

INFORMATION AND TECHNOLOGY MANAGEMENT SYSTEMS IN PUBLIC HOSPITALS

MA. *Haqif Arifi* PhD
State University of Tetova
KOSOVA
haqif_1960@hotmail.com

MA. *Sabri Klaiqi* PhD
South East European University of Tetova
KOSOVA
sabriklaiqi@hotmail.com

ABSTRACT

The purpose of this paper is to analyze the importance of using information systems and technologies in management procedures in the hospital sector. Therefore, in order to identify the effects of using information produced through these elements in improving management performance and support for decision-making.

In this study of Information and Technology Systems in public hospitals we present the results of 3 public hospitals in Kosovo (Prishtina A, Ferizaj B, Prizren C) which we present as a representative sample. The study was intended to demonstrate how information and technology systems are elements that enhance the performance of hospital authorities.

With the results achieved by this study we hope to contribute in facilitating the work particularly of regional hospitals and in Kosovo in general, in order to provide high quality, timely and integrated information that can allow in progressive way decision-making in hospital management.

Keywords: Management, Management Control, Information System, Information Technology, Hospitals, etc.

INTRODUCTION

The ability to create, advance and maintain a strong healthcare system is essential to the overall well-being of the people. From this aspect the ongoing reforms of the health system infrastructure, particularly those of funding, commissioning and provision of health services are at the forefront of the global reform agenda. The countries of Europe, especially those that have a historical development with the basics of early legislation today benefit from stable health systems and can continue their further development through the most popular structures. While in Kosovo the situation in the social and health sector despite the efforts and engagements remains severe in all spheres, especially in the use and approval of information management systems of technologies and innovations.

The research objectives include presenting reliable evidence on the importance of the Information and Technology System, for management and supporting decision-making in improving the efficiency and effectiveness of hospital management which is reflected in the most satisfied people with hospital care and management.

The research was conducted in public hospitals in A, B, C (Prishtina (A), Ferizaj (B), Prizren (C), this research covers topics and proposals for integrated solutions in: Human Resources, Strategic Hospital Management, Technological Innovations (Investing in technological innovation and Collaboration for innovation), competition between hospitals and strategic cooperation, information technology equipment in hospitals, purchase of machinery and other medical equipment, databases, networks, security and telecommunications, IT management, E-commerce and E- Business, Telemedicine and other related topics.

With the results achieved by this work, we hope to contribute in facilitating the work of regional hospital managers in the study and other hospitals that need to ensure high quality, timely and integrated information that can allow decision-making in a more progressive way in hospital management.

2. GENERAL DEFINITIONS ABOUT MIS

2.1. WHAT IS INFORMATION

Information is a source with several features that are: it is low, costly, there are alternative uses and the lack of information processing is an opportunity cost. Information is a collection of facts organized in such a way that it can add value to self-worth. The value of information is directly related to how it helps decision makers meet the organization's objectives.

2.2. WHAT IS THE ROLE OF USING THE INFORMATION SYSTEM

The use of information systems to add value to the organization is strongly linked to the organization's structure, culture, and its changes. Given that information systems are so important to the organization we must be confident that using the system will lead to cost reductions, increased benefits, improved services, or the growth of a comparative advantage. Information system personnel is the main factor that determines the development of a new system or the modification of current systems.

2.3. SOME ASSESSMENTS BY DIFFERENT IS RESEARCHERS (INFORMATION SYSTEM)

The introduction of new computerized systems is one of the ways companies have found to provide timely information and respond quickly and efficiently to their environmental pressures. The perception was clear that companies are attentive to technological progress as a tool to introduce more advanced control techniques that enable Managers to get information of any nature and support their management decisions.

Balloni (2006) states that in the globalized world, information systems (IS) and information technology (IT) with a rapid flow of information are fundamental to decision-making, implying that IS recognition is essential to create competitive companies, management, global corporations and providing customers with valuable products and services.

Si Sun (2010) points out a hospital which is considered one of the most complex organizational models in existence, as it requires a number of information about its internal operations and related to the healthcare society in which it operates. There are several reasons for this complexity including the technical resources needed to diagnose, cure and prevent illnesses involving the participation of multiple actors, including patients, health professionals, providers, health insurance companies, government agencies, non-governmental and international agencies, organizations among many others who interact in this context.

3. HEALTH IN KOSOVO

Public hospitals are the subject of this document we deem necessary to provide a brief description of the health systems in Kosovo. To do this we thought it is important to share the development of Kosovo's health system in two different phases: Before and after the war in Kosovo.

3.1. THE HISTORY OF BUILDING THE HEALTH SYSTEM IN KOSOVO

From 1945 to 1989, Kosovo was involved in the health system built within the Yugoslav Federation and within this federation Kosovo had to install the health system according to the

Shemasko's model (the first health commissioner in the former Soviet Union), where this model was applied to the eastern bloc countries, including the countries of Southeastern Europe that had state regulation of the socialist system.

Kosovo has inherited a massive, hierarchical and centralized system of socialist Yugoslavia, which was oriented according to the doctor-hospital-treatment model (**the Shemasko system**). Although this system had many shortcomings, including poor staffing, low prestige and non-motivating wages, after 1990 this health system became worse and aggravated even more because of occupation and the exclusion of Albanian health workers from their jobs.

This exclusion of Albanian health workers started another phase marking a special status of the health system during the 90s of the last century when a parallel institutional life was created in Kosovo in relation to what was installed violently from Serbia. In this parallel activity, the institutions of the Government of Kosovo who were in exile had installed an independent health system from the official of state of Serbia. Although this system with many organizational and applicative problems, has managed to provide at least some basic health care services.

After the war in 1999, the health systems and structures had to be rebuilt and developed. About 90% of Clinics and Health Institutions were injured during the war and many private clinics of Albanian health professionals were destroyed. A big stream of resources of donor assistance has provided resources (alongside challenges in co-ordination) and also with the influence of the donor community reform strategies have been adopted.

Whereas after the declaration of Kosovo's independence according to the law, the highest health authority of the Republic of Kosovo is the Ministry of Health. The health system is organized and implemented **in three (3) levels**: Primary, secondary and tertiary.

4. FIELDWORK – INTERVIEWS

This research was focused on three hospitals, with direct interviews taking place with representatives of each hospital, during which they answered questions based on each voice or topic described in the questionnaire:

Hospital description, human resources, hospital strategic management, Research & Development, technological innovation, information and technology equipment in hospitals, IT Management, e-commerce, Co-operation Innovation, Machine and Equipment Buying, Database, Equipment for information technology, general information on Information and Communication Technology, use of the Internet, costs, costs and features of the implemented system, barriers in using the Internet and general ICT, etc.

The interview is used in three ways or in three types: Unstructured, structured and semi-structured.

In this research the questions included in the questionnaire were mainly closed questions, combined with some open questions.

5. DATA COLLECTION AND ANALYSIS

We begin by describing all three studied hospital subjects, A, B, C, of which they are part, as all subjects studied are exclusively publicly owned.

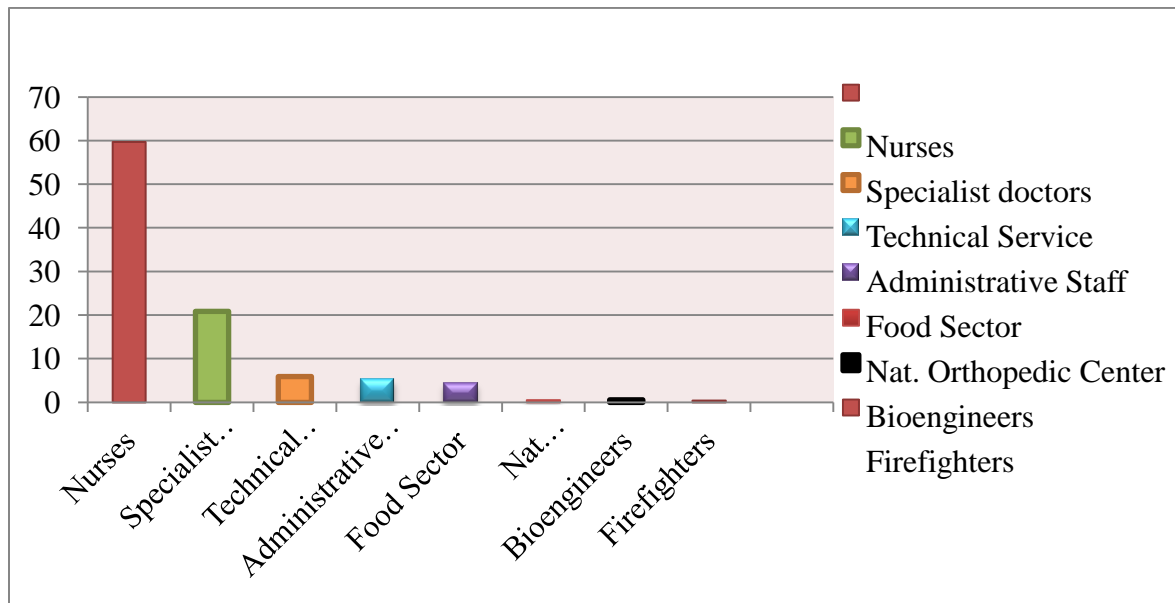
5.1. HUMAN RESOURCES HOSPITAL A

The human resources of these organizations have also been analyzed. The following explanations show us how human resources are distributed to each hospital according to the function they perform and professional profiles.

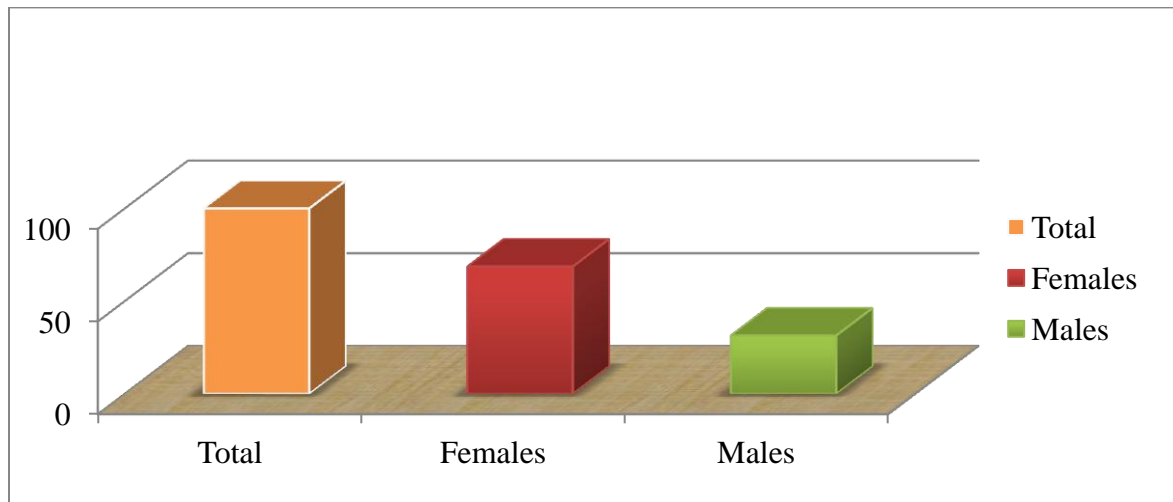
What can be seen in all of the hospitals is that the most common professional group are nurses, with around **59.66%** of the general sample staff, followed by specialist doctors with about **20.87 %**, followed by specialist doctors with about **20.87 %**, staff and then technical services with about **5.93 %** of general staff, followed by general administrative staff (Administration, finance, statistical service, procurement, human resources, legal office, estate office, internal audit, other administrative staff) with about **5.27%**, followed by the food sector with about **4.25%**, then the National Orthopedic Center with **0.52%**, bioengineers with about **0.59%**, and firefighters with about **0.46%**.

It is worth mentioning that out of the total employed female sex dominates with **2,076** employees, or about **68.60%**, compared with a male **956** employees, or **about 31.39%**.

Graph.1. Human resources Hospital A



Graph.2. Division of workers based on gender shown in %



5.2. HOSPITAL B

At the regional hospital in Kosovo, hospital B has **759** employees, out of which **172** specialist doctors, **458** nurses of various fields and **129** other staff, **9** Administration, Finance, Maintenance, Hygiene, etc.

The hospital has a satisfactory road infrastructure, buildings, and equipment and currently has **124** different devices used for diagnostics of the patients and population in general.

5.3. HOSPITAL C

There are **232** employees in Regional C Hospital, out of which **41** specialist doctors, **138** nurses in various fields and **53** other staff, **9** Administration, Finance, Maintenance, Hygiene, etc.

The hospital does not have a level infrastructure like Hospital A and B, they lack space for From the above, it can be seen that in these three institutions regarding the management positions of these entities, the difference between them is evident, both by the number of members and by the distribution of the functions of each member. While Hospital A has another organizational management structure with a larger number of leaders, regional Hospitals B and C, managerial management positions are the same despite the fact that the number of employees is twice as large as Hospital B and C.

Regarding the academic qualifications of the staff, the situation is again distinct, Hospital A leads again in this regard, then Hospital B and then Hospital C.

5.4. STRATEGIC MANAGEMENT

Hospital A: Meet all the health needs of the Kosovo population, taking responsibility for integrating different levels from health education to self-care, ongoing and palliative care, and referral to other levels of hospital network. The development and revision of the Strategic Plan was analyzed by all three institutions and it was found that the involvement of human resources is limited to executive leadership and process leaders. In the case of Hospital A - participation is extended to all levels of the hierarchy, but decision-making is centralized. While it should be noted that in B and C hospitals, other employees can discuss and participate in this process but without any influence.

We have noticed that the strategies were created using different elements. Thus, we have found that competency analysis, patient satisfaction rate, actual and potential demand were used to offer services for citizens, which was observed by all three institutions when creating strategies based on mission and competence. Apart from the mentioned elements, it has been noted that comparisons of years and years of services provided and citizens' assessment have been used. So we have found that competition analysis with the private sector has recently been used because there is often dictating the level of customer satisfaction, in these private institutions, and so on. Questions about the level of importance of human resource requirements (training, motivation, availability, etc.) in defining the strategies of these hospitals. Through from the answers we received, we found that the level of importance is average.

Concerning with the existence of monitoring strategies formulated only Hospital C has responded negatively, stating that there is no proper monitoring because it takes place in longer periods of time.

5.5. RESEARCH AND DEVELOPMENT

In this part of the questionnaire, hospital A undertakes activities on an ongoing basis, while hospitals B and C receive such activities occasionally.

In the next question, we notice that the level of importance given to research and development is moderate in Hospital A and that Hospital B and C give lower importance.

5.6. E-COMMERCE

In relation to e-commerce they have received a response from all three surveyed hospitals that no internet purchases were made from all the total purchases made. Although they know that through purchasing through internets leads to: cost savings, increased access and supplier recognition, increasing the speed of business processes, and so on.

Shortly, this research has argued that the definition of budgetary priorities does not reflect the needs for this sector. In particular, this research confirms that the improvement of the health sector is not on the government agenda and the share of health spending in the budget of only

2% to 3% of GDP does not even reflect the needs of the population health and health institutions in advancing technology and technological innovations.

The implementation of the Information and Technology System in Kosovo's health systems will help provide the right and timely information to the right person, increase efficiency, support decisions, group decisions, or executive decisions and many other advantages. Good database design and its good management are a valuable tool to support decision making.

CONCLUSION

This study presents the results obtained from the interviews conducted and all additional information collected for each of the three public hospitals in Kosovo: Hospital A, B, C. The study was intended to present evidence that information systems and technologies are influencers that enhance the performance of hospital authorities.

For this purpose several fields for the questionnaire were selected including; Human Resources, Strategic Management, Research and Development, Technological Innovation, Competition, E-commerce Cooperation.

In the Human Resources section, we also estimated that by number leading management positions, professions, participation in decision-making, training and research, etc. Have differences with each other. In the Strategic Management section we were able to evaluate access to all hospitals with their mission, which is closely related to the service and concerns of their clients. The evidence collected also showed that all hospitals have a strategic plan reviewed periodically and showed that the extent of human resources involvement in each hospital in drafting and reviewing the strategic plan is not the same in all hospitals.

Another important aspect regarding the differences between hospitals is the communication for the strategic plan throughout the organization structure, where only one subject stated that the entire structure was aware of the strategic plan.

With regard to the research and development we have received evidence from one of three hospitals undertake such activities. Perhaps it is a coincidence that this is a University Hospital while in the other two cases these activities are undertaken randomly.

With regard to technological innovation, we have found that all interviewees agreed that technological innovation contributes to improving the performance of hospitals. Increasing productivity, improving the quality of services, care and enhancing the image of the hospital are considered topics directly affected by technological innovation. In this regard, automation of hospitals management, namely the use of databases to store customer information, is mentioned as a priority. However budget constraints were found for investments in technological innovation.

It was also noted that for the moment e-commerce is not an important business process for the subjects studied. None of the three hospitals have made internet purchases.

Thus, given the results achieved in this study it has been concluded that information systems and technology are a mechanism for improving the productivity and performance of the hospital authorities despite the fact that none of these hospitals have such a system.

Literature

1. Bashkim, R., & Kozeta, S. (2005) Management Information Systems: Tiranë.
2. Hedley, R., & Maxhuni, B. (2004) Development of Family Medicine in Kosovo: Praxis Medica Kosovo.
3. Percival, V., & Sondorp, E., (2010) Case study of health sector reform in Kosovo, Conflict and Health.
4. Scapens, R., Burns, J., Baldvinsdottir, G., & Ezzamel, M. (2003); Netherlands
5. UNDP & USAID, (2013) Action Paper on Health in Kosovo. Public Pulse Project: Prishtina.
6. Health Ministry, (Maj, 2009) The sectoral health strategy, 2010-2014: Prishtina.

Laws, Regulations, Reports, Conventions and other legal sources

- Law nr. 04/L-125., (2012) For health: December Prishtina.
- University Clinical Center of Kosovo status., (May, 2014): Prishtina.
- Labor Report., (2016) - Hospital A, B, C.

Sources from the Internet

- Federation of Trade Unions of Kosovo Health. Part from the link <http://www.fsshk.eu>.
- Kosovo Agency of Statistics, last modification, (2012) 3th October: <http://esk.rks-gov.net/rekos2011/>.