

Information and Communication Techniques in the Appropriation of Technology in Riohacha SMEs

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Abstract

The main objective of this research was the evaluation of information and communication techniques in the appropriation of technology in the SMEs of Riohacha in Colombia. Methodologically, it was typified as descriptive, not experimental. As a data collection instrument, a questionnaire consisting of 36 items was used. The results obtained during the investigation indicated that for the studied ones, the web resource is determined due to the dynamism of the daily activities that are carried out, conceiving the internet in general as the ideal tool of these times to obtain labor benefit. Also that the maintenance techniques used in its technological structure work, with the help of technological support for the fulfillment of its purposes, with better training of the personnel for the management of these resources.

Keywords: Technological Resources, ICT, Technological Gap, Technological Structure

Introduction

The small and medium-sized enterprises (SMEs) are an important part in the national economy of a country [1]. Because they are one of the key sectors to improve employment levels in most economies, It is also known that these companies

can have a leading role in the creation of sources of innovation and technologies, offering competitive advantages in productive activities or service areas. Nevertheless, Market access, which is a strong point in the growth of SMEs, depends to a large extent on the availability of ICT (Information and communication technologies) resources [2]. Due to these have an impact on the improvement of external and internal communication, it improves organizational processes and competitiveness [3]. However, for a small business to adopt these technologies successfully, its directors must understand the way and the advantages of using them and share that information with their employees.

The above represents one of the problems of SMEs, because employees and decision makers in these companies generally lack knowledge and skills about these technologies, which means that small businesses lose many business opportunities; this is evidenced by implementing and using the Internet for commercialization [1]. On the other hand, many of the SMEs cannot face limitations, such as technical, economic and legal barriers, so they need to go to public and / or private support [4]. An example of this is provided by the literature in the study carried out by [5], which shows that the importance of these tools, as a significant growth factor, is underestimated by entrepreneurs in the SMEs sector, because employers do not notice the benefits of ICT implementation, therefore, investments in this area are minimal. In addition, in [6] it was evidence that the level of ICT skills that SMEs owners possess is low, that their ICT use is low and that their adoption is slow and late, mainly because they consider ICT adoption difficult.

In this sense, it is perceived that as computer environments become more complex, the level of specialization of staff training, the use of networks and the experience that is needed will increase. Therefore, it is necessary to take measures to facilitate the adoption of these tools, because if there is no culture of appropriate appropriation of technologies, it is difficult to guarantee the operational continuity of small and medium enterprise. The above can occur mainly because it does not support the high levels of availability, which will lead to future problems in the communication process, because if not updated, the main consequence would be that the response time is slow and the reception capacity has not been appropriate to the dynamics imposed by the current business world. It is for this reason that this research seeks to analyze information and communication techniques in the appropriation of technology in Riohacha SMEs, propose indicators of this management, where the priority is to analyze resources, applications and technological gaps, to reinforce business action.

Methodology

The present study was methodologically framed within the descriptive type, which is identified by the collection of information related to the real state of a sample or population under study, describing what is measured without making inferences or verifying hypotheses [7]. On the other hand, this research is field because it went to the site to apply the instrument in the SMEs of Riohacha in Colombia, in this case, information was obtained directly from the source, i.e. in the sector under

study, since the data was collected directly in the environment where the events occurred, without the researcher having control of the variable [8]. Regarding the design, was taken the transverse non-experimental and descriptive, it is characterized as non-experimental, because the quality of the variant, its dimensions and indicators, were analyzed in their natural state, without the intervention of the researcher. It was also classified as transversal and descriptive because the variable information and communication technologies was developed in a single time and each of its elements that were characterized was described. Regarding the Population, it was formed by the commercial area managers of the selected companies or positions in depended charge which due to its size, it was not necessary to calculate a sample, but it was considered as population census according to the exposed by [9]. Table 1 shows the distribution of the population.

Table 1. Population Distribution

SMB Companies	Interviewed
Starcoop	1
Solior LTDA	1
Arte y Estilo	1
Uniguajira productiva	1
Distribuidora J:R:	1
Ferretería Waspi	1
Muebles y variedades la 2G	1
Fundación Koortirwa	1
Variedades rey de reyes	1
Distribuidora Bethel	1
Total	10

Research instruments

As an information collection technique, the observation was used by means of a survey and the questionnaire was used as an instrument, because it was considered the appropriate method to collect the information related to the opinion and attitude of each of the subjects that make up the sample of the investigation. In this sense, the questionnaire directed to the subjects of the sample, was designed with 36 items, designed to measure the indicators of the variable under study, it allowed the search and reception of numerical information, which were made in function of Lickert scale, with a total of five alternatives. For reliability, the instrument was applied to a sample of 5 individuals; different to the sample object of study but similar to the population under study. To the data contributed of this test called "pilot test", the Cronbach's alpha formula was applied, which generated a coefficient r in 7.95 according to the formula, being located in a high category.

Data analysis

The statistical treatment of the data was carried out through a statistical program called SPSS version 18.0, which showed graphs and frequency related to the problem. On the other hand, [9] clarify that the study of the descriptive nature, the analysis of the data of the same nature, that is, the descriptive statistical treatment,

so that after applying the instrument of data collection to the subjects that made up the population under study, a matrix was developed when the rows represent the variables of each individual and the columns represent the elements of the instrument. The data obtained were analyzed, using for this, a type of descriptive statistics, specifically absolute and percentage frequencies.

Results

Next, the results of the Information and Communication Technology variable are displayed, According to the dimensions and indicators (Table 2).

Table 2. Statistical for dimensions.

Indicators	Always		Almost always		Sometimes		Almost Never		Never		X
	af	rf	af	rf	af	rf	af	rf	af	rf	
Dimension: Types of information and communication technology											
Email	0	0	4	44	6	56	0	0	0	0	3.43
Electronic journal	0	0	2	20	5	50	3	30	0	0	2.8
Video Conference	0	0	2	20	4	40	4	40	0	0	2.6
Average											2.94
Dimension: Information and communication technology resources											
Internet	2	20	2	20	5	50	1	10	0	0	3.43
Web resources	0	0	8	80	2	20	0	0	0	0	4.07
Multimedia	2	20	3	30	3	30	2	20	0	0	3.2
Average											3.57
Dimension: Information and communication technology applications											
E-commerce	3	30	3	30	3	30	1	10	0	0	3.8
E-business	1	10	4	40	5	50	0	0	0	0	3.47
Web page	0	0	0	0	5	50	5	50	0	0	2.47
Average											3.24
Dimension: Technological gaps											
Technological infrastructure	0	0	4	40	6	60	0	0	0	0	3.45
Technological support	0	0	3	30	6	60	1	10	0	0	3.2
Internet Access	0	0	2	20	2	20	5	50	1	10	2.43
Average											3.01

Dimension: Types of information and communication technology

In table 2, it was evidenced that for the indicator, email, 56% of the interviewees sometimes used the service for the exchange of messages, as well as the tool for sending attachments to the medium of computer networks, then 44% indicated doing it almost always. This result agrees with the findings in [10], where an almost universal adoption of the use of electronic mail appeared. However, in [11]. The results indicate that they use an application that has improved mobility compared to email, which can be used for real-time communication, but it is also possible to respond to this with more time to think and prepare before responding to the other side.

Regarding the indicator, electronic magazine, it was known that 50% sometimes indicated to develop the use of audio in publications, On the other hand 30% thought almost never and 20% almost always do it or use it. This result is positive

according to the theory expounded by [12], who states that a magazine is a diverse tool and serves its readers in many ways, for example, it must be enlightening and entertaining, it must provide ideas and points of view, and it must educate and inform. Finally, for the indicator, video-conference 40% responding sometimes the training of personnel is developed with this tool, for obtaining other institutional benefits or achieving resources with this tool, likewise 40% indicated that they almost never do it, Contrary to 20%, which stated that almost always makes use of this tool.

These results are contrary to the findings in [13], where it was found that more than 50% of SMEs investigated used tools such as emails, databases, document management systems, audio conferencing / video conferencing, cloud computing, point-to-point resource exchange, ERP systems and data warehouse. In addition, [14] affirmed that the use of videoconferencing to impart education and corporate training directly in the workplace has been the most successful and fastest growing application of video conferencing. The advantages obtained with the use of video conferencing are, among others, the increase in the student population that receives the courses, the reduction in operating costs and the organization of the courses.

Dimension: Information and communication technology resources

The table 2, evidence that for the Internet indicator, 50% of the interviewees said that sometimes they had easy internet access, in addition to gaining employment benefits because they were able to develop new protocols for the company, On the other hand, 20% always say they do it, like 20% with the option almost always, contrary to the opinion of 10% who said almost never do it. These results differ from the findings in [15], where it was found that SMEs face greater difficulties with respect to the integration of the Internet compared to medium-sized enterprises. However, it agrees with the results of [16], where it was identified that the Internet was seen as a business tool that presented an advantage over traditional methods. For the analysis of the web resource indicator, 80% of the interviewees said they almost always have the appropriate resources for their use, with management on the use of hyperlinks on the website, which gives dynamism to their daily activities, then, 20% said they sometimes use it. These results are positive according to the perception found in [16], where it was found that an important aspect of the Internet was the advantage that a website had over traditional forms of advertising and retail, for example, The online shopping service on a website eliminates the 'excess' of people in stores who know exactly what they want.

Likewise, for the multimedia indicator, 30% said almost always integrate the content of a single presentation, since it allows you to make illustrations in your presentations, even conferences with this tool, In the same way, 30% said, sometimes, 20% said they always do it, contrary to the same 20% who answered that they almost never use it. This result is positive for the appreciation of [17], who says it is the dissemination of information in more than one way. In this way it includes the use of text, audio, animated graphics and full motion video. From this point of view, multimedia is used for the need to transmit information, in the specific

case referred to education this means leads the student interactively through the subjects. Thus, phenomena and techniques can be learned by taking advantage of any information that the user wants.

Dimension: Information and communication technology applications

According to the results observed in table 3, for the e-commerce indicator, 30% of the interviewees always said, perform the manipulation of the information correctly and satisfactorily in the processing, since it covers the needs of any type of equipment, likewise 30% said almost always and sometimes, ending with the 10% who expressed that almost never use this resource. These results agree with the findings in [18], where it was found that most of the small and medium companies that use this tool are due to the benefits they offer, in the same way, the results revealed that participating SMEs that have adopted EC technologies can be organizationally prepared and comply with environmental pressure, but ignore the influence of the potential benefits of the adoption of email and the Internet.

In the e-business indicator, 50% said, sometimes making electronic sales connections, and being directly involved with the company's finances because it offers possibilities for business improvements, followed by 40% who said almost always, about 10% this always happens. Consequently, there is an affinity with the approach made by the author [19], who expresses that e-business includes connections of electronic sales to other parts of an organization that is internally related to finances, staffing, marketing, customer service, and external customers, suppliers and management ultimately. Similarly, [4] found that SMEs can take advantage of the opportunities offered by electronic commerce to access new markets, often, distant, or global value chains. However, despite its benefits, a series of technical and technical limitations with electronic commerce that limit or prevent SMEs from entering into operations of information technology and electronic commerce.

In the indicator, the web page shows 50% of the opinions, the result of this tool, the fact that the design is pleasant and offers important data in this way, likewise 50% thought that it almost never uses this tool. These results agree with those found in [16], where it was discovered that websites are more complex and require more time and resources and only two SMEs created their own website, although initially it was intended to outsource the design. Similarly, they agree with the findings of [20], where considerable evidence was found that SMEs use websites in a limited way, because they are based on their understanding of websites as incompatible with the system of cultural negotiation, characterized by cash transactions and face-to-face negotiation. Nevertheless, SMEs websites can portray a sophisticated image and advertise/market their products.

Dimension: Technological gaps

Table 4 shows that for the technological infrastructure indicator, 60% of those interviewed agreed that it sometimes uses technological means to operate it, while at the same time it has maintenance techniques appropriate to the service using the technology resources that requires, while 40% manifest almost always. Referring

to this, [21] state that the effective implementation of the technological aspects of the strategy requires an understanding of the nature of the external infrastructure that supports technological change and the strategic capacity to continuously interact with this infrastructure. Likewise, in [22], he affirms that public investment in technological infrastructure and intellectual capital is crucial for successful economic development to build competitiveness.

Regarding the indicator, technological support, evidenced that 60% of the respondents sometimes have trained personnel to manage it or have the necessary resources for its use, because it considers the learning obtained to be enriching, 30% said almost always making use of this, finally 10% said almost never be like this. Respecting to the internet access indicator, it was known that 50% consider that they almost never use rapid search methods, or that they obtain mental abilities with their use because the information obtained is easy to understand, on the other hand 20% affirm that sometimes they use this resource as the other 20% said almost always, Contrary to the final 10% who said never. These results differ from the findings in [16], where staff attitudes toward the Internet were positive. In addition, the speed and capacity of existing networks in SMEs are at the upper end of information technology.

Conclusions

After exploring and verifying the results obtained from evaluating the information and communication techniques in the appropriation of technology in the SMEs of Riohacha in Colombia, it is concluded that the electronic mail tool is used for its performance, also the use of audio in their electronic publications and acceptance of the video conference method for their performance. Likewise, it is concluded that the web resource is determined due to the dynamism of the daily activities that are carried out, conceiving the internet in general as the ideal tool to obtain a good work performance, in the development of new administrative processes. In the same way it is concluded that the e-commerce tool allows the correct manipulation of the resource for any procedure, as well as being involved with e-business, it is increasingly improved as companies, contrary to what is reflected in the web pages of the which there is no better experience. Finally, it is concluded that the maintenance techniques used in its technological structure work hand in hand with technological support for the fulfillment of its purposes, with better training of personnel for the management of these resources.

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