

Application of Information Technology in Institutions and Challenges of Human Resources-Case Study: Administration of the Municipality of Ferizaj

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Abstract

This study aims to investigate how information technology is applied in the administration of the municipality of Ferizaj and what are the challenges with human resources, the work was carried out through a case study in the municipality. This paper highlights that the use of information technology provides higher efficiency for the performance of daily work in the municipality, thus also the provision of better services to citizens. However, the level of use of information technology in the Municipality of Ferizaj leaves much to be desired in terms of efficiency because a significant number of employees have not attended adequate training for the effective and efficient use of various IT applications and have not are still adapted to the digital environment in the municipality. Therefore, the recommendation derived from this paper is that the information technology environment in the municipality of Ferizaj needs to be improved by providing staff with adequate qualifications, while for those who are currently engaged in the municipality and who do not have adequate qualifications, training should be provided in a way that all users of IT applications are fully integrated into the digitized environment in order to be effective and efficient in providing services to citizens. This simultaneously gives the municipal staff job security and motivation for better services for citizens. Also, information technology enables a better control over the activity of the municipality because every action is recorded as data which can then be used to analyze the performance of the municipality.

Keywords

Information Technology, Human Resources, Administration of the Municipality of Ferizaj, Digitalization

1. Introduction

Noticing the importance of this topic and the problems we may encounter from the lack of IT, we have decided to do more detailed research regarding the application of information technology in institutions and the challenges of human resources with special emphasis on administration of the municipality of Ferizaj.

Information technology (IT) has become an indispensable part of the modern world, penetrating all areas of our life and work and becoming an integral part of them. It has revolutionized how enterprises and institutions carry out their daily activities, and in particular, has had an intense effect on Human Resources (HR) processes and practices. Today, IT is the backbone of modern businesses/institutions, it is part of business success, and it represents a decisive field of leadership and organization [1].

The success of modern enterprises and institutions, regardless of their size and activity, is increasingly dependent on the use of IT and skilled HR in this field. The use of IT helps institutions not only to achieve the defined goals but also to optimize work processes. For this reason, HR knowledge in the field of IT is a priority in daily work and the lack of knowledge in the field of IT represents an obstacle.

Human resource management (HRM) takes care of employees in an enterprise, organization, or institution. It is a scientific discipline that has a man and his professional training as its subject. It is in the function of meeting the needs of the enterprise with human resources in number, time, preparation, dexterity, and necessary skills. HRM is responsible for how people are managed in the enterprise, it is responsible for bringing new people into the enterprise, it is responsible for helping them so that their work performance is as good as possible, for the compensation for the work theirs and if problems arise, try to solve them. [2].

In addition to these, the pandemic has necessitated the use of online communication applications such as Zoom, Teams, and the like, which has placed an additional demand on HR to acquire new skills to respond to the needs of the time.

In the reports of performance audits in the field of information technology published by the National Audit Office (NAO), numerous shortcomings in the use of information technology, information security, and weak controls in information systems have been presented. From the conducted audits, it is observed that despite the investments in these applications, none of them has reached the full objective for which they were financed.

2. Literature Review

The literature review will be done in order to find ICT theories, a process which is important for every organization. This chapter is divided into several parts that help to create the theoretical framework of the whole paper in a clear and logical way.

2.1. Information and Communication Technology [ICT]

ICT is the combination of three words: INFORMATION, COMMUNICATION and TECHNOLOGY. From these three words we can define ICT as “a combination of technological tools and resources that are used to manipulate and communication the information. Here technological tools are the electronic & digital devices like computers, Internet and broadcasting technologies etc. Nowadays ICT (Specially an internet) plays very important role in the process of integrating technology into the educational activities. The importance of ICT is: Students Centred Learning, Supporting Knowledge Construction (Constructivism Learning), motivation to learn, Developing Higher Order Thinking Skills, Developing Problem Solving Attitude and Creating interest.

ICTs can play the same role in our information and communication process and their outcomes as played by other technologies in making our lives quite comfortable and purposeful. As a result, they have become quite popular in all walks of our life. The modern

ICTs, in fact, have brought a revolution in the field of business, industry, insurance, banking, agriculture, medicine, transport, postal and telecommunications, service organizations and various other fields affecting our day-to-day activities.

ICT is defined, as a “diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information. Information and Communication Technology implies the technology which consists of electronic devices and associated human interactive materials that enable the user to employ them for a wide range of teaching-learning processes in addition to personal use. These technologies include computers, the Internet, broadcasting technologies (radio and television), and telephony.

ICT is that technology which uses the information to meet human need or purposes including processing and exchanging. Information and communication technologies are of paramount importance to the future [3].

2.2. Information Technology

In the early days of humanity, man counted the head of cattle by placing lines of trees. Slowly, these lines changed into numbers. In order to make the numbers of the sums of the calculation, the inventions of the machines began.

The term computer is derived from the Latin word compute which means to calculate. A computer is an electronic machine, designed to perform calculations and control actions that can be expressed in logical or numerical terms. A computer is an electronic device that performs various operations with the help of instructions to process information to achieve desired results. Computer application extends to cover large areas including education, industries, government, medicine, scientific research, etc.

The results obtained from data processing are called information. Information is needed in virtually every area, thought, and action. But in addition to being

essential for the individuals who use it, the information is also needed by managers in organizations. The success of any business is determined by the success of its managers in performing their activities. In short, quality information leads to better managerial decisions and effective managerial performance leads to organizational effectiveness [4].

Information technology (IT) is the use of computers to store, retrieve, transmit, and manipulate data or information. It is considered to be a subset of information and communication technology (ICT). An information technology system (IT system) is generally an information system, a communication system, or a computer system including all hardware, software, and peripherals operated by a limited group of IT users.

Information technology broadly includes information infrastructure, communication infrastructure, institutional infrastructure, and instructional infrastructure. It can provide access to resources around the world, facilitate the accumulation, generation, and presentation of data, provides tools for analysis and modeling of deeper and more realistic examples in a short time, investigates and extends the human ability to visualize, organize and analyze data, etc [5].

2.3. Human Resource Management

Human resources (HR) were initially considered as an expense but now they are considered as resources and more and more are being called human capital. An organization's HR and how they are managed represent the organization's present and future competitive advantage.

Sam Walton, founder of Walmart and one of the richest people in the world, when asked what was the key to the success of a successful company, he answered: "People are the key." While, Peter Drucker emphasizes, in particular, the human resource, writing that: "The business enterprise or any other institution has only one real resource—the human being"!

The human resources of the organization represent the knowledge, skills, and ability to work alongside the realization of the organization's objectives. Whereas, the management of human resources in the organization must do HR planning, recruitment, selection, development, control, and reward as well as offer support for their adaptation to work [6].

3. Research Methodology

This chapter explains the methodology used to carry out this study. During the chapter, the quantitative and qualitative methods that were used, the selection of the sample, the research instruments and the method of data collection and analysis will be explained.

The strategy to collect and analyze the data consists of the case study in the municipality of Ferizaj which will be analyzed to deeply understand the issue of the level of ICT used in the administration as well as the knowledge used by

human resources and their evolution based on ICT—I applied.

A cross-sectional or short-term study, involving the collection of data at a specific point in time, is consistent with the objective of this study. This means that the data will be collected simultaneously by the relevant IT and HR departments to analyze and ascertain how IT has been used and how HR has been found during the application of IT.

The techniques and procedures for data collection and analysis will mainly be based on the collection of secondary data provided by the Personnel Office from which we provide the number and structure of employees in the municipality of Ferizaj as well as the relevant qualifications.

According to the 2019 budget, the number of employees in the municipality of Ferizaj was 2393, while at the end of the year, their number was 2463 (including 58 assembly workers). Of these, 360 people with different professions work in the administration of the municipality of Ferizaj, distributed in 11 Directorates. All of these, in the job description, are charged with work and tasks, the performance of which represents the necessity of using information and communication technology (ICT).

The questionnaire will contain open questions, closed questions, semi-closed questions, and Likert scale questions. The population includes the employees of the municipality of Ferizaj, while the sample will be random for the workers, while the managers will be included as a whole.

In this paper, the population includes the employees of the municipality of Ferizaj, while the sample is representative of the population, based on the fact that there are two basic types of models for determining the sample: 1) The probability model in which each member of the population has a probability be chosen and 2) Non-probability model (purposive): in which the model is chosen based on personal judgment, forced by the epidemic situation, we will be based on the non-probability model and we will survey 100 employees. The questionnaire will contain open-ended questions, closed-ended questions, semi-open-ended questions, and questions based on the Likert scale.

As a supporting method, we will use the unstructured interview before the survey began, based on the fact that this often provides us with some information that is not found in the literature but is the result of experiences so far.

The GrafStat program will serve us as a supporting instrument. According to the author of this program, [7] GrafStat is a program for survey (survey) projects and supports all aspects of such a project. It starts with the creation of the questionnaire form, continues with the preparation of the questionnaire until its printing, or the creation of a ready form of the questionnaire in the HTML format of the Internet, the use of various methods for complex data analysis, complex evaluations as well as document the survey. GrafStat offers all the necessary functions in a single interface, and long-intensive jobs are done with one click. We will also use MS Excel in certain cases, as it combines very well with GrafStat.

4. Analysis of the Results

Case study—IT application in institutions and human resources challenges in the administration of the Municipality of Ferizaj. This research aims to analyze and identify what is the level of IT application in the municipality of Ferizaj, including Hardware, Software, Databases, People, and Procedures. Also, through the questionnaire, we learn the structure of HR for the application of IT, based on the growing demands of IT and the perspectives of the application of new IT in the municipality of Ferizaj and the possibilities of HR development.

Graph 1 shows that out of a total of 100 respondents, 53 of them were women and 47 of them were men.

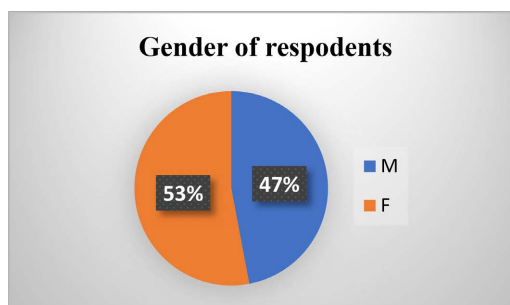
Graph 2 also shows that we are dealing with different ages of respondents who participated in this study. The minimum age of respondents is 46 - 55 years, while the maximum age is 26 - 35 years.

In **Graph 3**, 36% of the respondents have completed master's education, 51% have completed university, 11% have completed secondary education and 2% have completed primary education.

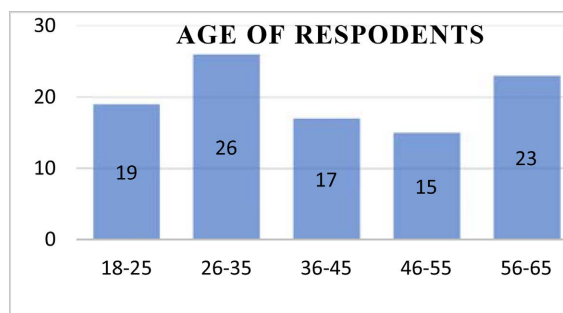
In **Graph 4**, 66% of the respondents have an official position, 23% of them have a leadership position and 11% of them have a director position.

4.1. How Do You Provide Services to Customers?

In the municipality of Ferizaj, citizens can request services by physically appearing in the municipality or through online requests (via e-mail). The survey shows that most of the services offered to clients (citizens) are performed in physical presence in the institution, except for a very small number performed



Graph 1. Respondents by gender.



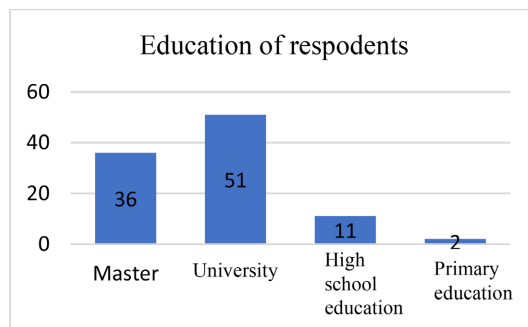
Graph 2. Respondents by age.

online. This makes the need for skills in information technology to be even greater because any delay even the smallest in the provision of services in physical form can cause traffic jams and queues in the offices and counters of the municipality. The municipality has 9 (nine) locations throughout its territory, where two of them are not functionally that provide services to citizens, and considering the large number of requests that are received every day in physical form, the skills of workers in information technology are also most important.

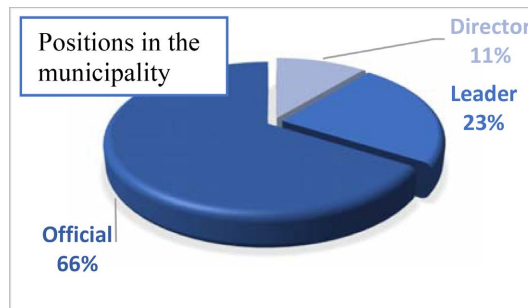
In **Graph 5**, the survey shows that most of the services offered to clients (citizens) are performed 96% in physical presence in the institution, except for a very small number, 13% performed online.

4.2. What Hardware Features Do the Devices You Use to Do Your Job Have?

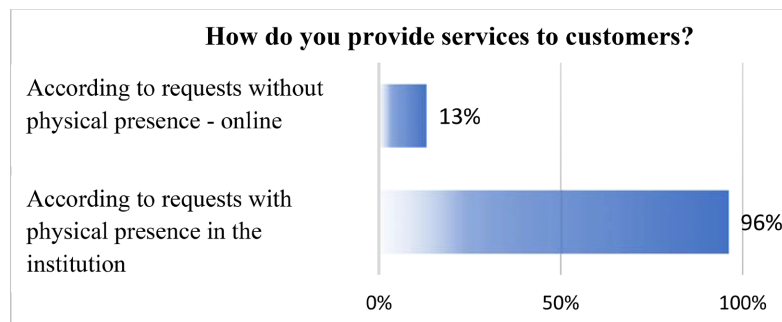
The hardware used to perform various tasks in the municipality must be compatible



Graph 3. Respondents according to education.



Graph 4. Respondents by position in the municipality.



Graph 5. Providing services to clients.

with the task to be performed, e.g. staff in geodesy and cadastre need, in addition to powerful processors, monitors with larger dimensions than the usual monitors used by the vast majority of staff. For some functions where you don't work a lot with applications or voluminous data (such as databases), the hardware is not required to be very advanced, therefore it is necessary to determine the real needs for hardware for each function and provide them by the needs the staff too.

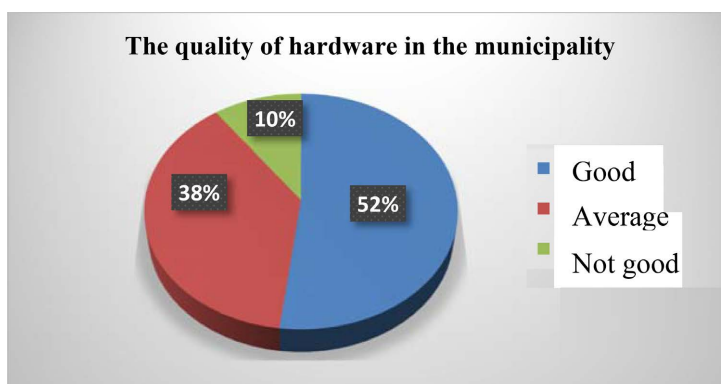
The questionnaires are standard and the same for all staff involved in the study. The results from the survey (according to the questions) are as follows:

On the question of what hardware characteristics the devices you use to perform your work have, 10% of the respondents answered that they do not meet the criteria for performing their work, the others (38%) stated that they are compatible on average and, the other dominant part with (52%) answered that the hardware devices are good.

In **Graph 6**, shows the quality of hardware in the municipality and results shows on the question of what hardware characteristics the devices you use to perform your work have, 10% of the respondents answered that they do not meet the criteria for performing their work, the others (38%) stated that they are compatible on average and, the other dominant part with (52%) answered that the hardware devices are good.

5. Conclusions

From the analysis of the level of IT used in the administration of the municipality of Ferizaj, it is evident that the municipality uses a significant number of IT applications and the work environment is relatively digitized. Most of the services in the municipality of Ferizaj are carried out digitally, while the staff is also trained in their use. However, there remains a part of the staff that has not been fully integrated into the digital environment of the municipality. They think that they have not received enough training, that digitization has caused them stress, and that their workplace has been endangered. This group of employees needs to be integrated with the rest of the staff by providing them with additional training.



Graph 6. Respondents about the hardware devices they use.

- This paper has found that a significant part of the hardware of the municipality of Ferizaj is not by the current needs, is completely depreciated and there is an urgent need for replacement with new hardware.
- Most of the staff have been prepared for the use of IT, the municipality has provided them with training, however short, but which is necessary for using the applications found in the municipality. However, the municipal staff financed a significant part of the training themselves, without the help of the municipality.

Digitization of processes in the municipality can affect the increase in efficiency, increase productivity and make the staff of the municipality more capable compared to the staff of other municipalities. I don't think that for the management staff (president and directors), the new technology in the workplace has a mostly positive impact. However, it is not surprising that not all employees welcome and are not enthusiastic about digitization. Any change in the daily routine can cause them stress and fear, especially when it comes to new technology. For employees, new technology is more difficult to accept because it brings concern and fears that they will become redundant or that they will not be able to adapt to the new changes, especially those with low educational qualifications and age, and this causes their self-esteem and productivity to drop.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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