e_bd</b>  |                    |                       |                          |                       |                             |                    |                        |
| Courts<br><b>f1f_bd</b>  |                    |                       |                          |                       |                             |                    |                        |
| Customs and trade regulations<br><b>f1g_bd</b>   |                    |                       |                          |                       |                             |                    |                        |
| Inadequately educated workforce<br><b>f1h_bd</b>   |                    |                       |                          |                       |                             |                    |                        |
| Labor regulations<br><b>f1i_bd</b>   |                    |                       |                          |                       |                             |                    |                        |
| Political Instability<br><b>f1j_bd</b>   |                    |                       |                          |                       |                             |                    |                        |
| Tax administration<br><b>f1k_bd</b>  |                    |                       |                          |                       |                             |                    |                        |
| Transport<br><b>f1l_bd</b>   |                    |                       |                          |                       |                             |                    |                        |

|   |                                |
|---|--------------------------------|
| Question: In a typical week over the last year, what percentage of total senior management's time was spent on dealing with requirements imposed by government regulations? (By senior management I mean managers, directors, and officers above direct supervisors of production or sales workers. Some examples of government regulations are taxes, customs, labor | <b>f3a_bd</b><br>(% share) (%) |
|---|--------------------------------|

|  |  |
|--|--|
| regulations, licensing and registration, including dealing with officials and completing forms)<br>) |  |
|--|--|

|  |                  |
|--|------------------|
| Question: Over the last complete fiscal year, please estimate the proportion of this establishment's working capital, that is its day-to-day operations, that was financed from each of the following sources? |                  |
| <b>Sources</b>   | <b>(% share)</b> |
| Internal funds or retained earnings  | <b>f4a_bd</b>    |
| Borrowed from banks: private and state-owned   | <b>f4b_bd</b>    |
| Borrowed from non-bank financial institutions which include microfinance institutions, credit cooperatives, credit unions, or finance companies  | <b>f4c_bd</b>    |
| Purchases on credit from suppliers and advances from customers   | <b>f4d_bd</b>    |
| Other, moneylenders, friends, relatives, etc.  | <b>f4e_bd</b>    |

**INTERVIEWER: CHECK THAT TOTAL SUMS TO 100% (UNLESS DON'T KNOW)**

## 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.8 Interviewer code **a8**

|  |
|--|
|  |
|--|

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

| Day (dd)   | Month (mm) | Year (yyyy) | Hour (00 to 23) | Minutes (00 to 59) |
|------------|------------|-------------|-----------------|--------------------|
| <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.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**

ADD QUESTION ON THE PERCEPTION

INTERVIEWER COMMENTS:

|            |
|------------|
| <b>a13</b> |
|------------|

(Problems occurred/extraordinary circumstances which could influence results)

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

|   |   |                  |
|---|---|------------------|
| One visit in face-to-face interview with one person               | 1 | <b>STOP HERE</b> |
| One visit in face-to-face interview with different managers/staff | 2 |                  |
| Several visits  | 3 |                  |

|            |
|------------|
| <b>a14</b> |
|------------|

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

|             |                |
|-------------|----------------|
| <b>Hour</b> | <b>Minutes</b> |
|             |                |

**a15h      a15m**

|                        |                          |            |
|------------------------|--------------------------|------------|
| <b>GPS COORDINATES</b> | Degrees North (Latitude) | <b>lat</b> |
|                        | Degrees East (Longitude) | <b>lon</b> |

SUPERVISOR SECTION

A.14 Supervisor code

a16

|  |
|--|
|  |
|--|

INFORMATION BASED ON LOCATION OF INTERVIEW (s2d). ENSURE s2d IS THE NAME OF AN OFFICIAL LOCALITY AND NOT A NEIGHBORHOOD

| Is this city the official capital city? | a17a | Is this city the main business city? | a17b | Size of locality                    | a17c |
|---|------|--------------------------------------|------|-------------------------------------|------|
| Yes                                     | 1    | Yes                                  | 1    | City with population over 1 million | 2    |
| No                                      | 2    | No                                   | 2    | Over 250.000 to 1                   | 3    |
|   |      |                                      |      | 50.000 to 250.000                   | 4    |
|   |      |                                      |      | Less than 50.000                    | 5    |

SUPERVISOR: THE DESCRIPTION OF THE ESTABLISHMENT'S MAIN PRODUCT AND ACTIVITY IS PROVIDED IN c1b. PLEASE REVIEW c1b IN ORDER TO IDENTIFY THE CORRESPONDING SECTOR CODE IN c1d

|      |  |
|------|--|
| C.1d | <b>PLEASE CHOOSE THE 4-DIGIT ISIC REV. 4 SECTOR CODE THAT BEST APPLIES TO THE ESTABLISHMENT'S MAIN ACTIVITY AND PRODUCT.</b> |
|------|--|

|  |            |
|--|------------|
|  | Code       |
| <b>CODE OF THE MAIN PRODUCT AND ACTIVITY</b> | <b>c1d</b> |