

**A STUDY OF THE LINK BETWEEN POOR QUALITY AND POOR
PERFORMANCE OF VARIOUS HEALTH CARE INDICATORS**

A Thesis Presented for the

Master of Science

Degree

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Abstract

The key performance indicators of healthcare facilities are used to manage the various elements of their operations, such as patient care and costs. The objective of this study is to analyze how poor performance indicators can affect the quality of healthcare services that a local health care center provides. Studies have shown that the operations of an organization are linked to its key performance indicators (KPIs) and can have a significant impact on the satisfaction of its customers. For instance, healthcare facilities use performance measures to provide their employees with a better understanding of the quality of their health insurance. Through a questionnaire survey, the researchers were able to identify the various factors that affect the quality of healthcare services provided by a local health care center. They then analyzed the data using ANOVA and other statistical tests to determine if the performance indicators of different health care industries can influence the overall quality of the services.

Preface

A healthcare facility's key performance indicators (KPIs) are used to manage the various data elements of its operations, such as patient care, costs, and performance. They can help identify areas where improvements can be made and ensure that the hospital is operating efficiently. Patients of a selected local health care centre are surveyed in this research to see whether poor performance indicators results in poor quality in the Health care industry that can help the employees of health care industry in providing good services to their customers or patients. Existing research has consistently demonstrated that any organization's operations are linked and affected by their KPIs and have a significant impact on customer satisfaction. For the researcher, such data may be used as a foundation for demonstrating how the achievement of KPI influence the overall quality outcome of their health care and consequently the customer satisfaction, and finally that can evaluate a hypothesis under consideration.

Performance measures are used by healthcare facilities to provide their employees with an overview of the quality of their health plans. They can also help them compare the various services offered by different healthcare companies. As part of the present study, the researchers are trying to figure out if the KPIs of any health care industry can affect the overall quality of the outcome from any health care industry.

Statistics such as the analysis of variance (ANOVA) were used to study a group of healthcare employees as well as patients from a neighboring health care centre. Following a study of the literature and an analysis of the data, theoretical and analytical conclusions may be drawn.

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Chapter One

Introduction and General Information

Introduction

A key performance indicator is a measure of progress that can help identify areas for improvement and create an analytical framework for making informed decisions. It can also help focus on the most important factors that matter most. According to Parmenter (2015), “What gets measured gets done.” Setting goals and tracking progress against them are some of the key elements that organizations use to manage their KPIs. However, managing them also involves identifying and improving the leading indicators that will drive future success. For instance, improving the performance of the organization's lagging indicators can help identify areas of improvement. A good performance indicator should provide objective evidence of how far an organization has come in achieving its goals. It should also help inform decision making by showing the changes that have occurred over time. Various performance indicators can be used to measure an organization's efficiency and effectiveness. These include quality, compliance, and efficiency.

Unfortunately, the use of performance indicators can be a challenging issue for policymakers when assessing the performance of managers in the public sector. There are many criticisms about their use, and they can be used to marginalize other management activities. They can also be misleading, and they can be used to make an objective statement seem more accurate. The goal of performance measurement instruments in customer centric sectors such as health care services is to improve the efficiency and effectiveness of the health system. They are

also designed to promote accountability among various groups within the system, such as providers, insurers, and central and local governments. It is very important that the actions and outcomes of various health care agents are measured and analyzed in order to make informed decisions regarding the health system. This type of accountability can be considered a good thing in order to promote informed debate and transparency in the system. Performance measurement can help improve the efficiency of the health system and inform the public about the effectiveness of the government's financial resources. It can also help increase the willingness of citizens to contribute to the health system.

Performance assessments are usually conducted by organizations all around the world. They are usually carried out to evaluate the employees' performance. Despite the widespread use of performance management systems, many organizations are still not satisfied with their results. A survey conducted in 2013 by the consulting firm, Mercer et al. (2018), revealed that only 3% of the leaders believed that the systems delivered exceptional value.

Due to the emergence of the COVID-19 pandemic, various organizations all around the world have changed their mission and vision. It is very important that the healthcare industry quickly responds to the coronavirus pandemic to ensure that it can adapt to the changes it has brought about. The WHO declared the outbreak a global public health emergency on March 11, 2020. Two cases of COVID--19 were reported in Algeria two days later. The rapid emergence and evolution of the coronavirus pandemic has highlighted the need to implement effective measures to prevent its spread. In October 2020, there were over 51,000 cases of COVID-19 and 1880 deaths in Algeria (Kadi & Khelfaoui, 2020).

The high number of healthcare-associated deaths is a threat to the country's health. It's important that the private and public sectors work together to reduce this issue. According to

the latest statistics from the WHO, Algeria is currently the fourth-highest country in Africa with over 50,000 cases of COVID-19. It's followed by South Africa and Ethiopia with 669,498 and 72,700 cases, respectively. As of October 2020, Africa has recorded over a million confirmed cases and over 25,000 deaths (Zhao et al., 2020).

Due to the evolution of the coronavirus pandemic, various government officials and healthcare managers are still trying to figure out the best ways to improve the efficiency of their health organizations. Performance indicators can be used by healthcare organizations to measure their efficiency and respond quickly to the effects of the pandemic. To effectively address the effects of the pandemic, healthcare industry leaders are required to identify the performance indicators they can use to improve their facilities. Unfortunately, the exact answers to the various questions related to the pandemic have not been identified. This means that the effects of the outbreak on the healthcare industry are still not yet fully understood (Babbie, 2010).

After conducting their studies, the researchers discovered that various factors can affect the operations of healthcare facilities. They then decided to implement performance indicators as a tool to improve the efficiency of the industry.

Aside from the small details of a facility's design, the factors that can affect its sustainability can also affect its operation and maintenance. This is why it's important that decision-makers have the necessary technical skills to identify these factors. For instance, the design of healthcare facilities should consider the use of bioclimatic passive strategies. Performance indicators can also be used to improve the efficiency of various public health measures. In addition, they can be used to identify factors that can be changed to improve the operations of the healthcare industry (Creswell& Poth, 2016).

Although some of the techniques used for developing performance measurement systems were commonly used in formal evaluation processes, they were not as prevalent in the decisions made after the evaluation. According to a study conducted by McKinsey (2013), over 60% of organizations utilize multi-source feedback systems, while almost 90% of them utilize pay-for-performance methods. Although performance measurement is usually the focus of a comprehensive evaluation, it is not always enough to achieve the goals.

Creswell and Creswell identified 48 key performance indicators (KPIs) that are categorized into ten categories. These include operational, tactical, strategic, and tactical indicators. They classified the performance dimensions into four categories: timeliness, safety, efficiency, and effectiveness. The 41 key performance indicators for Algeria's healthcare system were then selected based on the findings of a literature review and our research. These include ten indicators for sustainability, nine for economic sustainability, and nine for internal process (Creswell& Creswell, 2017).

For healthcare facilities struggling with a crisis, the concept of social sustainability indicators (SSIs) can be very ambiguous. According to Nunan (2020), SSIs are a concept in chaos. They are organized under various categorical concerns, such as inequality, well-being, and agency. Some researchers believe that using social sustainability indicators can help improve the well-being of individuals. They also believe that certain KPIs can contribute to improving the lives of the people. Due to the complexity of the concept, it has been difficult to establish effective and specific indicators that can help track the various factors that affect a facility's social sustainability. This is why it has been necessary to create a variety of approaches to social sustainability. It is widely believed that the use of sustainability indicators in the healthcare industry is appropriate. Several studies have been conducted to identify the various

economic factors that can be used to evaluate the performance of a facility's sustainability. These studies were then used to develop a set of baseline indicators that can be used to keep the facility running smoothly during the global pandemic.

According to Myers et al., in 2008, the concept of enterprise social intelligence (ESI) refers to the ability to monitor and analyze the various activities and procedures within a healthcare facility. This type of performance measure can help improve the quality of care provided by the facility. An internal process index is also used to analyze and monitor the multiple processes and practices within a healthcare facility. Since the design and construction of healthcare facilities is complex, it is important that they have a set of specific performance indicators that can be used to implement their strategic objectives. During a global pandemic, it is very important that every detail is taken into account to ensure that the facility is running smoothly. The use of various performance indicators can help healthcare facilities plan and prioritize their actions. They can also help them respond to situations in real time. According to Elmar Hrner, one of the most important factors that can be considered when it comes to assessing the effectiveness of a healthcare facility's operations is the decision making process. Having a set of continuous performance indicators can help healthcare facilities determine if their objectives are achievable. It can also help them evaluate the effectiveness of their facilities. One of the most important factors that can be considered when it comes to assessing the effectiveness of a healthcare facility's operations is the decision making process. Since the goal of a healthcare facility is to provide the best possible care, it is important that it has a set of performance indicators that can be used to evaluate the facility's needs and goals. According to Schmidt et al., it is important that healthcare facilities have a comprehensive

understanding of the various factors that can affect their operations. This can help them create new performance indicators (Parmenter, 2015).

Recently, El Sayed, a healthcare consultant, decided to use the multiple performance indicators that were collected from the pharmaceutical industry to evaluate the effectiveness of a project management system. She found them to be useful in helping both system administrators and managers make informed decisions (El Sayed, 2012). David Parmenter, a healthcare consultant, also advised healthcare facilities to carefully consider the selection of the right KPIs (Parmenter, 2015). According to Leape., all of the panelists agreed that there were only eight key performance indicators that they could use. These include medication education, discharge patient care rounds, medication reconciliation, and the implementation of a comprehensive drug therapy plan. The other four KPIs that were allocated to the different classes were: IIE, which is focused on the implementation of a proactive direct patient care program; ESI, which is on the reconciliation of medication history; and SSI, which is on the provision of in-person disease education (Leape, 1991). In order to explain the core principles of Society 5.0, Hennink used the multiple performance indicators to explain the various factors that influence the development of the organization. In their study, the authors of the paper noted that the use of technical indicators in the decision-making process can help improve the efficiency of a healthcare facility. They also noted that performance measurement can help improve the management's ability to make effective decisions during times of crisis (Hennink, 2020). Rahman et al also noted that the mean lead-time is one of the most important factors that can be considered when it comes to assessing the effectiveness of a facility's operations. According to Ramzi Shawahna, a healthcare consultant, various performance indicators are often developed to help healthcare facilities

measure the effectiveness of their services. These are also supposed to help them improve the efficiency of their operations (Rahman, 2015).

Research Objective

The objective of this study was to investigate how the quality of health care and various health care indicators affect the performance of customers and employees of health facilities.

The objective of this project is to provide a comprehensive analysis of the quality of services that are offered by various health care organizations. It will help improve the performance of these organizations and the quality of their services.

In addition to the regular training and development programs, this project also aims to help the employees improve their skills and knowledge in order to achieve their goals.

The study initially focused on identifying the factors that contribute to the quality failures in the health care industry. Through a set of questionnaire designed to collect data on the customers and employees of health care facilities, the researchers were able to identify the main causes of these failures. They then used this data to narrow the Center's focus on the various KPIs that affect the performance of healthcare industries.

The researchers then conducted a survey to collect data on the employees and customers of health care facilities. The decision to conduct this study was based on the fact that customers usually don't complete surveys unless they are conducted in a face to face interview. This method is very valuable to an organization as it allows them to gather valuable information. Through this qualitative technique the information about a group's characteristics and opinions can be easily gathered. Various demographic factor such as age, profession etc can be gathered easily. In the present investigation the opinions, experiences, and

hypothetical scenarios of patients as well as employees of a health care on the outcome quality levels in view of KPIs were studied using survey method.

Due to the limited scope of the study, the researchers were not able to ask about the various types of failures that affect the quality of health care services. Instead, they focused on the most critical factors that affected the performance of the organization such as the Key Performance Indicators and its effect on the overall quality of the services provided in terms of the metric related questions such as length of stay, bed occupancy rate, equipment utilization etc. The study then categorized the critical causes of these failures into a customer survey such as length of stay, bed occupancy rate, equipment utilization etc., and the responses from the employees of the same facility. The basic objectives of this research project can be summarized as follows:

Objectives:

The study aims to investigate whether any correlation between poor performance indicators and poor quality in the Health care industry exist. The objectives of the study are mentioned below:

- 1. Research and organize critical KPIs to be related with outcomes.***
- 2. Survey health care units with a set of questions on these major KPI issues and explore whether the customers as well as employees viewed the KPI Vs Quality outcome issues in a similar way***
- 3. To find out the relationship between poor performance indicators and poor quality in the Health care industry***

This effort can help the respondents to answer questions quicker by relying on personal experiences by the customers, internal staff feedback and experience in the future.

Research Questions

- a. Do critical KPIs be related with outcomes of healthcare systems in deciding the quality of services?
- b. Are the current performance indicators and measurement methods useful in evaluating healthcare employees' performance?
- c. Is there any relationship between poor performance indicators and poor quality in the Health care industry?

Rationale of the Study

The quality of healthcare can be measured through various factors, such as safety, effectiveness, and person centeredness. For instance, the former refers to the degree of accuracy that processes can achieve in achieving desired outcomes. On the other hand, the latter refers to the level of involvement that the patient has in the delivery of healthcare services. During the Crimean War, quality assessments were carried out on British military hospitals. In Austria, researchers focused on the mortality rates of patients in maternity clinics. In the US, Ernest Codman developed a system that allowed healthcare workers to monitor the outcomes of procedures (Shell& Dunlap, 2008).

The quality of healthcare has been under increasing scrutiny due to the publication of studies conducted by the Institute of Medicine and Harvard Medical Practice in 1991 (Leape et al., 1991). These findings led to the establishment of a framework for assessing the healthcare quality. Due to the rise of public interest in the quality of healthcare, various initiatives and

programs have been created to improve the efficiency and effectiveness of hospitals. One of these is a public comparison of hospitals. Having external comparisons between different healthcare facilities can help improve the quality of healthcare. This can also help the insurance companies identify the providers that are most effective. The study intended to address this inquiry.

Research Hypothesis

The following hypothesis is considered for the study:

Hypothesis:

Null hypothesis: There is no correlation between poor performance indicators and poor quality in the Health care industry.

Alternative hypothesis: There is a correlation between poor performance indicators and poor quality in the Health care industry

Overview of the Study

This report is divided into five chapters. The study's problem statement, justification, aim, objectives, and research question are all covered in the first chapter. The theoretical underpinnings of this study, as well as critiques of existing research in the literature, were covered in the second chapter. The approaches utilized for the research are discussed in the third chapter of the report. The fourth chapter goes with data analysis and observations in depth, and the assignment is finally completed in the fifth chapter.

Setting of the Problem

Quality of healthcare is a critical issue that affects the development and maintenance of healthcare organizations. It is a common objective of all healthcare workers and is a central

issue in the debate regarding the quality of care. Due to the varying perspectives in the industry, the debate regarding the quality of healthcare can be influenced by everyone. For a long time, the quality of healthcare was determined by the medical practice and the quality of the service provided by its practitioners and management. However, this has started to change due to the increasing emphasis on customer experience.

The rapid growth of the healthcare industry has led to the need for new and effective management strategies. Due to the increasing number patients and the fierce competition, the challenge of managing healthcare organizations has become more challenging. In order to improve the performance of its healthcare workers, organizations need to regularly monitor and manage the actions of its employees. This process can be more complex than other industries due to the varying perspectives and priorities of the decision-makers and the number of stakeholders involved.

A study revealed that the quality of healthcare depends on the skills needed to deliver personalized and effective services. This means that various factors such as the hard and soft skills needed to perform their duties can affect the quality of care. The image of the organization can also be affected by the quality of service. Due to the complexity of the process involved in managing the quality of healthcare, many organizations are now turning to the use of performance evaluation tools. These tools can help them measure and manage the performance of their employees.

Although there are various advantages to implementing a performance management system, most professionals agree that it is the first step in establishing the strategy that will allow the organization to achieve its goals. Having a clear and measurable goal is very important in order for the results to be accurate. The goal-oriented approach is a common method that

people use when it comes to implementing performance management systems. This method can be utilized for various jobs that require a definite numerical target. However, setting a goal for other positions can be challenging. Instead of developing an individual approach to employee performance, many small businesses adopt a standardized method that focuses on all employees. This approach tends to generate high subjectivity and low credibility. On the other hand, big organizations can customize their appraisal procedures to meet the needs of their workers. Performance appraisal is a process that focuses on the employees' past performance instead of the improvement that was made in the previous process. This method is more effective when the output data contribute to the achievement of the company's goals. Unfortunately, many organizations are not able to fully integrate the performance measurement system into their performance management system. This method can make it hard for them to identify the key performance measures that they need to implement their strategy. One of the most common reasons why this method is not used is because the alignment between the goals and performance measurement is not ideal.

Background

The quality of primary care services varies widely, and there is a significant gap between what doctors actually deliver and what they are paid for. This issue can have serious consequences, such as the deaths of patients due to medical errors and the emergence of infectious diseases like measles. The quality of primary care services can also have significant financial costs. It affects society and the healthcare system. Sometimes, the quality of primary care services can be attributed to the actions of the public. For instance, parents might refuse to provide their children with certain vaccines due to concerns about their side effects.

Even if the patient and doctor agree that a healthcare plan should meet the highest standards, structural barriers can prevent the timely receipt of certain services. For instance, a woman's breast cancer screening might not be performed properly because of the financing or design of a healthcare system. This article is part of a series that aims to measure the performance of doctors. Some of the factors that can contribute to the quality gap include the lack of knowledge about the latest techniques and procedures. For instance, many doctors are reluctant to use certain drugs, such as warfarin, because of the fear of adverse effects. A key performance indicator is a tool that can be used to measure the performance of a healthcare facility. It can also help improve the quality of patient care. A quality indicator is a tool that can be used by healthcare providers to measure and improve the quality of their services. It can also be used in combination with other administrative tools to improve the efficiency of the healthcare system. Unfortunately, implementing quality improvement programs in a facility can be challenging due to the complexity of its system. More hospitals are realizing that the concept of quality improvement can be applied to improve the services they provide. However, implementing this method requires the involvement of all of the organization's staff members.

Through hands-on activities, such as training sessions, employees can get a deeper understanding of the strategy and its effects. This type of activity also helps motivate them.

Today, healthcare professionals are more focused on the quality of their work and the best possible care for their patients. They also have to consider the various factors that affect the efficiency of a facility. To improve the efficiency of a facility, most hospitals have started implementing electronic records. Due to the digitization of healthcare records, it has become easier for healthcare providers to access and manage the information of their patients. This

eliminates the need for manual entries and allows them to improve the quality of care by making it easier for them to keep track of their patients' vitals. However, this type of revolution can also be used to analyze the operations of a facility.

When it comes to improving the efficiency of a facility, one of the most effective ways is by transforming patient data into key performance indicators. These are used to measure and report on the quality and effectiveness of healthcare services. They can also help identify areas where improvements can be made and compare the current systems with those of other organizations. Unfortunately, there is currently a lack of consistency and standardization in the measurement of oral health care quality indicators. This is because the data collected and reported by different programs and organizations have been inconsistent. These are various indicators that have been identified by expert consensus as feasible and meaningful tools to improve the quality of healthcare services in a facility. A combination of these measures is needed to show how well the MCH systems are delivering effective and efficient care.

Current Initiatives

During the 1990s, performance indicators in England were initially developed ad hoc. There were also multiple regions that developed their own indicators. Performance indicators were introduced to help improve the quality of healthcare provided by the NHS. Other initiatives included the establishment of national service frameworks and the establishment of a clinical excellence institute. These provide guidance on preventing and treating ill health. The introduction of performance indicators during the past decade has been largely driven by the increasing interest in the quality of healthcare. Also, the development of computerized clinical databases has allowed healthcare professionals to monitor the quality of care.

Due to the increasing sophistication of performance indicators, they have become more critical to achieve. For instance, in the UK, they are now based on the data collected from electronic medical records. The introduction of performance indicators in the US was mainly driven by the increasing cost of healthcare. This was also due to the increasing number of people who are looking for value for their money. Other factors such as the availability of performance data and the development of health informatics have contributed to the cost-effectiveness of developing these indicators.

In 2004, the UK government introduced performance indicators to general practitioners' pay. They were then linked to the quality and outcomes framework for their new contract. This new contract also includes various performance measures for different areas, such as the implementation of contraceptive services and the screening of women for cancer. Early results of the pilot program indicated that most general practices were able to achieve high scores on the various performance indicators. However, as the program continues to evolve, we may start to see more variation in the quality of care provided by these practices.

In 2011, the Cincinnati Children's Hospital Medical Center experienced a significant issue with the flow of patients. The hospital's quality improvement team then developed a set of discharge criteria that were used to reduce the length of patient stays and improve the efficiency of its operations. The implementation of performance indicators has allowed healthcare professionals to improve the quality of their services by allowing them to track the progress of their patients. It has also helped them prioritize their patients and improve the efficiency of their procedures.

By 2014, about 80 percent of the hospital's eligible patients were able to be discharged within two hours following the implementation of the performance indicators. This resulted in a cost

savings of approximately \$5.9 million. One of the most effective ways to improve the quality of healthcare is by implementing quality improvement initiatives. These can transform the way a hospital works. In addition to improving the efficiency of its operations, quality improvement programs can also help improve the culture of the hospital. In the US and the UK, the availability of performance data has been gradually becoming more common. In the UK, the data collected by general practices is now available online, which gives the public a better understanding of the quality of their services. However, this doesn't seem to have a huge effect on the decisions that patients make when it comes to choosing their healthcare providers. As the number of performance indicators and the variety of information about general practices increases, the number of people who will use them may change.

Due to the varying nature of performance indicators and systems, it is difficult to compare their effectiveness with that of other healthcare providers. This is also why it is important that they are developed in a way that allows them to be easily transferrable between different cultures and health systems. Some of the performance indicators that will be used by general practices will be country-specific. However, other indicators that will be used to make international comparisons can also be designed in a way that makes them easier to interpret.

Performance indicators can also be used to measure the quality of healthcare across different countries. This can help healthcare professionals identify areas of improvement and develop strategies to improve the quality of their services. However, implementing systems of this kind can be very time-consuming and require the investment in information systems. Although the concept of primary care is similar in different countries, the way in which data is collected and coded can make it hard to compare. For instance, in the UK, the use of Read codes is common. In the US, the use of ICD-9 is also common. Establishing international

standards for the coding and documentation of clinical data is a first step toward establishing a framework that will allow healthcare professionals to make comparisons between different countries.

One of the most important factors that countries need to consider when it comes to implementing performance indicators is the availability of information systems that can provide them with comparable information on the quality of their healthcare services. This can help them make informed decisions when it comes to improving the quality of their healthcare. Aside from the data collected by general practices, other factors such as the development of educational strategies for healthcare professionals are also important to consider when it comes to establishing a national performance framework. Aside from the data collected by general practices, other factors such as the development of educational strategies for healthcare professionals are also important to consider when it comes to establishing a national performance framework. One of the most common adverse consequences of using performance indicators is the refusal of doctors to treat certain patients.

Aside from the data collected by general practices, other factors such as the development of educational strategies for healthcare professionals are also important to consider when it comes to establishing a national performance framework. Despite the various challenges that performance indicators can face, they are still expected to be used in the development of quality improvement programs and performance management in primary care. This series of articles aims to explore the various aspects of the use of quality measures in the US. They will also discuss the patient perspective on the quality of healthcare and the future directions in measuring it.

Scope of the study

The scope of this study is relegated to employees and customers within the Health care sector Services. Some of the past research aspects considered in the scope of the current investigation is as follows.

The Figure 1 shows the average length of stay in a hospital, which is a simple and straightforward metric that shows the time that a patient spends in the facility. It can be used to measure different types of healthcare, such as heart transplants and wisdom teeth removal. A heart transplant operation can increase the figure, while a wisdom tooth removal procedure can decrease it. This is why it is important to break this metric down into different categories so that it can be more accurate. For instance, it can be used to measure the number of procedures and stay days.

The bed occupancy rate is a key performance indicator that can be used in healthcare. It can be shown in Figure 2, and it shows how many beds are occupied during a specific period. This is very important in analyzing the data, as it can provide a quick overview of the facility's performance. For instance, in March and April, we can see that the occupancy rate was over 90%. The following month, the hospital experienced a positive change in its occupancy rate. This could be due to various factors, such as a pandemic. However, the goal is to maintain the level of occupancies to prevent the facility from experiencing extreme pressure and higher infection rates.

The figures 3, 4 and 5 indicate few more KPIs generally considered for evaluating the outcomes quality in the health care industries.



Figure 1 Evaluating the amount of time the patients stay in the hospital (Khalifa & Khalid, 2015)

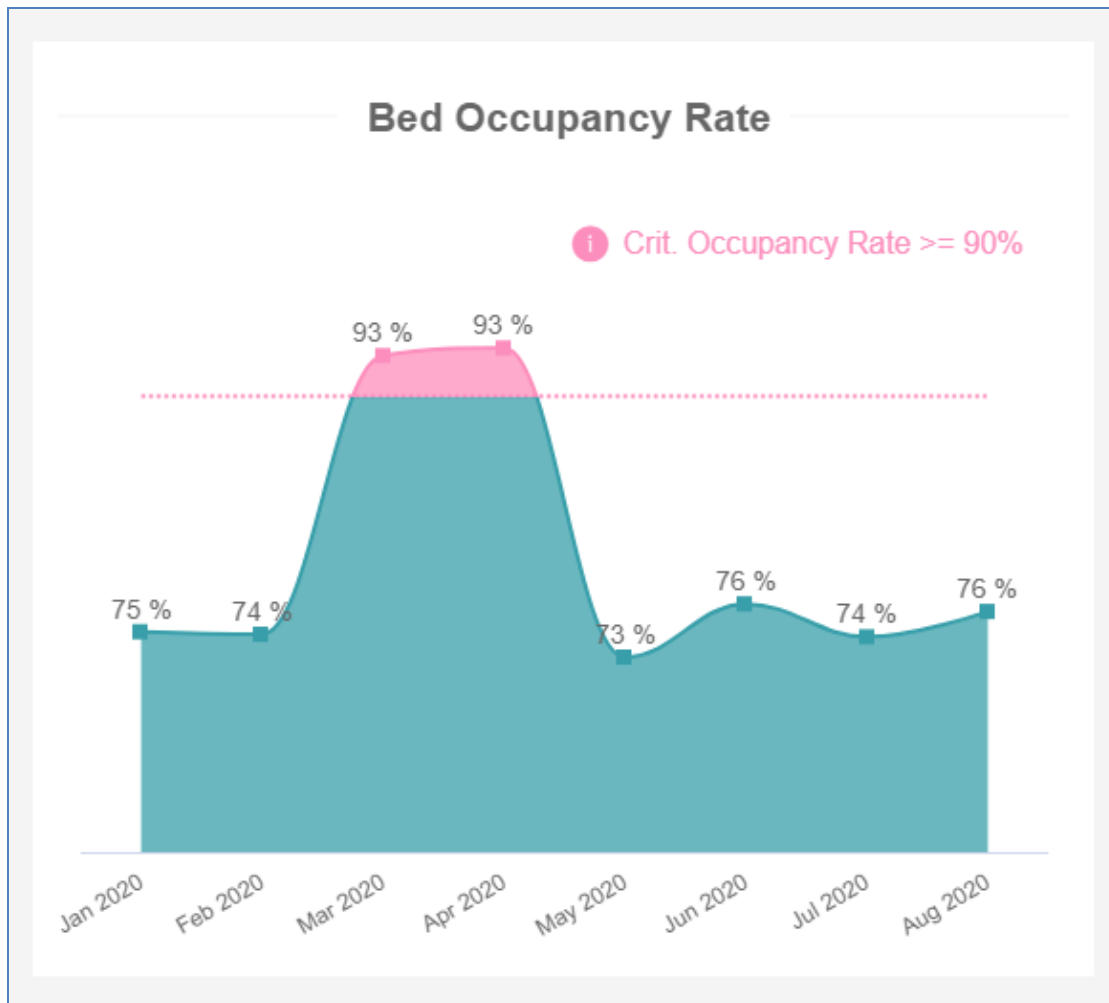


Figure 2 Evaluation of Bed Occupancy rate as a KPI (Khalifa & Khalid, 2015)

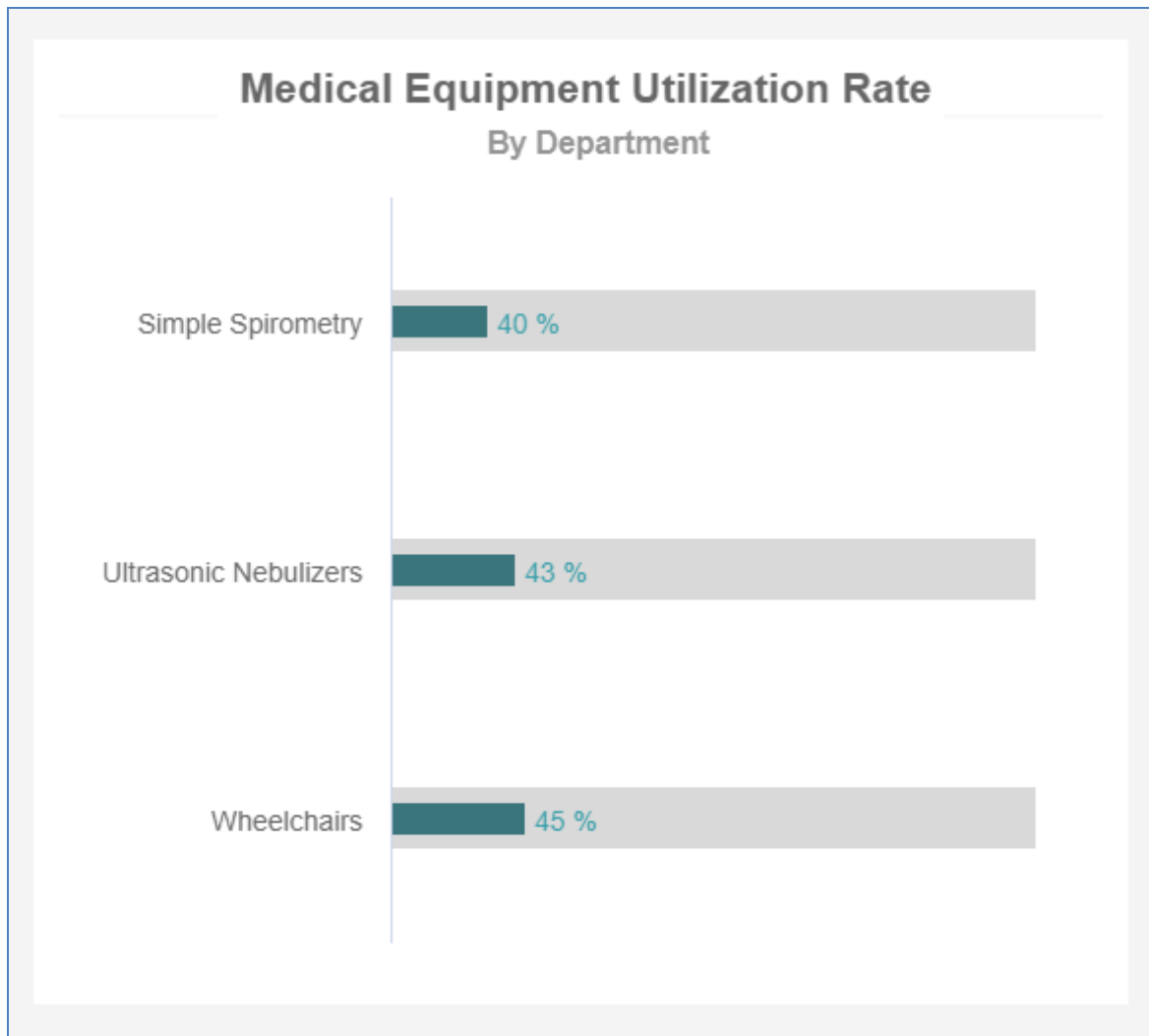


Figure 3 Evaluation of Medical Equipment Utilization Rate (Khalifa & Khalid, 2015)



Figure 4 Evaluation of Medical Equipment Utilization Rate (Khalifa & Khalid, 2015)

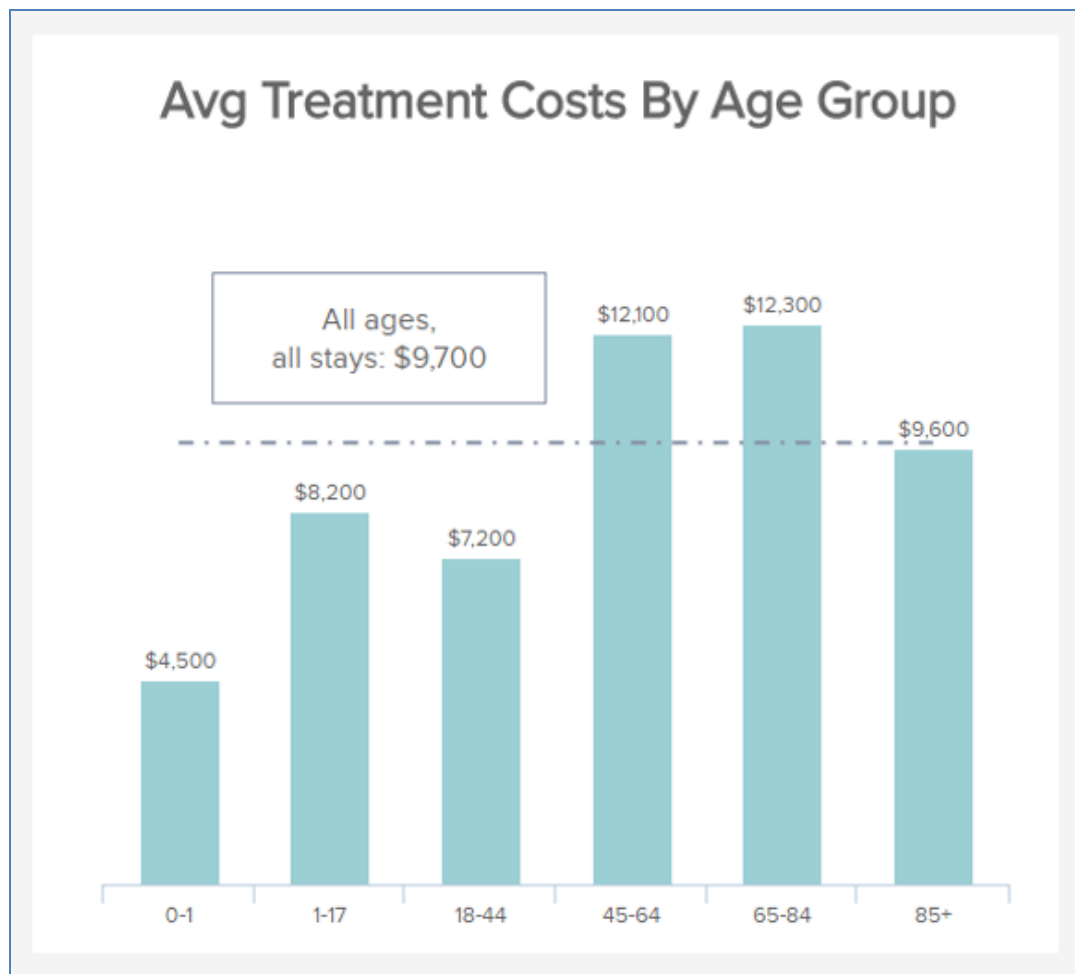


Figure 5 Evaluation of Average treatment cost by age group (Khalifa & Khalid, 2015)

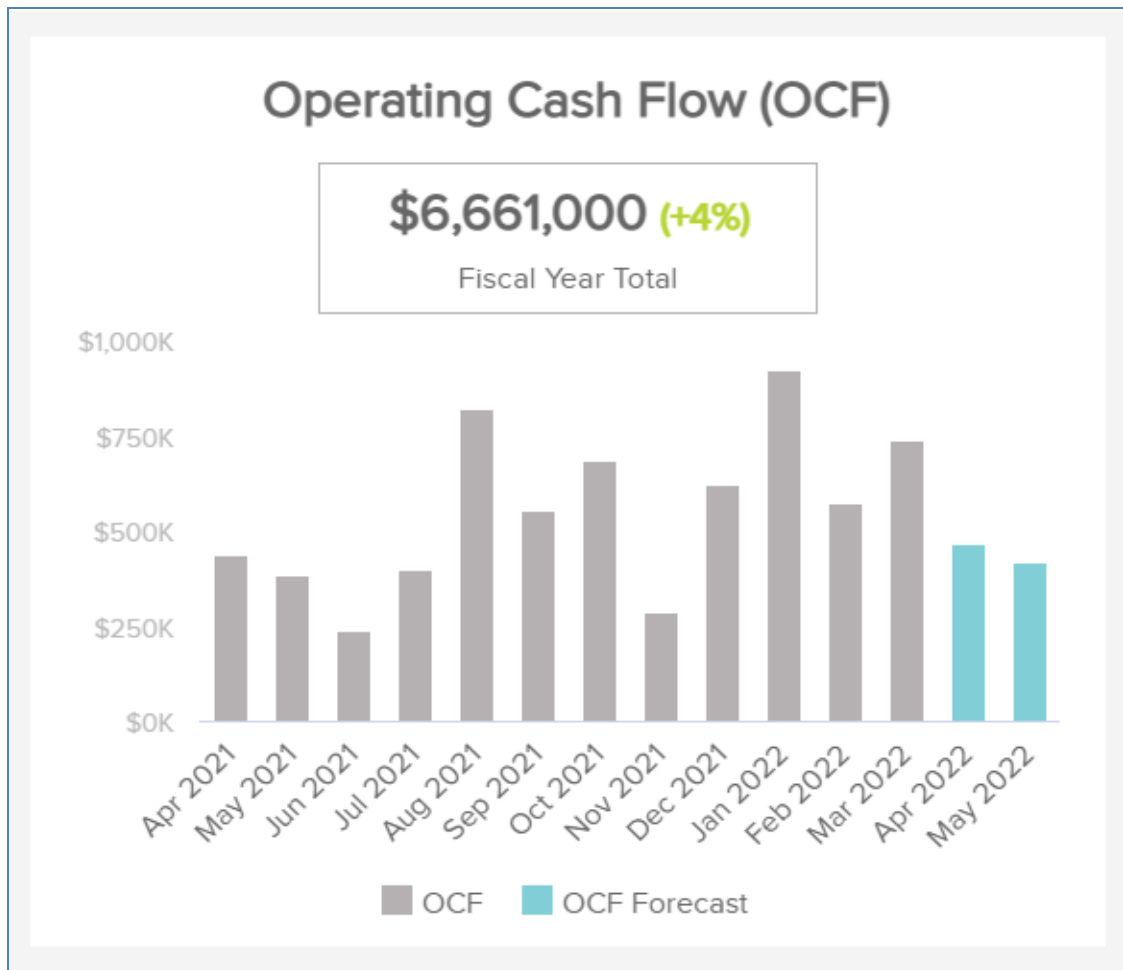


Figure 6 Evaluation of Operating Cash Flow (Khalifa & Khalid, 2015)

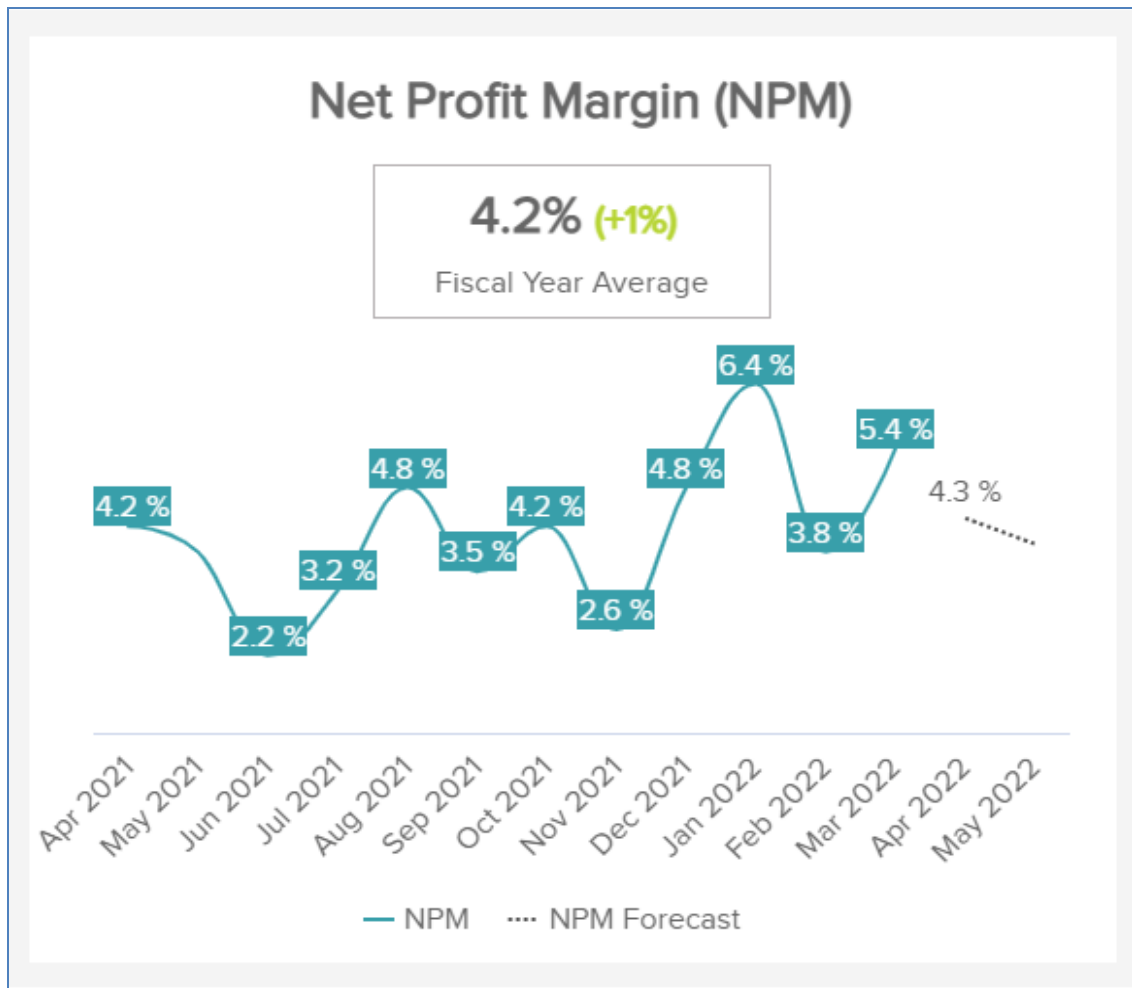


Figure 7 Evaluation of Net Profit Margin (Khalifa & Khalid, 2015)

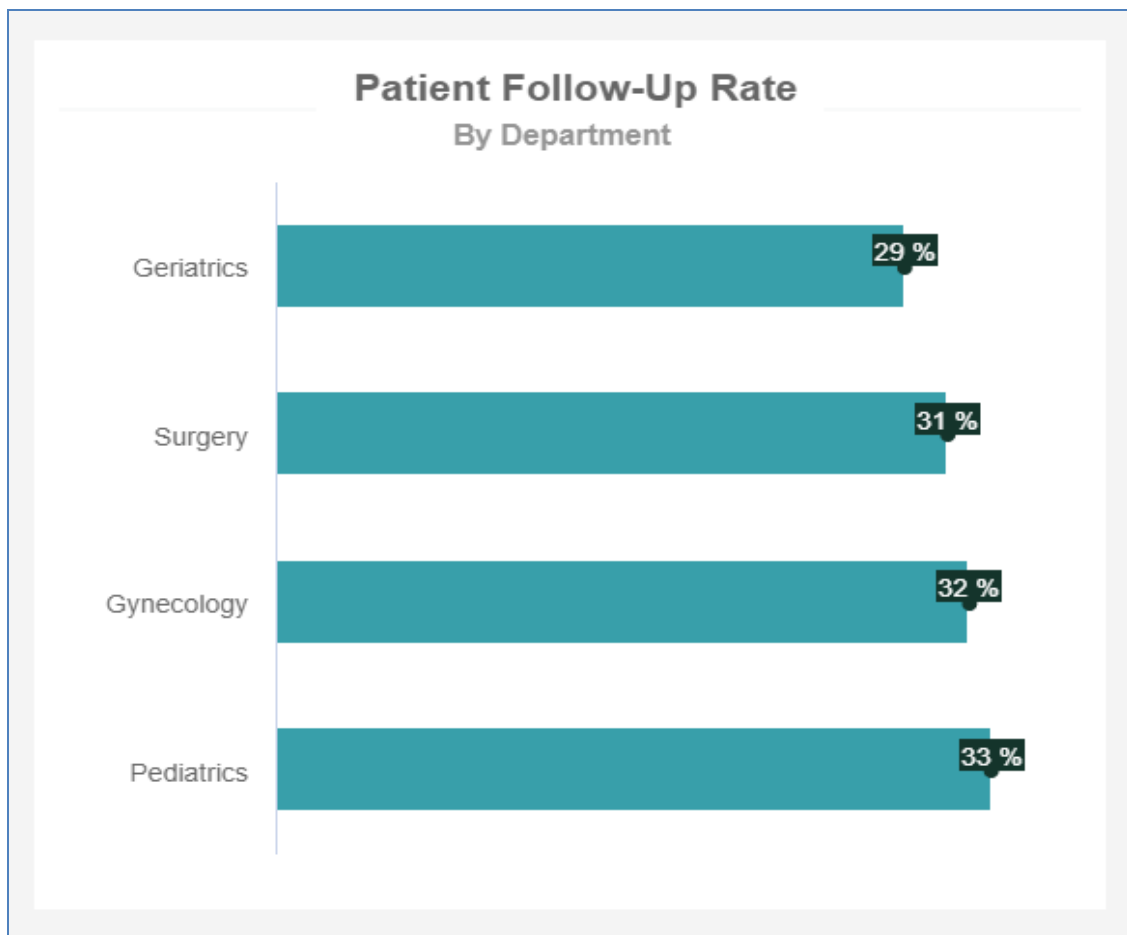


Figure 8 Evaluation of Patient Follow-Up Rate (Khalifa & Khalid, 2015)

Chapter Two

Literature Review

Past Research Studies

The public has a keen interest in the quality and efficiency of the operations of health-care institutions. Due to the increasing number of people who are involved in the development and implementation of policies and programs, it is important that the public has a clear understanding of the various measures that are used to measure the effectiveness of these facilities. Many authors conducted several comprehensive searches and investigations to identify the most effective and common performance measures and also the effect of these measures on the outcomes in the Healthcare industries. Performance measures are commonly used to measure the achievement of a particular objective. However, they have become a target of ridicule and criticism due to their negative effects on the public. This situation has prompted many policymakers to use them even though they are regarded as useless. The framework that the authors of this study have developed aims to provide a middle ground between the criticisms and the use of performance measures. It offers a way forward by acknowledging the issues and suggesting a solution.

The results of the investigation presented by Van Peurse et al. (1995) are based on a skeletal structure that was designed to provide greater coherence to the observations. This framework can be utilized by accounting and health management professionals.

The author's structure is based on the concept of social accountability, which suggests that indicators should be used to inform the public. Table 1 shows the performance measures that

were reviewed within the framework. Table 1 shows that without non-ratio measures, the quality of care and health improvements would not be able to be adequately indicated. Moreover, the information that experts, patients, and practitioners provide would be lost if the disclosures were restricted to the most isomorphic measures.

The lack of nominal and ordinal scales for information related to efficiency and inputs has been identified as a major issue in the development of performance measures. Although DEA is a relatively new concept, its strengths are already apparent. It is hoped that the implementation of performance measures will continue to improve. The work presented thus far has been focused on developing a framework that will allow health management professionals to develop performance measures that are appropriate for their profession. Unfortunately, cost-benefit constraints prevent them from producing and disclosing all the possible measures of performance.

The framework suggested by the authors of this study does not attempt to predict the exact number of measures that will be disclosed. Instead, it provides an understanding of the various disclosures that are likely to be made. This is a way forward in the selection process, which can be facilitated by providing a set of measures from a variety of sources.

The authors of this study suggest that the way forward in the selection of measures for public reports is through a pluralist discourse. This method can be facilitated by providing a set of measures from a variety of sources. The framework can then be used to generate discussion about the various objectives and measures that will be disclosed. The authors of this study suggest that the various measures that are used to produce a balanced report should be accompanied by a balance of ordinal, nominal, and ratio indicators to avoid misleading the public. They also believe that the process should be open and transparent.

The authors of this study suggest that the various measures that are used to produce a balanced report should be accompanied by a balance of ordinal, nominal, and ratio indicators to avoid misleading the public. They also believe that the process should be open and transparent. One of the most important factors that the authors of this study consider when it comes to the selection of measures is the issue of objectivity.

The framework's features can be used to analyze existing reports. They can be useful in generating discussion about the various objectives and measures that will be disclosed. The authors of this study also provide a basis for criticizing a report that is focused on narrowly-focused ratios. The authors of this study remind the reader that the final decision regarding the use of performance measures does not lie with them. It is important that the public is informed about the process so that they can make an informed choice. One of the most important factors that the authors of this study consider when it comes to the selection of measures is the availability of information.

In 2006, a study conducted by DiCicco-Bloom & Crabtree revealed that employees and managers in Algeria use various performance indicators to evaluate and monitor the healthcare system's performance during a pandemic. A survey was also conducted to gather data from medical workers in the country. The study revealed that the four key performance indicators (KPIs) play a significant role in the implementation and development of effective decision-making procedures. A hierarchy of key performance indicators (KPIs) should be established to help medical staff members improve their efficiency. The researchers aim to identify the factors that can help improve the efficiency of a facility. Some of these include the number of errors, the rate of infection, the location of the facility, and the quality of the air.

Table 1 performance measures that were reviewed within the framework (Kadi &Khelfaoui, 2020)

Description	Ratio measures	Ordinal or cardinal measures	Nominal measures
Resources consumed: inputs	Patients per staff Staff numbers Programme budget Staff per activity Population-to-assets Finance available Costs of services Cash management analysis Capital budgets	Staff qualifications	Staff qualifications
Efficiencies	Cost per output Patient throughput ratios Equipment use rates Multiple regression Data envelope analysis Diagnostically related groups Financial benefit- cost calculations Return on investment Profit and leverage ratios	Data envelope analysis	
Effectiveness: outputs	Birthweights Mortality rates Treatments complete Discharge rates		
Effectiveness: outcomes		Activities of daily living Quality adjusted life Man-years index Chiang index Packer index Health status index Rosser <i>et al.</i> disability states Torrance indices Willingness-to-pay	
Effectiveness: process and equity quality of care measures	Waiting and access statistics Hospital-acquired infections Readmission rates Legal action rates Complication rates Mortality rates Industrial Quality Management Science Travel times Participation rates	Physician awareness scales Continuity of care scales Patient or public survey scales	Patient or public surveys
Effectiveness: organizational structure and quality of care measures	Waiting and access statistics Staff turnover rates Environmental incident rates Mortality/morbidity rates	Expert opinions (scaled) Teaching status scales	Expert opinions (non-scaled)

Burlea-Schiopoiu & Ferhati (2020) noted that their study did not support previous studies due to the complexity of the situation. They also noted that the lack of studies related to KPIs during the pandemic crisis prevented them from concluding that their findings supported previous studies. The results of studies have been linked to the pandemic crisis because of the importance of the human factors and the communication process. Hospital performance is a function of key performance indicators that are used by the Institute for Industrial Policy and Transparency (IIP) and the Social Investment Fund (SSI) to evaluate the capacity of hospitals to meet their new goals. During this period, the use of these indicators became an indicator of the effectiveness of the hospitals' management. The Path Coefficients of the research model for KPIs were depicted in figure 9.

The authors concluded that the use of technology in healthcare can help improve the efficiency of operations and reduce the risk of failure. For facilities that are dealing with a pandemic such as the Covid-19 implementing the ESI can help them keep their operations running smoothly. This was not an easy task to accomplish, especially since the employees were not trained to deal with an unpredictable enemy. Due to the lack of information about the status of the pandemic, many organizations, including private and public sectors, temporarily stopped their operations. The lack of information has caused a state of uncertainty and panic among the public. The use of key performance indicators (KPIs) can help improve the efficiency of healthcare systems. Through the Figure 10, the authors depicted various key performance indicators (KPIs) that can be used by hospital managers during a crisis. Each of these measures has its own importance and can be prioritized (Burlea-Schiopoiu & Ferhati, 2020).

According to Voelker et al. (2001), in their study, the use of balanced scorecards can help organizations manage their various operational activities in a challenging environment. For instance, healthcare organizations are shifting toward an integrated delivery system that includes hospitals, outpatient clinics, and nursing homes. Due to the dynamic environment that healthcare organizations operate in, many leaders fail to consider the various factors that are critical to their success. This is why it is important that they develop effective management systems that can help them integrate diverse groups and focus on their strategies. The complexity of the healthcare system is increasing due to the increasing number of providers and the need for better quality care. The Business System for Care (BSC) is a framework that aims to help manage this complexity.

Voelker et al. (2001) concluded that adopting a Business Support System is not a lightly considered decision. It is a major undertaking that can be very time consuming and challenging. The complexity of the process and the initial resistance to the change can make it an even more challenging decision. In many cases, the development of new information systems is required to capture the latest data. This process can be very time-consuming and challenging, especially when the results don't materialize quickly. The entire team must support and commit to the project. Besides being able to develop a new system, it also requires the ability to think critically and creatively.

The complexity of the process and the initial resistance to the change can make it an even more challenging decision. To effectively implement a new system, senior management must first understand the various factors that affect the development of the system. They also need to look at the long-term goals and develop a strategy that will support the system. Due to the complexity of the process and the implementation problems associated with the Business

Support System, many organizations have experienced a high failure rate when it comes to implementing it. Despite the various challenges that they have encountered, many companies have successfully used the system (Guest et al., 2013).

Many studies have presented classifications of health indicators. They are guided by the work of a framework that considers both the utilization of resources and the improvement of health state. The framework of the Torrance Institute is designed to accommodate various types of measures and their efficiency. The framework of several reviews is based on the concepts of accountability and economic accountability. It allows for the classification of various performance measures into three categories: cardinal, ordinal, and nominal. This is substantially broader than the model used by Torrance. It distinguishes between measures that are management-derived and those that are not.

The distinction between outcomes and outputs is important in assessing the performance of health management. Past research studies aimed to provide a comprehensive analysis that discusses the various aspects of health performance measures.

It also includes measures that are related to the framework that was developed in several research investigations. A description of the process is provided in the initial search results, which are based on the terms "performance indicators," "health indicators," and "health authorities." These terms expand the data source of the relevant literature.

The inputs category is mainly concerned with the financial and human resources utilized in health intervention activities. The staff numbers and qualifications of these individuals are the most frequently used measures in policy statements.

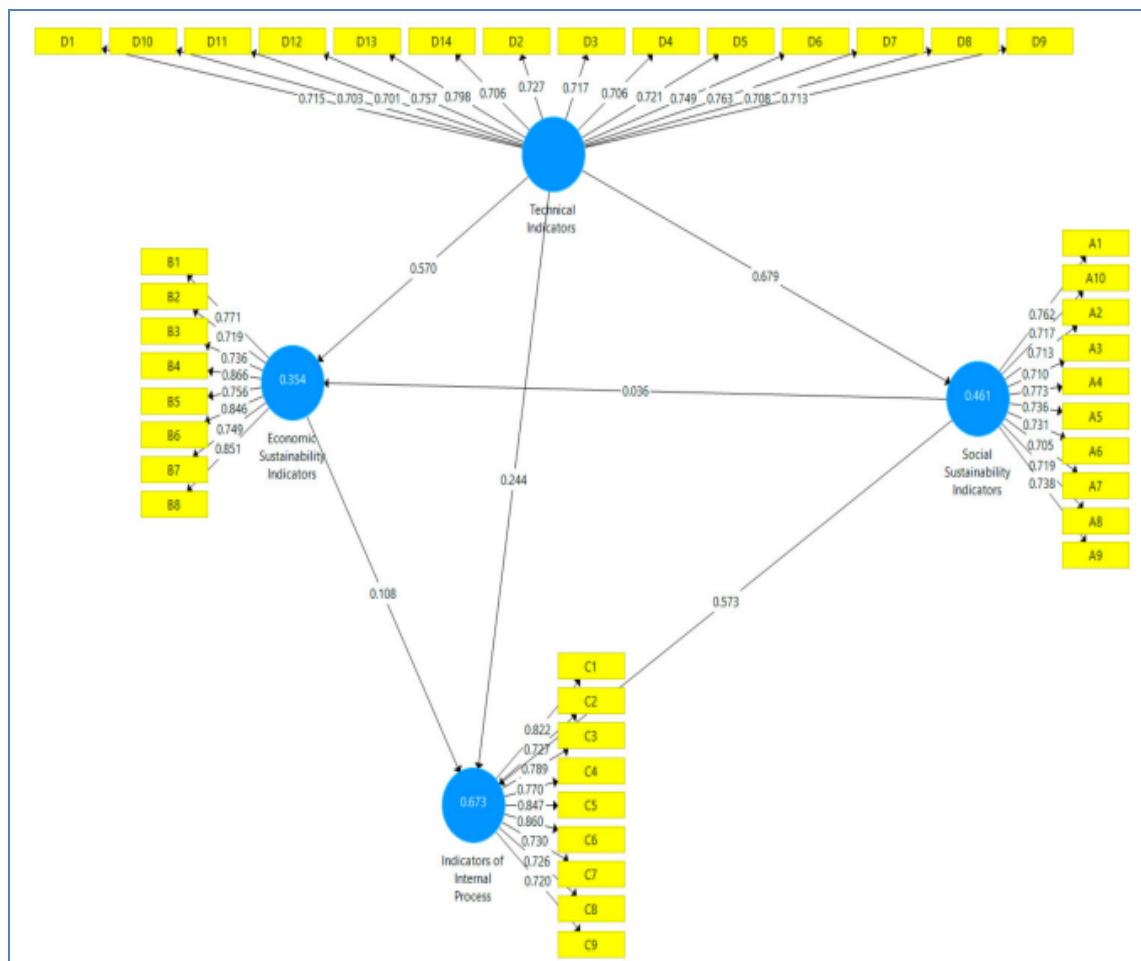


Figure 9 The Path Coefficients of the research model for KPIs (Burlea- chiopoiu & Ferhati, 2020)

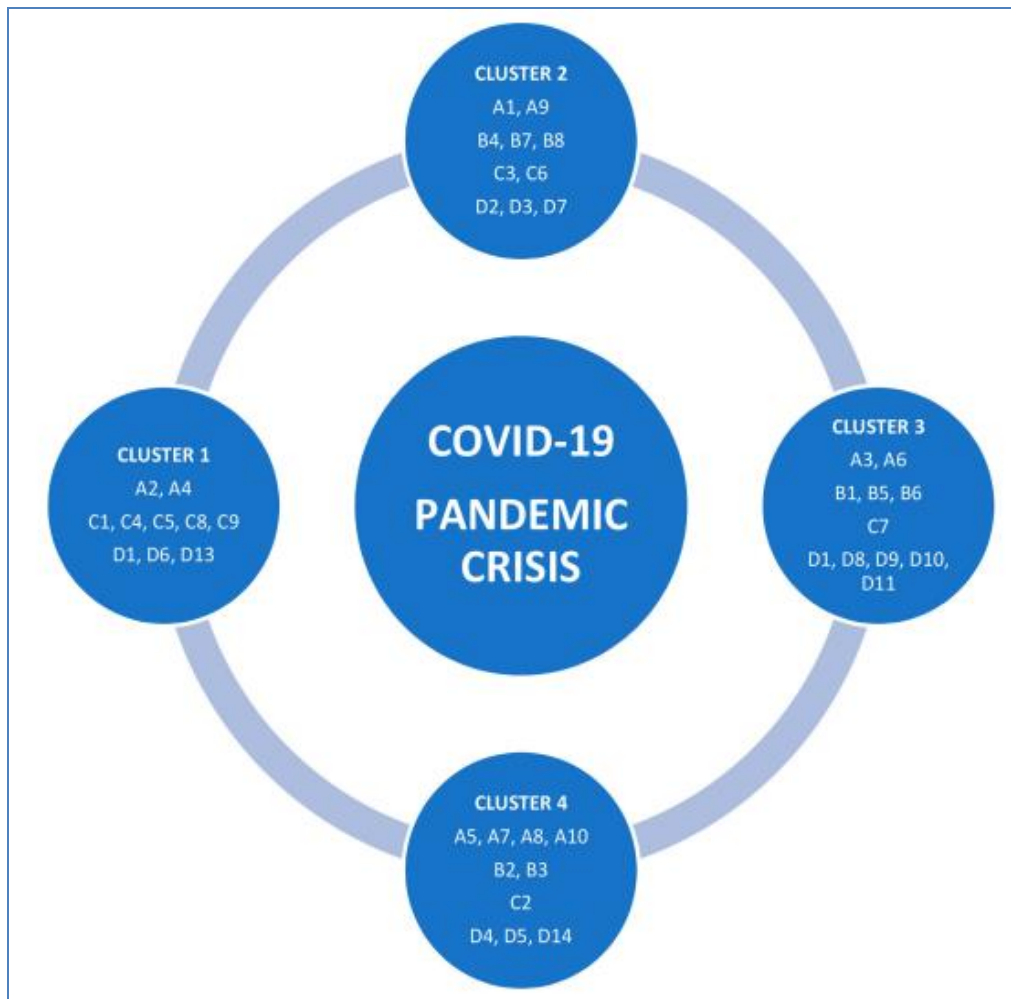


Figure 10 The Clusters of the KPIs, as a managerial decision support during pandemic crisis (Burlea-Schiopoiu & Ferhati, 2020)

Among the various types of performance indicators that are commonly used are population-to-land-ownership ratios. Although these are relatively objective, they do not capture the complexity of the relationship between the resources and the cash spent. Other factors such as capital budgeting and cash flow management are also commonly used in the evaluation of health performance. A broader range of input measures could also be included in the review. These include employees' perceptions of the various factors that affect the quality of their work, as well as their opinions on the procedures used in purchasing control. The ranking of these measures is based on the objective of the scale they are part of. Although various measures may play a role in an accountability report, they are not intended to be recommendations. Instead, they are aimed at informing the public about the importance of health performance measures. Many of the researchers believe that key performance indicators (KPIs) are the key factors that can be used to monitor and evaluate the various aspects of the clinical and support functions of a hospital. This concept is considered to be one of the most important factors that the research community in Ireland considers when it comes to developing new strategies and procedures. The country's rapid emergence and evolution of new healthcare delivery systems has led to the need for more effective and efficient measures. The figures 11, 12 and 13 indicates the framework, measuring parameters in Healthcare Key Performance Indicators.

A literature review was conducted in 2016 to identify the factors that influence the care provided by hospitals. A consensus process was then carried out from June 2012 to October 2013 to evaluate the candidate indicators. The indicators were then rated using an arbitrary 5-point Likert scale to evaluate them.

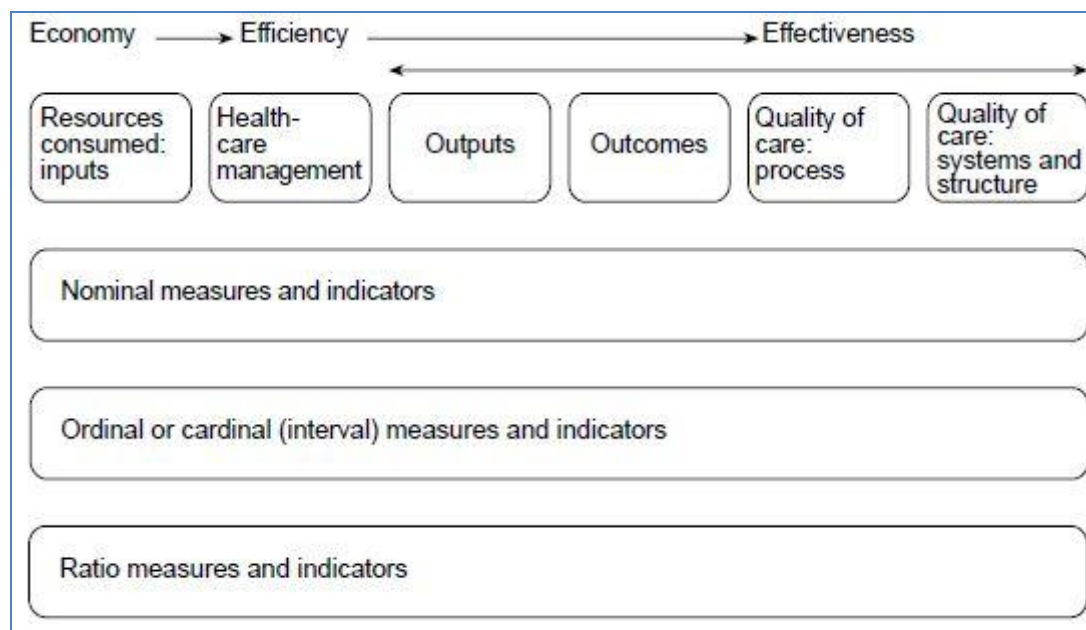


Figure 11 A framework for a review of health performance measures (Krauss, 2005)

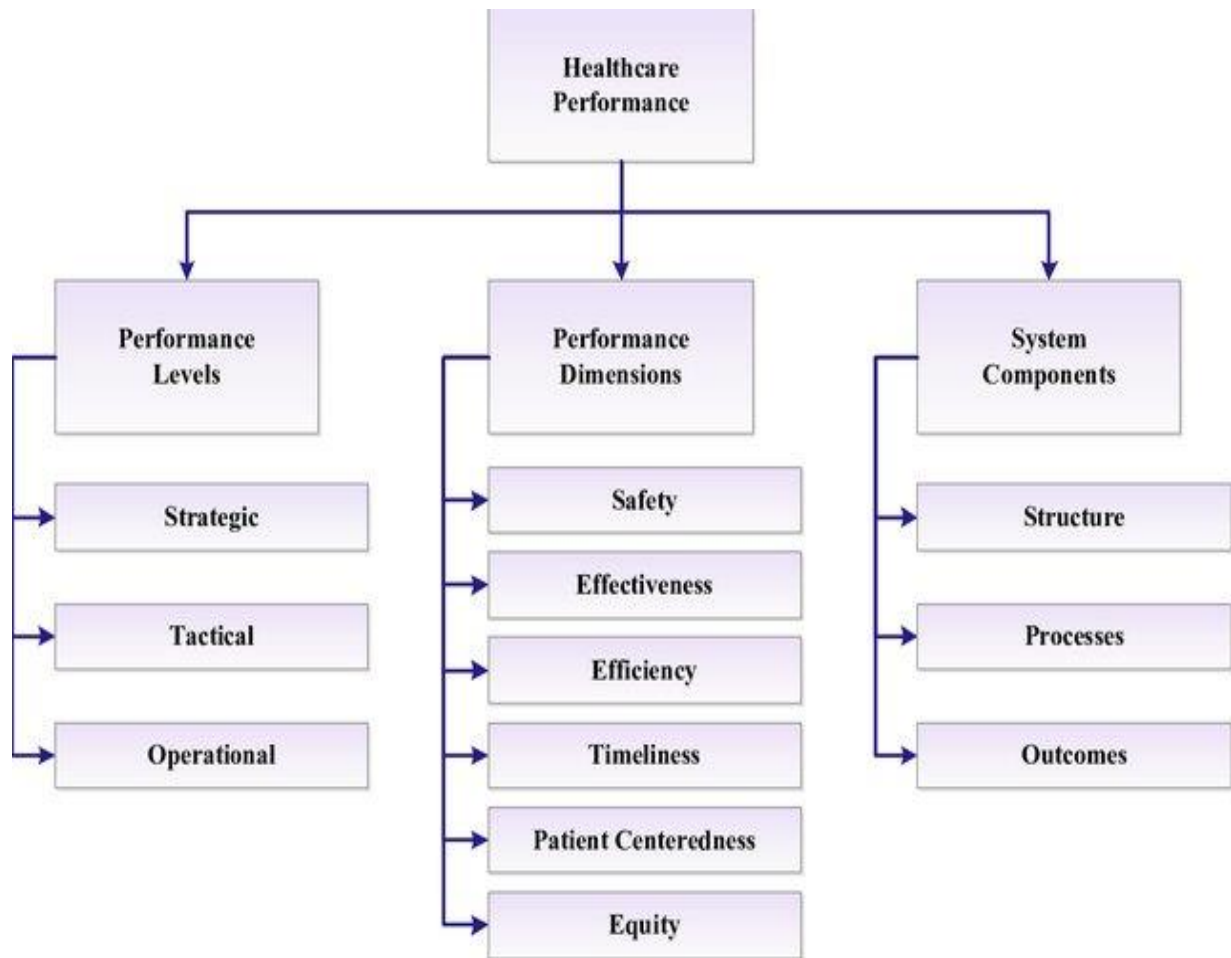


Figure 12 Healthcare Key Performance Indicators and their measuring parameters and the ten Categories of Suggested Key Performance Indicators (Mack, 2011)

S/N	KPIs Categories	Value
A	Patient Access Indicators	Reflect healthcare services accessibility
B	Inpatient Utilization Indicators	Reflect inpatient performance
C	Outpatient Utilization Indicators	Reflect outpatient performance
D	OR Utilization Indicators	Reflect operating room utilization and performance
E	ER Utilization Indicators	Reflect emergency department performance
F	Generic Utilization Indicators	Reflect the performance of some major services
G	Patient Safety Indicators	Reflect the safety of diagnosis, treatment and procedures
H	Infection Control Indicators	Reflects quality of care
I	Documentation Compliance Indicators	Reflects compliance with documentation policies
J	Patient Satisfaction Indicators	Reflects patient centeredness

Figure 13 The Ten Categories of Suggested Key Performance Indicators (Shawahna, 2019)

The goal of this study was to collect descriptive data on the opinions of the respondents about the various performance indicators that were used in the first round of the Delphi questionnaire.

The data was analyzed using statistics. After conducting a systematic review, the authors identified the 78 citations that were used in the selection process. The response rates during the first two rounds of the review were 83% and 89%. In the third round, which was held in October 2013 and included a total of 101 performance indicators, the participants agreed on a set of key performance indicators. These include 20 outcome KPIs and seven structure KPIs. During the third round, one of the performance indicators that was identified was the direct transfer of patients with severe heart disease to a suitable facility for a cardiac intervention. The authors concluded that the implementation of scientifically accurate performance measurement techniques is needed to improve the quality of healthcare services in Ireland. The panel of experts that helped develop the performance indicators was composed of individuals from the Delphi community. These experts were able to identify the various factors that influence a hospital's operations (Shell & Dunlap, 2008).

Many studies revealed that the evaluation of the health care system is a complex and challenging process. It involves analyzing various factors such as the length of time it takes for patients to receive treatment and the inefficient use of resources. Due to the emergence of the coronavirus pandemic in 2019, the situation has become even worse. Although COVID-19 has become a major factor that affects the quality of health care, there is still a lot of information that policymakers and managers don't have about the various factors that can affect the future of the healthcare industry. This is why it's important that they have the necessary resources to implement effective strategies and procedures (Singh, 2007).

Researchers can use various tools to evaluate the performance of HCO. Some of these include the SASA, the ISO standards, and the Pabon Lasso model. The World Health Organization launched a framework in 2003 to improve the efficiency of health care facilities. It identified various factors that can affect the performance of hospitals. Some of these included patient-centeredness, clinical effectiveness, and responsive governance. Despite the various tools available, studies have shown that the Pabon Lasso model is not ideal when it comes to assessing the performance of HCO. In 2006, an organization launched a project to develop performance indicators that can help improve the quality of healthcare (Tuli, 2010).

The various managerial tools used during the evaluation of HCO were mainly focused on analyzing the factors that affect the quality of an organization's performance, which included timeliness, efficiency, and quality. These dimensions are considered as part of an organization's internal perspective. The other four perspectives of an organization's business are customer, knowledge, financial, and growth. The concept of dimensions is a framework that allows researchers to collect various statistical measures to improve the efficiency of hospitals. It can also be used to compare different facilities (Urimubenshi, 2017).

Before the outbreak of the coronavirus pandemic, the use of performance indicators in the healthcare industry was beneficial. They can help improve the quality of patient care and reduce the number of people who experience delays in their treatment. They can also help the organization develop new strategies and improve its efficiency. In addition to this, they can help identify areas where the organization can improve its performance.

Unfortunately, the majority of the managerial tools used during the evaluation process of HCO were focused on internal factors. They also didn't take into account the other factors

that can affect the organization's performance. This is one of the main reasons why many managers prefer to use a comprehensive approach when it comes to assessing the quality of healthcare. A strategic communication tool known as the business and strategic communication (BSC) is also helpful in identifying areas where an organization can improve its performance. It can help align the various operations of an organization with the goals and strategies of its HCO. Unlike other tools, the capabilities of the BSC can be used for any area. A comprehensive approach can also be used to create a more accurate view of an organization's operations. The first generation of this system, which was released in 1992, featured four different perspectives. These include the internal process, knowledge, financial, and customer.

Patients in culturally diverse societies have the opportunity, through various forms of healthcare, to benefit from varying approaches to treatment. One such approach is the integration of Western medicine with complementary and alternative therapies. In addition to being able to provide comprehensive care to patients, integrative medicine also allows individuals to customize their care based on their specific needs? This concept goes beyond the traditional approach to medicine by incorporating various aspects of the body, including the spiritual and the mid-body.

Studies have shown that an integrative medicine approach can improve the quality of life and lower the risk of death for patients with various conditions, such as cancer. It can also help lower the cost of healthcare. Modern healthcare systems have heavily promoted multi-provider models. This has led to the recognition of the expertise and role of pharmacists, who are experts in providing pharmaceutical and pharmacotherapy care. Because of this, they are constantly adapting to provide the best possible service to their patients.

Due to the increasing number of professional organizations supporting the role of integrative medicine in the healthcare industry, it has been widely supported in various countries. As the scope of roles and responsibilities of pharmacists continues to expand, they are expected to provide even more services to their patients. Due to the increasing number of patients receiving complementary and alternative therapies in hospitals, they are expected to provide more comprehensive care.

In addition to providing comprehensive care, pharmacists also provide a variety of other services to their patients. These include education and counseling, medication management, and collaboration with other healthcare providers. In addition to being able to provide comprehensive care to patients, pharmacists are also expected to provide more services to their patients. They can help patients develop their own personalized treatment plans and implement various other procedures. Some of these include the design and implementation of laboratory tests, counseling and education, and identifying and resolving adverse reactions.

Modern healthcare delivery systems have shifted the focus from providing large volumes of care to providing high-quality care. Due to the increasing number of initiatives and programs aimed at improving the quality of healthcare, the focus on measuring and benchmarking the performance of healthcare providers has become more prominent. Various organizations have been developing quality measures that can be used by them to measure and benchmark the performance of healthcare providers. These measures are often used to capture and compare the quality of services that healthcare providers provide. As the number of initiatives and programs aimed at improving the quality of healthcare continues to rise, it is important that the measurement of quality is also carried out (Weber & Thomas, 2005).

Recently, a research discussed the various quality indicators that can be used to measure and benchmark the performance of community pharmacy services. In order to review the use of the Delphi technique, they conducted a systematic review that focused on the method's use and reporting. Despite the importance of this subject, there has been a lack of information on the various activities and services that pharmacists can provide to improve the quality of healthcare (Zhao, 2020).

Chapter Three

Materials and Methods

Research Methodology

The research methodology is a process utilized by scientists to develop their ideas and come up with a conclusion about their study. It shows the path that they need to follow to carry out their work. This chapter also provides a detailed analysis of the various steps involved in conducting the study. This section covers the various aspects of the research process, including the strategy and the results of the study. It also provides an overview of the research methodology. Research is an essential part of the advancement of knowledge. It involves the pursuit of truth through the use of various methods and techniques, such as observation, experimentation, and study.

The goal of a research project is to find a solution to a problem that is related to a scientific issue. The term research refers to a process that involves the study of a problem and the creation of a theory. This type of research is commonly referred to as a systematic method, which involves gathering facts and coming up with a hypothesis. It can also involve the use of various statistical techniques and methods. The research methodology is a process utilized by scientists to develop their ideas and come up with a conclusion about their study. It can also involve the use of various statistical techniques and methods. The goal of the research technique is to provide a rationale for the purpose of organizing the data and information in a certain manner. This helps prove that the researcher followed established procedures. One of the most critical factors that a research project should consider is the impact of its findings on

the decision-making process. This is because the consumer's decision-making process can be affected by various biases (Saunders et al., 2016).

Research Approach

This report provides an overview of the research methodology utilized in analyzing the effects of corporate social responsibility and ethical initiatives on consumer engagement. It also explains the philosophical perspective that the author uses in conducting the study. This information helps in the development of research strategies and methods. In 2016, Saunders et al. utilized the onion method to develop the most appropriate approach to collect information. The first step in this process was to identify the research philosophies that were most influential in the development of the method. Figure 14 shows an outline of the research onion's process (Saunders et al., 2016). The two main philosophical methods that are commonly used in theory are interpretivism and positivism. While positivism is focused on the idea that society is made up of people, interpretivism claims that humans are unique and can create meaning. Through this difference, one can interpret the world through humans' perspective (Krauss, 2005). Interpretivism is focused on the idea that personal experiences are very important to people. This philosophy aims to develop new beliefs and knowledge by asking participants to share their own experiences. Researchers use this technique to try to understand how people interpret the world (Ritchie et al., 2013). The more important factors that researchers consider when it comes to assessing the outcomes of a health care centre are the individuals' perceptions and beliefs regarding the good and bad in the services and facilities provided at the health care industries. This is because these are the ones that are linked to the customer's previous experiences.

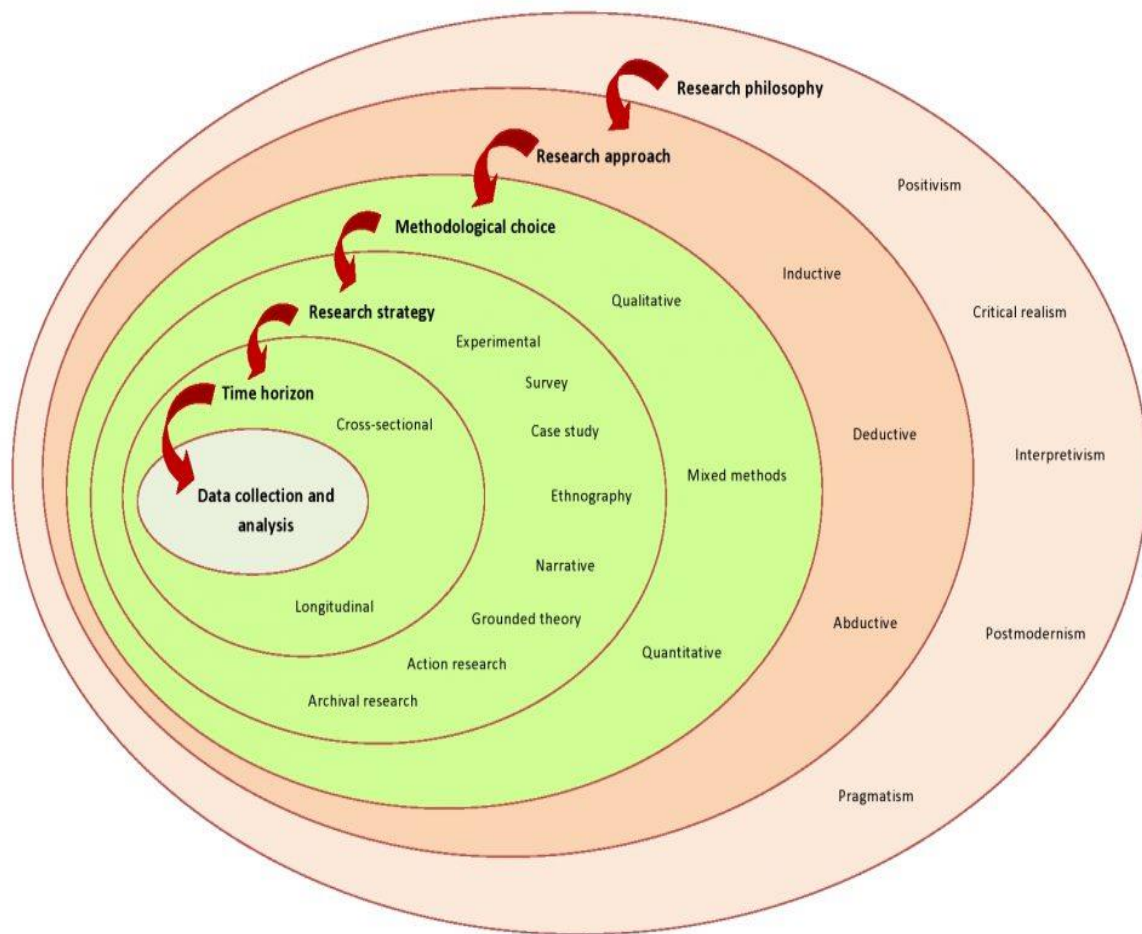


Figure 14 Research Onion approach (Saunders et al., 2016)

n interpretive perspective is based on the idea that almost everyone has their own unique perspective (Weber, 2009). The concept of interpretation is also related to the way people interpret the world. For instance, every health care consumer has their own unique perspective on the services provided to them when they were treated by any health care system. In order to gain a deeper understanding of their experiences with the health care service providers, we conducted a semi-structured interview. This method allowed us to collect multiple perspectives and interpretations of the lived experiences with the services. The interview also conducted to the employees of the health care industry or the employees to analyze their level of satisfaction and interest to provide good services to the customers and the effect of Key Performance Indicators (KPIs) on their service levels.

Through this method, we were able to gain a deeper understanding of the individuals' interest and understanding regarding the KPIs and their effect on the outcomes of the Health care Industries. The main advantages of this technique are its ability to analyze complex social processes and its ability to identify hidden motives.

This method can also be used to develop new theories about various subjects or topics. It can assist in the discovery of interesting and relevant issues, and it can be useful in areas where there is no research.

Through this method, the researcher was able to gain a deeper understanding of the phenomenon of social responsibility. Through interviews, health care providers were able to identify the various needs of the customers and the relation of those need with that of KPIs. Although our study was focused on proving that there is no correlation between poor performance indicators and poor quality in the Health care industry. We were also able to

extend the model by taking into account the findings of the survey (Creswell & Creswell (2017) , Tuli (2010)).

Through this philosophy, we were able to extend the model by incorporating all of the answers into its complexity. This method is very useful in developing new theories and conducting research. Although we follow a certain model throughout the process, it can still provide us with a deeper understanding of the facts. For instance, by adopting an interpretivist approach, we were able to infer how the health care industries views its customer care and responsibilities towards KPIs.

Research Design

Research design is a framework that allows a researcher to create a study that is focused on the use of the most effective and efficient methods. This allows them to carry out their studies successfully and efficiently. The design of a research study can be categorized into three types: quantitative, qualitative, or mixed. Researchers can choose from a wide range of research methods, such as surveys, quasi-experimental review studies, or experimental studies. There are also multiple sub-types of research methods that are focused on the definition of research problems, descriptive studies, and experimental design. The design of a research study also includes the various elements of the study, such as the collection of data, the analysis of the data, and the measurement of the data. One of the most important factors that a company considers when it comes to choosing a research design is the type of research problem that it wants to tackle.

The design phase of a research study is the time when the researchers identify the tools and the way they will use them in the study. Good research ensures that the data collection

method is conducted with minimal bias to improve the internal and external validity of the study. In experimental research, the goal is to have a design that minimizes the amount of error in the study. A good research design outlines the overall strategy and procedures that will be used in the study, as well as the knowledge that will be gathered in order to solve consumer research problems. It also provides a framework for the planning and conducting of the study. There are two types of research designs: exploratory and conclusive (Malhotra et al., 2012).

Although exploratory research is not always able to provide definitive evidence, it can help in identifying the underlying issues and developing a strategy to address them. This type of study strategy can also serve as a foundation for more conclusive research. For instance, it can help in identifying the various challenges that was faced by any the business community. The objective of this study is to analyze the correlation between poor performance indicators and poor quality in the Health care industry. Through this research, the health care unit will be able to gain a deeper understanding of its employee's performance and the quality of their service outcome as per the customers' views and ideas. A deductive technique has been used in the study to help in developing a quantitative and qualitative strategy.

The importance of inference is also acknowledged by the study's design. It can help in extending the initial model and in identifying the areas where any business or company can improve its practices. Before conducting the study, it is important that the customer's perceptions are analyzed. Through the use of qualitative methods, the study was able to gain a deeper understanding of its customers' views and ideas. This method was also able to help in developing a more complex and comprehensive analysis of the issue. According to a study by Hennink et al., this method can be used to comprehend the various perspectives and

actions of the people involved in the study. Through this method, we will be able to gain a deeper understanding of the company's customers' views and ideas. One of the most common types of research that is commonly used in this type of study is qualitative interviewing. This method allows us to explore various social and individual issues. Semi-structured questionnaires are also commonly used in this type of study.

The main contribution of the study is the use of a semi-structured interviewing technique. This method allows us to explore various social and individual issues. It also provides a clear path to follow up with the study's participants. In contrast to the traditional interview, follow-up questions are usually asked to go deeper into the issue. Hence, we can say that there exist many types of research methodologies as shown in figure 15, among which suitable method can be chosen by the researchers depending upon the requirement.

Compared to other methods, interviews provide more insight into the participants' reactions. However, focusing on a single reaction in a focus group can be hard. Another disadvantage to this method is that it can be biased since the researcher might not follow up with the study's participants after the interview.

The goal of the interview guide is to provide a clear path to follow up with the study's participants. It also aims to minimize the impact of the interview on the participants' perceptions. It has been suggested that certain issues may not be freely discussed due to the participants' unwillingness or embarrassment. Some interviewees might find it difficult to talk about sustainable behavior. This is because it can be very delicate for them when it comes to their own personal behavior.

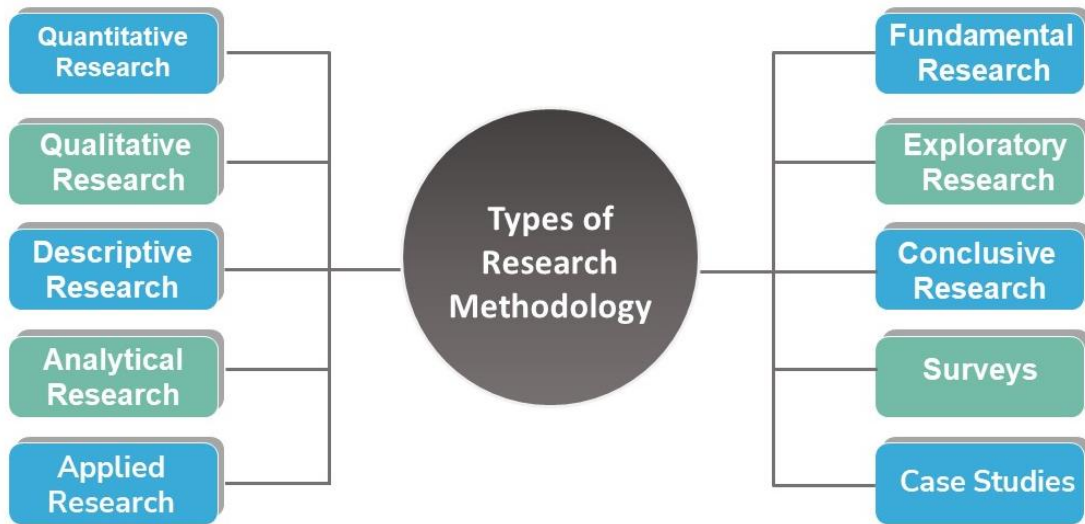


Figure 15 Types of research methods / designs(Saunders et al., 2016)

Research Methods

Qualitative Research

Quantitative methodology refers to the process of gathering information instead of relying on quantitative data. Qualitative research, on the other hand, tends to collect a lot of data on a small number of cases, while quantitative methods tend to gather minimal evidence about every case (Webley 2010). A qualitative research technique is a broad term that encompasses various forms of research. It can be focused on a wide range of subjects and techniques (Guest 2013). For instance, a psychologist might pursue a deeper understanding of human behavior, while another researcher might look into how decisions are made. In addition to being able to collect data, qualitative methods also have a strong theoretical foundation in sociology.

The concept of quantitative and qualitative research approaches has been separated from its various forms into distinct ends. For instance, a qualitative study is more likely to be conducted than a quantitative study. A mixed method approach is also considered to be a part of the spectrum. According to Mack, Woodsong, and others, there are three main types of qualitative research that are commonly used: in-depth interviews, survey research, and focus groups. Each of these modules has its own length and can be used to get a particular type of data (Mack and Woodsong, 2011).

In 2007, John Creswell defined qualitative evaluation as the process of removing layers from an onion. This process involves preparing the data for analysis, and then going through various steps to visualize and interpret the information. Creswell also said that this process helps researchers make an informed decision regarding the data (Mack et. al. 2011). According to Creswell, the process of qualitative evaluation is iterative, and it involves

continuously reflecting on the data. It also involves writing memos throughout the study. This process is performed at the same time as the analysis and documentation of the study. While conducting interviews, a researcher might be reviewing an old interview and then creating 14 memoranda that will be used in the report's narration. They might also organize the final article's framework (Babbie, 2007).

Quantitative Research

Quantitative research is a type of scientific study that uses statistical methods to analyze data. It can explore hypotheses or come up with new concepts based on the findings. Usually, conducting research involves gathering information from large groups of individuals. In order to obtain the most accurate results, research also requires the use of various statistical tools, such as surveys and inspections. Quantitative research is a type of scientific study that involves the manipulation and analysis of data in order to explain or describe the underlying phenomena that it shows. It is also referred to as statistical analysis. Through the process of applying statistical techniques to the data, investigators can obtain a deeper understanding of the data (Creswell, 2007).

Mixed method of Research

A mixed research methodology is a type of approach that combines the methods that are commonly used in quantitative and qualitative studies. It involves exploring the relationship between the two, as well as the study's application of both quantitative and qualitative approaches. According to Babbie, in 2007, this type of approach is more than just gathering data. It also involves evaluating and combining the two. The main strength of a study is that it is more powerful than both quantitative and qualitative methods. The goal of a mixed

research methodology is to generate a rich description of a particular situation, and this can be done through either a quantitative or qualitative method. However, it also depends on the type of study and the goal. For instance, if you want to produce a comparative analysis of the various factors that affect a particular situation, then a systematic technique is necessary.

The planning process for different types of research designs can be very challenging. When it comes to choosing a mixed-method approach, it can be very different from a single-method study. On the other hand, a combination of these techniques can overcome various issues that can arise when carrying out a single study. For instance, the unstructured nature of fieldwork/ethnographic approaches can allow researchers to collect unexpected data (Babbie, 2007).

Data Collection

The present research study collected and analyzed the data gathered from various sources. Through a semi-structured questionnaire, the researchers were able to gather primary data. They then used interview techniques to extract and analyze the data.

Sampling Process

The researcher aims to identify the target population, which is the part of the population that he or she wants to study. The accessibility population is the part of the study that the researcher can reach out to. After gathering information about an accessible population, a sampling frame is created to draw out the sample. This is done by listing all the elements and units in the population. The goal of the frame is to identify everyone in the group so that everyone gets equal chance of being selected for the study. Sample is the process as shown in figure 16, where the researcher does the investigation. Due to the lack of resources, time, and

money, getting the data from the entire population is not recommended for most researchers. However, with the availability of various sampling methods, it can be done in a way that will allow the study to be carried out in a way that will give the same effect used for the data collection based on the requirement. The figure 17 shows various types of sampling techniques available (Purvis et al., 2009)

The objective of the study is to collect enough data to inform the decision-making process of the customers when they visit a health care unit regarding the quality of the services and the employees also interviewed simultaneously to find whether they are meeting the KPIs and in what way. This method was used to select the target population and the elements that will be included in the sampling.

The customers as well as employees of the health care unit were the main target group for the study. They were asked to share their thoughts regarding the issues addressed through the questionnaire. Totally 13 customers and 13 employees were considered for the questionnaire. Due to time and capacity restrictions, the study also impacted by the convenience sampling approach, in which targeted population samples are selected based on the most available elements. Because selection bias might occur, this method has several drawbacks, such as data that isn't as comprehensive or of lower quality. The respondents' were of all ages. There were no any constraints (Malhotra et al., 2012).

The total questions were divided into mainly 4 categories related to:

1. Employees satisfaction on KPIs
2. Employees achievement of KPIs Vs Quality issues
3. Customer satisfaction on service outcomes
4. Customer suggestions on KPIs

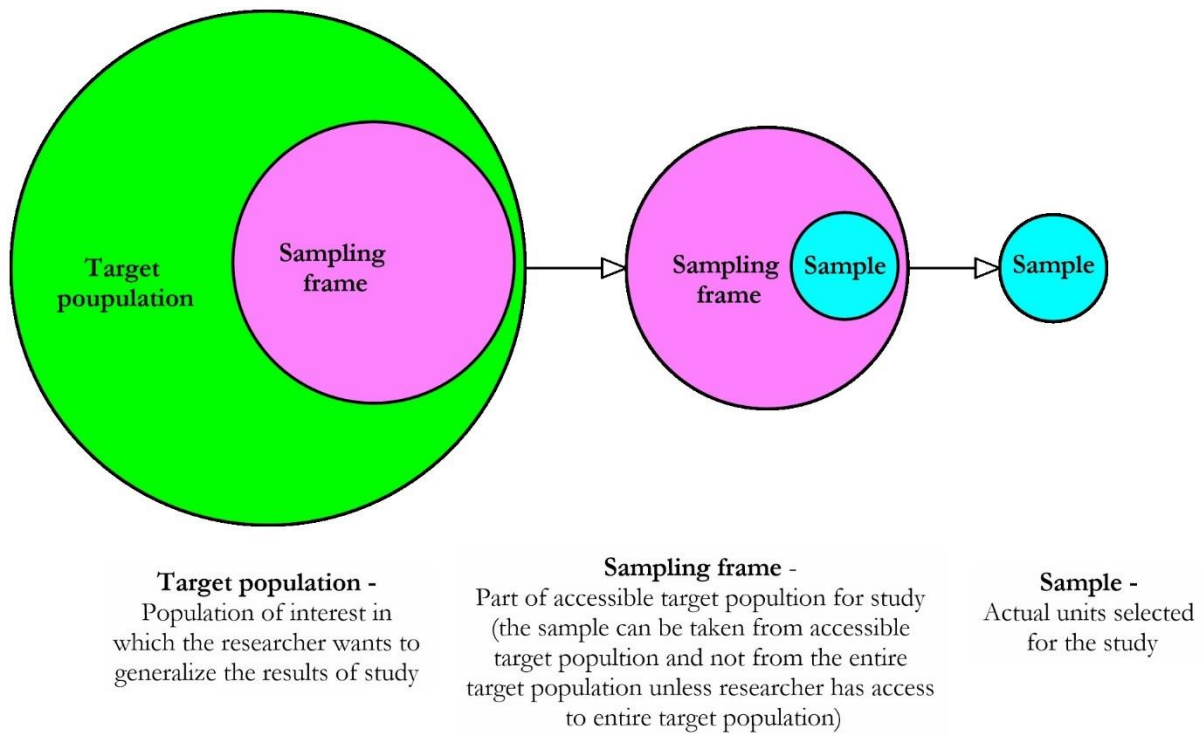


Figure 16 Sampling process (Weber, 2009)

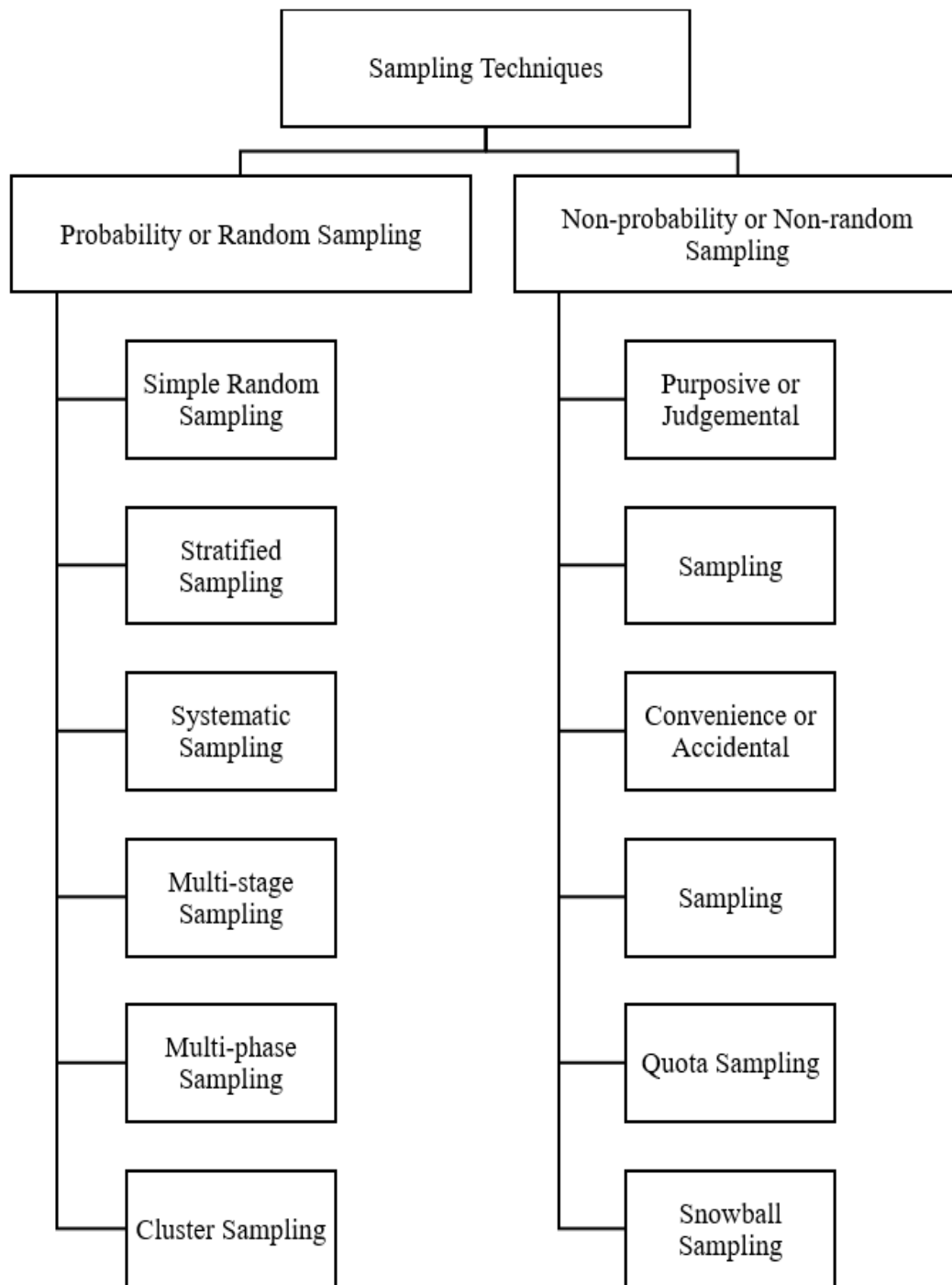


Figure 17 Types of sampling methods (Babbie, 2007)

Data Analysis through SPSS

A combination of nonparametric inferential and descriptive statistics can be used to analyze the data collected from various questionnaires. Although it is generally recommended to use parametric methods when we have real measurements, it is also possible to use nonparametric methods if the responses are described as scores.

There is a debate within the community about the use of nonparametric methods in statistics, but one would suggest that instead of using the other way round, one can start with applying them. For instance, in 2001, the data in this file was gathered as part of a project looking into the IT skills of new students.

Although the data in the file is only a part of the collection process, all of the collected information is in the file. The portion of the questionnaire that was re-written is also included in the collection process. It should be noted that when the university was split into multiple faculties, the collection of the data was carried out in a different way.

Before we start analyzing the data collected from the questionnaires, we make sure that we can see how it relates to the data file. After that, it is needed to translate the data into a format that can be easily accessed by a computer. Some hints that might help include:

- Each of the respondents will have a single row in the data sheet. Through SPSS software the data can be easily analyzed for testing the hypothesis.

Chapter Four

Data Analysis and Results

In working with any living situation, it is frequently discovered that information in hand are insufficient, and therefore, it becomes important to acquire data which is acceptable. There seem to be numerous techniques of gathering data which varies greatly in a framework of money expenses, time and other resources somewhere accessible to the researcher. The data for this research technique was acquired using multiple ways; they included qualitative research method and quantitative research method. The sort of quantitative research approach utilized in the study contains questionnaire while quantitative research includes an interview. The data gathered on this topic is done via the distribution of questionnaires (Kothari 2004). The facts and information obtained from the respondents are presented, evaluated and analyzed according to respondents. Similarly, the interview approach helps the researcher to get to the base of the study, which will enable the researcher to offer the organizational perspective towards the growth of the customer satisfaction and the step towards the customer loyalty attainment. Firstly, in the present work an analysis of questionnaire has been provided and then the data acquisition procedure is described briefly (Hair et al., 2019).

The target group

The survey questionnaire were designed and tested against the targeted group of population. The responses were collected from the selected population against a set of 10 basic questionnaires to both customers (patients) visiting the health care centers as well as the employees (the care takers / nurses) working in the health care centre as shown in appendix-

1 and 2. The target group included persons who are visiting the nearby Healthcare Centers in my locality. A total of 105 respondents were considered for study and the responses against the questionnaire survey were collected and analyzed to arrive at the best possible solution against the hypothesis considered for the study (Grant et al., 2007).

The **Objectives** of the present research is

- 1. Research and organize major types of KPIs to be related with outcomes.***
- 2. Survey health care units with a set of questions on these major KPI issues (top five) and explore whether the customers as well as employees viewed issues in a similar way***
- 3. To find out the relationship between poor performance indicators and poor quality in the Health care industry***

Hence, based on the objectives of the study, the questionnaire for the study was formulated as shown in appendix-1 and appendix-2.

Validity and Reliability of the Research

Customers were asked to consent to being contacted for research purposes while at the health care facility. It was also made clear to the target audience that the survey was done in an anonymous way (in order to make them reply without having to consider that they have to please the researchers) (Leung, 2015). For this reason, the respondent's name was not recorded during the survey. It was critical to obtain honest reactions from clients in order to better understand how they felt about the staff' services at the health care center, as well as their services and equipment utilization (Zohrabi, 2013).

The use of a questionnaire-based survey technique in this study raises concerns regarding the study's validity and reliability. This is because it is dependent on the replies of individuals who have completed the survey. Not in terms of being watched, for example. As a result, some of the answers may be too dramatic (Draugalis et al., 2008).

Survey results (quantitative survey)

Questionnaires are a common tool used in quantitative studies like the present study. Quantitative data is gathered employing research methods. Consumers and employees of nearby health centre are given different set of questionnaire to fill out as a method of ensuring that the survey was conducted on the right set of customers and to allow them to share their ideas as per the KPIs of the health centre considered. Finally, the responses were transformed into data and displayed in pie charts or bar graphs for additional analysis (Williams, 2003).

There were a total of 10 questions each for the customers as well as the employees. Totally 108 customers and 50 employees were given the opportunity to answer them. All of them have been answered all the questions.

Analysis of Questionnaire

Health care centre customers and employees of a nearby health centre were asked to fill out a set of questionnaire to see how satisfied they are against the criteria considered in the objective of the study. In the list of questions provided to the respondents, as given in the Appendix 1 and 2, there are totally 10 questions each to Employees as well as the customers of nearby health centre. Based on the responses given by the participants to these questions, qualitative data can be drawn, to analyze the attainment of the objective of the current study (Green &Peloza, 2014).

Hypothesis testing

Null hypothesis:

There is no correlation between poor performance indicators and poor quality in the Health care industry.

Alternative hypothesis:

There is a correlation between poor performance indicators and poor quality in the Health care industry.

H0: There is no correlation between poor performance indicators and poor quality in the Health care industry.

Ha: There is a correlation between poor performance indicators and poor quality in the Health.

First stage of analysis- with Patients (Customers)

In the first stage of analysis, the responses of 108 customers against the 10 questionnaires were studied and analyzed as follows:

The basic descriptive statistics of the considered questionnaire and the responses were as shown in the table 2.

The null hypothesis in ANOVA is that there is no difference between means. The alternative hypothesis, on the other hand, states that means are not all equal and that they are written in words. The research hypothesis states that means are not always equal. For instance, if one of the four means is unequal, then two of the other three are unequal. The alternative hypothesis takes into account the various possible situations that can arise in the absence of equality of all means. This can be easily understood in case of a survey data as, if p-value or the

significance is less than α , then the Null Hypothesis (H_0) will be rejected and therefore H_a will be accepted. Here, α is taken a 0.05 for a 95% confidence level.

Calculating the F statistic and p-value for ANOVA is shown in table 3.

In the Hypothesis analysis, since the p-value is greater than 0.05, H_0 is rejected. Therefore, H_a is accepted. Hence “There is a correlation between poor performance indicators and poor quality in the Health.”

The results of T-Test for hypothesis testing of the considered questionnaire and the responses were as shown in the table 4, 5 and 6.

Generally in a T-Test, if the t score computed is beyond the critical value in either direction, then the null hypothesis will be rejected. If the t score computed is between the upper and lower critical values, then the null hypothesis will be retained. From the result of a T-Test, as depicted in the above table, as the ‘t’ values are beyond the upper and lower critical values the null hypothesis will be rejected. Hence the Null hypothesis H_0 was rejected and hence the Alternative Hypothesis H_a need to be accepted, which inference that “There is a correlation between poor performance indicators and poor quality in the Health.”

Table 2 Descriptive Statistics for patient's data

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Q1	108	2	1	3	1.94	.823
Q2	108	2	1	3	1.95	.802
Q3	108	2	1	3	2.08	.787
Q4	108	2	1	3	2.07	.794
Q5	108	2	1	3	2.12	.806
Q6	108	2	1	3	2.10	.773
Q7	108	2	1	3	1.90	.808
Q8	108	2	1	3	1.94	.812
Q9	108	2	1	3	2.14	.814
Q10	108	2	1	3	2.02	.785
Valid N (listwise)	108					

Table 3 The F-statistic and p-value for ANOVA

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.524	9	.503	.802	.616 ^b
	Residual	61.439	98	.627		
	Total	65.963	107			

a. Dependent Variable: Q10

b. Predictors: (Constant), Q9, Q4, Q5, Q3, Q2, Q1, Q8, Q7, Q6

Table 4 The results from a T-Test for hypothesis testing

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.809	.635		2.849	.005
	Q1	.050	.096	.053	.519	.605
	Q2	-.128	.097	-.131	-1.326	.188
	Q3	-.104	.099	-.104	-1.047	.298
	Q4	.083	.099	.084	.839	.404
	Q5	.091	.097	.093	.942	.349
	Q6	.042	.107	.041	.393	.695
	Q7	.078	.098	.081	.804	.423
	Q8	.073	.097	.076	.752	.454
	Q9	-.078	.098	-.080	-.788	.432

a. Dependent Variable: Q10

Table 5 The resultsfrom a T-Test for hypothesis testing

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Q1	108	1.94	.823	.079
Q2	108	1.95	.802	.077
Q3	108	2.08	.787	.076
Q4	108	2.07	.794	.076
Q5	108	2.12	.806	.078
Q6	108	2.10	.773	.074
Q7	108	1.90	.808	.078
Q8	108	1.94	.812	.078
Q9	108	2.14	.814	.078
Q10	108	2.02	.785	.076

Table 6 The results from a T-Test for hypothesis testing

One-Sample Test						
	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Q1	24.424	107	.000	1.935	1.78	2.09
Q2	25.326	107	.000	1.954	1.80	2.11
Q3	27.515	107	.000	2.083	1.93	2.23
Q4	27.157	107	.000	2.074	1.92	2.23
Q5	27.354	107	.000	2.120	1.97	2.27
Q6	28.270	107	.000	2.102	1.95	2.25
Q7	24.409	107	.000	1.898	1.74	2.05
Q8	24.768	107	.000	1.935	1.78	2.09
Q9	27.303	107	.000	2.139	1.98	2.29
Q10	26.717	107	.000	2.019	1.87	2.17

Second stage of analysis- with Employees

In the first stage of analysis, the responses of 50 employees against the 10 questionnaires were studied and analyzed as follows:

The basic descriptive statistics of the considered questionnaire and the responses were as shown in the table 7.

Calculating the F statistic and p-value for ANOVA is presented in table 8.

In the Hypothesis analysis, since the p-value is greater than 0.05, H_0 is rejected. Therefore, H_a is accepted. Hence “There is a correlation between poor performance indicators and poor quality in the Health.”

The results of T-Test for hypothesis testing of the considered questionnaire and the responses were as shown in the table 9,10 and 11.

A T-Test is a type of test that involves determining the t score's value in either direction. If the value of the t score is beyond the critical value, then the null hypothesis is rejected. On the other hand, if the value of the t score is between the lower and upper critical values, the null hypothesis can be retained. The null hypothesis H_0 was rejected, and the alternative hypothesis H_a should be accepted. It states that there is a correlation between poor quality of health care and poor performance indicators.

Table 7 Descriptive Statistics for Employee data**Descriptive Statistics**

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Q1	50	2	1	3	1.96	.856
Q2	50	2	1	3	2.06	.793
Q3	50	2	1	3	2.10	.863
Q4	50	2	1	3	1.64	.722
Q5	50	2	1	3	1.66	.772
Q6	50	2	1	3	2.06	.818
Q7	50	2	1	3	2.06	.913
Q8	50	2	1	3	2.02	.820
Q9	50	2	1	3	1.98	.845
Q10	50	2	1	3	1.90	.839
Valid N (listwise)	50					

Table 8 The F- statistic and p-value for ANOVA

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.056	9	.562	.763	.650 ^b
	Residual	29.444	40	.736		
	Total	34.500	49			

a. Dependent Variable: Q10

b. Predictors: (Constant), Q9, Q4, Q8, Q2, Q3, Q7, Q6, Q1, Q5

Table 9 The results from a T-Test for Employees data

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.065	1.040		1.024	.312
Q1	.115	.155	.117	.741	.463
Q2	-.187	.159	-.176	-1.172	.248
Q3	.089	.147	.091	.603	.550
Q4	.093	.179	.080	.521	.606
Q5	.369	.178	.340	2.080	.044
Q6	.072	.154	.071	.469	.641
Q7	-.144	.149	-.157	-.969	.339
Q8	.031	.153	.031	.204	.839
Q9	.064	.156	.064	.410	.684

a. Dependent Variable: Q10

Table 10 The results from a T-Test for Employees data

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
Q1	50	1.96	.856	.121
Q2	50	2.06	.793	.112
Q3	50	2.10	.863	.122
Q4	50	1.64	.722	.102
Q5	50	1.66	.772	.109
Q6	50	2.06	.818	.116
Q7	50	2.06	.913	.129
Q8	50	2.02	.820	.116
Q9	50	1.98	.845	.119
Q10	50	1.90	.839	.119

Table 11 The results from a T-Test for Employees data

One-Sample Test						
	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Q1	16.187	49	.000	1.960	1.72	2.20
Q2	18.367	49	.000	2.060	1.83	2.29
Q3	17.205	49	.000	2.100	1.85	2.35
Q4	16.069	49	.000	1.640	1.43	1.85
Q5	15.200	49	.000	1.660	1.44	1.88
Q6	17.798	49	.000	2.060	1.83	2.29
Q7	15.959	49	.000	2.060	1.80	2.32
Q8	17.410	49	.000	2.020	1.79	2.25
Q9	16.571	49	.000	1.980	1.74	2.22
Q10	16.011	49	.000	1.900	1.66	2.14

Chapter Five

Conclusion

A patient's satisfaction is a measure of how satisfied they are with their health care experience. It is very important that the facility where they receive their care is able to improve their quality of life. One of the most important factors that healthcare professionals consider when it comes to improving the quality of their patient experience is the belief that people don't care how much they know until they know how much they care. This is a self-evident principle that should be taught in modern medical practice. Being able to provide a good customer experience is beneficial for both the patients and the staff members of a health care. It can help improve the quality of care and reduce the risk of malpractice.

This thesis has explored into the relationship between quality outcome from the health care and achievement of Key Performance Indicators (KPIs). The author has learned that customer happiness and satisfaction are the foundations of business success, and that the customer plays a critical role in both. While conducting research, the authors discovered if consumers were happy with the quality of the services provided at the health care then the health care's potential customers will be enhanced.

Hence, based on the experimental results, attained, it was concluded that there is a correlation between poor quality of health care and poor performance indicators. The null hypothesis is proven to be false and hence the alternate hypothesis is correct. Hence this study concludes that there is a positive correlation between the poor quality of health care and poor performance indicators.

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Appendices

Appendix-1

Survey Questions- Patient

Basic Interview Questions: (Tick (✓) the option of your choice)

Q1 Were you satisfied with the overall service provided at the health centre?

1 Yes 2 No 3 Not sure

Q2 Were the nurses prompt in addressing your needs during your stay at health centre?

1 Yes 2 No 3 Not sure

Q3 Were you satisfied with the length of your stay at the health centre?

1 Yes 2 No 3 Not sure

Q4 Were you satisfied with the number of nurses present per shift at the health centre?

1 Yes 2 No 3 Not sure

Q5 Were you satisfied with the total cost spent/ expenditure at the health centre?

1 Yes 2 No 3 Not sure

Q6 Were you satisfied with the quality of the equipment used for your treatment at the health centre?

1 Yes 2 No 3 Not sure

Q7 Would like to refer this health centre to any one?

1 Yes 2 No 3 Not sure

Q8 Do you feel that the employees are giving importance to customer service rather than their timings or duty shifts allotted?

1 Yes 2 No 3 Not sure

Q9 Do u feel that the health centre need to provide training for its employees to improve its overall quality outcome?

1 Yes 2 No 3 Not sure

Q10 Do you believe that this health care centre has developed good will among the customers through its service and employee behavior?

1 Yes 2 No 3 Not sure

Appendix-2

Survey Questions- Employees

Basic Interview Questions: (Tick (✓) the option of your choice)

Q1 Were you satisfied with your shift timing and duty allocation norms followed by your employer?

4 Yes 5 No 6 Not sure

Q2 Were you satisfied with the nurse-to –patient ratio that was followed by your employer?

4 Yes 5 No 6 Not sure

Q3 Were you satisfied with your salary/ other allowances provided by the employer?

1 Yes 2 No 3 Not sure

Q4 Were you satisfied with the training provided by the employer?

4 Yes 5 No 6 Not sure

Q5 Do you think that the KPIs defined for the employees with respect to the number of patients attempted per day need to be removed to enhance the outcome?

1 Yes 2 No 3 Not sure

Q6 Do you feel that the employer is giving importance to KPI achievement by the employees rather than the customer satisfaction?

4 Yes 5 No 6 Not sure

Q7 Does u feel that your employer can reframe its KPIs for the employees to improve its quality?

4 Yes 5 No 6 Not sure

Q8 Do you believe that your employer need to relax the KPI related to achieving the Net Profit Margin

4 Yes 5 No 6 Not sure

Q9 Do you believe that your employer need to relax the KPI related to Patient Room Turnover rate

1 Yes 2 No 3 Not sure

Q10 Do you believe that your employer have maintained good employee retention with good policies that can support the employees.

1 Yes 2 No 3 Not sure

Vita

Lamara Glass was born in Knoxville, Tennessee on September 3, 1996. She attended her schooling in Davidson County and graduated from Hunters Lane High School with honors in 2014. In the year 2022 she received her degree of Master of Science in Industrial Engineering from University of Tennessee. She wrote a thesis with title “A Study of the Link between Poor Quality and Poor Performance of Various Health Care Indicators”. While writing the thesis she followed all the guidelines by the university.