The Role of Business Intelligence in Promoting Decision-Making in Humanitarian Organizations Operating in Turkey, Orange Organization as a Sample

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Abstract: This study aimed to identify the relationship between business intelligence systems and the decision-making process of humanitarian organizations operating in Turkey. In this study, the non-experimental quantitative descriptive research method was preferred, which is one of the types of scientific research suitable for the aim of the current research. The number of community members surveyed as a whole was (105) and represent the number of employees in the orange organization for this, data were collected and analyzed, and hypotheses were tested using SPSS. Several tests were conducted suitable for research, including noting the correlations between the variables, in addition to looking at the averages and proving the hypotheses. After conducting the process of analyzing the study data and its hypotheses, the study reached several results, the most prominent of which are first: There is a strong correlation between business intelligence systems and the decision-making process in humanitarian organizations operating in Turkey at the level of significance α ≤ 0.05. Second: There is a positive correlation between the quality of information and the quality of systems used in business intelligence systems and both user satisfaction and perceived value and its use in humanitarian organizations operating in Turkey at the level of significance α ≤ 0.05. Third: There is a positive correlation between the satisfaction of users of business intelligence systems with regard to decision-making in humanitarian organizations operating in Turkey at the specified significance level α ≤ 0.05.

Keywords: Business intelligence systems; Decision-making, humanitarian organizations.

1. Introduction

Humanitarian organizations today are among the phenomena that have become widely spread in unstable areas, whether at the economic or political levels.

It is considered one of the organizations that aims to provide material or moral support to people who are experiencing crises, wars, or shortcomings in an aspect of life. In emergency situations, humanitarian organizations seek to assist and protect vulnerable people and meet the basic needs of groups affected by war and conflict. Certainly, such organizations have the right to do studies around them and their working mechanism, and to discover administrative means and programs that are suitable for this type of organization and the specificity it bears in work and its superiority in goals. So, we seek to conduct some studies on humanitarian organizations. Perhaps the most important thing that any organization needs is a clear policy and a correct method for the decision-making process. In order to reach this method, we must have some means or support systems, and it must be noted that information systems and databases have become real capital for every company, organization, or institution. Perhaps the business intelligence system and its features and capabilities can be a great support for the decision-making process.

For this purpose, this article sought to use systems to measure the success of information systems, such as information quality, system quality, use, user satisfaction, and perceived value, and then reflecting these dimensions and knowing their impact on the decision-making process (Ephraim McLean & William Delone, 1992).

1.1. The Study Problem:

The case of the study lies in researching the relationship and knowing the nature of the relationship between business intelligence systems and the decision-making process in humanitarian organizations operating in Turkey.

From the above, the issue of the study exists in the process of observing the role of business intelligence methodologies and the details it carries on the decision-making process in humanitarian organizations working in Turkey, where the Orange Organization was taken as a model for the study.

Business intelligence systems that rely on technology and software to analyze data in order to provide applicable information that can help CEO and staff to make useful decisions may have a significant role in the decision-making operation for humanitarian organizations, especially since organizations such as humanitarian organizations need a very high flexibility in dealing with the changes being operating in an unstable environment. Organizations need specialized programs and also the process of introducing systems that would facilitate their work and allow them to give them greater flexibility in dealing with the changing environment in which they operate. This requires synergy and cooperation between all the departments to work together, and there must be systems that facilitate the process of coordination between these departments and support them in the decision-making process. This procedure can benefit the beneficiaries, as a result of my work within humanitarian organizations operating in Turkey, and after discussions with Orange staff operating in Gaziantep Province in Turkey about the importance of having supportive methods for decision-making in this sector. Therefore, after reviewing several studies that noted the impact of business intelligence on the decision-making process (Aldag R. J. & Power, 1986), it was necessary to study the impact of business intelligence on decision-making in the sector of humanitarian organizations operating in Turkey and note its role in the process of providing support for this sector, hence the importance of having systems that facilitate the decision-making process and increase the coordination process between the departments as a whole. The study problem can be formulated in the following questions:

- Can business intelligence systems affect the decision-making process in humanitarian organizations?
- Can the quality of information have a serious impact on both use and user satisfaction and the expected value of using business intelligence systems in humanitarian organizations operating in Turkey?
- Can the quality of the system seriously affect both use and satisfaction of users and the expected value of using business intelligence systems in humanitarian organizations operating in Turkey?
- Can the level of use, user satisfaction, and perceived usefulness influence the decision-making process?

1.2. Importance of the Study:

The study dealt with the issue of business intelligence as a new term and knowing its ability to facilitate or provide benefit to decision-makers in humanitarian organizations operating in Turkey. In addition to providing a supportive procedure for humanitarian organizations with the aim of making their work more rapid, flexible, and effective, as well as seeking to provide information to decision makers at the appropriate time and place.

This will be reflected in the implementation of projects aimed at supporting those affected by crises and the study gains its importance from a number of points which can be summarized as follows:

- Research and note the effect between new and original variables such as business intelligence systems and decision-making.
- Perhaps one of the most important features of this study is the place of application, which is the humanitarian organizations, and what these organizations need from the support as they provide a humanitarian service concerned with maintaining the safety and ensuring decent living conditions for thousands of beneficiaries.
- The process of providing a theoretical scientific basis in relation to the subject of business intelligence.

1.3. Intentions of the Study:

The main goal of this article is to research the impact of the use of business intelligence dimensions on decision-making and research the basic pillars of decision-making based on business intelligence in addition to noting what are the basic requirements to reveal the effectiveness of the business intelligence methodology, as many references mentioned that information technology has become very important in the decision-making process, where it had a major role in the speed of decision-making and the use of information in the right time and in the appropriate manner. Information technology contributed to reducing the barriers between the organization and the external environment, as it had a role in the speed of information gathering when urgent needs, preferences and basics for each problem we are about to deal with or seek to Solve it (Saleh mahdi alamyri & Taher algaly, 2011).

1.4. The Study Aims:

- Discovering the nature of the relationship between information systems and business intelligence in an environment that is considered relatively new, namely, humanitarian organizations.

- Shedding light on a fertile environment for the study, which is the environment of humanitarian organizations, which is considered essential in the place in which we seek to apply the study.
- Recognizing the most important business intelligence systems' programs used in humanitarian organizations and within which departments that can be more effective.

1.5. Questions for Study:
- **The first question:** Can the business intelligence system affect the decision-making process in humanitarian organizations operating in Turkey, especially in Orange Org?
- **The second question:** Does information quality and system quality as inputs to business intelligence systems affect decision-making in humanitarian organizations?
- **The third question:** Can the benefit we get from the use of business intelligence systems be significantly beneficial to the organization as a whole?

1.6. Study Hypotheses:

The first main proposition: There is a statistically crucial relationship between the use of business intelligence systems for decision-making in humanitarian organizations operating in Turkey.

The following sub-hypotheses are extracted from it:
- **The first sub-proposition:** There is an accomplished correlation between the quality of information used in business intelligence systems and the use of business intelligence systems in humanitarian organizations operating in Turkey.
- **The second sub-proposition:** There is a certain correlation between the quality of the system used within business intelligence systems and the use of business intelligence systems in humanitarian organizations operating in Turkey.
- **The third sub-proposition:** There is an inarguable correlation between the quality of the system used within business intelligence systems and user satisfaction in humanitarian organizations operating in Turkey.
- **The fourth sub-proposition:** There is an incontestable correlation between the quality of information used in business intelligence systems and user satisfaction in organizations operating in Turkey.
- **The fifth sub-proposition:** There is an incontrovertible correlation between the quality of business intelligence systems information and the tangible value of using business intelligence systems in humanitarian organizations operating in Turkey.
- **The sixth sub-proposition:** There is an indisputable correlation between the quality of the system used within business intelligence and the tangible value of using these systems in humanitarian organizations operating in Turkey.
- **The seventh sub-proposition:** The degree of utilization of business intelligence systems has a significant positive impact on decision-making in humanitarian organizations operating in Turkey.
- **The eighth sub-proposition:** The level of satisfaction using business intelligence systems has a significant indubitable influence on decision-making in humanitarian organizations operating in Turkey.
- **The ninth sub-proposition:** The level of perceived value of business intelligence systems has a significant positive impact on the decision-making process in humanitarian organizations operating in Turkey.

1.7. Study Terms:

The first term is Business Intelligence: It is an umbrella-like prevailing term that includes a group of operations, framework, tools and best patterns that license access to data and analyze it to root information planned to developing the decision-making process and implementation to the top range (stedman, n.d.).

The second term is decision-making: a decision that expresses a choice or preference. The process of choosing a manager or any person in any matter is considered a decision. The method or solutions adopted by the manager as a result of thinking about a problem or an issue is considered a decision, and making decisions, whether good or bad, right or wrong, is considered a choice of method or methodology, as decision-making is the essence of the work of administration, and therefore it can be said that a manager who cannot make decisions cannot do their work.

2. Theoretical Framework of the Study

After the increase and the great complexity of humanitarian crises, it was noticed that there was an emergence of many organizations that carry various and different programs that are appropriate to the widespread crises (https://www.mandint.org/ar/guide-IO, undated), where it was found that there are more than thirty activities for organizations working with the United Nations. Therefore, it was necessary for humanitarian organizations to obtain their share of studies and research that would improve the agility and capabilities of these organizations. Perhaps the business intelligence system has a share of these studies, as the business intelligence system is an umbrella-like prevailing term under which a group of operations, framework, tools and top patterns that empower access to data and analyze it to root information planned to developing the

decision-making progress and achievement to the greatest range (stedman, n.d.). Some have argued that business intelligence (BI) is a technology-dependent operation for perceiving data and providing workable information that assists CEO and staff make clear business decisions. As portion of the business intelligence operation, institutions gather info from internal IT configuration and external sources, arrange them for inspection, and then create data visualizations and dashboards to display information and prepare reports to allow decision makers to move forward in the decision-making process. Others define business intelligence as a vast array of applications, techniques, and procedures to gather, stockpile, reach, and analyze information to assist business users make perfect decisions (Watson, 2009). There are those who spoke about business intelligence from a slightly different point of view, expressing it as a mixture of products, technology and approaches to arrange the basic data needed by administration to enhance revenues and implementation (Mohamed Z. & Elbashir, 2007). From the above, we can note that business intelligence can play an important task in the organizational decision-making advancement and raise its effectiveness. If we go back to the definition of what humanitarian organizations are, we will find that they have a definition like any other organization and that most of us have worked or lived for a period of our lives in an environment or under conditions that are very similar to the conditions enjoyed by organizations. The family is an organization, and we can define the organization in a simple way as a group of resources that work consecutively in some way to fulfil a common objective (Management Library, 2022). This also applies to humanitarian organizations in that it applies to organizations in general in terms of the presence of an individual or a group of individuals working collectively to reach specific goals within the optimal use of available resources, and that one of the most important features that distinguishes humanitarian organizations from organizations in general is what was determined by the United Nations, which I will mention shortly:

Non-Governmental Organization (NGO)

The notion of a non-governmental organization (NGO) was devised by the UN to recognize a State-independent organization with which the United Nations has a collaboration.

As a norm, a non-governmental organization match the following criteria:
- It has the framework of an organization, with constitution and a legal system.
- It was established by individuals or organizations independent of the authorities.
- Its decision-making staff are independent of state government.
- Its goals are non-lucrative and of public interest, which occasionally go beyond the interests of its own staff. (Gandhi, 1988).

Talking about decisions, the decision expresses the choice or preference. The process of choosing the manager or any person in any matter is considered a decision. The method or solutions adopted by the manager as a result of thinking about a problem or issue is considered a decision, and making decisions, whether good or bad, right or wrong, is considered a choice of a method or methodology. Decision-making is the center of the work of management, and therefore it can be said that a manager who cannot make decisions cannot do his work. In short, we can say that the decision is a process of choosing an alternative from several available alternatives in order to achieve a specific goal.

The particularity of the system or the quality of the information and the user's opinion plays a crucial role in the safety of the decisions taken, especially since we find ourselves compelled to show a quick response to any change and to provide quick and sound decisions based on a sound and solid ground, as we are talking about a society witnessing great development and requiring a quick response, especially since we are facing a great challenge in providing services to beneficiaries, any delay may lead to negative consequences. It must be clarified that any step to provide any support must be based on information and this information must be derived from data collected either through teams employed to obtain data or through data published by the United Nations or through the needs assessment process carried out by organizations before starting to provide a plan of action to secure the perfect support in the suitable place and at the exact time.

2.1. Business Intelligence Systems, What It Is and Ways to Measure It:

Business intelligence systems are very similar to information systems, and the same systems used to measure them can be used in the process of measuring business intelligence. Perhaps the most prominent research on this topic is Ephraim McLean and William Delone (1992), and we will make a sufficient explanation about this measure so that we can create a sound idea and methodology in the process of measuring business intelligence systems and noting its influence on the decision-making process in humanitarian organizations operating in Turkey. In Delon and MacLean's Information Systems Success Model (1992), data quality, system quality, utilization, user satisfaction, individual influence, and organizational influence structures were used. Ephraim McLean and William Delone (1992) stated that these structures influence each other and that there are relationships between them. Accordingly, he explained that the quality of information and the quality of the system are related to use. However, it has also been stated that information quality and system quality have an impact on user satisfaction. In this ideal, it is shown that there is a correlation between the degree of utilization and user satisfaction. Finally, it has been reported that user satisfaction with use influences individual effect, and

individual effect interacts with organizational influence Ephraim McLean and William Delone (1992). These models and relationships were later supported by the researchers' studies and the degree of relationship between the structures was revealed. In the literature in this field, the relationships between the variables in the model are revealed according to different information systems and different degrees of use.

We will now provide a detailed explanation about each variable of the study in order to create a clear idea of the mechanism by which business intelligence will be measured.

2.2. Information Quality:

Information quality pertains to the value of the data and output that the system produces (DeLone W. H. & McLean, 2003). The quality of information is used to regulate the quality of the outputs obtained from the use of any system (Gable. G. G., Sedera. D. & Chan, 2008). The quality of the data can express the level of benefit achieved from the system's outputs to the users of the system in the form of (Sirsat. S. S. & Sirsat. M. S, 2016). Marshall. L. and De la Harpe. R. (2009) stated that the quality of information is the tools that meet the functional needs of users and that can provide permanent support on any topic that users may seek to develop or build information about. The quality of information is one of the fundamentals for organizations, especially when talking about data warehouses and other technologies that deal with information. The high quality of the information obtained is an important and essential factor for managers in many of the businesses or decisions they take. Organizations in general seek to obtain the maximum benefit from the information they have in managing their business and making their decisions. Therefore, the quality of the available information will make the operations that will be implemented more efficient and effective (Ephraim McLean & William Delone, 1992), and this can have a very important role in achieving the success of information systems.

2.3. Quality System:

Petter ve others (2008) define system quality as comprising features and capabilities that meet the requirements and expectations of users and decision makers in humanitarian organizations (Stacie Petter. William DeLone & Ephraim McLean, 2008). Nelson, Todd ve Wixom (2005) reports that the dimensions that shape system quality consist of the elements that ensure successful user-system interaction (Nelson. R. R. & Todd. P. A., 2005). In general, criteria such as simplicity of utilization in an information system, system resilience, system trust ability, ease of system learning, system sophistication, system intuitiveness, and system response time can be used to determine system quality (Petter. S., DeLone. W. & McLean. E., 2008). These features are generally used to demonstrate the performance of a particular system or to determine the usability aspects of a system. All of these things taken together can be criteria that reveal the quality of the system (Urbach. N. & Müller. B., 2012).

2.4. Usage:

The term 'usage' is defined as the user's consumption of data system output. The use of data and information system is a very important criterion in the success of information systems and thus business intelligence. There are many criteria that can show the importance and effectiveness of this use. The use of success scope characterizes the status and manner in which information systems are used by their users (Urbach. N. & Müller. B., 2012). The use of information is closely related to the consumption of information system outputs. This is measured in terms of amount of use, nature of use (DeLone W. H. & McLean, 2003), suitability of use, extent of use, actual use, daily utilization and prevalence of use (Almutairi, 2005).

2.5. User Satisfaction:

User contentment is one of the basic criteria of the success model of information systems or business intelligence and is used to regulate the satisfaction of users with the use of information systems. DeLone and McLean (2008) report that the user satisfaction structure is the satisfaction obtained when people who use information systems use functions such as websites, reports, and support services for management and decision-making (Petter. S., DeLone. W. & McLean. E., 2008). The User Satisfaction Scale has become a valid measurement tool for evaluating any system within the information systems, especially when the use of a specific system is mandatory. In this case, we must have either satisfaction and admiration for the system used or dissatisfaction. (Ephraim McLean. & William Delone, 1992) reported that user satisfaction is related to the attitudes of the person connected to the system, so the good and effectiveness of the system can be judged according to the degree of satisfaction provided by the user. DeLone W. H. and McLean (2003) also revealed that there is a correlation between user satisfaction and usage. User contentment is one of the most important criteria in revealing a person's attitudes towards the system and influencing the success of the system.

2.6. Individual Impact:

Ephraim McLean and William Delone (1992) stated that the individual influence variable is one of the combinations that explain the building of an information systems success model. According to DeLone and McLean (1992), individual influence refers to the effects of any information system used on user conduct at a personal level. Accordingly, the implications of the process of using information systems, such as the impact of the

information system in enabling the person to make decisions, the productivity of the person, changes in work performance, and the sense of benefit provided by the system used to the individual all constitute what is known as individual effects. Halawi, McCarthy, and Aronson (2008) report that while an individual influence is information that influences an individual's behavior (Halawi, 2008), criteria such as productivity, high-quality decisions, and operational control constitute an individual influence. DeLone and McLean (1992) report that effective decisions, efficient use of time, task performance, problem solving, and similar influences form individual effects with system use in studies identifying individual effect.

2.7. Individual Organization:

DeLone and McLean (1992) stated that the organizational effectiveness structure is the final component of the information systems success model. Accordingly, he stated that the individual influence affects the organizational influence in order to ensure success in information systems. However, it can be said that the information system has effects not only on individual users, but also on the organizational level. These influences can spread throughout the organization and are considered as one of the factors that enhance organizational performance (Ephraim McLean & William Delone, 1992). In order to measure organizational impact, many researchers have tried to explain the success of information systems by developing different methods and measurements. The authors have contributed to the literature and interested in this field to conduct the process of measuring organizational impact. DeLone and McLean (1992) report that benefits such as increased income, return on investment and overall productivity can be used at the organizational level to determine organizational impact. On the other hand, Sedara and Gable. G. G. Sedera (2008) reported that benefits such as staffing requirements, reduced costs, improved output, and increased ability to work and make decisions will be achieved. (Halawi, 2008) stated that organizational influence is fundamental to achieving organizational performance and explained that factors such as profitability, productivity and financial success at the organizational level can be used to determine this. Some dimensions emerge in revealing organizational influence.

In order to determine the correlations between the changes used in this study and to identify their hypotheses, the studies in the literature were examined. The quality of information, which is one of the basic variables of the success model of information systems, reveals the value of the information obtained from the system. According to Petter. S. and McLean E. R., (2009), information quality has defined information quality as having such features as clarity, completeness and appropriate timeliness of information output obtained from the system. The usage variable is defined as the active, useful consumption of information. Accordingly, usage refers to the degree of benefit the user derives from the system (Seddon, 1997). The quality of information associated with the use is reported in the first form of Ephraim McLean and William Delone (1992); this study is on Student Information Systems. Ray et al. (2002) use the information systems attainment model of Dillon and McClain (1992) revealed that there is an incontestable affiliation between information quality and its preference.

Wang. Y. S. and Liao. Y. W (2008) stated that information quality has an effectiveness on usage in their study using the updated DeLone and McLean (2003) information systems success model to determine the success of a government system. Urbach. N. and Ahlemann (2010) used features such as usefulness, uptake, reliability, completeness and timeliness to measure the quality of information in his study on the information portal used by employees. As a result of the regression analysis performed with the system usage dimension, no effect of information quality on usage was found. Mudzana and Maharaj (2015) also used an updated information systems success model by Dillon and MacLean (2003) to determine the success of business intelligence systems in their study of 102 professionals in South Africa to detect the success of business intelligence systems. As a result of this study, it was confirmed that the information quality dimension which has features such as content, relevance, accuracy, timeliness, and brevity, is significantly related to the use dimension. Iivari. J. (2005) has measured the quality of information by features such as quantity, completeness, accuracy, consistency, validity, and accessibility in his research on employees using finance and accounting systems. The degree of use was measured in terms of time of active use and frequency of use. As a result of the research, no significant correlation was found between information quality and its use. In some studies (Petter. S., DeLone. W. & McLean. E., 2008), there were significant relationships between information quality and use, but there were also non-meaningful relationships.

This can benefit from the existence of a correlation between system quality and satisfaction with the system (DeLone W. H. & McLean, 2003). Dillon and MacLean (1992) report benefits at the individual level. Accordingly, such benefits as decision-making quality, decision effectiveness, decision-making time, task completion efficiency, productivity at work, efficiency at work, and effective work performance can all be considered as benefits that can be obtained at an individual level. Aldag R. J. and Power (1986) emphasized the importance of quality decision-making in computer-aided programs. Torkzadeh. G. and Doll. W. J (1999) developed a 12-item, 4-dimensional scale for measuring individual effects on information systems. Accordingly, these dimensions have been identified as task productivity, job part contrivance, consumer satisfaction, and management regulation, and their validity and reliability have been demonstrated by the authors.

2.8. Making Decision:

Every institution requires to make decisions at one extent or other as part of managerial operation. Decisions are made in the perfect interest of the business institution. For that case, decisions made by the business institution are to illuminate the way forward. Be it strategic, business performances or HR issues, operations of making decisions are complex, including professionals of diverse genre. While small business institution encompasses all levels of managers, complex business institutions enormously relay on staff of professionals in private trained to make all types of decisions. But to remind you, such a body alone cannot come out with hard-and-fast decisions. Here, the idea is, decision making procedure is cumulative and consultative way. The operation, on the whole, bears its pros and cons and would by and large evolve results and consequences in the business institutions' overall development and considerations (Juneja", 2022).

Decisions are used to back up organizational development. The entire configuration of administration, i.e., its daily process is rightly constructed on managerial decisions. Top notch business institutions, as evidenced by their performances, actual communication applications are applied in addition to ordinary consultation procedure to make decisions that would have huge scope indications on the company's perspectives (Juneja", 2022).

Discussions and consultations are two crucial applications that sustain and finally cause decisions. For example, to take a decision on how to start on new business performance proposed by strategic management staff must have improved via chains of consultative operation, which is currently available with execution staff. Here we recognize the cumulative impact of decision brought at one point by a diverse body of issues. Decision taken by strategic managers is to advance new and innovative business line or initiative. At this degree, the decision taken by such staff becomes consultative peculiarity for discussion for execution professionals. There is lot to discuss, research and finalize. Is the new proposal viable? Is it innovative enough? Can there be progression stimulant in the strategies suggested? Handle-full of such inquires emanated from the decision taken by strategic team has reflective impact on the coming degree of managerial consultations and meetings. Let us consent, at this idea of discussion, that proposals subjected by business growth staff would hugely rely on another group of deliberations in the board room (Juneja", 2022).

Thus, the hard-and-fast decision to any operation is through cumulative interim decisions suggested by diverse internal and external parties. In addition, the final decision is reflective and established on research and consultations. The entire procedure is a chain affair where one decision taken at one point and at one level shall have far reaching inclusions in the way a business institution advances forward (Juneja", 2022).

In fact, being capable of taking decisive decisions is one of the diverse characteristics that every manager should possess, be it perfect level or middle or entry level. By nature, a human being during their existence and by virtue of their instinct makes decisions for their survival, as social psychologists explain. By and large, managers are polished people to take decisions to influence others, i.e., the business institution's existence and development, thus is annotative with human attempt to live and succeed. Success is accomplished by the decisions taken by an individual or an institution (Reviewed, n.d.).

After talking about the decision-making process in general, it is necessary to note the great importance of this process. An organization that cannot make decisions cannot continue because the principle of continuity is the ability to make decisions. Accordingly, we noticed that the decision-making process needs the presence of consultants and an accumulation of expertise and information, and humanitarian organizations are the same as any organization, whether large or small, complex or simple, that needs this process to continue with some differences. Its work is in places that live under abnormal conditions, here the decision-making process must be fast, accurate and sound, and this requires more tools and more comprehensive experience, and perhaps the most important of these tools is accurate and clean information in the suitable place, at the right time and in the right quantity which can secure this information and with these specifications, and perhaps business intelligence systems have the ability to meet and secure this information, which can be reflected on decision-making and thus achieve the goals of projects proposed in humanitarian organizations.

2.9. Connecting the Variables:

Business intelligence systems consist of structures and technologies created to support decision-making processes (Gibson, 2004). Organizations need to make effective decisions in certain areas in order to determine the analysis of the external and internal environment, increase the performance of organizations, and gain a competitive advantage. In this sense, the data obtained should be evaluated in the best way. Until recently, this data has been evaluated using different platforms and applications. Sometimes these analyzes have been evaluated by independent companies. With increasing competition and rapidly changing customer needs, decision makers want to achieve better performance through faster and more accurate reporting and inquiries. Thus, it aims to make high quality decisions in order to better address problems and produce faster solutions. In this way, it becomes easier to achieve organizational business objectives. Accordingly, investments in business intelligence systems have also increased (Azvine, 2006).

The decision-making process has evolved over the years and the criteria and tools used have become more appropriate to the needs. The most productive stage of the decision-making process is the period that combines

decision support systems such as management information systems, expert systems and senior management information systems with other technologies (Tutunea. M. F. & Rus. R. V., 2012). Although management information systems have provided services to users extensively and for long periods, information systems that aim to make decisions, such as decision support systems, expert systems and senior management information systems, did not always achieve expectations, that is, they could not always make decisions, especially under pressure, and show intelligent systems. Business is superior to it, especially in areas such as making decisions under time pressure and having the ability to make decisions in a timely manner.

Today, systems such as decision support systems and senior management information systems are lagging behind thanks to the superior capabilities of business intelligence systems. Business intelligence systems provide high-quality information to organizations by analyzing the data proprietary to the organizations in detail, enabling superior decision-making (Gibson vd., 2004; Chee vd., 2009; Sangari ve Razmi, 2015). With superior business intelligence features like the information management, data warehouse, data mining and analytical capabilities, query, reporting and analysis activities can be carried out effectively. Business intelligence provides significant benefits at the organizational level by making data transparent, tangible, explicit and highly realistic for effective decision making (Karim. A. J., 2011).

Business intelligence systems are used at management levels within an organization. On the other hand, Karim (2011) considers business intelligence systems as systems that produce high-quality and effective decisions for strategic and tactical management to use technology that serves to produce ready and analyzed output after data entry. Chee. T. and Chan (2009) also mentioned that business intelligence systems are business appeals to business managers at all levels of the organization and they stated that information must be analyzed and evaluated at all levels of management.

According to Olszak (2007), BI systems are used at the operational level at the level of interim reports in specific areas such as ongoing operations, current financial status, suppliers and customers. At the tactical level, business intelligence systems determine the decisions made in areas such as marketing, sales and capital management in order to organize and improve the future activities of the company and direct the organization. At the strategic level, business intelligence is effective in making analytical decisions such as comparisons and predictions in order to achieve the organization's goals and maintain its existence.

2.10. The Previous Studies:

- **Masa'Deh R., Obeidat Z., Maqableh M. and Shah M. (2018)** state that Business Intelligence (BI) systems are broadly utilized by big hotels in Jordan; however, their impact has not yet been inspected. The objective of this research is to investigate the correlations among definitional metadata quality, data quality metadata quality, navigational metadata quality, lineage metadata quality, recognized spontaneity of utilization, recognized utilization, and system impact in improving organizational impact of five-star hotels in Aqaba, Jordan. To experiment the research propositions, 225 workable replies including 37 items were inspected using structural equation modelling (SEM) and a Machine Learning technique. Results explain that organizational impact was straight off and positively influenced by recognized serviceability and BI systems impact. However, recognized serviceability did not affect BI systems impact.

- **Carlsson S. (2010)** reveals that the objective of this research is to assess the experiment of the success of a BI system in the context of a police institution. The BI system is utilized for a group of tasks and decisions, for instance, operational resource management in addition to long-extent planning. The inquiry directed in this experiment is: How prosperous is the BI system (BIS) in the police institution? The assessment study makes use of DeLone and McLean's Information System success model. The model contains six interdependent constructs: system quality, information quality, utilization, user satisfaction, people effectiveness, and organizational influence.

- **Petrini M., and Pozzebon M. (2009)** shows in this research that we inspect how management of sustainability in organizations can be backed up by Business Intelligence (BI) systems. We refer that BI has a critical role to play in assisting organizations which carry out and monitor sustainable performances. We pay particular attention to one aspect of any BI project, the information planning aspect, i.e., the systematic methodology of defining pertinent information in order to incorporate it in reporting practices. Utilizing grounded theory, the chief contribution of our research is to contemplate a notional model that look for supporting the operation of integration of socio-environmental indicators into organizational strategy for sustainability.

- **Olszak C. M. and Ziemba E. (2003)** concentrate on the Business Intelligence systems. At the prelude, knowledge as a critical and strategic asset that marks a success of an enterprise is offered. Next, some aspects of the Business Intelligence systems are debated, and their architecture is rendered. Purposefulness of utilizing such solutions in an enterprise is highlighted. An integrated approach to build and implement business intelligence systems is featured. The systems are depicted in four dimensions: business, functional, technological and organizational dimensions. The factors that distinguish the current study from previous studies is the place of application of the study. The impact of business intelligence systems on decision-making in humanitarian organizations was investigated. DeLone and McLean method has also been used in humanitarian organizations operating in Turkey. Whereas previous studies applicated to different places

such as hotels and police stations, and also used different measurement methods and different variables such as how to support sustainability management in organizations with Business Intelligence (BI) systems and how business intelligence systems can be used in enterprise management.

3. Study Procedures

3.1. Study Methodology:

In this section, the research design, hypotheses, and sample used are explained. This study aims to mark the relationships between structures and to clarify the degree of influence of these relationships. Therefore, in this study, the non-experimental quantitative descriptive research method was preferred, which is one of the types of scientific research. The non-experimental quantitative descriptive research method is considered one of the best methods in order to determine the relationships between variables (Swanson. R. A. & Holton. E. F, 2018) and in order to find the effect of using Business Intelligence systems on the decision-making process and with the support of the literature, deep research was conducted in the field of information systems and business intelligence systems. Accordingly, the questions and hypotheses to be investigated were identified and a research model was formed. After examining the evaluation of the data obtained from users of business intelligence systems, which were obtained through the questionnaire, the relationships between the factors were determined and the results were reached. We also performed the validity and reliability tests of the main measuring instrument and we tested the applicability of the measuring instrument and obtaining the required amount of data from the selected sample. Then, testing the hypotheses and adding and interpreting the results were formed.

3.2. Model Development and Propositions Proofing:

As a result of many researches, a model was designed to control the success of many systems within information systems. The Information Systems Success Model (1992) consists of six main structures that relied on scientific studies as a starting platform. The dimensions of this model have been defined as information quality, system quality, usage, user satisfaction, individual influence, and organizational influence (Stacie Petter, William DeLone & Ephraim McLean, 2008). System quality and information quality are expected to increase user satisfaction and use, resulting in positive effects on individual productivity which leads to improved organizational productivity.

Established on both practical and causal considerations, it is suggested that the six dimensions of success are interrelated rather than independent. This has crucial inclusions for the measurement and analysis of the success of information systems in the study. Information systems are created for the first time in which they have different features, which can be described as displaying different grades of system and information quality. Then, users and managers test these features using the system and are either satisfied or dissatisfied with the system or its information products. Then the utilization of the system and its information products affects the individual user in the behavior of his work, and these individual influences collectively lead to organizational effects.

The DeLone and McLean success model for measuring information systems success has received a lot of interest among information systems researchers, and it provides a solid foundation and a distinct scientific base for research in the field of business intelligence. Therefore, this study uses the DeLone and McLean model for measuring Business Intelligence and validating its use in measuring the impact of business intelligence and its impact on decision-making. DeLone and McLean's (1992) Information Systems Success Model was used as the main model (DeLone, 2016).

In this context, I will explain the method of the study. After the process of collecting data from workers in the field of humanitarian organizations, the questionnaire sought to measure the impact of business intelligence on the decision-making process, where the ability of the quality of information used within business intelligence systems to influence the process of use, for example, in terms of large use and the recurring and reliance on Business Intelligence systems on an ongoing basis, and at the same time, the impact of system quality on the use of Business Intelligence systems will also be observed with respect to the same axes that the quality of information sought to measure. Then, the process of measuring the impact of the quality of the system used on the satisfaction of users of Business Intelligence systems will be carried out in terms of satisfaction with the efficiency of the Business Intelligence system and its ability to meet all informational and cognitive needs, as well as in terms of effectiveness and at the same time measuring the effectiveness of information quality on user satisfaction with the Business Intelligence system. After obtaining the results, we will move to the second stage, which seeks to observe the relationship of both the use and user satisfaction of Business Intelligence systems on the decision-making process within humanitarian organizations, in terms of choosing the best alternative among the available alternatives, as well as the process of using information widely and performing the analysis process more. This will lead to the observation of the impact of the use of Business Intelligence on enhancing the decision-making process in humanitarian organizations. The relationships have been clarified in Figure (1).
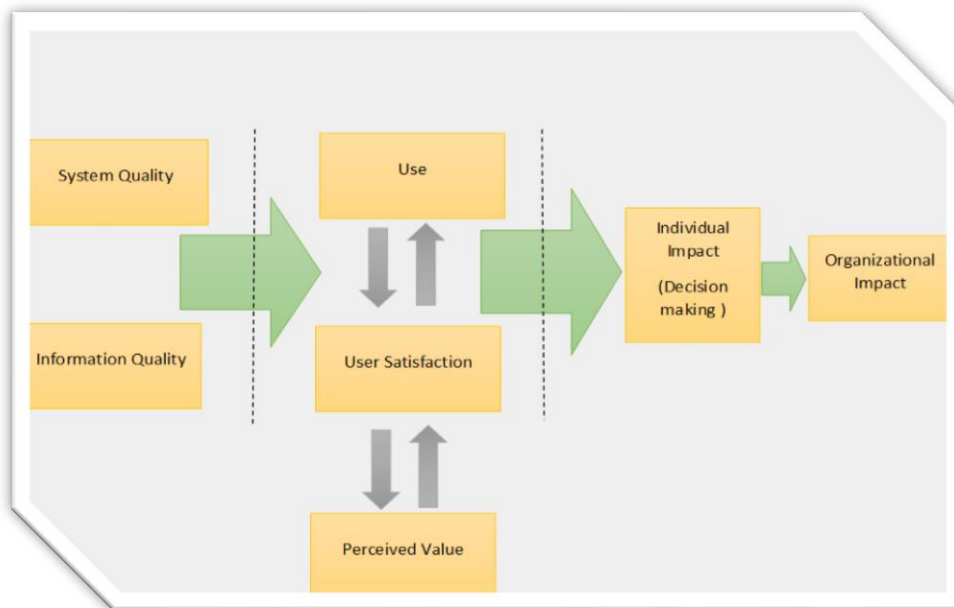
Figure (1): DeLone & McLean Model

After the process of collecting data from workers in the field of humanitarian organizations, the questionnaire sought to measure the effectiveness of Business Intelligence on the decision-making process, where the ability of the quality of information used within Business Intelligence systems to influence the use process, for example, in terms of large and frequent use and dependence on Business Intelligence systems in a continuous way and at the same time the impact of system quality on the use of Business Intelligence systems will also be observed with respect to the same axes that the quality of information sought to measure. Then, the process of measuring the impact of the quality of the system used on the satisfaction of users of Business Intelligence systems will be carried out in terms of satisfaction with the efficiency of the business intelligence system and its ability to meet all informational and cognitive needs, as well as in terms of effectiveness and at the same time measuring the impact of information quality on user satisfaction with the business intelligence system. After obtaining the results, we will move to the second stage, which seeks to observe the relationship of both the use and user satisfaction of business intelligence systems on the decision-making process within humanitarian organizations, in terms of choosing the best alternative among the available alternatives, as well as the process of using information widely and performing the analysis process more. This will lead to the observation of the effectiveness of using business intelligence on enhancing the decision-making process in humanitarian organizations. Thus, we have identified the main benefit that humanitarian organizations can obtain as a result of using business intelligence, which is the process of making decisions in a flexible, fast and timely manner in a way that can keep pace with the decision-making process in a changing environment, and we need speed and accuracy in the decision-making process.

3.3. Study Sample:

The study sample is considered workers in the humanitarian organizations sector in Turkey, and the focus is largely on workers in an organization who have direct contact with humanitarian work or with beneficiaries and who use Business Intelligence systems on a daily basis.

3.4. Study Population:

The study population that was selected is made up of workers in humanitarian organizations, whether workers in the main centers, that is, those who communicate with donors, secure support, submit reports, and manage budgets and operations remotely. In short, workers within the Grants Department, the Finance Department, Programs, Monitoring and Evaluation, and the Logistics and Human Resources Department. In addition to the field staff who implement the plans and provide support to the beneficiaries, whether through distribution, guidance, training and other activities and programs that have been agreed upon with donors.

4. Statistical Methods

The most appropriate statistical tests were chosen to prove or negate the hypotheses of the study, where the validity of the questionnaire was tested. Reliability, and then the demographic information of the study sample was analyzed and correlations were measured by conducting Correlations test in order to know the relationship between the studied variables. To prove hypotheses and note the effect between the variables under study.

4.1. Statistical Analysis of the Study Sample:

4.1.1. View the Results of the Study:

- **Reliability test**

The stability of the tool indicates that if the questionnaire is re-applied in similar affairs, we will obtain the same findings, that is, the answer will be the same to some extent if it is frequent on the same individuals at diverse times, (this does not include that the findings will be in a condition of congruence) completely (100%), but it could be near to the previous findings, and after applying the Cronbach's alpha index to all the questions, the result was the Cronbach's alpha coefficient was (0.891), which refers to the high potential of the study tool to regulate what it was intended to.

Table (1): Reliability Statistics

Cronbach's Alpha
.891

- **Test for the normal distribution of the study axes:**

Table (2): normal distribution of axes based on (zs) and (zk) test.

		Information quality	System quality	use	User satisfaction	Perceived value	Make decision
N	Valid	92	92	92	92	92	92
	Missing	0	0	0	0	0	0
	Mean	1.9112	1.9581	2.1775	1.9755	1.9312	1.8342
	Std. Deviation	.51144	.50852	.63371	.51363	.58791	.52581
	Skewness	1.015	.768	.954	.259	.727	.208
	Std. Error of Skewness	.251	.251	.251	.251	.251	.251
	Kurtosis	4.870	2.727	3.257	1.964	2.362	.210
	Std. Error of Kurtosis	.498	.498	.498	.498	.498	.498

We note that all axes are distributed normally, and this gives an indication of the validity of the sample for the study.

- **Analyzing Demographic Variables:**

A. Gender

The statistical analysis of gender in the study sample showed that approximately (92.4%) of the total respondents are males, and that the remaining (7.6%) represent females, and this is what was shown in the table (3).

Table (3): Statistical analysis of gender

		Frequency	Percent	Valid Percent	Cumulative Percent
		Gender			
Valid	Male	85	92.4	92.4	92.4
	Female	7	7.6	7.6	100.0
	Total	**92**	**100.0**	**100.0**	

Table (3) shows the ratio of males and females in the sample surveyed, and with regard to this distribution, it can indicate that the field of humanitarian organizations is in areas that are somewhat unstable, and this matter can cause a good percentage of females to refrain from working with organizations, especially with regard to field work, but the percentage of females over males could increase if the work shifted from field work to Office work. We can explain the result, but that males are more active in terms of gathering experiences, since organizations and work in humanitarian organizations require a certain level of expertise, capabilities and languages, and that the presence of a high percentage of male employees may be attributed to the fact that the academic achievement and experience acquisition of males is the best thing that allowed to increase the number of males over females in humanitarian organizations.

B. Age

The statistical analysis of age in the study sample showed that (56.5%) of the total respondents are of the age group (between 26 and 35), while the percentage of the second age group was (39.1%), which includes individuals in the age group (from 36 to 45 years). The third age group, which includes individuals (less than 25), had obtained a percentage of (3.3%), and finally the age group (more than 45 years) constituted (1%) and this is what was shown in the table (4).

Table (4): Statistical analysis of age

		Age			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	The less than 25	3	3.3	3.3	3.3
	between 26 and 35	52	56.5	56.5	59.8
	Between 36 and 45	36	39.1	39.1	98.9
	More than 45	1	1.1	1.1	100.0
	Total	**92**	**100.0**	**100.0**	

Table (4) shows that the majority of employees in humanitarian organizations are mature youth. The reason for this percentage can be attributed to the fact that the organizations seek to obtain young graduates who have sufficient experience, and this explains that most of the workers are people who graduated some time ago and have a sufficient number of years of training and experience. This can constitute a good standard, since most of the employees are young people who can have the necessary energy to advance the organization and serve humanitarian work, and they will be more able to keep pace with developments in the era of globalization and the great technological openness that is sweeping the entire world.

C. 15.4.3. Academic Qualification

The statistical analysis of the academic qualification showed that most of the sample members are university degree holders, as their percentage reached about (67%) of the total sample as a whole, while the second rank was the holders of master's degrees that are (16.3%), and the percentage of employees who hold certificates from institutes are (9.8%), and a lower percentage for PhD holders are (3.3%), and this is what the table (5) shows.

Table (5): Statistical Analysis of Academic Qualification

		Level of education			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Institute	9	9.8	9.8	9.8
	College degree	62	67.4	67.4	77.2
	Master's degrees	15	16.3	16.3	93.5
	PHD	3	3.3	3.3	96.7
	Other	3	3.3	3.3	100.0
	Total	**92**	**100.0**	**100.0**	

Table (5) shows that the organization selects its employees based on the educational qualification, as most of the employees were from university degree holders and from the young age group, and this is a strong point that can be benefited from when applying business intelligence, as this age group is often keeping pace and has a sufficient idea about technology and new releases for every program and even programming languages that allow building a program that may be useful as a wall for humanitarian organizations, and the low percentage of master's degree holders can be attributed to the fact that most workers seek to supplement their experiences with higher university degrees that support the experiences they obtain as a result of working in this field and that most young people working in the humanitarian sector seek to obtain a master's degree related to the self-development of their specializations, and this does not require much effort and can build a solid scientific base for their expertise. This result can also support the low percentage of PhD holders.

D. Years of Experience

Statistical analysis of years of experience showed that most of the sample members have experience ranging from (6- to 10 years), and in the second place comes people with years of experience (6 to 10 years), and then the rest of the options come with simple results, and this is what the table (6) shows.

Table (6): Statistical analysis of years of experience

		Experience period			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than 1 year	2	2.2	2.2	2.2
	Between 1 and 5 year	33	35.9	35.9	38.0
	Between 6- 10 years	42	45.7	45.7	83.7
	More than 10 years	15	16.3	16.3	100.0
	Total	**92**	**100.0**	**100.0**	

It is clear from the percentages shown in the table (6) that most of the workers have years of experience between six to ten years, which is the period during which humanitarian organizations began to work and respond to the emergency situation that began in Syria, i.e. the need for the intervention of humanitarian organizations working to provide the necessary support, and this is the period that formed The first period for Syrian youth to enter the humanitarian sector is crowded, and it can be reinforced that people who hold the second rank may have from 1 to 5 years of experience.

- **What fields are Business Intelligence systems used at?**

In order to know the areas that use the Business Intelligence system more, we have conducted some tests such as averages and distribution, and all results can appear in the table (7).

Table (7): which field do you use business intelligence?

	Reporting		Data analysis		Make decisions		Continuous improvement		Financial reporting		Purchasing Functions	
	Yes	No	Yes	NO	Yes	NO	Yes	NO	Yes	NO	Yes	NO
Frequency	56	36	61	31	31	61	33	59	20	72	14	78
Percent	60.9 %	39.1 %	66.3 %	33.7 %	33.7 %	66.3 %	35.9 %	64.1 %	72%	78.3 %	15.2 %	84.8 %
Mean	0.49072		0.47526		0.47526		0.48225		0.41473		0.36116	
Percent for each case	26.0%		28.4%		14.4%		15.3%		9.3%		6.5%	
Valid	92		92		92		92		92		92	

After reviewing the results in table (7), it was found that (26%) of the sample members use Business Intelligence systems for preparing reports in general, and this is evidence of the importance of Business Intelligence systems in preparing reports. While (28.4%) of the studied sample use Business Intelligence systems from data analysis, and also this is a very blind matter in humanitarian work, since most decisions in humanitarian organizations are based on data analysis, which is what makes the assessment of human needs a very important matter. The importance, clarity, and knowledge of the sectors that require support, and this can be an important indicator of the great role that Business Intelligence systems play in humanitarian organizations. (14.4%) of the sample members use Business Intelligence systems in the decision-making procedure, and this is very natural, since those involved in making decisions are project managers or workers in senior management, as the use of Business Intelligence systems in analyzing and cleaning data can lead to production accurate and clear information that allows senior management and project managers to make decisions more easily and quickly. This matter can be very important in humanitarian organizations being. Looking at the percentage of those who use Business Intelligence systems in the process of continuous improvement, it was found that (15.3%) of the sample members use Business Intelligence systems for the permanent improvement of humanitarian organizations, improve the reality of work, or improve project normalization methods. It was found that (9.3%) of the sample members use Business Intelligence systems for preparing financial reports and humanitarian organizations, like all humanitarian organizations, have budgets dedicated to implementing project activities and are forced to submit financial reports to project supporters. Monthly or quarterly financial reports according to the specifications of each project. We note the weak use of Business Intelligence systems in the procurement department, as the percentage reached (6.5%). This can explain naturally that workers in the procurement department need to carry out traditional purchases that depend on the process of collecting quotations and choosing the best, and this needs a few techniques that can be provided by the Business Intelligence system. This could explain the low percentage of the utilization of Business Intelligence systems in the procurement department.

- **The most widely used programs within Business Intelligence systems**

Table (8): Which program is essential in your department?

	Excel		QuickBooks		Power BI		Other	
	Yes	No	Yes	No	Yes	NO	Yes	No
Frequency	87	5	12	80	33	59	24	68
Percent	94.6%	5.4%	13%	87%	35.9%	64.1%	26.1%	73.9%
Mean	0.9457		0.1304		0.3587		0.2609	
Percent for each case	55.8%		7.7%		21.2%		15.4%	
Valid	92		92		92		92	

Table (8) shows the response of the sample members towards the Business Intelligence programs most commonly used in humanitarian organizations. A set of options have been developed for the programs used in humanitarian organizations or working institutions in general. It was found that 55.8% of the sample members use Excel program and this is normal as Excel program is the basis of the work of humanitarian organizations which is considered a result of the high flexibility that it enjoys, in addition to its ability to facilitate work, build data cleaning tables and issue effective interfaces, leads to update in a timely manner with any change in the values or information entered into it, in addition to the ability to interpret all information into graphic lines that facilitate the process of understanding the results and aiding in making decisions as a result of being able to

clearly read the results. While (7.7%) of the sample members work on the QuickBooks program, this is normal since the program is dedicated to controlling financial movements and issuing financial reports in relation to projects or banks and funds. It is natural that the percentage of use is low because the use is confined to the finance department. It can also be noted that the forgetfulness of using the Power BI program has reached (21.2%), and this program is considered one of the programs that have been recently released, so it did not have a large spread and the fact that most workers in humanitarian organizations focus on using Excel as a result of the cakes it provides. While the statistical analysis indicated that there are other programs that are used, and their percentage was not high, about (15.4%).

4.2. Statistical Analysis of the Associations between Study Variables:

Table (9): The correlations between the study variables

		Information quality	System quality	Use	User satisfaction	Perceived value	Make decision
Information quality	Pearson Correlation	1					
	Sig. (2-tailed)						
System quality	Pearson Correlation	.789**	1				
	Sig. (2-tailed)	<.001					
Use	Pearson Correlation	.420**	.467**	1			
	Sig. (2-tailed)	<.001	<.001				
User satisfaction	Pearson Correlation	.652**	.671**	.520**	1		
	Sig. (2-tailed)	<.001	<.001	<.001			
Perceived value	Pearson Correlation	.556**	.554**	.453**	.746**	1	
	Sig. (2-tailed)	<.001	<.001	<.001	<.001		
Make decision	Pearson Correlation	.559**	.587**	.444**	.649**	.674**	1
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	

**. Correlation is significant at the 0.01 level (2-tailed).

Table (9) of the correlations shows that there are positive correlations between all the variables, ranging from strong to moderate correlations with high reliability. Referring to the results contained in the table, it was found that there is a powerful correlation between the quality of information, and both uses, with a value of (0.420). In addition to observing a good correlation between the quality of information and satisfaction with use, it reached (0.652), and there was also a high reliability in this correlation. Returning to the relationship between information quality and tangible value, a strong relationship between these two variables was also observed, which amounted to (0.556), and the reliability was also high. Thus, we can say that all the variables related to the first level (information quality, system quality) to measure the success of information systems are well linked and have strong and reliable correlation with the variables at the second level (use, user satisfaction, tangible value). In the context of observing the correlation relations between the variables of the study, a strong correlation was observed between the variable of use and decision-making in humanitarian organizations, which amounted to (0.444), which is also a reliable relationship, and in the same context, there was a powerful relationship between satisfaction with use and decision-making in organizations. Humanity reached (0.649**) and also high reliability. Finally, a strong correlation was discovered that amounted to (0.674**) and is highly reliable, which proves the existence of strong correlations within the study variables in general.

4.3. Verification of the Hypotheses of the Study:

Table (10): Table of analysis of variance

variables	R	R Square	Sig	T
Information quality -Use	0.420**	0.177	0.001	4.394
System quality-Use	0.467**	0.218	0.001	5.006
System quality - User satisfaction	0.671**	0.450	0.001	8.578
Information quality - User satisfaction	0.652**	0.425	0.001	8.163
Information quality - Perceived value	0.556	0.309	0.001	6.347
System quality - Perceived value	0.554**	0.307	0.001	6.310
Use- Make decision	0.444**	0.197	0.001	4.698
Perceived value - Make decision	0.674**	0.454	0.001	8.647
User satisfaction- Make decision	0.649**	0.421	0.001	8.083
Business intelligence - Make decision	0.713**	0.509	0.001	9.656

In this paragraph, the test of acceptance or rejection of the study's hypotheses will be tested, and we start with the first sub-proposition:

- **The first sub-proposition: There is a positive interrelation between the quality of information used in Business Intelligence systems and the utilization of business intelligence systems in human institutions operating in Turkey.**

The correlation coefficient was found to know the relationship between the quality of information used in Business Intelligence systems and usage, whether in terms of method or degree. It was found from the table (10) that the correlation coefficient is equal to (**0.420) and that the importance value is (0.001), which is less than (0.05), which means that there is a significant positive direct relationship between the quality of information used in business intelligence systems and usage at the level of significance (0.05).

This can show that the quality of management information can play a crucial role in the process of using management information systems. The information entered or used that bears the quality of high quality can affect the process of using information systems, whether in terms of the degree of use or the method of use and thus, which will be reflected on some administrative tasks, such as the decision-making process. Sound inputs are fundamental to the decision-making process. Business Intelligence systems play an important role in the process of obtaining transparent and clean data, thus improving the process of use and thus making decisions, and this is what was indicated by (Karim A. J., 2011).

- **Second sub-proposition: There is a positive correlation between the quality of the system used within Business Intelligence systems and the use of Business Intelligence systems in humanitarian organizations operating in Turkey.**

The correlation coefficient was found to find out the relationship between the quality of the system used in Business Intelligence systems and usage, and it was found from table (10) that the correlation coefficient is equal to (**0.467) and that the significance value is (0.001), which is less than (0.05), which means that there is a positive relationship. There is a high grade of direct correlation between the quality of the system used in Business Intelligence systems and usage at the level of significance (0.05).

This shows that the system used has a positive effectiveness on the process of using Business Intelligence, and there can be many criteria that indicate the quality of the system, such as ease of use or reliability, which can reflect positively on the process of use and thus may lead to the improvement of some administrative functions such as decision-making process.

- **The third sub-proposition: There is a positive relationship between the quality of the system used within Business Intelligence systems and user satisfaction in humanitarian organizations operating in Turkey.**

The correlation coefficient was found to find out the relationship between the quality of the system used in Business Intelligence systems and usage, and it was found from table (10) that the correlation coefficient is equal to (**0.671) and that the significance value is (0.001) which is less than (0.05), which means that there is a positive relationship. There is a high degree of direct correlation between the quality of information used in Business Intelligence systems and satisfaction with use at the level of significance (0.05).

Hence, we can say that the quality of the system has an important role in the process of use, and it may be in terms of ease, ability and results, and therefore we can say that the quality of the system will affect the use, which will affect some of the functions used by decision makers.

- **The Fourth sub-proposition: There is a positive correlation between the quality of information used in Business Intelligence systems and user satisfaction in organizations operating in Turkey.**

The correlation coefficient was found to know the relationship between the quality of information used in Business Intelligence systems and usage, and it was found from table (10) that the correlation coefficient is equal to (**0.652) and that the significance value is (0.001), which is less than (0.05), which means that there is a positive relationship. There is a high degree of direct correlation between the quality of information used in Business Intelligence systems and satisfaction with use at the level of significance (0.05).

The quality of information plays a positive role in the process of building user satisfaction in Business Intelligence systems. The presence of appropriate information is reflected in the use and consequently the user's satisfaction with the use of Business Intelligence. Therefore, this combination of quality in information and satisfaction with use must be influential and positive on the decision-making process.

- **The Fifth sub-proposition: There is a positive correlation between the quality of Business Intelligence systems information and the tangible value of using Business Intelligence systems in humanitarian organizations operating in Turkey.**

The relationship coefficient was found to find out the relationship between the quality of information used in Business Intelligence systems and the tangible value by users of Business Intelligence systems in humanitarian

organizations which is less than (0.05), which means that there is a positive, direct relationship with a high degree between the quality of information used in Business Intelligence systems and the tangible value as a result of using Business Intelligence systems at the level of significance (0.05).

This indicates that the quality of the information used greatly affects the tangible value of using Business Intelligence systems, with regard to the material value paid for the Business Intelligence system. In general, the results indicated that the Business Intelligence system has a positive tangible value on the users of those systems.

- **The Sixth sub-proposition: There is a positive relationship between the quality of the system used within Business Intelligence and the tangible value of using these systems in humanitarian organizations operating in Turkey.**

The correlation coefficient was established to find out the correlation between the quality of the system used in Business Intelligence systems and the tangible value by users of Business Intelligence systems in humanitarian organizations operating in Turkey, and it was found from table (10) that the correlation coefficient is equal to (0.554**) and that the significance value which is (0.001), which is less than (0.05), which means that there is a positive, highly direct relationship between the quality of information used in Business Intelligence systems and the tangible value of using Business Intelligence systems at the level of significance (0.05).

This indicates that the quality of the system used greatly affects the tangible value of using Business Intelligence systems with regard to the material value paid for the business intelligence system. In general, the results indicated that the business intelligence system has a positive tangible value on the users of those systems.

- **The Seventh sub-proposition: The degree of use of Business Intelligence systems has a significant positive impact on decision-making in humanitarian organizations operating in Turkey.**

The correlation coefficient was found to know the relationship between Business Intelligence systems and decision-making in humanitarian organizations operating in Turkey. It was found from the table (10) that the correlation coefficient is equal to (0.444**) and that the significance value is (0.01) which is less than (0.05), which means that there is a positive, high direct relationship between employment and decision-making in humanitarian organizations working in Turkey.

This indicates that the degree of use of information systems greatly affects the decision-making process in humanitarian organizations. The correct and reliable use of Business Intelligence systems affects the quality and validity of decision-making in humanitarian organizations operating in Turkey.

- **The eighth sub-proposition: The level of satisfaction using Business Intelligence systems has a significant positive impact on decision-making in humanitarian organizations operating in Turkey.**

The correlation coefficient was found to find out the relationship between the user satisfaction of Business Intelligence systems and decision-making in humanitarian organizations operating in Turkey. It was found from table (10) that the correlation coefficient is equal to (0.649**) and that the significance value is (0.01), which is less than (0.05), which means that there is a positive, direct relationship with a high degree between user satisfaction with Business Intelligence and decision-making at the level of significance (0.05).

The process of user satisfaction with the Business Intelligence system may have a major role in the decision-making process. When the user has a feeling of satisfaction with the efficiency of the system that is being used, and that the system used can meet the knowledge and information needs and has confidence in the effectiveness of the system from us, he can rely heavily on the process of making decisions. I decided.

- **The ninth sub-proposition: The level of perceived value of Business Intelligence systems has a significant positive impact on the decision-making process in humanitarian organizations operating in Turkey.**

The correlation coefficient was found to find out the relationship between the perceived value of Business Intelligence systems and decision-making in humanitarian organizations operating in Turkey, and it was found from the table (10) that the correlation coefficient is equal to (0.674**) and that the significance value is (10.00), which is less than (0.05), which means that there is a highly direct positive correlation between the perceived value of Business Intelligence systems and decision-making between them at the level of significance (0.05).

Thus, the positive orientation of the perceived value can be expressed. The amount that is paid by the user of information systems is considered valuable, and this is evidence of the ability and importance of Business Intelligence systems and therefore considered as a basis in the decision-making process. Also, these systems can reduce effort and make the decision-making process easier.

5. Conclusion

In this chapter, I will write a summary of what was reached through this research, where the study was built with the aim of discovering the relationship between Business Intelligence systems and decision-making in humanitarian organizations, which works in Turkey and implements some projects inside Syria. This study relied mainly on the method of Ephraim McLean and William Delone (1992) in measuring the success of information systems, and this is with the aim of testing the impact that the use of such as Business Intelligence gives on the decision-making process. A detailed commitment was made to the measurement process and the addition of a new variable used by the researcher Abdullah Eren, where a new variable related to the tangible value was added. This questionnaire is in a form that can answer the questions that were included in this research, and the way in which the measurement was made was noted. It was found that there is a powerful relationship between the quality of the information used and both the use of Business Intelligence systems, user satisfaction and tangible value. At the same time, a good correlation was observed between the quality of the system used and the use of Business Intelligence systems, satisfaction with use, and tangible value. There was also a perfect relationship between the user of Business Intelligence systems, user satisfaction, and the tangible value of using Business Intelligence systems on the reading-taking process in humanitarian organizations working in Turkey. Business Intelligence systems have a role in the decision-making process in humanitarian organizations operating in Turkey, and the biggest player is the quality of the information used and the quality of the system used, the more high-quality information in terms of cleanliness, non-repetition, modernity and adequacy, all of these things can play a good role in the decision-making process. At the same time, the system, its quality, ease of use, and flexibility in use have a significant effectiveness on the decision-making process, and thus we reach a basic conclusion that information systems affect the decision-making process in human organizations, and this can open new horizons for consolidating the process of introducing Business Intelligence systems to work in organizations. Because of the importance of humanity, speed, accuracy and flexibility in the decision-making process in humanitarian organizations, what organizations achieve is by making decisions quickly and flexibly, to show a faster response to meet the needs and requirements of the beneficiaries, or even the process of identifying and assessing the needs of the beneficiaries or those affected, and thus determining the type of support that is most beneficial to the beneficiaries, as well as the process of drawing distribution plans or how to adapt the support taken in a way that meets the needs of the beneficiaries, which is the main goal of humanitarian organizations. In addition to the blindness that can be played by the process of using business intelligence systems in the process of monitoring and evaluating the progress of projects that have been approved to support the beneficiaries and thus the ability to compare between what has been planned and what has been implemented i.e., the actual Finance Department. Business Intelligence systems can be a strong supporter of this department by providing real-time information that can affect the way project budgets are managed, rationalize the distribution process, or change between inefficient budget lines and convert them to the budget lines that are most beneficial to the beneficiaries, in addition to providing the information necessary to draw up any plan. Financial funds can be provided to the affected or beneficiaries. If we go to project the result obtained through the study on the logistics department, we note that Business Intelligence systems can help the logistics department choose the best decision for the supplier that can meet our needs in terms of knowing the most appropriate goods and the best price and can help me in the process of obtaining information about suppliers, their specializations and how can I better differentiate between these suppliers, which will be reflected on the nature of the goods provided to the beneficiaries and by referring a little to the human resources department. We can respond faster to secure qualified people, through filtering methods and searching in databases for the most suitable person for the job, in addition to the large blindness provided by such systems to the planning process, that is, making plans to secure the necessary human resources in a way that can meet the needs of the beneficiaries. Finally, when we make some of the commands that Business Intelligence systems can achieve on the software department, such systems can provide the software department with real-time follow-up of the project's activities and can provide them with the ability to know the number of beneficiaries, the rest of the project and the rest of the budget and thus the potential to make decisions based on the information received thanks to Business Intelligence systems. From the above, it turns out that we have a great ability for Business Intelligence systems to influence the decision-making process in humanitarian organizations, and therefore it is necessary to work on the introduction of these systems significantly so that we can benefit from them in such areas.

The study concluded a set of results, the most important of which are the following:
- There is a strong direct relationship between Business Intelligence systems and the decision-making process in humanitarian organizations operating in Turkey at the level of significance (0.05), and this is consistent with the study of (Aldag R. J. & Power, 1986) in terms of the importance of the quality of decision-making in computer-aided programs.
- There is a positive correlation between the quality of information used in Business Intelligence systems and use in humanitarian organizations operating in Turkey at the level of significance (0.05), and this is consistent with the study (Rai, 2002) in terms of the existence of the same relationship between the quality of information and the use of this information.

- There is a positive correlation between the quality of the system used within Business Intelligence systems and use in humanitarian organizations operating in Turkey at the level of significance (0.05), and this is consistent with the study of (Ephraim McLean & William Delone, 1992) in terms of the existence of a relationship between system quality and use.
- There is a positive correlation relationship between the quality of Business Intelligence systems information and the perceived value of using Business Intelligence systems in humanitarian organizations operating in Turkey (0.05), and this is consistent with the study (EREN, 2018).
- There is a positive relationship between the quality of the system used within Business Intelligence and the tangible value of using these systems in humanitarian organizations operating in Turkey.
- There is a positive correlation between the user satisfaction of Business Intelligence systems on decision-making in humanitarian organizations working in Turkey at the level of significance (0.05).
- There is a positive relationship between the perceived value of Business Intelligence systems on decision-making in humanitarian organizations working in Turkey at the level of significance (0.05).
- There is a relationship between use and user satisfaction with Business Intelligence and the degree of use in humanitarian organizations operating in Turkey.
- Business Intelligence applications are very important in the reporting process, which in turn is used for the decision-making process. No decision can be taken except by relying on the reports received from the departments. Thus, we note that the reports prepared using Business Intelligence systems can constitute a wonderful entrance to the decision-making process.

Recommendations:

Depending on the results of the research, we recommend the following:

- Business Intelligence systems must be introduced to humanitarian organizations and the process of using them as basic systems for humanitarian organizations and an auxiliary to the decision-making process, and there must be a permanent monitoring process for the systems in order to adapt them in appropriate to each department, and this may require the use of programmers in addition to some administrative ideas or to experts or graduates from Information Systems Departments. That is, we need people who are able to build Department systems in appropriation to each department. We have noticed the use of a program related to the human resources department in Orange, and according to an interview with the Director of Human Resources Department at Orange Organization in Turkey, Gaziantep Branch, on 15-Mar-2022 there have been radical changes with regard to data archiving, quick access to information and an increase in the ability to follow-up for each employee in addition to the ability to take decisions commensurate with the objectives of the projects to be implemented.
- It is necessary to find a methodology to follow up on Business Intelligence systems, ie we need people who are able to understand and use these systems. These systems require experts and followers so that we can take advantage of the features they have. This issue can be avoided by conducting training courses for each employee who is in direct contact with Business Intelligence systems.

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دور ذكاء الأعمال في تعزيز اتخاذ القرارات في المنظمات الإنسانية العاملة في تركيا (منظمة أورنج كنموذج)

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الملخص:

هدفت هذه الدراسة إلى التعرف على العلاقة ما بين نظم ذكاء الأعمال وعملية اتخاذ القرارات لدى المنظمات الإنسانية العاملة في تركيا، ولتحقيق أهداف الدراسة قام الباحث بتصميم استبانة شملت على (30) فقرة لجمع المعلومات الأولية من عينة الدراسة المكونة من (92) مفردة ويمكن اعتبار أن عدد افراد المجتمع المستبيين ككل (105) وهم يمثلون عدد الموظفين في منظمة أورنج. وفي ضوء ذلك جرى جمع وتحليل البيانات واختبار الفرضيات باستخدام الحزمة الإحصائية SPSS وتم إجراء العديد من الاختبارات التي تتناسب وطبيعة البحث ومنها لحظ الارتباطات ما بين المتغيرات ككل بالإضافة إلى الاطلاع على المتوسطات واثبات الفرضيات. وبعد إجراء عملية التحليل لبيانات الدراسة وفرضياتها توصلت الدراسة إلى جملة من النتائج أبرزها أولًا: هناك علاقة ارتباط قوية ما بين نظم ذكاء الأعمال وعملية اتخاذ القرارات في المنظمات الإنسانية العاملة في تركيا عند مستوى دلالة 0.05 ≥ α. ثانيًا: وجود علاقة ارتباط إيجابية ما بين جودة المعلومات المستخدمة في نظم ذكاء الأعمال والاستخدام في المنظمات الإنسانية العاملة في تركيا عند مستوى دلالة 0.05 ≥ α. ثالثًا: هناك علاقة إيجابية ما بين جودة النظام المستخدمة ضمن نظم ذكاء الأعمال والاستخدام في المنظمات الإنسانية العاملة في تركيا عند مستوى دلالة (0.05). رابعًا: وجود علاقة إيجابية ما بين جودة المعلومات المستخدم في نظم ذكاء الأعمال ورضا المستخدم في المنظمات العاملية في تركيا أيضًا عند نفس مستوى الدلالة. خامسًا: لوحظ علاقة إيجابية ما بين جودة النظام المستخدم في نظم ذكاء الأعمال ورضا المستخدم في المنظمات العاملة في تركيا عند مستوى دلالة α ≥ 0.05. سادسًا: هناك علاقة إيجابية مابين جودة معلومات أنظمة ذكاء الأعمال والقيمة الملموسة من استخدام أنظمة ذكاء الأعمال في المنظمات الإنسانية العاملة في تركيا عند مستوى الدلالة المحدد 0.05 ≥ α. سابعًا: هناك علاقة إيجابية ما بين جودة النظام المستخدم ضمن ذكاء الأعمال والقيمة الملموسة من استخدام هذه النظم في المنظمات الإنسانية العاملة في تركيا. ثامنًا: وجود علاقة إيجابية ما بين الرضا المستحدم لأنظمة ذكاء الأعمال على اتخاذ القرار في المنظمات الإنسانية العاملة في تركيا عند مستوى الدالة (0.05 ≥ α) . وأخيرًا: هناك علاقة إيجابية ما بين القيمة المتصورة لأنظمة ذكاء الأعمال على اتخاذ القرار في المنظمات الإنسانية العاملة في تركيا عند مستوى الدلالة ذاته.

الكلمات المفتاحية: نظم ذكاء الأعمال؛ اتخاذ القرارات؛ المنظمات الإنسانية.