THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA CENTRAL STATISTICAL AGENCY

## REPORT ON ICT ACCESS AND USE BY LARGE AND MEDIUM SCALE MANUFACTURING INDUSTRIES




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## 1. INTRODUCTION AND OBJECTIVES OF THE SURVEY

### 1.1 Introduction

Information Communications Technology (ICT) is the business of developing and using technology to process information and aid communication. It is all about the uses of digital technology that already exist to help individuals, businesses and organisations use information. The information accessed through digital technologies can promote innovation, increase productivity, advance trade and enrich the quality of lives. ICT helps unlock stores of information, making them accessible to all. It is a powerful tool for directing and expressing creativity.

ICT describes a range of technologies for gathering, storing, retrieving, processing, analysing, manipulating, and transmitting or receiving information electronically. It is a generic name for all of the technologies involved with communicating with computers. It includes any communication device or application, encompassing radio, television, cellular phones, networks, computers, other data processing and transmitting equipment, and software.

The potential for ICT to foster economic growth and reduce poverty is receiving increasing attention from the Ethiopian government and society. While ICT presents opportunities for economic and social development of the country, the digital divide within the country also causes confrontation with new challenges. Devising and executing ICT policies and strategies to prevail over the challenges entail proper knowledge of the state of ICT in the country, its use by organizations and individuals, and the impediments to such use. The measurement of ICT enables the formulation of such policies. As a result, measuring ICT for development is becoming a principal concern for the Ethiopian government. Thus, demand for ICT statistics in Ethiopia more urgent than ever.

Statistics on ICT access, use and impact enables appraisal and monitoring of the digital divide and the benefits of ICT in the country. It also helps policy makers and business people to make informed decisions about public policy measures and private investment. Policies, strategies and investments that enable to seize the benefits of ICT are better made with the guidance of statistical evidence. Reliable and timely indicators on ICT are needed to exploit its potential to promote economic and social development including poverty reduction, increase in education and health standards, generation of new industries and employment opportunities, and improvement in competitiveness.

With the growing use of ICT by the government, businesses and individuals in the country and the explicit recognition of the need for ICT statistics, the Central Statistical Agency (CSA) has found it imperative to assess ICT first in the manufacturing industries and then extend it to other businesses, and households. With this in mind, the CSA has been
conducting a survey on ICT usage in Large and Medium Scale Manufacturing Industries since 2019/20(2012 E.C) This is the fourth publication of its kind. Because of priority given to other data aspects of manufacturing industries by the Agency the processing of the report was preceded by the Report on Large and Medium Scale Manufacturing Industries. Hence, the deferred debut of the report.

### 1.2. Objectives of the Survey

The general objective of the ICT survey is to collect basic quantitative information on the status of ICT in the manufacturing sector of the economy in Ethiopia that is essential for planning, policy formulation, monitoring and evaluation of the performance and expansion of ICT in the country to accelerate the economic and social development.

The specific objective of the ICT survey on large and medium scale manufacturing industries is to provide numerical data on the number of establishments using computers, computers in use, number of establishments having internet connection, websites, local area network ( $\mathbf{L A N}$ ), number of employees having access to computers, internet, number of establishments reporting problems for not being connected to the internet, etc.

## 2. SURVEY METHODOLOGY, DATA COLLECTION AND PROCESSING

### 2.1 Scope, Coverage and Content of the Survey

The range of data items that this survey dealt with includes number of computers in use, internet subscribers, websites, LAN's, employees accessing computers and internet, and other related information in all establishments of large and medium scale manufacturing industries employing 10 or more persons and using power driven machinery all over the country.

The coverage of the survey was on the basis of complete enumeration of the same establishments that were operational in 2019/20 only and spread across all regions of the country. Both private and public manufacturing industries were also covered.

As a fourth attempt, the content of the survey is slightly improved over that of the previous major core indicators, which can be used further as a yardstick for enriching the substances of the ensuing surveys. Core indicators such as the percentages of establishments using computers, having internet connections, having own websites (web pages), reporting ICT benefits by industrial classification, percentages of employees having access to computers, internet by industry group, and other related data are presented in this report. Number of establishments without internet connection by reason and establishments using internet by purpose are also portrayed in these tables.

### 2.2 Concepts and Definition used in the Survey

Data items of ICT have to be clearly defined and identified so that the information about the items becomes useful. Stating data items and related terms correctly is a requirement for making standards and definitions for the collection and compilation of ICT data. The purpose of using standard concepts and definitions is to enumerate and measure the right items accurately and provide quality data to reflect the ICT situation in the manufacturing industries.

Standard concepts and definitions used in this survey to maintain consistent enumeration and measurement of the variables of interest are illustrated as follows.

Computer: - is a machine that manipulates data to a list of instructions. The ability of a computer to store and execute catalogues of instructions called programs makes a computer extremely versatile and distinguishes it from calculators.

Computer includes desk - top or hand held portable computer, minicomputer, and mainframe. It does not include equipment with some embedded computing abilities such as mobile phones or TV sets, computer controlled machinery.

Local Area Network (LAN) is a computer network that connects computers and devices in a limited geographical area such as home, school, computer laboratory, office building, and group of office buildings. It connects work stations and personal computers to provide access to printers and data. Each node (personal computer) in a LAN has its own CPU and can access data and devices such as printers anywhere in the LAN enabling many users to share information and facilities. LAN differs from Wide Area Network (WAN) by higher data transfer rates, smaller geographic area, and lack of a need for leased telecommunication lines and radio waves.

Internet: - is a global network of interconnected computers enabling users to share information along multiple channels. A computer that connects to the internet can access information from a vast array of available servers and other computers by moving information from them to the computer's local memory. The same connection allows that computer to send information to servers on the network.

Website: - is a collection of related web pages, images, video or other digital assets that are hosted on the web server usually accessible via internet. A web page is a document or resource of information that is suitable for the World Wide Web (WWW).

ICT: - Information Communications Technology (ICT) covers any product that will store, retrieve, manipulate, transmit or receive information electronically in a digital form. Example: PC, Internet, e-mail, digital television, robots, etc. ICT is also concerned with the storage, retrieval, manipulation, transmission or receipt of digital data.

Infrastructure: - refers to basic physical and organizational structures needed for the operation of a society or an establishment / enterprise. It is the services and facilities necessary for an economy (establishment) to function. It includes the technical structures that support an establishment or a society such as electricity, telecommunications, roads, etc.

## Manufacturing is $t$

he physical or chemical transformation of materials or components into new products, whether the work is performed by power - driven machines or by hand, whether it is done in a factory or the worker's home, and whether the products are sold at wholesale or retail.

Large and Medium Scale Manufacturing Industries are manufacturing industries that employ 10 or more persons and use power - driven machines for production.

Establishment: - is an economic unit producing goods and/or services and owning assets, incurring liabilities and involving in economic activities and in transactions with other economic entities. It is an economic entity performing transaction with autonomy in financial and investment decision making as well as allocating resources for the production
of goods and services. It may be engaged in one or more productive activities at one location.

Employees: - are all persons working for the business (not only clerical jobs) including working proprietors and partners as well as employees.

### 2.3 Methods of Data Collection

This ICT survey was conducted along with large and medium scale manufacturing industries survey. The questionnaire module was attached to the manufacturing industries survey questionnaire and the survey was carried out simultaneously. Before the survey, the field staff (enumerators and supervisors) drawn from all Branch Statistical Offices were trained for a week to reinforce their understanding of standard data collection procedures and the tasks to be performed in the survey so that data quality will be ensured.

Then, the field staff was assigned to all establishments categorized as large and medium scale manufacturing industries. The data was collected on the basis of complete enumeration by interviewing the respondents, in this case the manufacturing establishments. The data obtained was recorded in the form designed for this purpose. More than one hundred statisticians, supervisors and enumerators were involved in the survey which lasted 50 days.

### 2.4 Data Processing

Data editing plays an important role in ensuring the quality of the collected survey data by minimizing the effects of the error incurred during data collection. For this purpose, in addition to the editing and coding done in the field, the collected data was again edited, coded, and verified manually at the Head Office.

The data were then entered into personal computers and checked and cleaned using edit specification prepared earlier for this purpose. Finally, it was tabulated using CSPro (Census and Survey Processing System) to produce statistical tables as per the tabulation plan. The data entry and processing involved 35 staff members and lasted 35 days.

## 3. SUMMARY OF SURVEY RESULTS

## Computer Usage in the Manufacturing Business

The first core indicator information was elicited on the use of computers in the manufacturing sector. The manufacturing businesses in - scope were asked whether they used computer during the last 12 - month reference period of 2019/20(2012 E.C)the result is revealed in the following table (Table 1).

Table 1 shows that the total number of manufacturing industries covered by the survey in 2019/20(2012 E.C) was 3559 which is $3 \%$ than that of the previous reference year. The table also shows that of all the manufacturing industries covered by the survey about $58.22 \%$ of them used computers during the reference period. When the data is dissected by industry group, it is the establishments theManufacture of coke and refined petroleum products, Manufacture of basic pharmaceutical products and pharmaceutical preparations ( $100 \%$ of them) that are ahead of the others in the use of computers followed byPrinting and reproduction of recorded media, (about $93.94 \%$ of them), and Manufacture of beverages (about $92.59 \%$ of them). Despite the variation in percentage, all the 22 industry groups used computers in the reference year of 2019/20.

Of all the computers (17588) in use by the in-scope businesses during the reference year. When compared among industry groups the highest percentage (more than $30.98 \%$ ) was reported by Manufacture of food products followed by Manufacture of other non-metallic mineral products, Manufacture of beverages about $10.46 \%$, and $7.43 \%$, respectively. More than $26.58 \%$ of all the establishments had Local Area Network (LAN). When the data is analysed by industry group about $100 \%$ of the Manufacture of coke and refined petroleum productshad LAN followed byManufacture of beverages (about 62.96\%), and Manufacture of basic pharmaceutical products and pharmaceutical preparations (more than 60\%).
Of all establishments during the reference year more than $39.7 \%$ of them had reported to have benefited from ICT. When the comparison is inspected by industry group, the Manufacture of coke and refined petroleum products and Manufacture of basic pharmaceutical products and pharmaceutical preparations reported the highest percentage ( $100 \%$ ) followed by Manufacture of beverages (about $83.33 \%$ ), andPrinting and reproduction of recorded media (about $73.72 \%$ ). Users are reminded of the point that the benefits of ICT in this survey refer to the return obtained from the use of computers or LAN or internet or all three only.

Table 1 Percent of Establishments using Computers, local area network (LAN) and Number of Computers in use by Industry Group, 2018/2019(2011 E.F.Y)

| INDUSTRY GROUP | Total number of establish ments | Percent of establish ments using computer s | Numb er of compu ters in use | Percent of establish ments having LAN | Percent of establish ments reporting ICT benefits |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Manufacture of food products | 1,091 | 60.04 | 5,449 | 23.46 | 38.59 |
| Manufacture of beverages | 54 | 92.59 | 1,306 | 62.96 | 83.33 |
| Manufacture of tobacco products | - | - | - | - | - |
| Manufacture of textiles | 194 | 74.23 | 1,084 | 26.29 | 48.97 |
| Manufacture of wearing apparel | 142 | 53.52 | 478 | 18.31 | 40.85 |
| Manufacture of leather and related products | 96 | 77.08 | 591 | 29.17 | 55.21 |
| Manufacture of wood and of products of wood \& cork except furniture; manufacture of articles of straw and plaiting materials | 142 | 43.66 | 532 | 26.06 | 30.28 |
| Manufacture of paper and paper products | 67 | 77.61 | 589 | 44.78 | 59.70 |
| Printing and reproduction of recorded media | 99 | 93.94 | 783 | 56.57 | 72.73 |
| Manufacture of coke and refined petroleum products | 1 | 100.00 | 34 | 100.00 | 100.00 |
| Manufacture of chemicals and chemical products | 125 | 70.40 | 793 | 46.40 | 54.40 |
| Manufacture of basic pharmaceutical products and pharmaceutical preparations | 5 | 100.00 | 58 | 60.00 | 100.00 |
| Manufacture of rubber and plastic products | 208 | 69.71 | 976 | 37.98 | 50.00 |


| Manufacture of other non-metallic mineral products | 523 | 41.3 |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Manufacturing of basic metals | 88 | 82.95 | 539 | 19.31 | 24.67 |
| Manufacture of fabricated metal products except machinery and equipment | 98 | 47.96 |  | 47 | 65 |
| Manufacture of machinery and equipment n.e.c. | 19 | 52.63 | 319 | 21 | 34 |
| Manufacture of electrical equipment | 20 | 60 | 35 | 32 | 53 |
| Manufacture of computer electronic and optical products | 5 | 80 | 113 | 25 | 40 |
| Manufacture of motor vehicles trailers and semi-trailers | 12 | 91.67 | 76 | 41.67 | 66.67 |
| Manufacture of other transport equipment | 0 | 0 | 0 | 0 | 0 |
| Manufacture of furniture | 385 | 31.69 | 714 | 9.09 | 19.48 |
| Other manufacturing | 185 | 71.35 | 1151 | 37.84 | 45.41 |
| Total | $\mathbf{3 5 5 9}$ | $\mathbf{5 8 . 2 2}$ | $\mathbf{1 7 5 8 8}$ | $\mathbf{2 6 . 5 8}$ | $\mathbf{3 9 . 7}$ |

Table 2 presents the percent of establishments covered by the survey which had internet connection, website, and provided information on their websites during the reference period. The proportion/percentage of establishments under study using internet is another basic core indicator that this report conveys to data users. It exhibits the percent of establishments which used the internet in 2019/20.

Of all the establishments covered by the survey about $37.23 \%$ used internet in the year 2019/20(2012 E.C). When the data is examined by industry group, the highest percentage of (more than $100 \%$ ) establishments using internet in the same year was reported by theManufacture of basic pharmaceutical products and pharmaceutical preparation Manufacture of coke and refined petroleum products, followed byManufacture of beverages (about $74.07 \%$ ), and Printing and reproduction of recorded media (about $71.72 \%$ ).
More than $18.12 \%$ of the establishments under study had web presence during the year the survey referred to. The highest percentage of establishments which had Web presence (about $100 \%$ ) during the reference year was reported by Manufacture of coke and refined petroleum products followed by Manufacture of basic pharmaceutical products and Manufacture of beverages about $80 \%$ and $55.56 \%$, respectively.
Regarding the provision of information on own websites, about $17.14 \%$ of all establishments covered by the survey offered information on their websites during the reference period. When the information is classified by industry group, virtually all the establishments which reported to have websites used their websites to furnish more information on their businesses.

Table 2 - Percent of Establishments having Internet connection and Websites by Industry Group, 2018/2019(2011 E.C)

| INDUSTRY GROUP | Total <br> number <br> of <br> establish <br> ments | Percent of <br> establish <br> ments <br> having <br> internet <br> connectio <br> n | Percent of <br> establish <br> ments <br> having <br> websites |  |
| :--- | :--- | :--- | :--- | :--- |
| Percent of <br> establishme <br> nts <br> providing <br> information <br> on websites |  |  |  |  |
| Manufacture of food products | 1,091 | 33.82 | 18.42 | 16.41 |
| Manufacture of beverages | 54 | 74.07 | 55.56 | 50.00 |
| Manufacture of tobacco products | - | - | - | - |
| Manufacture of textiles | 194 | 47.42 | 22.16 | 21.13 |
| Manufacture of wearing apparel | 142 | 26.76 | 7.75 | 7.75 |
| Manufacture of leather and related products | 96 | 44.79 | 21.88 | 21.88 |
| Manufacture of wood and of products of wood \& cork except furniture <br> manufacture of articles of straw and plaiting materials | 142 | 27.46 | 21.13 | 21.13 |
| Manufacture of paper and paper products | 67 | 58.21 | 34.33 | 34.33 |
| Printing and reproduction of recorded media | 99 | 71.72 | 22.22 | 22.22 |
| Manufacture of coke and refined petroleum products | 1 | 100.00 | 100.00 | 100.00 |
| Manufacture of chemicals and chemical products | 125 | 57.60 | 32.80 | 32.80 |
| Manufacture of basic pharmaceutical products and pharmaceutical preparations | 5 | 100.00 | 80.00 | 80.00 |
| Manufacture of rubber and plastic products | 208 | 55.29 | 25.00 | 24.52 |


| Manufacture of other non-metallic mineral products | 523 | 26.20 | 8.99 | 8.22 |
| :--- | :--- | :--- | :--- | :--- |
| Manufacturing of basic metals | 88 | 70.45 | 36.36 | 36.36 |
| Manufacture of fabricated metal products except machinery and equipment | 98 | 28.57 | 14.29 | 13.27 |
| Manufacture of machinery and equipment n.e.c. | 19 | 42.11 | 15.79 | 15.79 |
| Manufacture of electrical equipment | 20 | 40.00 | 25.00 | 25.00 |
| Manufacture of computer electronic and optical products | 5 | 60.00 | 40.00 | 40.00 |
| Manufacture of motor vehicles trailers and semi-trailers | 12 | 50.00 | 33.33 | 25.00 |
| Manufacture of other transport equipment | - | - | - | - |
| Manufacture of furniture | 385 | 15.58 | 5.71 | 5.45 |
| Other manufacturing | 185 | 48.11 | 20.00 | 20.00 |
| Total | $\mathbf{3 , 5 5 9}$ | $\mathbf{3 7 . 2 3}$ | $\mathbf{1 8 . 1 2}$ | $\mathbf{1 7 . 1 4}$ |

Table 3 displays the percent of employees of the manufacturing industries under study who accessed computers and internet during the reference period. It generates another important indicator (the proportion/percentage of employees who used computer and internet) during the reference year. It also indicates the size of the workforce in the manufacturing industries under review which was about $(\mathbf{3 7 0 , 2 0 1})$ during the survey year.
Out of all employees of the manufacturing industries about $32.59 \%$ of them accessed computers regularly during the survey reference year. When the comparison is made by industry group the highest percentage (about 50.08\%) of employees who accessed computer during the reference period was reported by the Manufacture of chemicals and chemical products, followed by the Other manufacturing 48.26\%), and Manufacture of beverages (more than $45.44 \%$ ) industry group.
About $29.83 \%$ of all the employees engaged in all manufacturing industries accessed the internet routinely during the reference period. When the analogy is done by industry group the highest percentage of employees who routinely used internet in the same period was reported by the Manufacture of chemicals and chemical products (about $48.41 \%$ ) followed by the Manufacture of fabricated metal products except machinery and equipment (48.18\%), and Manufacture of beverages (about 43.02\%).

Table 3 - Percent of Employees Using Computers and Internet by Industry Group, 2018/2019(2011 E.C)

| INDUSTRY GROUP | Total <br> number <br> of <br> employees | Percentof <br> employees <br> having access <br> to computer <br> Percent of <br> employees <br> having <br> access <br> to internet |  |
| :--- | :--- | :--- | :--- |
| Manufacture of food products | 84,137 | 36.34 | 32.03 |
| Manufacture of beverages | 12,647 | 45.44 | 43.04 |
| Manufacture of tobacco products | - | - | - |
| Manufacture of textiles | 28,446 | 26.55 | 26.98 |
| Manufacture of wearing apparel | 7,321 | 24.54 | 17.19 |
| Manufacture of leather and related products | 9,319 | 36.46 | 30.03 |
| Manufacture of wood and of products of wood \& cork except furniture; manufacture <br> of articles of straw and plaiting materials | 18,526 | 15.00 | 13.91 |
| Manufacture of paper and paper products | 21,816 | 24.08 | 25.12 |
| Printing and reproduction of recorded media | 7,663 | 32.84 | 23.24 |
| Manufacture of coke and refined petroleum products | 251 | 34.00 | 17.00 |
| Manufacture of chemicals and chemical products | 11,765 | 50.08 | 48.41 |
| Manufacture of basic pharmaceutical products and pharmaceutical preparations | 478 | 17.42 | 27.15 |
| Manufacture of rubber and plastic products | 78,121 | 25.74 | 23.89 |


| Manufacture of other non-metallic mineral products | 33,918 | 36.35 | 35.77 |
| :--- | :--- | :--- | :--- |
| Manufacturing of basic metals | 10,776 | 22.51 | 16.50 |
| Manufacture of fabricated metal products except machinery and equipment | 5,091 | 49.24 | 48.18 |
| Manufacture of machinery and equipment n.e.c. | 374 | 13.30 | 6.87 |
| Manufacture of electrical equipment | 1,303 | 11.50 | 13.22 |
| Manufacture of computer electronic and optical products | 619 | 19.50 | 18.67 |
| Manufacture of motor vehicles trailers and semi-trailers | 728 | 8.62 | 6.54 |
| Manufacture of other transport equipment | - | - | - |
| Manufacture of furniture | 4,348 | 34.62 | 34.85 |
| Other manufacturing | 32,554 | 48.26 | 42.04 |
| Total | $\mathbf{3 7 0 , 2 0 1}$ | $\mathbf{3 2 . 5 9}$ | $\mathbf{2 9 . 8 3}$ |

Table 4 demonstrates the number and percent of establishments in the manufacturing industries without internet connection during the survey reference period by reason as reported by the respondents. The establishments were asked one question and assisted to choose one major reason only from a list of reasons for not using the internet during the reference period since the reasons for not using the internet can be many and different.

It is to be noted that $25 \%$ of all the establishments under study during the reference period did not use internet. Of all establishments which did not use internet during the reference period $38 \%, 11 \%, 8 \%$ were from the Manufacture of food products andManufacture of other non-metallic mineral products, and Manufacture of furniture, respectively.
Out of all establishments which did not use internet during the reference period many of them gave various reasons for not using internet in the reference period. When the data is compared by industry group a majority of the establishments in the manufacturing sector did not state a major reason for not using internet during the reference year. Further details are available in the table.

Table 4 - Percent of Establishments Not Using Internet by Reason, 2018/2019(2011 E.C)

|  |  | Percent by Reason |  |  |  |  |  | NS |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| INDUSTRY GROUP | $\begin{array}{\|l\|} \hline \text { Total } \\ \text { Number } \\ \text { of } \\ \text { Establis } \\ \text { hments } \\ \text { Without } \\ \text { internet } \\ \text { connecti } \\ \text { on } \\ \hline \end{array}$ | Can <br> man <br> age <br> with <br> out <br> inter <br> net | Fina ncial Probl ems | Infrastr ucture Proble ms | Lack of Train ed perso nnel | No <br> Ben <br> efit <br> fro <br> m <br> Inte <br> rnet | Oth <br> er <br> reas <br> ons |  |
| Manufacture of food products | 286.00 | 6.23 | 1.01 | 8.62 | 0.73 | 7.06 | 2.57 | - |
| Manufacture of beverages | 10.00 | 5.56 | 1.85 | 5.56 | - | 5.56 | - | - |
| Manufacture of tobacco products | - | - | - | - | - | - | - | - |
| Manufacture of textiles | 52.00 | 4.64 | 1.55 | 7.22 | 1.03 | 7.73 | 4.64 | - |
| Manufacture of wearing apparel | 38.00 | $\begin{array}{\|l} \hline 11.2 \\ 7 \\ \hline \end{array}$ | 1.41 | 7.75 | - | 4.23 | 2.11 | - |
| Manufacture of leather and related products | 31.00 | 7.29 | 1.04 | 12.50 | - | 9.38 | 2.08 | - |
| Manufacture of wood and of products of wood \& cork except furniture; manufacture of articles of straw and plaiting materials | 23.00 | 2.11 | 2.82 | 6.34 | 0.70 | 4.23 | - | - |
| Manufacture of paper and paper products | 13.00 | 2.99 | - | 5.97 | - | 7.46 | 2.99 | - |
| Printing and reproduction of recorded media | 22.00 | 3.03 | 2.02 | 3.03 | 2.02 | 8.08 | 4.04 | - |
| Manufacture of coke and refined petroleum products | - | - | - | - | - | - | - | - |


| Manufacture of chemicals and chemical products | 16.00 | 2.40 | 4.00 | 2.40 | - | 0.80 | 3.20 | - |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Manufacture of basic pharmaceutical products and pharmaceutical <br> preparations | - | - | - | - | - | - | - | - |
| Manufacture of rubber and plastic products | 30.00 | 2.88 | - | 3.37 | 0.48 | 6.73 | 0.96 | - |
| Manufacture of other non-metallic mineral products | 79.00 | 3.25 | 0.38 | 4.40 | 0.19 | 5.16 | 1.72 | - |
| Manufacturing of basic metals | 11.00 | 6.82 | 1.14 | 3.41 | - | 1.14 | - | - |
| Manufacture of fabricated metal products except machinery and <br> equipment | 19.00 | 5.10 | - | 4.08 | 1.02 | 9.18 | - | - |
| Manufacture of machinery and equipment n.e.c. | 2.00 | - | - | 5.26 | - | - | 5.26 | - |
| Manufacture of electrical equipment | 4.00 | 5.00 | - | 5.00 | - | 10.0 | - | - |
| Manufacture of computer electronic and optical products | 1.00 | - | - | 20.00 | - | - | - | - |
| Manufacture of motor vehicles trailers and semi-trailers | 5.00 | 8.33 | - | 16.67 | - | 16.6 | - | - |
| Manufacture of other transport equipment |  |  |  | - | - |  |  |  |
| Manufacture of furniture | - | - | - | - | - | - | - | - |
| Other manufacturing | 62.00 | 4.68 | 0.78 | 4.42 | - | 5.71 | 0.52 | - |
| Total | 43.00 | 2.70 | - | 3.78 | 0.54 | 6.49 | 9.73 | - |

Table 5 illustrates the number and percent of establishments in the manufacturing industries which used internet and the purpose they used for. Here, again the respondents were asked one question and aided to choose only one answer (one major purpose) to the question from a list of purposes because the internet might be used for various purposes in the reference year.

Of all the manufacturing establishments under study $44 \%$ used internet during the reference year. About $28 \%$ and $10 \%$ of the manufacturing establishments which used internet in the reference period were from theManufacture of food products, and, Manufacture of other nonmetallic mineral products respectively.
When the percentage distribution of internet users is contrasted by purpose, more than $10.82 \%$ of all establishments in the manufacturing industries used internet for placing purchase orders, more than $3.93 \%$ used it for e-mailing, and about $10.96 \%$ used internet for internal use.
When the comparison is made by industry group, about $40 \%$ of the establishments in the Manufacture of basic pharmaceutical products and pharmaceutical preparations used internet for placing purchase orders in the reference year. Another $22.73 \%$ of the establishments in the Manufacturing of basic metals used internet for the same purpose. And $22.39 \%$ of the establishments in the Manufacture of paper and paper products used internet for placing purchase orders. More than $20 \%$ of the establishments in the Manufacture of computer electronic and optical products used internet for e-mailing.
The tables can be explored further for more details as and when the need for more information arises.

Table 5 - Percent of Establishments using Internet by Purpose and Industrial Group, 2018/2019(2011 E.C)

|  |  | Percent of Users of Internet by Purpose |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| INDUSTRY GROUP | Total <br> Number of <br> Establishm <br> ents <br> With <br> internet <br> Connection | For <br> placin <br> g <br> purcha <br> se <br> orders | For <br> receivi <br> ng <br> purcha <br> se <br> orders | For <br> advertise <br> ment | For <br> intern <br> al use | For <br> exchangin <br> g <br> informatio <br> n with <br> other <br> establishm <br> ents | For <br> accessing <br> informati <br> on <br> from <br> governme <br> nt <br> organizati <br> ons |
| Manufacture of food products | 369 | 11.27 | 2.84 | 1.83 | 9.07 | 4.12 | 0.64 |
| Manufacture of beverages | 40 | 16.67 | 5.56 | 3.70 | 20.37 | 14.81 | 1.85 |
| Manufacture of tobacco products | - | - | - | - | - | - | - |
| Manufacture of textiles | 92 | 17.01 | 2.06 | 1.55 | 11.34 | 5.67 | 3.09 |
| Manufacture of wearing apparel | 43 | 5.23 | 1.41 | 2.11 | 10.56 | 2.11 | 1.41 |
| Manufacture of leather and related products | 43 | 5.21 | 4.17 | 6.25 | 6.25 | - |  |
|  <br> cork except furniture; manufacture of articles of <br> straw and plaiting materials | 39 | 12.68 | 0.70 | - | 6.34 | 0.70 | - |
| Manufacture of paper and paper products | 39 | 22.39 | 4.48 | 2.99 | 14.93 | 2.99 | - |
| Printing and reproduction of recorded media | 71 | 14.14 | 6.06 | 13.13 | 24.24 | 6.06 | - |
| Manufacture of coke and refined petroleum <br> products | 1 | - | - | - | - | 100.00 | - |


| Manufacture of chemicals and chemical products | 72 | 18.40 | 4.80 | 2.40 | 17.60 | 1.60 | 5.60 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Manufacture of basic pharmaceutical products <br> and pharmaceutical preparations | 5 | 40.00 | - | 20.00 | 20.00 | 20.00 | - |
| Manufacture of rubber and plastic products | 115 | 13.94 | 5.29 | 3.85 | 15.87 | 1.92 | 2.88 |
| Manufacture of other non-metallic mineral <br> products | 137 | 6.12 | 0.19 | 0.57 | 14.53 | 1.34 | 0.38 |
| Manufacturing of basic metals | 62 | 22.73 | 1.14 | 2.27 | 14.77 | 10.23 | 5.68 |
| Manufacture of fabricated metal products except <br> machinery and equipment | 28 | 1.02 | 4.08 | - | 15.31 | 5.10 | - |
| Manufacture of machinery and equipment n.e.c. | 8 | 10.53 | - | 10.53 | 15.79 | - | - |
| Manufacture of electrical equipment | 8 | 10.00 | - | 10.00 | 15.00 | - | - |
| Manufacture of computer electronic and optical <br> products | 3 | 20.00 | - | - | 20.00 | - | - |
| Manufacture of motor vehicles trailers and semi- <br> trailers | 6 | 8.33 | 8.33 | 16.67 | 16.67 | - | - |
| Manufacture of other transport equipment | - | - | - | - | - | - | - |
| Manufacture of furniture | 60 | 4.16 | 0.52 | 1.82 | 2.08 | 2.34 | -1.56 |
| Other manufacturing | 89 | 17.84 | 3.24 | 4.32 | 9.19 | 5.95 | 1.62 |
| Total | $\mathbf{1 , 3 2 5}$ | $\mathbf{1 0 . 8 2}$ | $\mathbf{2 . 4 4}$ | $\mathbf{2 . 3 9}$ | $\mathbf{1 0 . 9 6}$ | $\mathbf{3 . 6 8}$ | $\mathbf{1 . 9 6}$ |

Table 5 (Continued) Percent of Establishments using Internet by Purpose and Industrial Group, 2018/2019(2011 E.F.Y)

|  |  | Percent of Users of Internet by Purpose |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| INDUSTRY GROUP | Total <br> Number of Establishme nts With internet Connection | For providi ng Other servives To custome rs | For paymen ts | For emaili ng | For Telephoni ng Over the Internet | For Instant Messagi ng | Non <br> e |
| Manufacture of food products | 369 | 0.46 | 0.18 | 2.29 | 0.46 | 0.55 | 0.09 |
| Manufacture of beverages | 40 | - | 1.85 | 9.26 | - | - | - |
| Manufacture of tobacco products | - | - | - | - | - | - | - |
| Manufacture of textiles | 92 | - | 1.03 | 5.15 | - | - | 0.52 |


| Manufacture of wearing apparel | 38 | - | 1.41 | 3.52 | - | - | - |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Manufacture of leather and related products | 43 | 2.08 | 3.13 | 12.50 | - | - | - |
| Manufacture of wood and of products of wood \& cork except furniture; manufacture of articles of straw and plaiting materials | 39 | - | - | 7.04 | - | - | - |
| Manufacture of paper and paper products | 39 | 2.99 | 2.99 | 4.48 | - | - | - |
| Printing and reproduction of recorded media | 71 | - | - | 7.07 | - | 1.01 | - |
| Manufacture of coke and refined petroleum products | 1 | - | - | - | - | - | - |
| Manufacture of chemicals and chemical products | 72 | - | 0.80 | 6.40 | - | - | - |
| Manufacture of basic pharmaceutical products and pharmaceutical preparations | 5 | - | - | - | - | - | - |
| Manufacture of rubber and plastic products | 115 | - | 2.88 | 8.17 | - | 0.48 | - |
| Manufacture of other non-metallic mineral products | 137 | 0.38 | - | 2.49 | 0.19 | - | - |
| Manufacturing of basic metals | 62 | - | 4.55 | 6.82 | - | 2.27 | - |
| Manufacture of fabricated metal products except machinery and equipment | 28 | 1.02 | - | 2.04 | - | - | - |
| Manufacture of machinery and equipment n.e.c. | 8 | - | - | 5.26 | - | - | - |
| Manufacture of electrical equipment | 8 | - | - | - | - | 5.00 | - |
| Manufacture of computer electronic and optical products | 3 | - | - | 20.00 | - | - | - |
| Manufacture of motor vehicles trailers and semitrailers | 6 | - | - | - | - | - | - |


| Manufacture of other transport equipment |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Manufacture of furniture | - | - | - | - | - |  |  |
| Other manufacturing | 60 | 0.52 | 1.04 | 1.56 | - |  | - |
| Total | 89 | - | 1.08 | 4.86 | - | - |  |

Table 6 portrays the number and percent of establishments in the manufacturing industries which had website and used websites for different purposes. The respondents were asked one question and aided to choose only one answer (one major purpose) to the question from a list of purposes they used the website for.

Of all manufacturing establishments under study in 2019/20(2012 E.C) more than $21 \%$ had websites (web presence). Comparing all establishments which reported web presence in the reference year by industry group about $31 \%$ and $8 \%$ were reported to be from theManufacture of food products, and Manufacture of rubber and plastic products, respectively.
When the use of web presence is scrutinized by purpose, of all establishments in the manufacturing industries with web presence about $8 \%$ used their web sites for placing product types and prices, more than $3 \%$ used their web presence for providing other information to their customers, more than $3 \%$ used it for placing purchase orders, and about $3 \%$ used it for receiving purchase orders.
When analysed by industry group, of all the establishments in the manufacturing industries reporting web presence, more than $100 \%$ of the establishments in the Manufacture of coke and refined petroleum products and another $26 \%$ of the establishments in the Manufacture of beverages, and $25 \%$ of the establishments in the Manufacture of paper and paper products used their web presence for placing product types and prices. More than $40 \%$ of establishments in the Manufacture of basic pharmaceutical products and pharmaceutical preparations, Manufacture of computer electronic and optical products used their web presence for providing other information to customers, and about $10 \%$ of establishments in the Manufacture of electrical equipment used their web presence for providing other information to customers and more than $9 \%$ of the establishments in the Manufacture of textiles and Manufacture of beverages also used their web presence for the same purpose as in the above. The table offers additional details.

Table 6 Percent of Establishments using Website by Purpose and Industrial Group, 2018/2019(2011 E.F.Y)

|  |  | Percent of Users of Website by Purpose |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| INDUSTRY GROUP | Total <br> Number of Establis hments With Website | $$ | For <br> placi <br> ng <br> purc <br> hase <br> orde <br> rs | For recei ving purc hase order s | For <br> introd <br> ucing <br> local <br> cultur <br>  <br> Langu <br> age | For <br> provid ing other inform ation to custo mers | $\begin{aligned} & \hline \text { No } \\ & \text { ne } \end{aligned}$ | NS |
| Manufacture of food products | 201 | 8 | 3 | 3 | - | 2 | 2 | - |
| Manufacture of beverages | 30 | 26 | 6 | 9 | - | 9 | 6 | - |
| Manufacture of tobacco products | - | - | - | - | - | - | - | - |
| Manufacture of textiles | 43 | 9 | 1 | 2 | - | 9 | 1 | - |
| Manufacture of wearing apparel | 11 | 2 | 1 | 2 | - | 3 | - | - |
| Manufacture of leather and related products | 21 | 8 | 5 | 3 | - | 5 | - | - |
| Manufacture of wood and of products of wood \& cork except furniture; manufacture of articles of straw and plaiting materials | 30 | 13 | 1 | 6 | 1 | - | - | - |
| Manufacture of paper and paper products | 23 | 25 | 3 | 3 | - | 3 | - | - |
| Printing and reproduction of recorded media | 22 | 13 | 4 | 3 | - | 2 | - | - |
| Manufacture of coke and refined petroleum products | 1 | 100 | - | - | - | - | - | - |


| Manufacture of chemicals and chemical products | 41 | 14 | 10 | 5 | 1 | 3 | - | - |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Manufacture of basic pharmaceutical products and pharmaceutical preparations | 4 | 20 | 20 | - | - | 40 | - | - |
| Manufacture of rubber and plastic products | 52 | 11 | 6 | 4 | - | 3 | 0 | - |
| Manufacture of other non-metallic mineral products | 47 | 4 | 1 | 2 | - | 1 | 1 | - |
| Manufacturing of basic metals | 32 | 9 | 16 | 3 | 2 | 6 | - | - |
| Manufacture of fabricated metal products except machinery and equipment | 14 | 4 | 4 | 1 | - | 4 | 1 | - |
| Manufacture of machinery and equipment n.e.c. | 3 | - | 5 | 5 | - | 5 | - | - |
| Manufacture of electrical equipment | 5 | 15 | - | - | - | 10 | - | - |
| Manufacture of computer electronic and optical products | 2 | - | - | - | - | 40 | - | - |
| Manufacture of motor vehicles trailers and semi-trailers | 4 | 17 | - | 8 | - | - | 8 | - |
| Manufacture of other transport equipment | - | - | - | - | - | - | - | - |
| Manufacture of furniture | 22 | 4 | 0 | 1 | - | 1 | 0 | - |
| Other manufacturing | 37 | 9 | 5 | 3 | - | 3 | - | - |
| Total | 645 | 8 | 3 | 3 | 0 | 3 | 1 | - |

## Large and Medium Scale Manufacturing Industries Survey

PART IX ICT Access and Use by Large and Medium Scale Manufacturing Industries, 2019/2020(2012 E.C)

| Serial <br> No. | Questions | Code |
| :---: | :---: | :---: |
| 1 | Did the industry use computers during the survey year? Yes = 1 No = 2 |  |
| 2 | If the answer to question number 1 is yes, how many computers did the industry use during the survey year? |  |
| 3 | If the answer to question number 2 is 2 or more, did the industry also have Local Area <br> Network (LAN) during the survey year? $\quad$ Yes $=1 \quad$ No $=2$ |  |
| 4 | If the answer to question number 1 is yes, what percentage of the workers used computers routinely at work during the survey year? |  |
| 5 | If the answer to question number 1 is yes, did the industry use internet during the survey year? $\text { Yes }=1 \quad \text { No }=2$ |  |
| 6 | If the answer to question number 5 is yes, what percentage of the workers used internet routinely at work during the survey year? |  |
| 7 | If the answer to question number 5 is yes, what did the industry mostly use the internet for during the survey year? <br> Placing purchase orders over the internet $=1$ <br> Receiving purchase orders over the internet $=2$ <br> Advertisement $=3$ <br> Internal use only $=4$ <br> Exchanging information with other industries $=5$ <br> Obtaining information from government organizations $=6$ <br> Providing other services to customers $=7$ <br> Payment purposes $=8$ <br> e-mail $=9$ <br> Telephoning over the internet $=10$ <br> Instant messaging $=11$ <br> None of the above $=12$ |  |
| 8 | If the answer to question number 5 is no, what was the reason for not using the internet during the survey year? <br> Carrying out dealings in person (physically) $=1$ <br> Financial problems $=2$ <br> Infrastructural problems $=3$ <br> Lack of trained personnel $=4$ <br> Industry did not benefit from internet $=5$ <br> Others $($ specify $)=6$ |  |


| 9 | Did the industry have a Web presence (website) in the survey year? Yes =1 <br> No = 2 | If the answer to question number 9 is yes, what did the industry mostly use its <br> website for <br> during the survey year? <br> Placing the industry's product types and prices over the website $=1$ <br> Placing purchase orders over the website $=2$ <br> Receiving purchase orders over the website =3 <br> Introducing the local culture and language on the website = 4 <br> Providing information other than the above to customers on the website |
| :---: | :--- | :--- |
| 10 | None of the above =6 |  |
| 11 | Did the industry benefit from the use of ICT (computer, internet, and website) during <br> the <br> survey year? |  |

