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Strategic Planning Efforts: An Assessment of Tripoli University Performance[1]

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Abstract

The study explores the impact of strategic planning to achieve recommendations that improve efficiency and effectiveness in tertiary institutions in Libya. The study was carried out exclusively on employees at the University of Tripoli. The importance of this study stems, in particular, from its academic and professional contributions, to the universities of Tripoli. The study favored descriptive and analytical approaches that provide a deeper insight into what's going to happen in the future and give more accurate, reliable results than pure analysis. A total of 458 executives and staff, including faculties and institutes at the University of Tripoli, make up the research's universe. In this work, participants are identified by the sampling method. After examining each subdimension of strategic planning independently with the University of Tripoli's performance level, significant differences were found for the following two variables. These sub-dimensions can be sorted by strategic analysis and strategic selection. At the University of Tripoli's performance level, no significant differences were found for the following sub-dimensions. These can be sorted by strategic vision, mission and objectives. Finally, because of the academic competency variables and the current business area, it has been found that there are statistically significant differences in participants' positions on strategic planning level, and that participants' positions on demographic data and performance concepts have been statistically differentiated based on existing business area variables.

Keywords: Strategic Planning, University of Tripoli, Higher Education Performance

1.Introduction

The study considers the fruitful work of Tripoli University, the largest university in Libya, to give to strategic planning. The university has the largest number of Libyan students in the region. The University of Tripoli was founded in 1957, and it is an institution with a total of 4,000 employees and 3,000 academics, and faculties with many different disciplines, home to 100,000 students.

For all these reasons, this work is particularly important in higher education institutions as an incentive to demonstrate the importance of strategic planning for the development of educational activities and a higher quality for the education sector. The primary objective of the study is to determine the extent to which factors are involved in strategic planning are effective on performance. It is also about enabling the positive and negative aspects of the University of Tripoli to be established through long-term strategic planning. It is believed that this work could serve as the basis for much work to be done in the future.

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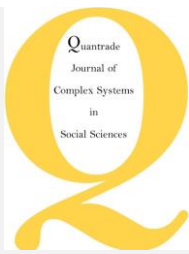
2.Literature

In strategic management, classical scholars include Ansoff' (1965), Penrose (1959), Chandler (1962), Rumelt (1997) and Porter (1990, 1991). Scientists who advocate for classical understanding have mainly treated the strategy as the firm's competitive strategy. Ansoff (1965) described the strategy as relevant to the relationship between the firm and its surroundings. The same scientist sees institutional strategy as a process by which executives can anticipate future challenges due to the organization's environment and hence determine intervention plans. He also argues that strategic planning is a must-have part of the organization. One of the classical thinkers, Sofa's strategy view (1965), was criticized by Ansoff and McDonnell (1990) for not taking into account the unpredictable environment where he thought events were predictable, and that unpredictable events might develop. After this criticism, these environments were described as "Turbulent Environment". Another view of Sofia (1965) is that strategic thinking can be decoupled from institutional management. Finally, Sofa said that new strategies can be developed with the techniques of data analysis (Mintzberg, 1994). It is important to remember that Ansoff's theories were also criticized. The main reason for criticism is that there is no evidence that Ansoff's theories can be applied to small organizations. Only large institutions have been investigated and small institutions not included (Kipley, 2009; Mintzberg, 1990). The top-down strategic planning process, or hierarchical strategic planning process, is said to provide very little input to small organizations. As a plan, the strategy refers to leaders' organization and employees' familiarization with a predetermined manner of action. That's why leaders are more interested in trying to lead the organization. Such a strategy is intended (Mintzberg v., 1996).

The strategy can also be seen by scientists or as a learning process (e.g., Starkey, 1996), or as a flow of activity (Mintzberg and Waters, 1985). Mintzberg and Quinn (1996) also called the strategy "a pattern strategy". From a perspective towards the strategy, one can see that it is a unified way of perceiving the world surrounding institutions. It is shared by members of the organization through intentions and/or actions. From the point of view of the board's members, strategy is the way the organization will go about getting there, with the vision and goals it wishes to be. However, it has also contributed to understanding how the organization will develop over time (Mintzberg and Quinn, 1996). Strategies may be intended, realized, exposed, intentional or unrealized (Mintzberg, 1994; Rumelt, 2011).

If the implementation of a intended strategy can proceed as planned, it has turned into a deliberate strategy. A strategy has been described as a stream of decisions that are regularly exhibited as time goes on (Mintzberg, 1978). An unrealized strategy appears in situations where the strategy evolves, although it is not intended, but with certain intentions. The strategy appears over time as it adapts to intentions (Moore, 2011, Mintzberg, and Waters, 1985). An organization can perform a series of activities that, over time, become a consistent pattern of behavior when there are no intentions. The resulting and continuous patterns become strategies (Mintzberg, 1994, Mintzberg and Quinn, 1996). Recent research in strategic management has seen more and more of the processes of organizational learning, rather than the effective policy-making processes of emerging strategies (Klijin, 2008) The strategic perspective as practice focuses on ways in which strategy practitioners are activated or restricted by organizational, social practices (Johnson, and., 2008). The question of which is better in strategic management is the subject of ongoing debate. Advocates of formalized strategic planning include Steiner (1999), while Mintzberg (1993) Quinn and Voyer (1998) advocated for unformalized strategic planning. In his study, Ansoff (1965) considered strategy building and development to be a process that had to be conducted in a conscious way. Lindblom (1959) argued that public sector officials should base their decisions on limited knowledge, policy analysis and rationality, and that decision-making should be fragmented. Lindblom (1959) also claimed that strategic decision-making was not a truly coordinated and rational process. Some other authors argue that strategic decision-making, such as Ansoff, (1965), Mintzberg, and Quinn (1996), is a planned process. Pettigrew (1985) argued that decision-making was not always rational,
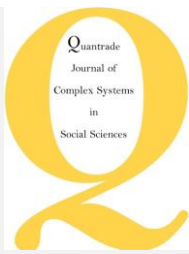
but that rationality could exist when the actor included his own interests. He also stated that the strategic decision-making process was influenced by bureaucracy, organizational structure and environmental factors. Finally, he claimed that strategizing was a political process (Pettigrew, 1977). According to Bryson (2004), strategic planning in the public sector ranges from individual public institutions to governments, and their specific functions, such as transportation, organization, government, and inter-organization networks. The relationship between strategic planning and organizational performance was also criticized for being uncertain (Mintzberg, 1994; Grant, 2003; Poster, etc.). Some research also highlighted the importance of effective and efficient management and the importance of the organization having flexible bureaucracy (Meier and O'Toole, 2009).

According to a study by Moore (1997), administrators should continually educate themselves, constantly questioning what they can produce, how they can meet citizens' demands, and how they can network with their political auditors (Moore, 2010).

To summarize, strategies are closely related to the organization and its environment, to governance, to objectives, to organizational aspects, and to strategizing. So the definition of strategy is related to how and why the organization uses it. In organizations, the concept of institutional strategy was first described in the 2009 financial statement (Ministry of Interior, 2010b) as follows, the common strategic objectives of the administration sector and actions to implement them. The strategy guides activities and financial planning and strengthens public sector procedures in performance measurements. The concept of an institutional strategy is to guide actions and see activities as a controllable process (Quinn and Voyer, 1998).

At the same time, strategies are all decisions and actions towards common goals. It is also closely associated with performance management. The strategic implementation described above is a targeted strategy (Mintzberg and Quinn, 1996). In recent research on the development process and challenges of the public sector, complexity theory has been preferred. The theorem involved has been considered a possibility to explore the organizational development process and solve complex problems that arise (Head, 2008; Klijin, 2008; Mitleton-Kelly, 2003; MacIntosh, etc., 2006; Klijin, 2008). Further information on the subject is included in a 2003 study by Mitleton and Kelly, or in a 2006 study by MacIntosh, etc. In complexity theory, strategies are not shaped by unilateral responses to a changing environment, but by the actions and interactions of different actors in the networks (Klijin, 2008; Mitleton and Kelly, 2003). Complex systems consist of many interactive parts according to rules, laws, or forces (Maguire and McKelvey, 1999).

In self-sustaining organizations, actors interact dynamically and reshape the environment (Bovaird, 2008; Stahle, 2008). Adaptability of actors to the system is an important factor in success (Stahle, 2008; Bovaird, 2008). Elections, events, activity, and the positions of actors are shaped. Following the position, the manager's job is to assess opportunities, develop policy recommendations or adapt plans to suit the circumstances of the moment (Klijin, 2008). According to the ideology of anarchism, organizations are not well-organized rational systems, but systems in which individual solutions, problems, and events must be connected (Klijin, 2008; Cohen and., 1972). Self-organization is self-reforming and capable of complex decision-making (Klijin, 2008; Stahle, 2008). These systems are then categorized according to their complexity and analysis units, either micro- or macro-level (Head, 2010). In addition, some of the complex problems are classified as poor based on their resistance to clear and easy solutions. The submissive problems were not always easy, but were described as solvable (Ritchey, 2013; Rittel and Webber, 1973). The limits and responsibilities of the problems are not clear. One of the features of these complex social problems mentioned above is the existence of underlying value conflicts (Head and Eisenberg, 2010; Head, 2008; Shön and Rein, 1994).

Strategic planning relates to the proper orientation of the strengths and weaknesses of the organization to take advantage of opportunities arising from its external environment and to minimize threats/problems associated with the external environment (Adeleke vd., 2008). According to Thomas Bateman and Scott Snell, strategic management is a process by which all units of the organization should be involved in the creation or implementation of strategic objectives and strategies. Strategies are the allocation of actions and resources designed to achieve organizational goals. Thompson and Strickland (2003) described the strategic management process as the work of managers to create, implement and execute organization strategies. The benefits of strategies include a position in the right markets, ability to compete successfully, ensure customer satisfaction and achieve high performance. Hofer and I. (1984) The strategic administration is primarily concerned with the creation and development of structural systems necessary to ensure organizational renewal and growth. This process can also be described as strategizing and application processes. Ansoff (1984) called strategic management a systematic approach. This approach is governed by the general government. In addition, this approach should be positioned to ensure that the success of general administration is sustained and warranted, protecting the overall management from potential surprises. In addition, it must ensure that the organization's relations with its environment are consistent. In this definition, the emphasis is placed on the relationship between the organization and the environment.

Sharplin (1985) describes strategic management as the process of creating, implementing and executing plans for the common and persistent issues that remain of importance for the whole organization. In fact, this definition by the researcher can be seen as the most broadly constructed definition of strategic governance. Because this definition states that all the plans and activities that matter to the organization must be considered. Harrison and John (1998) described strategic management as a process in which organizations learn about their internal and external environment, strategically oriented towards the information, and develop applications to help them achieve their goals. The Institute of Strategic Management in Nigeria defines strategic governance as an integrative management process involving all administrative units and employees of an organization (Access Address: www.arabianjbmr.com/JPDS_index.php, 01.06.2022). The relevant institution outlines the benefits of strategic management as ensuring that organizations continually assess their environment, ensure proper organization development, facilitate proper organization implementation, ensure continuous control implementation, ensure continuous monitoring of plans, ensure vigilance of all positive/negative changes, create competitive advantage, ensure successful performance.

Strategic management is a process that consistently evaluates and controls the industries the company has been to. In the process, the organization evaluates its competitors, and lays out practices for influence over all current and potential competitors. After this process, they reconsider the strategies they have outlined in specific intervals. The main purpose of this evaluation process is to determine whether strategies are implemented, successful or should be replaced by a new strategy to adapt to changing circumstances (new technology, new competitors, new economic environment, new social, financial, political environment) (Lamb, 1984). Strategic management could also be defined as the organization's goal, and the determination of plans, actions, to achieve that goal. It is a series of administrative decisions and actions that determine an organization's long-term performance. Implementing strategies to help the organization align with its surroundings to achieve goals is another obligation. Lawrence and William (1988) described strategic management as an effective stream of decisions and actions to help achieve corporate goals. Strategic management is the way strategy practitioners determine goals and make strategic decisions. Strategic management is a disciplined approach that explores how any institution will use management principles to determine its goals or missions. Strategic management determines an appropriate target for achieving objectives, recognizes the current opportunities and risks in the environment, and sets out rational methods that can be achieved (Aremu, 2000). Strategic governance is the process of strategizing in the narrowest possible terms, proportional to the missions and visions of organizations. Their missions, visions and strategies play an important role in identifying themselves, providing solutions to problems they face and determining the positions they will assume for their future. Each

of the missions, visions, and strategies must be developed at the beginning of the process of development of the organizations. It is important to note that the three concepts are closely related

3.Tripoli University Overview

Founded in 1957, the University of Tripoli is a non-profit public institution in Tripoli, Libya (with a population of 1,000-5,000,000). The organization's campuses are as follows: Ben Gasher and Janzour. The University of Tripoli, officially recognized by the Libyan Higher Education Authority and the Ministry of Scientific Research, is a university that teaches mixed education to a large number (about 45,000) of students. The University of Tripoli offers pre-bachelor's degrees (i.e. certificates, diplomas, pre-bachelor's or foundation degrees), bachelor's degrees, master's degrees, doctoral degrees, etc. in a variety of working areas, as well as programs that enable officially recognized higher education. With a 63-year history, the university adopted a student-accepting policy through entrance exams. Acceptance rates are around 50-60%, making it a selective institution. International students also have the right to enroll. The University of Tripoli, on the other hand, offers students a variety of academic or non-academic opportunities, including libraries, accommodation, sports facilities and/or activities, financial assistance and/or scholarships, educational and exchange programs abroad, online courses and remote learning opportunities.

Details of the history and strategic plans of the university were posted on the university's website. To take its performance to the next level, the institution has developed a strategic plan intended to help it align itself with world universities. This strategy enabled the University of Tripoli to develop a vision that would help it develop in the years to come. This strategic plan is aimed at building the future of the university on a tradition of radical innovation, accessibility and compatibility embodied by successive generations. The relevant strategic plan focuses on the following key points;

- Strategies and Goals: A strategic plan created by the University aims primarily to provide answers to the questions of those involved.

- Vision: The original approach to research, education and innovation will be adopted. This approach will help to understand how the world is understood, how knowledge is created, shared and how global problems are resolved. It is also seen as a community of staff, students and partners.

- Mission: The University of Tripoli is an intellectual community that is closely following world developments and devoted to changing the world for the better. Our radical and critical thinking has a remarkable ability to integrate our education, research, innovation and initiative into the long-term benefits of humanity. One could say that the university's name change was part of its mission to keep up with the world.

- Objectives: The three objectives of this strategic plan can be laid out in the form of research leadership, transcending borders, and providing public benefits.

The strategic plan aims to inspire and empower research leadership in the first place. The objectives that must be accomplished in order to achieve their objectives can be sorted in this manner. To be the preference of the most talented researchers. To put forward a broad research base. Promoting different research societies. Activate various forms of leadership. Raising research students. To offer early career advancements. Develop cooperation agreements. Being a responsible investigator. To be part of the research community in Libya. To be involved in global research communities. Setting goals that fit the time we're in.

The university is highly regarded for its role as educational and cultural, and has a high importance for social responsibility towards society. So for those who are interested in this space, caring about it will help them achieve more efficient and productive results.

4.The Problem of Research

It is aimed at measuring the performance of the University of Tripoli operating in Libya. This measurement was demonstrated by the field work performed by university staff. On the other hand, it is the fundamental problem of the research that the university has accomplished in strategic planning at what level or in what areas it lacks. The following research questions are useful in describing the fundamental problem of research, based on these statements.

1.   Given the staff's perspective, how does strategic planning affect the performance of the units located at Tripoli University?

2.   What is the impact of strategic planning on the day-to-day functioning of units at the University of Tripoli and on the activities of administrators?

3.   Are there statistically significant differences between the importance of implementing strategic planning and the demographic characteristics of university staff?

4.   What are the proposals that could help implement strategic planning at the 4-Tripoli University?

5.Research Hypotheses

The study developed a total of three main hypotheses and each hypothesis has five sub-hypotheses, as follows. The study's hypotheses can be sorted as follows:
H.1 - There is a statistically significant difference between the variables of strategic planning and the performance of the University of Tripoli.
H.1.1 - There is a statistically significant difference between the subdimension of strategic planning, flexible planning, and the performance variables of the University of Tripoli.
H.1.2 - A statistically significant difference between realistic management, the subdimension of strategic planning, and the performance variables of the University of Tripoli.
H.1.3 -- There is a statistically significant difference between the subdimension of strategic planning, measurement standards, and the performance variables of the University of Tripoli.
H.1.4 - There is a statistically significant difference between the validation procedures and the University of Tripoli performance variables, which are the subdimension of strategic planning.
H.1.5 - There is a statistically significant difference between the subdimension of strategic planning, the distinguishing factors and the performance variables of the University of Tripoli.
H.2 - There is a statistically significant difference between the participants' demographic data and the University of Tripoli performance variables.
H.2.1 - There is a statistically significant difference between the gender of participants and the performance variables of the University of Tripoli.
H.2.2 - There is a statistically significant difference between the participants' ages and the performance variables of the University of Tripoli.
H.2.3 - There is a statistically significant difference between the scientific competences of participants and the performance variables of the University of Tripoli.
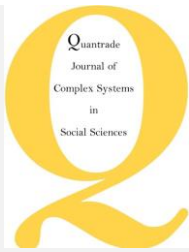
H.2.4 - There is a statistically significant difference between the participants' work area and the performance variables of the University of Tripoli.

H.2.5 - There is a statistically significant difference between the year of study by participants and the performance variables of the University of Tripoli.

H.3 - There is a statistically significant difference between the participants' demographic data and their corporate performance level attitudes variables.

H.3.1 - There is a statistically significant difference between the participants' gender and their corporate performance-level attitudes variables.

H.3.2 - There is a statistically significant difference between the participants' ages and their corporate performance level attitudes variables.

H.3.3 - There is a statistically significant difference between the participants' scientific competences and their corporate level of performance attitudes variables.

H.3.4 - There is a statistically significant difference between the participants' business and enterprise performance level attitudes variables.

H.3.5 - There is a statistically significant difference between the variables of the participants' year of work and their corporate level of performance attitudes.

6.Purpose of Research

The study essentially aims to:

1.   Identifying the impact of strategic planning and implementation on the performance of institutions in the education sector.

2.   Understanding how and to what degree strategic planning can be implemented at the University of Tripoli and assisting the day-to-day functioning of the administrators involved in the institutions.

3.   Identifying differences between demographic data of staff at the University of Tripoli and perceptions of strategic planning.

4.   What they're working on is communicating their potential ideas about the institution's strategic planning practices through studies.

7.Scientific Importance of Work

The study of higher education institutions was first examined, and did not involve much research on scientific evidence and field studies. It is primarily important from a scientific perspective. But there are some studies that are based on this, but there are very few qualified studies that actually bring together the two variables in this study. The topic is of great scientific importance in terms of being extremely new and providing the basis for future studies. Another important aspect is that this study has shown that strategic planning also influences the performance of universities.

The study thoroughly investigated various implementation steps of strategic planning. A detailed data set has been obtained regarding the vision and strategic planning activities of the University of Tripoli where the study was conducted. Finally, university administrators have been helped to see the positive effects of strategic planning on performance and help gain awareness of the issue.

This work has been limited to a number of selected units from the University of Tripoli, which has numerous educational institutions.

-        Another limitation of the study is that the higher education sector is only interested in the Strategic planning flow. The results therefore apply to higher education institutions.

- Subjectivity is an important factor in qualitative research, it is important to note that qualitative research focuses on the particular situation and experience of survey participants. Therefore, the study's reliance on responses from participants who played different roles in the higher education system has influenced the results of the study. Another limitation of the work pertains to this subject. The study only obtained data through the survey method. Further studies can include observation and in-depth interview methods.

8.Method

The study primarily used descriptive analyzes to determine the relationships between variables and to determine the direction of any relationship that is detected between these variables. According to Mugenda and Mugenda (2003), descriptive statistics allow a researcher to collect, summarize, present and interpret information in a whole way in order to make a statement. The statistical tool for conducting research analyzes can be called basically inference statistics. The analysis methods most favored for determining relationships between variables in the study were the correlation matrix and multiple regression analysis. In the study, the face-to-face polling method was preferred to obtain data. The most important reason for this is that it's economical and also allows for large amounts of data to be collected from a large population. Saunders vd., (2009) proposed this strategy in their study, and another reason for this proposition, except as one of the above reasons, is that it allows researchers to collect data that can be analyzed in quantitative terms using inference statistics. It is also important to note that the implications of the survey method are relatively easy to both clarify and understand.

A journal from the University of Tripoli is first received to provide relevant information in order to achieve research goals. Staff members of the university's respective departments were then identified. The survey has been distributed to eligible personnel through the administrators of the respective units. Participants have been informed in advance of an article about research in order to remove any doubt or mistrust that participants might have about the surveys and research involved. Preface contributors included in an article illustrating how to fill out questionnaires to participate and motivate them to answer questions.

Surveys have been distributed to the relevant personnel through the units. After collecting data from a representative sample using the survey method, the data was organized on the same day to check the lack of data, consistency, and reliability. The relevant survey data was then sequentially organized and logged into the computer environment. This is how you ensure there are no errors, scanning and cleaning of the data. The data was transferred from the computer to the SPSS package program for analysis.

According to Sarantakos (1998), analyzing the data includes the process by which the researcher evaluates the findings, editing the data collected during the study to reach some valid, reasonable and relevant conclusions. The study preferred the descriptive statistical method to present and summarize the biodata, as mentioned previously. Statistical methods for carrying out research analyzes can be sorted as inference statistics, correlation matrix, and multiple regression analysis. And Cooper. (2006) The research method allows a researcher to understand vast amounts of data and effectively communicate important aspects of his work. The software tool for data analysis, Statistical Package for Social Sciences (SPSS 24), has been used. The resulting qualitative data has been simplified by the content analysis method. The method of content analysis refers to the categorization of data, the identification of keywords, and meaningful interpretation of responses. Saunders. (2009), they define the method of content analysis as organizing the data for easy interpretation under certain key headings after it is categorized. Intel data is provided in prose, and highlights are addressed in the study.

The study sample consisted of a total of 458 employees of the University of Tripoli, Libya. Given that the total number of employees is approximately 4,000 people, 458 attendees are more than 384 people, enough to describe the universe. And the power of data to describe the universe is enough. More than two-thirds (72.3%) of respondents were men. The remaining 27.7% are female participants. More than half of respondents included 58.3% in age groups between 30 and 40 years old. 25.8% of those between 40 and 50 years old. The rest of the sample consists of participants over 50 years of age. The rate is 15.9%.

Testing the First Hypothesis: Strategic Planning has identified a statistically significant relationship between the University of Tripoli's Performance variables. This relationship appears to be at (p<0.05) level. The value of the R2 coefficient is 0.472, meaning that it accounts for 47.2% of the total variance caused by the independent variable (Strategic Planning) on the dependent variable (the University of Tripoli's Performance). It should be said that the f = 407.064 derived from the results of the ANOVA test is statistically significant. The linear regression model has been found to be better suited than a model with no arguments. The T test value is 20,176. A 1-unit change in the strategic planning scale will result in a co-directional movement of .825 units on the performance scale. This conclusion confirms that the first hypothesis was accepted. So strategic planning has a significant and positive impact on the performance of Tripoli University.

Testing of the first sub-hypothesis: A statistically meaningful relationship has been detected between the underlying dimension of Strategic Planning, Flexible Planning, and the University of Tripoli's Performance variables. This relationship appears to be at (p<0.05) level. The value of the R2 coefficient is 0.193, which means that it accounts for 19.3% of the total variance caused by the argument (Flexible Planning) on the dependent variable (the University of Tripoli's Performance). The F = 108.879 is statistically significant, derived from the results of the ANOVA test. The T test value is 10,435. A 1-unit change in the flexible planning sub-dimension results in an even-directed movement of .375 units on the performance scale. The results show that the relevant hypothesis was accepted.

Testing the second sub-hypothesis: A statistically meaningful relationship has been detected between Realistic Governance, the lower dimension of Strategic Planning, and the University of Tripoli's Performance variables (p<0.05). The value of the R2 coefficient is 0.251, which means that the argument (Realistic Management) explains 25.1% of the total variance caused by the independent variable (University of Tripoli's Performance). The F = 154.443 derived from the results of the ANOVA test is statistically significant. The T test value is set at 12,428. A 1-unit change in Realistic Management sub-size also results in a 5-way movement with a .446-unit scale on the performance scale. The results show that the relevant hypothesis was accepted.

Testing the third sub-hypothesis: A statistically meaningful relationship has been detected between the lower dimension of Strategic Planning, the Measurement Standards and the University of Tripoli's Performance variables (p<0.05). The value of the R2 coefficient is 0.230, which means that the argument (Measurement Standards) explains 23% of the total variance caused by the dependent (Performance of the University of Tripoli). The F = 173.356 is statistically significant, derived from the results of the ANOVA test. The T test value is set to 12,428 (p<0.05 level). The results show that the relevant hypothesis was accepted.

Testing the fourth subhypothesis: A statistically meaningful relationship has been detected between the subdimension of Strategic Planning, the Validation Procedures, and the University of Tripoli's Performance variables (p<0.05). The value of the R2 coefficient is 0.226, which means that the argument (Validation Procedures) explains 22.6% of the total variance caused by the dependent (University of Tripoli's Performance). The F = 134.081 is statistically significant, derived from the results of the ANOVA test. The T test value is set to 11,579 (p<0.05 level). The results show that the relevant hypothesis was accepted.

Testing the fifth subhypothesis: A statistically meaningful relationship is detected between the subdimension of Strategic Planning, the Distinguishing Factors, and the University of Tripoli's Performance variables ($p<0.05$). The value of the R2 coefficient is 0.277, which means that the independent variable (Distinguishing Factors) explains 27.7% of the total variance caused by the dependent (University of Tripoli's Performance). The F = 176,543 derived from the ANOVA test is statistically significant. The T test value is set to 13,284 ($p<0.05$ level). The results show that the relevant hypothesis was accepted.

The above analysis results show the total impact of strategic planning on the performance of Tripoli University. On the other hand, it is important to work on determining which sub-dimension of strategic planning has more impact on the performance of the University of Tripoli.

As mentioned earlier, multiple linear regressions were used to investigate which sub-dimension of strategic planning had more impact on the performance of the University of Tripoli. Statistical data shows that the model fits well. The value of the ANOVA test (f=81.879 $p<0.05$) has been identified as meaningful. Also, all t-test values are meaningful at $p<0.05$, meaning that all sub-dimensions have a significant impact on the performance of the University of Tripoli. Additionally, these domains have been found to be positively oriented as a result of the resulting multiple. Given the values of beta and t-test, the lower dimension of Realistic Management (0.202) has more impact on the performance of the University of Tripoli than the other four sub-dimensions.

Testing of the Second Hypothesis: "There is a statistically significant difference between the participants' demographic data and the University of Tripoli's strategic planning level variables."

Testing the First Subhypothesis: When data is analyzed, male participants appear to have a higher average score (3,378) than women in attitudes towards strategic planning level. The T-test results were found to be 2,277 at the semantic level of $p<0.05$, and are meaningful. These results suggest a statistically significant difference between the two groups. Men's strategic planning level perceptions are statistically significantly higher.

Testing the second sub-hypothesis: The ANOVA test was used to determine the differences among survey respondents based on age groups. The f-test value detected is f= 5.521. A statistically significant difference has been detected since P is $P<.001$) and $P<.05$. One of the Post Hoc tests, Tukey HSD analysis, was used to determine the age of difference.

The Tukey test was used in Post-Hoc analysis to identify the significant differences between variable groups. The results were found to differ statistically with average scores of participants younger than 30 years of age from 30 to 40, and average scores of participants older than 40 to 50 and 50. Participants under the age of 30 have a more positive attitude towards the level of strategic planning.

Testing the third sub-hypothesis: The ANOVA test was used to identify differences between responses based on the level of education of those surveyed. The f-test value detected is f= 4,784. A statistically significant difference has been detected since P is $P<.003$) and $P<.05$. One of the Post Hoc tests, the Tukey HSD analysis, has been used to determine the level of training differences between groups.

The Tukey test was used in Post-Hoc analysis to identify the significant differences between variable groups. Examination of the results found that average scores of participants with technical training and average scores of participants with other bachelor's and post-graduate courses differed statistically. Participants with technical training have a more negative attitude towards the strategic planning level.

Testing the fourth sub-hypothesis: The ANOVA test was used to identify differences between responses based on the positions of those surveyed. The f-test value detected is f= 4,890. A statistically significant difference has been detected since P is P<.000) and P<.05. One of the Post Hoc tests, the Tukey HSD analysis, has been used to determine the level of training differences between groups.

The Tukey test was used in Post-Hoc analysis to identify the significant differences between variable groups. When the results were examined, the average scores of participants in other positions and the average scores of participants in the non-auditor position of manager, manager, department vice president, and department head position were found to differ statistically. Participants in other positions have been found to have a more positive attitude towards the level of strategic planning.

Testing the fifth subordinate hypothesis: The ANOVA test was used to identify differences between responses based on the experience time of those surveyed. The f-test value detected is f= 8,604. A statistically significant difference has been detected since P is P<.000) and P<.05. One of the Post Hoc tests, the Tukey HSD analysis, has been used to determine the length of time the differences are among the groups with experience.

The Tukey test was used in Post-Hoc analysis to identify the significant differences between variable groups. Examination of the results found that the average scores of participants who served for more than 10 years and served less than 5 years differed statistically with average scores of participants between 5 and 10 years. Participants with less than 5 years of service have been found to have a more positive attitude towards the level of strategic planning.

Testing the Third Hypothesis

"There is a statistically significant difference between the participants' demographic data and their institutional performance-level attitudes variables."

Testing the first sub-hypothesis

In attitudes towards corporate performance, male participants appear to have a higher average score (3,340) than women. The T-test results were found to be 2,408 at the meaningful level of p<0.05. These results suggest a statistically significant difference between the two groups. Men's perceptions of corporate levels of performance are statistically significantly higher.

Testing the second sub-hypothesis: The ANOVA test was used to determine the differences among survey respondents based on age groups. The f-test value detected is f= 2.448. A statistically significant difference has not been detected because P<.063) is greater than P<.05.

Testing the third sub-hypothesis: The ANOVA test was used to identify differences between responses based on the level of education of those surveyed. The f-test value detected is f= 0.923. A statistically significant difference has not been detected, since P does not satisfy the P<.05 requirement (.430).

Testing the fourth sub-hypothesis: The ANOVA test was used to identify differences between responses based on the positions of those surveyed. The f-test value detected is f= 1,000. A statistically significant difference has not been detected, since P does not satisfy P<.05.

Testing the fifth subordinate hypothesis used ANOVA testing to determine differences between responses based on the experience time of those surveyed. The f-test value detected is f= 2.319. No statistically significant difference has been detected since P value (100) did not satisfy P<.05.

These results showed that strategic planning at the University of Tripoli had an impact on the performance of the institution. All five sub-dimensions of strategic planning are heavily influenced by the University of Tripoli's institutional performance. In addition, statistically significant differences have been detected between the participants' demographic data and their attitudes towards the level of strategic planning applied at the University of Tripoli. However, no statistically significant difference in their attitudes toward enterprise performance has been detected. Participants may be interpreted as being homogenous in their attitudes towards corporate performance.

9. Result

Strategic planning is a vital part of helping Libya's existing universities become better in the future. On the other hand, the confidence environment and political conditions in Libya are a factor that can delay the adoption of the universities' strategic planning. However, studies have shown that the competition between universities will increase even further if the trust environment in Libya is established.

Strategic planning will enable universities existing in Libya to compete with foreign universities that are lower than they are, and even hold a rank among universities. In addition, the concept of globalization will create difficulties for universities at low levels, and will lead to the emergence of the principle of competition.

In her study, Karen E. Hinton (2012) argues that modern strategic plans consist of several components, each serving a different purpose. These components are characterized as stand-alone or grouped planning tools. The objectives of the planning process are to ensure that the components are synchronized and to support each other mutually.

This study found that strategic planning had a positive effect on the performance of the University of Tripoli. Participants in the study argue that universities are service-oriented organizations and that their strategic planning should be carried out in different applications than corporate organizations. Dooley. (2000) according to their study, they found that strategy applications relate to many organizational factors, particularly performance. Rahma Zuaibi (2014) found a statistically meaningful relationship between strategic planning and performance level in a similar study.

A comprehensive and critical assessment has been made to better understand the current situation and role of tertiary services in Libya. It is important to note that strategic planning was first developed for educational institutions (Piorun, 2011). Kariuki1 and. (2016) in their study, they found that strategy applications had a great effect on school performance. It is understood that the missions, visions, goals and values of schools are clearly documented and hung within the school. The importance of the link between strategic planning and evaluation to make an institution effective is also recognized by the researchers (Holloway vd., 2006). Consequently, one can say that strategic planning practices have been adopted and can be used in both the

public and private sectors (Rowley and Sherman, 2004). In 2014, he stated that his perception of the importance of strategic planning and research on the subject was extremely poor. It is important to remember that strategic plans lead people and/or organizations to think about the future.

In a recent study, Bedran and Abukhshem (2020) emphasized the importance of strategic planning in undergraduate studies at the University of Tripoli. The results also revealed the role financial and human resources played in the success of the strategic planning process. The reasons include the weak beliefs of strategic planning by some Tripoli University administrators, as well as the cumbersome bureaucracy which exists in administrative work.

Elhwuegi. (2013), after the political changes in Libya, i.e. after 2011, he proposed the implementation of strategic plans for the University of Tripoli. The proposed strategic plan aims to deliver a high-quality education system that can help develop human skills, competing at regional and international levels, with a sense of belonging to the country and institutional principles. Obstacles that may arise in this process include the dilapidation of bureaucracy, the relaxation of administrative structure and the reduced quality of public services.

As regards literature screening and the controversy surrounding it, strategic planning for better organization performance is vital. Therefore, the relationship of each subdimension of strategic planning to organization performance has been tested in this study. This study provides advice on how strategic planning can help make better decisions in the future.

The success of any institution is very important for the sake of continuity of the institution. Without good performance and high profitability, it is impossible for the institution to survive. The study covered two concepts, namely "strategic planning" and "business performance". The study found that the University of Tripoli has a high level of implementation of strategic planning stages, as well as a high level of performance at the University of Tripoli. The concept of strategic planning also has a statistically significant effect on the performance of the University of Tripoli. The results can be sorted in the following order:

1st   Strategic planning has a statistically significant impact on the performance of the University of Tripoli.
2nd   The lower dimension of flexible planning has a statistically significant effect on the performance level of the University of Tripoli.
3rd   The lower dimension of realistic governance has a statistically significant impact on the performance level of the University of Tripoli.
4th   The lower standard size has a statistically significant effect on the performance level of the University of Tripoli.
5th   The lower dimension of validation procedures has a statistically significant impact on the performance level of the University of Tripoli.
6th   The distinctive factor subsize has a statistically significant effect on the performance level of the University of Tripoli.
7th   The subdimension of realistic governance has more impact on the performance of the University of Tripoli than on the other four sub-dimensions.
8th   Male participants have a higher average of strategic planning level perceptions than female participants.
9th   Participants in the age group under 30 receive higher and meaningful average scores than participants of other ages.
10th   Participants with technical training have lower strategic planning attitudes than those with other educational levels.

11th   Participants in other positions on the strategic planning scale have a more positive view of strategic planning.

12th   Participants with 12,100 years and more work experience and less than 5 years of business experience have a more positive view of strategic planning.

13th   Male participants have a higher average of enterprise performance than female participants.

14th   No statistically significant difference has been detected between corporate perceptions of performance given the age of participants.

15th   No statistically significant difference between participants' perceptions of corporate performance has been detected given their education levels.

16th   No statistically significant difference has been detected between the perceptions of corporate performance given the participants' positions.

17th   No statistically significant difference in business performance perceptions has been detected given the length of time participants spend in the profession.

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Analysis Of The Relationship Between Cryptocurrency Index (CCI30) Bist 100 And Nasdaq With Granger Causes Test

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Abstract

Virtual currency movements, which have intensified recently, are in relation to many macroeconomic variables. The decentralized nature of the cryptocurrency market does not eliminate the variables that affect the market. Macro and microeconomic events and variables affect the cryptocurrency market. The cryptocurrency market can also interact with and affect other markets and variables. Indices, which are the indicator indices of the markets, are important in terms of examining the relationship between the markets. The index, which is the indicator of the cryptocurrency market and includes 30 cryptocurrencies, is called the Cryptocurrencies Index (CCi30). The aim of the study is to examine the relationship between the CCi30 index, BIST 100, and Nasdaq Indices. In the study conducted using Granger Causality Analysis, data between the years 2015-2022 were used. According to the analysis result; It was concluded that CCi30 and Nasdaq indices affect each other in a bidirectional way.

Key Words: Cryptocurrencies, Cryptocurrency Index, BIST 100, NASDAQ, Granger Causes Test

1. Introduction

Since ancient times, various inventions have been made to make people's lives easier. However, one of the most important situations that made people's lives easier in history is considered to be the adaptation of technology to human life. Technology has influenced many areas in human life, from social life to education, from economy to health. Technological processes that develop day by day have caused abuse as well as benefits. However, the increased susceptibility to technology has made people more dependent on technology at the stage of their transactions. Technological innovations, especially in the economic field, have led to new developments day by day at the point of meeting investors and fund seekers.

The use of technology in the field of the economy has spread to a wider area, starting with stock market transactions over various networks. Such that, with the mobile banking services of physically located banks, the services needed can be reached almost without going to the branches. Likewise, almost all transactions in company public offerings are carried out electronically. Investment services, borrowing services, and other transactions that come to mind are also carried out using technological infrastructures and are recorded in digital environments. While the existence of new technological transactions continues every day, hesitations in the field of security are also considered a factor preventing transactions. For this reason, various systems have begun to be developed for safer economic transactions in networks. Systems have been developed under the name of Cryptology and various economic transactions made in the digital environment have

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been tried to be made secure by means of encrypted networks. After the cryptology system started to be developed, Bitcoin entered our lives with the Blockchain system, which uses the cryptology infrastructure. Bitcoin, the pioneer of the first virtual money movement, has attracted attention because it has a reliable, fast, and cost-reducing functionality. Upon the attention of Bitcoin, the virtual money market started to host many coins and altcoins. This has created the virtual money market, which is another area to invest in and is expressed as reliable. With the start of trading in more than one virtual currency, an index called Cryptocurrencies Index (CCi30) was created in 2015 and it is aimed to be an indicator for observing the price movements of cryptocurrencies. At this stage, the aim of the study is to analyze the relationship between the CCi30 Index, Nasdaq, and BIST 100 indices. Within the scope of the purpose, in the first part of the study, information about how the CCi30 Index is created and calculated will be given in the second part of the study about cryptocurrencies and Blockchain. Another part of the study is aimed to give a piece of brief information about the other variables used, BIST 100 and Nasdaq, and the last part, it is aimed to give information about the analysis results and the general results of the study.

2. Cryptocurrency Market and Blockchain Technology

The integration of the Internet into all areas of life has many beneficial aspects. Quick access to information, dissemination of technological tools, and their use in most activities in social life are some of them. However, it was inevitable that there would be abused points as well as good ones. With the widespread use of the Internet and the increase in its use, problems such as theft, interference between accounts, and violations of people's assets have been encountered in economic terms. These economic negativities were tried to be eliminated with the discovery of a secure network called "Cryptology". This system, which allows secure network transactions between people, is not only untraceable but also enables people who make transactions to view their transactions transparently. The first study in this sense in Turkey was the electronic signature application in 2004. This application was made according to the cryptology system and aimed to prevent negative situations such as imitating the signatures of people and making unauthorized transactions. A cryptology system is also defined as a system that allows the realization of interpersonal information or any data flow in a secure and unalterable way (Turan, 2018).

The concept of "Cryptocurrency", which allows the reliability of the cryptology system to be made through monetary transactions, first came to the fore in 2008. Bitcoin was the first currency to be mentioned as a cryptocurrency. Developed by a person who is thought to be Japanese named Satoshi Nakamoto, the currency allows money transfer using a cryptology system (Doğan, 2020, p. 861). The emergence of Bitcoin was with an article. An article titled "Bitcoin: End-to-End Electronic Money System" by Satoshi Nakamoto has attracted the attention of those interested in the cryptology system. Then, on January 3, 2009, the initial stage of Bitcoin was completed with the development of the first source code of 30,000 lines. Bitcoin operates as a virtual currency that is not issued by anyone or institution, is not managed from a domain, or is allowed to be transacted over a decentralized online network. It is stated that one of the most important features is that it is not affiliated with an institution and operates in a decentralized manner (İşgör, 2019).

Bitcoin is actually a virtual currency within a system that enables secure data exchange over virtual networks called Blockchain. The blockchain system can be interpreted as a system that has the potential to be used in many areas, thanks to its complex and secure structure. At the same time, the fact that it has a reliable structure contributes to the reliability of the system, thanks to the codes called keys directed only to them. The functioning of the blockchain system actually proceeds in the form of recording data between blocks and transferring the data to another block by changing the data in each block. The "Genesis" block, called the starting block, is called the 0 blocks and the process starts from this block. Afterward, each time a transaction is made, the data is transferred to other blocks as a piece of the information in the starting block. New blocks are created for each transaction made in this way. However, each block carries the information of previous blocks, including the genesis block. In other words, even the last block contains information about the genesis block. People who want to take advantage of the system badly by outside intervention should obtain the information in all blocks up to the genesis block. However, this is not possible because the information between blocks is transferred with different ciphers. The reliability of blockchain technology also comes to the fore at this stage and can be called a reliable transmission system (Şahin and Özkan, 2018).

The emergence of Blockchain technology, which follows the cryptology system, and virtual money services such as Bitcoin as an extension of it, has had a positive effect on both investors and project owners. However, as in all financial systems, there can be positive as well as negative aspects in this system. If we look at the beneficial aspects of cryptocurrencies (Erkuş and Gümüş, 2019, p. 47):

- It has a decentralized structure. In other words, it is not monopolized by any institution or person, it does not have a center.

- It saves time as it allows transactions to be carried out quickly.

- There is no time limit during the transaction. Transactions can be made on the desired day and time.

- It reduces information and transaction costs.

- It allows fewer operational transactions during the execution of transactions.

The negative aspects of cryptocurrencies can be listed as follows.

- Being decentralized means that it is not dependent on any supervisory authority.

- High volatility can cause investors to lose their money as well as make high profits within seconds.

- It can be considered as a system that attracts attention in cases such as not being able to launder money laundering, tax evasion and not being able to trace transfers.

- The usage areas of cryptocurrencies are still limited.

- In transactions made with cryptocurrencies, it may be necessary to constantly update the record, since the money value is volatile during the accounting period.

Cryptocurrencies, which started with Bitcoin, started to increase day by day with the rise of the crypto money market. In addition to the virtual currencies that emerged to support various projects, there were also cryptocurrencies that could not provide continuity. The concentration experienced in virtual money transactions has also enabled the formation of different financial transactions by using the cryptology system. Projects for the public offering system and the realization of securities with a cryptological system infrastructure have come to the fore, and infrastructures for the realization of projects have begun to be established. Projects with the aim of digitalization of securities and realization of the first public offering activity in the virtual environment are among the innovations that have come to the fore recently.

2.1.Cryptocurrencies Index (CCi30)

CCi30 is a rules-based index designed to objectively measure the overall growth and daily and long-term movement of the blockchain industry. It does this by tracking the top 30 cryptocurrencies by market cap, excluding stable coins. It serves as a vehicle for passive investors to join this asset class and an industry benchmark for investment managers.

To achieve its goals, the CCi30 is designed with 5 main features:

1. Diversified

2. Repeatable

3. Transparent

4. Provides in-depth coverage of the entire industry

5. Deliver the best possible risk-adjusted-performance profile.

2.2.Component Selection

The top 30 cryptocurrencies are automatically selected and included in the index based on the adjusted market value. All so-called "stable coins" pegged to the fiat currency are not considered. To calculate the weights of each cryptocurrency, the adjusted market value must first be calculated. Market cap is not calculated as an instant number – the volatility in the cryptocurrency market is such that it will destabilize the index composition too much. Instead, the CCi30 uses an exponentially weighted moving average market cap. Weighted average Market Capitalization helps smooth out volatility

to give the most accurate portrait of market value at any given point. The formula used to obtain the market capitalization is:

$$M^*(t) = \frac{\sum_{i=0}^{\infty} M\,(T-i)e^{-ai}}{\sum_{i=0}^{\infty} e^{-ai}}$$

where M(t) is the actual market value at time t, M* is our adjusted market value, and α is the exponential moving average decay rate determined by a 3-day half-life.

The number of components was set at 30 as this is the minimum required for statistical significance. Using more components results in higher wages without a significant increase in performance, and fewer than thirty risks poor performance, insufficient diversity, compromised statistical significance, and missed opportunities to pick the next rising star.

By including the top 30 cryptocurrencies, CCi30 captures a very high percentage of the cryptocurrency market cap. The index statistically represents the entire cryptocurrency market with a confidence level of 99% and a confidence interval of 1.11. In other words, the margin of error of the index value as an indicator of the market is only 1.11%.

2.3.Weight Calculation Of Components

The weight of each cryptocurrency generated is measured by the square root of the adjusted market value, so at time t the cryptocurrency's weight is 0:

$$\omega_0(t) = \frac{-b \pm \sqrt{M_0^*(t)}}{\sum_{i=0}^{N} \sqrt{M_i^*(t)}}$$

where Mi* is the adjusted market value of a given cryptocurrency at time t.The square root function was chosen as a hybrid that most accurately weights the components according to current cryptocurrency market conditions.A simple market-cap-weighted index will be dominated by the top two cryptocurrencies, while a slower decreasing weight, or in the extreme case equal weight, will give too much weight to small, illiquid cryptocurrencies below the range.

In order to accurately capture market movements, no cap or base is imposed on cryptocurrency weightings.

Calculate index value

Calculate index value

$$I_t = \sum_{j=1}^{30} W_j \frac{P_j(t)}{P_j(0)}$$

Where I_t is the value of the index at time t, W_j is the weight of the jth name in the index, and P_j is the price of the jth name as a function of time. On rebalancing dates, the weights are normalized in such a way that the index value is the same, whether it is computed with old or with new weights. The index is calculated in realtime. closing price of the previous day, which is considered 0000 GMT.

It's no surprise that the index is a better investment vehicle than Bitcoin itself and a much safer approach than trying to pick a single coin. Investing in the index allows you to benefit from the unpredictable rises of some cryptocurrencies while limiting losses from falls in others.

CCi30 is the most accurate tool for measuring the entire cryptocurrency market and the blockchain industry in general. It provides a useful tool for investors, a benchmark for traders and money managers, and a repeatable index for passive funds and ETFs. In short, it is the industry standard for cryptocurrencies (https://cci30.com/)
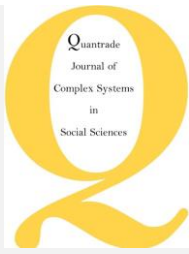
3. BIST 100 Index and Nasdaq

The stock market activities, which can be carried out under the name of the first institution in Turkey in a modern and organized manner, were established in 1873 under the name of Dersaadet Tahvilat Borsası. Afterward, in 1985, stock market transactions started to be carried out under the name of the Istanbul Stock Exchange (ISE). On April 5, 2013, ISE changed its name to Borsa Istanbul (BIST) and started its activities. In the stock market, where various commodities, precious metals, and valuable papers were traded, various indices were also calculated on a weekly basis (www.borsaistanbul.com). Initially, the ISE-100 Index was expressed in 1896 as the Combined Index, which was first calculated based on the stocks of 40 companies. Over time, with the increase in the number of companies, it was expanded to represent 100 companies. The fact that the indices, which were calculated weekly until 1987, started to be calculated on a daily basis, can mean that indices are an important indicator among investors and companies (Çulha, 2019).

BIST 100 Index is an index calculated based on the stock prices of 100 companies whose shares are traded in Borsa Istanbul. Companies included in the index are also among Turkey's largest companies traded on the stock exchange. The index calculation is based on the market value of the actually circulating part of the company shares included in the index and the average daily trading volumes (Gülpınar and Kır, 2016).

The shares of companies in Borsa Istanbul are divided into four classes in terms of the classification of companies. As a result of the decision taken by the Capital Markets Board in 2014, the shares were divided into four classes A, B, C, and D. A category shares, 30 Million TL or more shares, B category shares; Shares between 30-10 Million TL, C category shares represent 10 Million TL and below shares. Shares in category D represent the shares traded outside the stock market. As a rule, companies included in the BIST 100 Index must be in the category of A and B stocks at the end of the valuation period (Çulha, 2019).

Another variable of the study is the Nasdaq 100 Index, which is included in the National Association of Securities Dealers Automated Quotations (NASDAQ). Nasdaq is the largest and most automated exchange in the United States. Founded in 1971, this stock market continues its activities as the second-largest stock exchange in the world. The Nasdaq stock market includes many technology companies, small or large. With the feature of being a fully automatic stock market, all transactions are carried out in an online environment and online. For this reason, the shares of globally known technology companies such as Microsoft, Oracle, Apple, Intel, Adobe, Netflix, Facebook, and Yandex are traded on this stock exchange. One of the features that make the Nasdaq exchange so important is the flexibility experienced in terms of acceptance to the exchange. The terms of being listed on the stock exchange are adjusted in a reliable way to support new technology companies instead of being ordinary (www.isbank.com.tr).

4. Literature Review

In the literature part, previous studies were examined. Among the previous studies within the scope of the review, other close and related studies were included, since no similar study could be found for the data set and method used in our study.

Korkmazgöz et al. (2022) aimed to examine the relationship between Bitcoin and Borsa Istanbul Indices. From Borsa İstanbul Indices; BIST 100 (XU100), BIST Financial (XUMAL), and BIST Technology (XUTEK) indices and Bitcoin prices between the years 2012-2021 were used. The relationship between BIST indices and Bitcoin prices was examined using the ARDL bounds test approach. As a result of the findings, a long-term relationship was reached between Bitcoin prices and the BIST Financial Index, while no relationship could be detected between other indices.

Akdağ and Yıldırım (2021) aimed to investigate the effects of uncertainties in the field of the economy on investor behavior. For this purpose, the effect of the EPU Index, which expresses the uncertainty in the economic policies of European countries, on the BIST 100 index was analyzed using the Johansen Cointegration Test. It is also among the results that the EPU Index has a negative effect on BIST 100.

Tuncel and Gürsoy (2020) aimed to analyze the relationship between BIST 100, Bitcoin Prices, and Fear Index (VIX) in their study. Within the scope of the purpose, index data and Bitcoin prices between the years 2010-2020 were included in the analysis. As a result of the study tested using Toda-Yamamoto causality analysis, no causality relationship was found between Bitcoin prices and the BIST 100 Index.

Ayaydın et al. (2020) aimed to test the existence of a short- and long-term relationship between the Borsa Istanbul 100 Index and the stock markets of G-7 countries. For this purpose, using Fourier ADL cointegration analysis and Toda and Yamamoto causality analyses, the data for the variables between 2000 and 2008 were evaluated within the scope of analysis. As a result of Toda and Yamamoto's causality analysis; A bidirectional causality relationship was observed between the BIST 100 and the indices of the USA, France, Germany, and England stock markets. In addition, the existence of a one-way relationship from FTSEMIB to BIST100 between the Italian FTSEMIB Stock Exchange and BIST 100 is among the other results.

Oner et al. (2018) aimed to examine the relationship between stocks in developing country markets and the VIX (Volatility Index), also known as the fear index. In the study, Turkey BIST100 Index, Chile IPSA Index, South Africa JALSH Index, South Korea KS11 Index, Russia MICEX Index, Argentina MERVAL Index, Mexico MXSE Index, Thailand SETI Index, Taiwan TWII Index, and Poland WIG20 indices were used to represent the developing country stock markets in the study. . The Engel-Granger Co-integration Test and Granger Causality Test were used as the data set, using the data between 2006-2017. According to the analysis result; It has been determined that there is a relationship between VIX and all indices except Argentina MERVAL Index..

5. Analysis and Method

In the study; Daily data of BIST 100, CCi 30, and Nasdaq variables between the years 2015-2022 were used. The data was obtained from the Yahoo Finance site. Analyzes were made with the Eviews Package Program. The unit root test was performed as the first step in the analysis. Nasdaq, which is the world's largest traded stock exchange with the indices selected in the variables (https://www.dunya.com/foto-galeri/ekonomi/iste-dunyanin-en-buyuk-20-borsasi-galeri-623195?p=12), BIST 100, which is used as an indicator index in Turkey, and CCi30, which is the index of the crypto money market, were used. The time-series properties of the variables were examined and a unit root test was performed to avoid spurious regression problems. This is because the presence of a unit root in the data causes the analysis to be misinterpreted for 2 reasons:
- There may be a problem of misinterpretation with the spurious regression problem
- Incorrect approaches: The presence of a unit root may cause the assumptions made for the analysis to be invalidated.
ADF- Fisher Chi-square panel unit root test and PP- Fisher Chi-square panel unit root test. The hypotheses of the Levin, Lin & Chu panel unit root test are as follows (Bulut, 2019):
H0: The series has a unit root, it is not stationary. (H_0: $\rho i = \rho = 1$)
H1: There is no unit root in the series, it is stationary. (H_1: $\rho i = \rho < 1$)
According to the p probability value of the table results, H0 is rejected.
As mentioned above, the first step in performing Granger Causality tests starts with determining the stationarity of the series used in the study. The fact that the series is not stationary can lead to the spurious regression problem. For this reason, the existence of the unit root problem is tested using unit root tests such as ADF and PP, and models containing these problems are recovered from the unit root by taking the lagged values of the variables. The unit root test model is shown in Equation 1 (Temurlenk and Lögün, 2021: 490):

$$\Delta Y_t = (\rho-1)\ Y_{(t-1)} + u_t \tag{1}$$

In this study, the Augmented Dickey-Fuller unit root test will be used as a unit root test. The second step before proceeding to the Granger causality test is selecting the appropriate lag length. Before making a VAR model, the appropriate lag length must be determined for each model. In order to establish the VAR model, the appropriate lag length will be determined according to the Akaike information criterion. After the lag length is selected and the VAR model is established, the autocorrelation test for the model is performed and if there is autocorrelation, various adjustments should be made. If all these conditions are met, Granger Causality analysis can be done (Çilingir, 2021)
There are some differences between the Granger approach and correlation. Although both basically express the effect between variables, the Granger test focuses on the lagged values of two variables expressing the relationship between each other. In other words, it expresses the extent to which two variables, X and Y, explain each other. However, this situation can be interpreted as expressing whether these variables lead to each other rather than being interpreted as X or Y variables being the cause or result of each other. The formula for the Granger Causality test is given below as Equation 2 and Equation 3:

$$X_t = \sum_{j=1}^{m} a_j X_{t-j} + \sum_{j=1}^{m} b_j Y_{t-j} + \varepsilon_t \tag{2}$$
$$Y_t = \sum_{j=1}^{m} c_j X_{t-j} + \sum_{j=1}^{m} d_j Y_{t-j} + \mu_t \tag{3}$$

Equations 2 and 3 express the existence of a relationship between the X and Y variables, and if so, in which direction, according to the Granger Causality test. Two equations have been established to determine the relationship. The reason

for this is to detect if there is a one-way relationship between the variables. If there is a unidirectional relationship between X and Y from X to Y, it may not be obtained in a single model. For this reason, two models are established and it can be observed how the variables affect each other (Aslan, 2018).

5.1.Granger Causality Test

Granger (1969) causality; is defined as "If the prediction of Y is more successful when the past values of X are used than when the past values of X are not used, then X is the Granger cause of Y". After testing the correctness of this expression, its marrow is shown as X» Y. Although regression analysis is concerned with the dependence of one variable on another, it is clear that this does not imply causation. Here, whether the two variables affect each other with a lag, is X the cause of Y (X» Y), whether Y is the cause of X (Y» X), or is it the feedback between the two variables (both X» Y, as well as Y» X) are investigated.

H_0: There is no long-term relationship between dependent and independent variables.

H_1: There is a long-term relationship between dependent and independent variables.

Table 1. Unit Root Test Results

Method	Statistic	Prob.**
ADF - Fisher Chi-square	281.993	0.0000
ADF - Choi Z-stat	-15.2978	0.0000

According to the unit root test results in Table 1, the probability value being less than 0,05 significance level indicates that there is a unit root problem in the model. In order for the results to be meaningful, the unit root problem was eliminated by taking the first differences of the variables and included them in the analysis.

Table 2. Granger Causality Results

Dependent variable: B_ST_100			
Excluded	Chi-sq	df	Prob.
CC_30	1.526186	2	0.4662
NASDAQ	0.063234	2	0.9689
All	7.819498	6	0.7991
Dependent variable: CC_30			
Excluded	Chi-sq	df	Prob.
B_ST_100	0.514231	2	0.7733

NASDAQ	0.419987	2	0.0306
All	36.11484	6	0.0003
Dependent variable: NASDAQ			
Excluded	Chi-sq	df	Prob.
B_ST_100	1.696333	2	0.4282
CC_30	1.094887	2	0.0584
All	51.28813	6	0.0000

Table 2 shows the Granger Causality test results. According to the test results, since the probability values of CCi30 and Nasdaq variables are less than 0.05 statistical significance level, it is interpreted as the existence of a bidirectional effect between each other. No statistically significant effect was observed between BIST 100 and Nasdaq and CCi30 Index.

Figure 1. Representation of the Direction of Causality
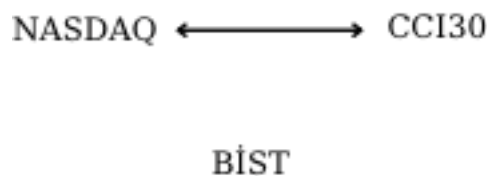
As a result of the analysis, as seen in Figure 1, there is bidirectional causality between Nasdaq and CCi30. No causality was found between BIST 100 and other indices.

6. Conclusion and Evaluation

Technological developments have affected human life in many ways. One of the affected areas has been the economy. While the operations in the economic field were more complicated and required physical effort in the past, with the development of technology, it has become more automated. So much so that those banking transactions, which were made by waiting in line for hours, are now done in seconds thanks to mobile banking services. In addition to the rapid execution of monetary transactions thanks to technological breakthroughs, it also benefits the parties in terms of costs. Although it reduces costs in many areas, the fact that transactions are carried out in a digital environment pushes businesses and households to take efforts and precautions in order not to suffer from security vulnerabilities. While companies providing services in the economic and digital environment pay high costs in terms of security, other economic units also receive various security services.

Various transactions have been tried to be developed in order to close the security gap at the stage of economic transactions. One of these processes is the Cryptology system, which includes an encrypted network. The cryptology system aims to deliver the data to the other party in an unbreakable way thanks to various encryption processes. The system, which was first used in electronic signature transactions in Turkey, was later developed to be used in the

infrastructure of many activities. One of these areas is Blockchain technology. Blockchain technology allows the processing of data on blocks and the mutual exchange of information and data between the parties. Encrypting information transfer between blocks contributes to the reliability of the system. The development of blockchain technology has accelerated with the emergence of the first virtual money called Bitcoin. The use of virtual money between accounts using the blockchain infrastructure has accelerated with the emergence of Bitcoin and many virtual money projects have been implemented. In this context, CCi30, a crypto money index for virtual currencies, has also been calculated since 2015. In this context, it is aimed to observe whether there is any relationship between BIST 100 Nasdaq and CCi30 indices. Data between 2015 and 2022 were analyzed with Granger Causality analysis. According to the results of the analysis, while there was a bidirectional relationship between the Nasdaq and CCi30 Index, no relationship was found between BIST 100 and CCi30. Likewise, no relationship was observed between BIST 100 and Nasdaq. The relationship between CCi30 and Nasdaq can be interpreted as the effect of technology companies in the Nasdaq stock exchange, and the technology infrastructure of cryptocurrencies in the CCi30 index.

The results obtained may vary during the diversification of the variables used in the study. The limited number of studies with the CCi30 index creates an opportunity for further studies in this area. Other major stock market indices can be included in the studies and contribute to the studies in this field.

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Financial Risk Analysis in Renewable Energy Companies

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Abstract

Global energy demand increases every year. It is needed new energy sources. Renewable energy companies play an essential role in producing or storing alternative energy sources. As they have high assets and liabilities, there can be financial risk. This study examined the financial risks of alternative energy companies for Alternative Energy Foreign Equity Fund. It comprises publicly traded renewable energy companies operating in different countries. The study employed the least-squares method for a panel data analysis of financial ratios calculated from companies' financial statements between 2017 and 2021. The data were obtained from the Wall Street Journal Market database, Yahoo Finance, and the companies' financial statements. Financial expenses coverage ratio and financing ratios were included in the model to examine the financial structure. Financial risk ratio, financial leverage ratio, and total assets were included in the model to evaluate the financial risk status of the companies. The results showed that financial risk ratio, capital structure, financing costs, and debt repayment ability affected alternative energy companies' performance.

Keywords: Alternative Energy, Financial Risk Analysis, Investment, Market Value

1. Introduction

Global energy demand is increasing rapidly due to the industrialization and growth of the world population. Economic growth means an increase in the production of goods and services in a country, resulting in more energy production and consumption. We need new sources to meet the demand for energy (Alessio, 1981). Climate change affects the financial risks of countries. Therefore, G20 countries should take measures for global carbon management, such as funding sustainable development and increasing renewable energy production (Bak, 2017). However, governments also need to consider climate change and environmental pollution when they take initiatives to meet the energy demand. The worst-case scenarios scientists warned us about are becoming a reality. This has urged countries to give priority to eco-friendly and sustainable policies. The Paris Agreement have influenced the green management policies of numerous countries. The most prominent reflection of this change has occurred in the European Union (EU). The EU targets to decrease its net greenhouse gas emissions 55% until 2030 (European Comission, 2019).

Fossil fuels cause environmental pollution. Therefore, governments and companies have focused on green energy to reduce carbon emissions. According to Bloomberg New Energy Finance (BNEF), "new energy" is about not only renewable electricity generation and storage but also encompasses electric transportation, electric heating, and recycling (BNEF, 2022). A report published by the International Energy Agency (IEA) (2019) states that energy efficiency contributes to the world's total energy consumption, equivalent to the annual energy consumption of the European Union.

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Therefore, it is not enough to use only renewable resources in energy production. In other words, we must carry out all transformation activities together to cut greenhouse gas emissions to as close to zero as possible (IEA, 2019). These concerns and policy changes have rapidly increased the global renewable energy supply and demand. Although renewable energy production has grown by 2.1 percent each year since 1990, less than 15 percent of global energy is supplied from renewable energy sources today (IEA, 2021). Governments implement many economic policies to promote alternative energy production, triggering private sector investments. According to BNEF (2022), low-carbon transformation investments increased by 27% and reached $755 billion in 2021. Equity markets and individual investors provided $165 billion in funds for those investments. However, many factors (high investment and financing costs, long payback times, etc.) increase the financial risks of companies investing in this field, affecting their performance (BNEF, 2022). Energy companies had sustainable investments and good performance before the COVID-19 pandemic. However, the financial situation of companies has changed significantly since the pandemic (Rutkowska-Tomaszewska et al., 2022). The pandemic has adversely affected the global economy and hence, the financial structure of energy companies. This study investigated the financial risk levels of alternative energy companies. The sample consisted of 20 international companies in the Alternative Energy Foreign Equity Fund issued by AK Portfolio Management Co. Inc., one of the largest fund management companies in Turkey.

2. Literature

There is a large body of research on the relationship between the financial performance, financial risks, and market values of energy companies. Green credit plays a vital role in reducing environmental degradation and energy consumption. It also contributes to the financing of energy companies and strengthens their financial structure (Lai et al., 2022). Although high costs negatively affect financial performance, companies bear them (Walley and Whitehead, 1994). Increasing environmental investments provide companies with competitive and cost advantages. Therefore, companies invest more and more in renewable energy (Porter and Linde, 1995). The renewable energy sector grows, and companies have more investments and costs. Renewable energy companies are at high risk. Changes in oil prices also have a significant impact on companies' returns. Increases in sales revenues and oil prices reduce the risk (Sadorsky, 2012b). Energy companies with high capital play an important role in economic management. We should focus on beta value and accounting data to examine the financial risks of listed and/or non-listed energy companies (Rutkowska-Ziarko and Markowski, 2022). The size of European energy companies does not affect their financial performance. Borrowing is expected to affect their financial performance positively (Iovino and Migliaccio, 2019)**.** As the size of the company increases, the level of indebtedness also increases. On the other hand, the fewer financial risks the sector faces, the higher the indebtedness of companies (Jaworski and Czerwonka, 2021).

Stock prices and public offerings of energy companies can increase financial risk. Energy prices are affected by many factors, such as important news. Energy companies may also affect stock prices (Wen et al., 2014). According to Anderloni and Tanda (2017), the financial performance of green energy companies is not different from traditional companies. However, the return behavior of alternative energy companies has similar characteristics to that of high-tech stocks. An unexpected result is that alternative energy sources, which are accepted as a substitute for oil, are more sensitive to technology (Henriques and Sadorsky, 2008). The increase in the sales revenues of alternative energy companies has a significant and positive effect on the beta coefficient of stocks (Sadorsky, 2012a). Rapid changes in alternative energy expose investors to technological risks. Alternative energy companies are sensitive to changes in both the energy market and technology (Bolton and Kacperczyk, 2020).

3. Materials and Methods

The sample consisted of 20 international companies in the Alternative Energy Foreign Equity Fund (in Table 1) issued by AK Portfolio Management Co. Inc. (Ak Portfoy, 2022). Alternative Energy Foreign Equity Fund comprises publicly traded renewable energy companies operating in different countries. Financial ratios were calculated using the financial table data of the companies for the last five years (2017-2021). The data were obtained from the Wall Street Journal Market database, Yahoo Finance, and the companies' financial statements (WSJ, 2022) (Yahoo Finance, 2022). Panel data analysis was performed on the data set.

Table 1: AK Portfolio Alternative Energy Fund's Firm Portfolio

No	Company	Ticker
1	Aptiv PLC	APTV
		(U.S.: NYSE)
2	Samsung SDI Co Ltd	00.6400
		(S. Korea: KRX)
3	Siemens Gamesa Renewable Energy	SGRE
		(Spain: Madrid)
4	Advanced Energy Industries Inc	AEIS
		(U.S.: Nasdaq)
5	Nordex SE	NDX1
		(Germany: Xetra)
6	Array Technologies Inc	ARRY
		(U.S.: Nasdaq)
7	NIO Inc	9866
		(Hong Kong)
8	Plug Power Inc	PLUG
		(U.S.: Nasdaq)
9	Eaton Corp PLC	ETN
		(U.S.: NYSE)
10	Generac Holdings Inc	GNRC
		(U.S.: NYSE)
11	Chart Industries Inc	GTLS
		(U.S.: NYSE)
12	First Solar Inc	FSLR
		(U.S.: Nasdaq)
13	NEL ASA	NEL
		(Norway: Oslo)
14	Enphase Energy Inc	NPH
		(U.S.: Nasdaq)
15	Sunnova Energy International I	NOVA
		(U.S.: NYSE)
16	Microchip Technology Inc	MCHP
		(U.S.: Nasdaq)
17	Orsted A/S	ORSTED
		(Denmark: OMX)
18	Ballard Power Systems Inc	BLDP
		(Canada:Toronto)
19	SolarEdge Technologies Inc	SEDG
		(U.S.: Nasdaq)
20	Vestas Wind Systems A/S	VWS
		(Denmark: OMX)

The analysis was conducted on 17 companies because three companies had missing data. Table 2 shows the type and name of variables in the model and the calculation methods. The market values of stocks were used in the model to evaluate the effect of the companies' financial risk status on their value. Financial risk can affect the market value of companies (Hankins, 2011). Financial expenses coverage ratio and financing ratios were included in the model to examine the financial structure. Financial risk ratio, financial leverage ratio, and total assets were included in the model to evaluate he financial risk status of the companies (Dayi, 2019).

Table 2: Variables Type and Name

Type	Name	Variable Calculation Method
Dependent variable	Market Value (MV)	The logarithm of stock market closing prices on the last day of the year
Independent variable	Financial Risk Ratio (FRO)	Total equity / (total payables - total receivables)
Independent variable	Financial Leverage Ratio (FLR)	(Short-term liabilities + long-term liabilities) / total assets
Independent variable	Financial Expenses Coverage Ratio (FECR)	Earnings before interest and taxes (EBIT) / financing expenses
Independent variable	Total Assets (TA)	Total assets (Napierian logarithm)
Independent variable	Financing Rate (FR)	Total equity / (short term liabilities + long term liabilities)

Financial risk management requires an effective liquidity management policy. Effective use of cash assets provides flexibility in the management of expenses. Increases in carbon costs reduce the profitability and liquidity of energy companies (Zimon, 2020). The stronger a company's liquidity, the higher its solvency and the lower its financial risk levels.

4. Results and Discussion

The Variance Inflation Factor (VIF) test was used to determine the multicollinearity between the variables (Table 3). The Variance Inflation Factor is a tool developed to measure the degree of correlation between variables in multiple linear regression models. The larger the VIF coefficient, the stronger the multicollinearity between the variables (Vu et al., 2015). A VIF greater than 10 indicates multicollinearity (Gómez et al., 2020). The test did not yield multicollinearity.

Table 3: VIF Test Results

Variables	VIF	1/VIF
FR	4.71	0.212314
FRR	3.48	0.287356
FLR	3.21	0.311526
FECR	1.03	0.970874
TA	1.13	0.884956
Mean VIF	2.712	

The Hausman test was used to choose between fixed and random effect models when performing panel data and least-squares analysis. Table 4 shows the Hausman test results. Panel data analysis should be performed using the Random Effects method because the P value was greater than 0.05.

Table 4: Hausman Test Results

	Coefficients		
	(b)	(B)	(b-B)
	fe	re	
FRR	0.006490	0.005846	0.000643
FLR	-0.378421	-0.701067	0.322647
FR	-0.070592	-0.050185	-0.020406
FECR	0.000142	0.000096	0.000045
TA	0.632335	0.452767	0.179568
chi2(5) =	38.1		
Prob>chi2 =	0.0538		

It is necessary to test whether there is autocorrelation between variables. Durbin Watson and Baltagi-Wu LBI tests were used because the Random Effects method was the method of choice. Durbin Watson and Baltagi-Wu LBI were 2.58 and 2.96, respectively, indicating no autocorrelation. The Levene-Brown-Forsythe test was used to check for heteroscedasticity. The results indicated heteroscedasticity [W0=3.11 df(16, 68) Pr>F=0,0001, W50=1.32 df(16,68) Pr>F=0.210, and W10=3.11 df(16,68) Pr>F= 0.001]. When a model has heteroscedasticity, the Eicker-Huber-White estimator should be used to calculate standard errors that are resistant to heteroscedasticity (Tatoğlu, 2018). Table 5 shows the results;

Table 5: Huber-Eicker-White Estimator Results

r2 =	0.4111			
Number of Observations =	85		Wald chi2(5)=	203.88
Number of Companies =	17		Prob > chi2	0.000
MV	Coefficient	Robust Standard Deviation	z	P > | z |
FRR	0.005846	0.001808	3.23	0.001
FLR	-0.701068	0.247431	-2.83	0.005
FR	-0.050186	0.017784	-2.82	0.005
FECR	0.000096	0.000018	5.26	0.000
TA	0.452767	0.054187	8.36	0.000
Constant	-8.089343	1.148623	-7.04	0.000
sigma_u	0.31817858			
sigma_e	0.18330108			
rho	0.75081534			

The model had an explanatory power (r2) of 41%. It had a Probe>chi2 value of less than 0.05, indicating statistical significance. There was a significant relationship between market value and financial risk ratio, financial leverage ratio, financing rate, financing expense coverage ratio, and total assets. The results indicated that the financial risk ratio of the alternative energy companies positively affected the market value of stocks. The market value of the companies is expected to increase because the higher the financial risk ratio, the lower the risk. In line with the literature, the financial leverage ratio is expected to affect the companies' market values positively. Borrowings up to the optimum debt amount can increase the value of a company. However, borrowings exceeding the optimum amount may negatively affect its value. Our results showed that the financial leverage ratio negatively affected the market value of the companies. The financing rate also negatively affected the market value of the companies by 5%. Increases in equity or decreases in debt positively affected the market value of the companies. There was a significant relationship between the financing expense coverage ratio and the market value. The ability of companies to pay their financial expenses increases their credibility.
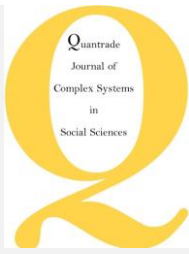
Thus, investors and financing companies trust them more. Low borrowing expenses increase their ability to pay their debts. Meeting their financial expenses also increases their market value. Total assets are expected to increase the market value. The more the assets, the more the resources. Higher shareholder expectations can also increase the stock market value. The growth of a company's assets can also increase its market value. The higher the financial risk ratios, the higher the equity ratio to total debt coverage. Companies prefer financing with equity in high-amount investments. The fact that the companies' equity is higher than their debts also reduces their financial risk.

5. Conclusion

In recent years, alternative energy models have emerged as disruptive innovations. Both companies and investors prefer alternative energy models more due to strict environmental measures and concerns. Many factors (high investment and financing costs, long payback times, etc.) increase the financial risks of energy companies. This study determined the financial risks of alternative energy companies. Our results show that financial risk ratio, capital structure, financing costs, and solvency affect company performance and investor confidence in alternative energy companies as in traditional companies. The financial risk ratio of the alternative energy companies positively affected the market value of stocks. The financial leverage ratio negatively affected the market value of the companies. The financing rate also negatively affected the market value of the companies by 5%. Increases in equity or decreases in debt positively affected the market value of the companies. There was a significant relationship between the financing expense coverage ratio and the market value. However, growing environmental concerns, incentives, and legal regulations will draw investors' attention to the field of alternative energy in the future.

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An Evaluation of the Impact of the Cyprus Issue on Turkey-EU Relations

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Abstract

Turkey has shown great interest in the EU since its creation. However, Turkey's EU accession has become a long and challenging journey. In this journey, various problems and crises have tested the Turkey-EU relationship. The Cyprus Issue is one of them. This study focuses on the impact of the Cyprus Issue on Turkey's EU accession. The study seeks to answer the research question by using primary and secondary sources, including articles, reports, and written and oral statements of government officials. This study pursues an answer to a question: to what extent is the Cyprus issue significant to Turkey's accession negotiations with the EU? The study's main conclusion is that the Cyprus Issue is a significant obstacle to Turkey's EU accession. There are three main supporting reasons for this conclusion. Firstly, the Greek Cypriot Administration of Southern Cyprus (GCASC) (the Republic of Cyprus) and Greece have used the Cyprus Issue as leverage, especially after the EU membership of GCASC in 2004, in the EU accession process of Turkey. Secondly, the EU has not adopted an objective position, although the EU has sometimes tried to find a balance position regarding the desires and demands of Turkey and GCASC-Greece. Finally, in addition to the existing problems in the Cyprus Issue, recent developments like the Eastern Mediterranean Crisis have made the Cyprus Issue a significant factor in the EU accession journey of Turkey.

Keywords: Turkey, European Union, Cyprus Issue

1. Introduction

Turkey has shown great interest in the EU since its creation. Turkey applied for associate membership in the European Economic Community (EEC) in 1957. After six years, the Association Agreement was signed between Turkey and the EEC in 1963, which paved the way for full membership. These relations between the two actors, which were started by the Association Agreement, have proceeded with the customs union (1995), candidacy (1999), and eventually through its accession negotiations (2005), which began a new phase in Turkey's relations with the EU (Muftuler-Bac, 2008: 115). However, as Paul (2015) states, it raises the question of whether they will stay engaged forever and never marry. Indeed, although Turkey and the EU's relations have continued slowly, nobody can estimate whether Turkey will be successful in the end, despite the fact that no country to start the accession process has ever failed to become a member.

According to Bogdani (2011), accession negotiations have been affected negatively due to several domestic and external problems. Bogdani (2011: 26–47) analyses these factors influencing Turkey's accession process by dividing them into

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three groups: 'formal obstacles' including domestic, political and economic factors and the Cyprus, Armenian and Kurdish issues; 'semi-obstacles' including geo-institutional and security factors; and 'informal obstacles' including religious and cultural factors.

However, one of the significant obstacles to Turkey's EU membership has become the Cyprus problem. Although in the twin referendums on 24 April 2004, there was an attempt at a comprehensive settlement of the Cyprus problem by means of the UN reunification plan, which is known as the Annan Plan, it failed when the overwhelming majority of Greek Cypriots voted 'no' despite the fact that the majority of Turkish Cypriots voted 'yes' (Kinacioglu and Oktay, 2006: 269). Furthermore, six days after the twin referendums, the Greek Cypriot Administration of Southern Cyprus (GCASC) (the Republic of Cyprus) joined the EU as a divided country. The Cyprus problem, therefore, was imported into the heart of Europe. As a result, since Turkey does not recognise Cyprus officially, the Cyprus problem has a negative effect on accession negotiations between Turkey and the EU. Because of the Turkish rejection of opening its Port Cyprus, the Council of Ministers decided to freeze eight of the 35 chapters of membership negotiations as a punishment in December 2006 (Bogdani, 2011: 24).

This study aims to evaluate to what extent the Cyprus issue is significant to the process of Turkey's accession negotiations with the EU. Firstly, we will clarify the emergence of the unresolved Cyprus question. Then, we will examine the effects of Greece and GCASC's accession to the EU on Turkey-EU relations by analysing the three periods, the 1980s, 1990s and 2000s. In addition, we will deal with the Europeanisation of the Cyprus issue, with Greece and GCASC's accession to the EU. Finally, we will discuss the recent developments regarding the Cyprus problem.

2. Brief Historical Background of Cyprus and Emergence of Unresolved Question

Cyprus is politically and strategically located between the Middle East and Europe. For centuries, its geographical position has attracted the dominant powers' attention, such as the Ottoman Empire (1571–1878) and Britain (1878–1960), and provided an ideal base for the dominant powers in the region. Furthermore, since 1955, the island has led to competition between two NATO powers; Greece and Turkey, which have close cultural relations with the island (Souter, 1984: 657).

Between the years 1571 and 1878, the island came under the rule of the Ottoman Empire. Since 1571, the island's population has consisted of two national communities. While the Greek Cypriots are in the majority, the Turk Cypriots are in the minority. In 1878, the ailing Ottoman Empire temporarily permitted Britain to take over Cyprus. When World War II broke out in 1914, Britain proclaimed its annexation of Cyprus. With the Treaty of Lausanne on 24 July 1923, Turkey and Greece officially recognised that Cyprus belonged to Britain (Gürel, 1993: 175).

However, Britain came across two challenges during the second half of the 1950s. While Greek Cypriots aspired to achieve 'enosis' - union with Greece, Turkish Cypriots campaigned for partition. In addition, EOKA (the National Organisation for Cypriot Fighters) waged an armed struggle for enosis against British rule (Souter, 1984: 660). The outbreak of violence in Cyprus brought about Britain's initiation of the Tripartite Conference in 1955, which constituted Britain, Turkey and Greece. As a result, Cyprus became an independent Republic in 1960 with the help of the London-Zurich accords signed by Britain, Greece and Turkey (Gürel, 1993: 176). These accords depended on bi-communal independence and political equality and administrative partnership of the two communities. Three treaties were signed; "the Treaty of Establishment which established a quasi-federal Republic of Cyprus, the Treaty of Guarantee which made Turkey, Britain and Greece the guarantors of the Republic and the Constitution, and the Treaty of Alliance which provided for stationing of troops by Greece and Turkey." (Muftuler-Bac, 1999: 561).

Gürel (1993) claims that the compromise was insufficient to establish a permanent solution. Developments after 1960 proved his argument. The Greek Cypriots argued that the 1960 constitution provided the Turkish community 'a privileged position' in the affairs of Government far exceeding their proportional strength in the Cypriot society. So, Makarios, the Greek Cypriot President of the Republic, submitted the Guarantor powers' thirteen amendments to the Cypriot Constitution. However, this proposal was rejected by Turkey. This is because, it aimed at removing the balance of power

between the two communities by favouring Greek Cypriots. Consequently, armed violence and civil disorder broke out in December 1963 (Bahcheli, 2000: 205).

In 1974, the tension on the island culminated when Nikos Sampson made a military coup against the regime of Makarios, which was engineered by the Greek military junta in Athens (Nugent, 2000: 135). In the aftermath of the military coup, the Greek junta regime announced the island's annexation to Greece (Muftuler-Bac, 1999: 562). According to Gürel (1993), Turkey considered this military coup a violation of the London-Zurich accords. From Gürel's perspective (1993), to protect the Turkish minority, in 1974, Turkey intervened militarily on the island by depending on these international treaties as a guarantor power.

However, Suvarierol (2003) claims that the island's strategic value is the underlying reason for the Turkish intervention in 1974. In terms of Suvarierol (2003), the island is only 40 nautical miles away from Turkey. The Karpaz peninsula's extension allows Cyprus to threaten Turkey's naval manoeuvrability by blocking the exit from the gulf of Iskenderun. The island is regarded as a 'stationary aircraft carrier', enabling Turkey to control the region. Moreover, the loss of Cyprus to Turkey's historical enemy, Greece, threatens Turkish interests. In other words, if Greece took over Cyprus, the Anatolian coasts would be surrounded by Greek islands. Consequently, these considerations led to this intervention rather than the humanistic pretext of protecting the Turkish minority (Suvarierol, 2003: 56–57). Bülent Ecevit's perspective on the Cyprus issue, who became Vice Prime Minister in 1998, strengthens this argument. "Cyprus is of indispensable strategic interest to Turkey and Ankara would not withdraw its troops from the island even if there were not a single Turkish Cypriot living on it." (Brey, 1999: 111).

After the Turkish military intervention of 1974, Turkey took control of 37 percent of the island. This intervention led to the end of the military regime in Cyprus. In addition, because of this failure, the junta in Greece was ousted (Muftuler-Bac, 1999: 562). In November 1983, the Turkish Cypriots declared the independence of the Turkish Republic of Northern Cyprus (TRNC) (Papanicolaou, 2005: 154). Consequently, Cyprus was divided into two parts: Greek Cypriot and Turkish Cypriot (Bogdani, 2011: 32).

These Turkish actions got many adverse reactions in the international area. Firstly, in 1974, the Security Council condemned the Turkish intervention in Cyprus (Papanicolaou, 2005: 154). Secondly, in May 1983, the United Nations General Assembly, with its resolution 37/253 (16 May 1983), used the term 'occupation' for the first time. Finally, the European Political Cooperation (EPC) expressed its disapproval of these developments. For instance, in 1983, the EPC expressed deep concerns for the declaration of independence of the TRNC and called on all interested parties not to recognise it (Ugur, 1999: 179). In addition, the declaration of the Turkish Cypriot was condemned by the European Parliament (EP). The EP also called upon Turkey to collaborate with the UN for a lasting solution in Cyprus (Arikan, 2003: 157). Thus, while the government of the GCASC is recognised internationally as the sovereign power of the whole of Cyprus, except Turkey, the TRNC is recognised by only Turkey (Yakinthou, 2009: 308).

Furthermore, Greece's membership to the EEC in 1981 and the membership of GCASC in the EU in 2004, respectively, have drawn the EU into the Cyprus conflict. Their memberships have allowed them to gain a better position regarding the Cyprus issue vis-à-vis Turkey (Grigoriadis, 2008: 153–156). So, the conflict and deadlock in Cyprus have gradually harmed relations between the EU and Turkey.

3. The EU Accession of Greece and GCASC and Impacts on Turkey-EU Relations

The origin of relations between Greece and the EEC coincided with the origin of relations between Turkey and the EEC. Greece and Turkey applied for associate membership to the EC in 1959, within a month. In addition, Greece and Turkey signed Association Agreements with the EC in 1962 and 1963, respectively, with a few months' difference (Grigoriadis, 2008: 152). Eralp (1993: 25) argued that their applications coincided with the same date because of "Turkey's concern not to be outflanked by Greece on Western-dominated international platforms." Arikan (2003) shared the same opinion as Eralp. According to Arikan (2003: 147), "the timing of the Turkish application for associate membership can be viewed in the context of Turkey's traditional concerns about Greek diplomacy, in that it feared that Greece would use its association with the EU to its disadvantage."

However, the parallel paths of Greece and Turkey towards the EEC diverged because of Greece's transition to democracy and the military coup in Turkey in 1980 (Grigoriadis, 2008: 152). For Greece, the Turkish intervention helped to display the bankruptcy of the military regime in Greece. Thus, the democratisation process accelerated in Greece. Eventually, Greece became a member of the EC in 1981. For Turkey, in contrast, the EC-Turkey relations did not advance due to the coup of 1980 (Bogdani, 2011: 26)

Greece's membership of the EEC in 1981 added a new dimension and led to an obstacle to improving EU-Turkey relations. Greece wanted to use Turkey's accession process to the European Union in line with its national interests (Grigoriadis, 2008: 152-153; Arikan, 2003: 148). For instance, The Greek Ambassador to the EU supported this by announcing that "Greece expected that the EC would favour Greece in the event of Greek-Turkish conflict." (Arikan, 2003: 152). At The Hague Summit in 1986, when the EU put the issue of normalisation of EU-Turkey relations on the agenda, Greece opposed the efforts of the normalisation of EU-Turkey relations by urging that Turkey must withdraw its troops from Cyprus and show goodwill to the solution of the disputes (Arikan, 2003: 158). Thus, Greece played a crucial role in blocking Turkey's bid for EU membership during the 1980s and 1990s (Koliopoulos, 2008: 101).

It is argued that the EU's decision-making mechanism concerning external relations enabled Greece to block Turkey's bid for EU membership in order to gain concessions from Turkey, especially regarding the Cyprus issue (Muftuler-Bac, 2002: 83). Therefore, it is necessary to analyse the 1966 Luxemburg Compromise in this context. To protect France's national interests against the European Commission, the French leader caused the Luxemburg Crisis, known as the 'empty chair crisis' in June 1965 (Dinan, 2010: 37). The Luxemburg Compromise overcame the crisis in 1966. According to this agreement, any member states would reserve their rights to veto proposals when 'their national interests are at stake' (Dinan, 2010: 38). As a result of this crisis, the structure of the EU's decision-making transformed qualified majority voting into unanimity voting. Although some treaties, such as the Single European Act in 1987, the Maastricht Treaty in 1992, and the Amsterdam Treaty in 1997, mitigated this agreement that was compromised in 1966, it remains applicable to EU external relations (Muftuler-Bac, 2002: 83).

So, it can be said that Greece significantly benefited from the rule of unanimity in the EU decision using it on Turkey (Muftuler-Bac, 2002: 83). "Greece's consent to any improvement became conditional upon changes in Turkey's position on Greek-Turkish disputes and the Cyprus question." (Grigoriadis, 2008: 153). Since Turkey did not satisfy Greece's demands about the Cyprus issue, the EU-Turkey relations suffered from stumbling blocks. For instance, Barnard (2004) and Grigoriadis (2008) claim that the implementation of the Fourth Financial Protocol of 1981 to provide Turkey with EEC financial aid was vetoed by Greece, referring mainly to the Cyprus issue.

As well as veto power over the course of EEC-Turkey relations, 'Europeanisation of the Cyprus problem' was another of Greece's policies to gain diplomatic leverage vis-à-vis Turkey concerning the Cyprus issue. So, Greek policy-makers raised the question of Cyprus in the EEC/EU (Ugur, 1999: 179). Ugur (1999) argued that increasing the number of Cyprus-related parliamentary questions directed to the Commission, the Council and the EPC indicated this policy. Another indication of this policy was that Greece and GCASC left the 'enosis' policy. The reason why the idea of 'enosis' weakened was that the annexation of Cyprus would mean a violation of the sovereignty of Cyprus, which has been recognised internationally. Such annexation could cause severe damage to the EEC-Greece relations as the EEC has respected the sovereignty of an internationally recognised state. As a result of weakening the idea of enosis in Greece and GCASC, the EEC willingly allowed Greece to Europeanise the Cyprus question. "While the idea of enosis ceased to exist, the occupation of the Turkish army remained." (Suvarierol, 2003: 64). In addition, Greece and GCASC started to perceive the EEC as a new platform for consolidating the Cypriot state (Ugur, 1999: 180). As a consequence, the EEC gradually became involved in the Cyprus problem.

Turkish policy-makers were aware that Greek factor was a significant obstacle in the progress of the EU-Turkey relations. They believed that joining the EEC as a full member would be Turkey's best policy stance to resist Greece's influence in the EEC. In addition, after the military regime of 1980, the tension between the EEC and Turkey started to ease, thanks to the return to civilian government under Turgut Özal in 1983. For these reasons, Turkey applied for full membership in the EEC in 1987 (Arikan, 2003: 159). However, Greece tried to influence the EEC to connect Turkey's membership expectations with the settlement of its disputes, such as Cyprus and the Aegean Sea, with Greece (Arikan, 2003: 159). On December 1989, the commission concluded that "it would not be useful to open accession negotiations with Turkey straight away." (European Commission, 1998). Consequently, "Turkey's EEC membership application met with a polite Commission rejection in 1989, which alongside the 'substantial economic and development gap between the Community

and Turkey', cited Turkey's bilateral disputes with Greece and the Cyprus issue as obstacles to Turkish EEC integration." (Grigoriadis, 2008: 153).

After the negative opinion of the Commission, the Council required the Commission to prepare a specific proposal to sugar the application rejection pill (Faucompret and Konings, 2008: 31). For this reason, in February 1990, the 'Matutes Package' was adopted to strengthen the EC-Turkey relations, which included the completion of the customs union, the intensification of financial cooperation, and the strengthening of political and cultural ties by the Commission (European Commission, 1998). However, Greece again blocked this package because of bilateral issues and the Cyprus issue (Faucompret and Konings, 2008: 31).

In the 1990s, the Cyprus issue was becoming more and more Europeanised. For the EU, it was hard not to link itself with Greece's disputes with Turkey as Greece became a member of the EU. At Dublin Summit in June 1990, community leaders agreed on a common position by declaring that the future of EC relations with Turkey was tied to Turkish attitudes on GCASC (Gürel, 1993: 181). The EU declared that: "The European Council, deeply concerned at the situation, fully reaffirms its previous declaration and its support for the unity, independence, sovereignty and territorial integrity of GCASC in accordance with the relevant UN resolutions. Reiterating that the Cyprus problem affects EC-Turkey relations and bearing in mind the importance of these relations" (European Council, 1990). Furthermore, in July 1990, President Georgios Vasileiou applied for full membership in the EC on behalf of the entire Cyprus (Zervakis, 2002: 162). Cypriot application led to further drawing the EU into the Cyprus issue.

After three years, the commission said that GCASC was eligible for membership even though the commission implied that the integration of GCASC into the EU required a peaceful, just and durable solution to the Cyprus issue (Brey, 1999: 114). In addition, in the event of no political settlement, the commission decided to reassess the situation in Cyprus in 1995 (Muftuler-Bac, 1999: 569). However, the EU did not wait until 1995. At the Corfu meeting in 1994, the European Council expressed that 'the next phase of enlargement of the Union will involve GCASC and Malta. Moreover, for the first time, the EU did not connect the Cypriot application to a peaceful settlement of the Cyprus problem at the Corfu meeting (Nugent, 2000: 139). In Zervakis's view (2002: 164), as Greek policymakers intimidated the EU not to approve the accession of Austria, Sweden and Finland, the European Council made such a decision.

In parallel with these developments, despite Greek resistance, the EU wanted to improve relations with Turkey, as Turkey had great economic potential and major strategic importance (Grigoriadis, 2008: 154). The application of GCASC allowed the EU to bargain with Greece to lift its veto against the Turkey-EU customs union agreement and release of the Fourth Additional Protocol funds. After the bargaining processes, Greece lifted its veto against Turkey. In return, the EU committed that accession negotiations between GCASC and the EU would commence within six months - in effect within 1998 (Grigoriadis, 2008: 154). Thus, the customs union agreement between Turkey and the EU entered into force in 1996. Consequently, the fate of the EU-Turkey customs union was linked to the beginning of the negotiations on GCASC's accession (Zervakis, 2002: 164).

At the Luxemburg Summit of December 1997, Turkey was frustrated when the EU rejected the candidacy of Turkey. The EU stated that strengthening Turkey's links with the European Union depended on respect for human rights, protection of minorities, the establishment of satisfactory and stable relations between Greece and Turkey and the settlement of disputes, such as Cyprus (European Council, 1997). It can be seen that the rejection of Turkey's candidacy is linked to both Turkey's disputes with Greece, the Cyprus conflict and the Copenhagen criteria (Arikan, 2003: 168; Zervakis, 2002: 165).

Relations between Greece and Turkey dramatically improved in late 1999. There were three explanations for this. Firstly, instead of Theo Pangalos, a long-standing opponent of Turkey, pragmatic and accommodating George Papandreou became Greece's Foreign Minister. Secondly, two earthquake disasters, which hit Turkey and Greece in August and September 1999, respectively, facilitated this détente attempt. Turkey received emergency assistance from the Greek government after the terrible earthquake in Turkey. These developments led to a wave of mutual sympathy between the Greek and Turkish public. Finally, as Greece wanted to join the Eurozone, the country tried to cut its budget deficit. Thus, a relaxation of tensions with Turkey would provide the prospect of significant savings on defence expenditure (Bache and George, 2006: 556). Furthermore, Germany changed its position against Turkish membership. SPD-Green government under Gerhard Schröder replaced the CDU-CSU government in 1998, which was concerned about Turkish membership in the EU. The new government supported Turkish membership due to domestic politics: consolidating the

ethnic Turkish vote for the left-of-centre coalition and the need to integrate the Turkish minority, the largest ethnic minority in the country, more securely into German society (Bache and George, 2006: 556). Consequently, at the Helsinki Summit of 1999, the European Council accepted Turkey's candidacy.

Although the European Council awarded Turkey as a candidate state, the council required Turkey to implement its essential conditions in order to start accession negotiations, such as the Copenhagen criteria, Turkish-Greek relations, and a comprehensive settlement of the Cyprus problem (Grigoriadis, 2008: 155). The council demanded that Turkey give 'strong support to the UN Secretary-General's efforts to bring the process to a successful conclusion.' (Arikan, 2003: 171). For GCASC, the council declared that a political settlement would facilitate the accession of GCASC to the European Union. However, this decision did not constitute a precondition for EU membership (Grigoriadis, 2008: 155). According to the Helsinki document, "if no settlement has been reached by the completion of accession negotiations, the Council's decision on accession will be made without the above being a precondition." (European Council, 1999).

According to Muftuler-Bac and Mclaren (2003), the EU did not want to admit a divided country into the community. For example, Yakinthou (2009) argues that some European countries, such as France, the Netherlands and Italy, objected to the accession of GCASC while the problem continued. However, as Greece threatened that it would veto the Central and Eastern European accession if GCASC was not admitted in the subsequent enlargement, the resolution of the Cyprus question was not a precondition for the EU membership (Muftuler-Bac and Mclaren, 2003: 27). Moreover, Greece argued that a candidate would not be prevented from joining the EU if she fulfilled the accession criteria (Suvarierol, 2003: 65).

According to Arikan (2003), the Helsinki outcome was carefully prepared to satisfy both Greece and Turkey. While the Helsinki document gave Greece what it wanted, it advanced Turkey's status from applicant country to candidate country.

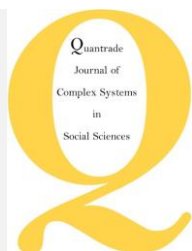## 4. The Recent Developments Regarding the Cyprus Problem

After the Helsinki Summit, although the UN's negotiation process for a Cyprus settlement was started, there was little progress in the negotiations. However, in the 2002–2004 period, there were important developments in the UN-led negotiations process for a Cyprus settlement and Turkish membership in the EU (Hannay, 2005: 167; Dinan, 2010: 489).

The first significant development was that the UN Secretary-General Kofi Annan submitted a comprehensive plan for a peaceful settlement of the Cyprus problem in 2002, later referred to as the Annan Plan. The submission of this plan coincided with the European Council meeting in Copenhagen in December 2002. As a result, the EU supported the UN efforts in its 2002 Copenhagen decisions (Yakinthou, 2009: 312). At the Copenhagen Summit, the Council declared that it completed accession negotiations with GCASC. In the Cypriot section of the Copenhagen document, the council announced that GCASC would become a member of the EU on 1 May 2004 irrespective of the resolution of the Cyprus issue. Nonetheless, it emphasised "its strong preference for accession to the EU by a united Cyprus" (European Council, 2002). So, it set 28 February 2003 as the final date for aiming at a comprehensive settlement of the Cyprus conflict based on the UNSG's proposals. (European Council, 2002). According to the Council, these proposals provided a unique opportunity to reach a comprehensive settlement for the Cyprus conflict. With respect to Turkey, "it asserted that the EU will open accession negotiations if the Council decides in 2004, on the basis of a recommendation by the Commission, that Turkey fulfils the Copenhagen criteria." (Suvarierol, 2003: 71).

However, Ulusoy (2008) claims that "the conditionality principle was applied to Turkey by implicitly resolving the Cyprus conflict as a condition for launching the accession negotiations." It is clear that the 2003 regular report of the Commission on Turkey and the strategy paper are examined, which stated that 'the absence of a settlement could become a serious obstacle to Turkey's EU aspirations" (Ulusoy, 2008: 316). So, it can be said that the EU wanted to solve the Cyrus problem by putting pressure on Turkey before the membership of GCASC to the EU on 1 May 2004.

The second significant development was the Justice and Development Party (JDP) came to power in 2002. When the JDP came to power, the JDP leaders saw the EU as a window of opportunity to broaden the political, economic and cultural spaces, which were significantly narrowed, especially by the military wing of the bureaucratic apparatus since the 1990s (Kaliber, 2012: 230). In other words, Europe was perceived as a place to challenge and eliminate the grip of the military and civilian bureaucracy on politics in Turkey (Kaliber, 2012: 231). As a result of this policy, the JDP, under the leadership of Recep Tayyip Erdogan, was committed to reforms because of EU membership (Bache and George, 2006: 557). Within

a year, the JDP implemented numerous economic and social reforms to attract a warm commendation from the Commission in its 2003 Report on Turkey's Progress towards Accession (Bache and George, 2006: 557).

The JDP 'saw an opportunity in the rapid settlement of the Cyprus issue as a means of strengthening its domestic political power through international success' (Kaliber, 2012: 231). Additionally, a comprehensive settlement of the Cyprus issue could pave the way for accession negotiations. To put it differently, if a solution to the Cyprus conflict is reached before 2004, it would be the key to the start of accession talks and the success of the negotiation process (Kinacıoglu and Oktay, 2006: 262). Furthermore, the JDP leaders assumed that GCASC would be able to sit in judgement on the Turkish membership process and would not clearly tolerate Turkish accession by blocking it if a peaceful settlement of the Cyprus problem was not reached before 2004. Therefore, the JDP declared that it supported the Annan plan.

For these reasons, the new government in Turkey tried to force Turkish Cypriots to accept the Annan Plan. Consequently, in twin referenda on 24 April 2004, while Turkish Cypriots accepted the Annan Plan, Greek Cypriots firmly rejected it. So, the GCASC joined the EU on 1 May 2014 without a settlement of the Cyprus question. After the referenda, the EU pledged to take measures to relax the isolation of the Turkish Cypriots and financial aid worth € 259 million. Nevertheless, the EU efforts to ease the economic isolation were vetoed by GCASC as they would mean the consolidation of TRNC as a separate entity (Kaliber, 2012: 233). Kaliber (2012) argues that the Greek Cypriots turned against the Plan, supported by international society and the EU in particular, as they had already guaranteed EU membership.

In December 2004, the European Council decided to open accession negotiations with Turkey. In addition, the EU welcomed the declaration of Turkey that "the Turkish Government confirms that it is ready to sign the Protocol on the adaptation of the Ankara Agreement prior to the actual start of accession negotiations" (European Council, 2004). This is because its sign was a precondition to starting accession negotiations in October 2005. So, Turkey accepted signing the Additional Protocol on extending the Custom Union Agreement to the new accession states, which includes GCASC, in July 2005. However, Turkey refrained from opening ports and airports to traffic from GCASC. Turkey declared that the signing of a protocol extending its Custom Union to ten new members had not meant the recognition of the GCASC. Furthermore, Turkey stated that she reserved her right to keep her ports closed to GCASC unless the EU lifted the economic isolations on TRNC (Muftuler-Bac, 2008: 125). So, the EU declared that Turkey must recognise GCASC and open its ports and airports to Cypriot ships and plans. At the behest of the Cypriot Government, the Council declared that it froze eight of the 35 chapters of membership negotiations, based on the Commission's recommendations, as a punishment in December 2006 (Dinan, 2010: 490). In the 2008 EC report, the EU stated that the Cyprus issue remains a significant obstacle to improving the accession negotiations with Turkey as Turkey maintained not to implement the Additional Protocol (Bogdani, 2011: 34).

It is necessary to answer why GCASC did not veto the start of accession negotiations with Turkey in 2004. Kaliber (2012) claims that the Cypriot leaders did not block the beginning of accession negotiations with Turkey because they wanted to use Turkey's membership negotiations as leverage to exert pressure on Turkey and obtain Turkey's eventual recognition of the GCASC. Ker-lindsay (2007) states the same idea. According to Ker-lindsay (2007), the Greek Cypriot leaders adhere to 'the old Greek policy', which is such that Turkey's accession process is seen as leverage on Turkey. So, to gain certain concessions over the Cyprus issue, they threaten Turkey with blocking its accession negotiations (Ker-lindsay, 2007: 75).

Discoveries of hydrocarbon resources (mainly natural gas) in the Eastern Mediterranean Sea (East Med) since the 2010s have been another game changer regarding the Cyprus issue. The Island of Cyprus sits on a strategic place in the Eastern Med. These discoveries fuelled an existing problem (maritime jurisdiction) in the East Med among the region's states. Due to the unresolved Cyprus issue, maritime jurisdictions among Turkey, TRNC and GCASC have not been resolved. In addition, Greece's claims on the Aegean Sea and the East Med have made maritime jurisdiction more complicated. In addition, the other East Med states (Egypt, Palestine, Israel, Lebanon, Syria, Libya) have unresolved problems of maritime jurisdiction among themselves. Even though these states held meetings to resolve these jurisdiction problems, they have not solved the issue yet.

On the one hand, Greece and GCASC relied on the EU to get more bargaining power against Turkey and TRNC regarding maritime jurisdiction problems and to secure possible benefits from discoveries of hydrocarbon resources in the East Med. Since the 2000s, the EU has attempted to analyse and solve maritime jurisdiction issues between Turkey and Greece. To this end, a group of academics prepared a map called the map of Seville through the University of Seville (Cetin,

2020). Greece has spread the Seville map, which basically leaves almost no maritime jurisdiction for Turkey on the Aegean Sea and tiny maritime jurisdiction for Turkey on the South West Coast of Anatolia. The EU has not officially accepted this map or its claims. In addition, the USA rejected this map and declared it has "no legal insignificance" (BBC, 2020a; Cetin, 2020; Hamit, 2020). On the other hand, Turkey and TRNC declared that they would defend their maritime jurisdiction in the East Med (mfa, 2022a, mfa, 2022b). To this end, the concept of "Mavi Vatan (Blue Motherland)" has become very popular in the circles of Turkish politics, civil and military bureaucracy, and academia. According to Mavi Vatan, Turkey applies various decisions of international courts, examples of bilateral agreements, and principles (like the Principle of Non-Cut Off) that consider the mainland before the island regarding drawing maritime jurisdiction (Erciyes, 2019). These decisions of international courts, principles and agreements were applied by the UK and France on the English Channel and by Spain and the UK on the Gibraltar Strait and by Nicaragua and Colombia on the Caribbean Sea (Erciyes, 2019). Several times, both sides declared NAVTEX (Navigational Telex) on disputed sea zones. All these political moves have increased tension between both sides.

Overall, the East Med energy issue and maritime jurisdiction issue as an outcome of the Cyprus issue have also influenced Turkey-EU relations. In this regard, Greece and GCASC have imposed sanctions on Turkey. Although the EU imposed some sanctions on the Turkish firms and people that allegedly searched hydrocarbon in "disputed" areas (BBC, 2020b), the EU has not imposed large-scale sanctions on Turkey. Turkey and TRNC called these sanctions unlawful and unfair because the EU is not an international court and because the EU is not objective (mfa, 2022b). In addition, Greece and GCASC have not been satisfied. Ulger (2020) argues that through the October 2020 summit declaration of the European Council, the EU aims to create a positive atmosphere and dialogue with Turkey regarding the agreement of the Customs Union, refugees and carrying visa exemption into effect while the EU pursues to threaten Turkey with sanctions. Once again, the EU tried to stay in the middle ground through its policies and actions. However, both sides have not completely satisfied with the EU's moves. On the road to Turkey's EU accession, Greece and GCASC have acquired another leverage, while Turkey has had another problem: The East Med Energy Crisis.

5. Conclusion

The Cyprus issue has played a key role in influencing the developments of Turkey and its EU relations from the 1980s to the 2000s. Especially, Greece's membership has provided a better position for Greece to gain the support of its European partners vis-à-vis Turkey. Thanks to its membership, Greece gained diplomatic leverage over Turkey to make concessions on Cyprus and bilateral issues to strengthen Turkey and EU relations. Moreover, Greece paved the way for the accession of GCASC to the EU. To achieve this, Greece constantly threatened the EU with blocking the enlargement processes by using its veto power in the Council. Thus, the EU has been tied by its decision-making procedure. Because of the Cyprus conflict, Greece used its veto power to prevent Turkey from accessing the EU. As a result of the membership of Greece and GCASC, the Cyprus conflict has been imported into the EU.

Although there was a glimmer of hope with the Annan Plan, which Turkey, Greece and the EU supported, to reach a comprehensive settlement of the Cyprus issue, this hope was lost when the Greek Cypriots firmly rejected it in twin referendums on April 2004. So, the Turkish accession process was negatively affected due to GCASC's membership in the EU in May 2004. When GCASC joined the EU in 2004, it adhered to the old Greek policy to gain concessions on the Cyprus issue against Turkey. Similarly, the Greek Cypriots leaders used their veto power in the Council to block Turkish accession negotiations. Consequently, due to the Cyprus problem, the opening of eight accession negotiation chapters was blocked by the EU.
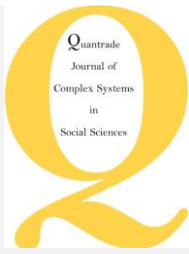
Given these periods, Cyprus has constituted an obstacle to Turkey's membership in the EU. However, although the Cyprus issue constitutes an obstacle to Turkey's accession, there are equally important obstacles to Turkey's accession to the EU, such as the Kurdish issue, the Armenian issue, and religious and cultural factors. Turkey's hosting of more than three million Syrian refugees after the Arab Spring and the desire of these refugees to cross into Europe illegally has emerged as a new problem in the development of relations between Turkey and the EU in recent years. In addition, even if the abovementioned obstacles are resolved, it cannot guarantee Turkey's accession to the EU. To sum up, as Muftuler-Bac (2008) states, Turkey's accession process to the EU is "a rather rocky road with many ups and downs".
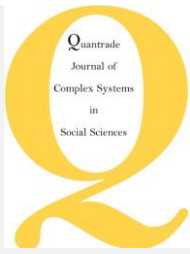
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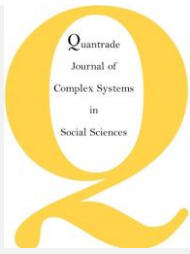
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Impact of Energy Management on Business Performance

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Abstract

Businesses have had to compete with many businesses not only in their possess countries but also around the world, as a result of globalization. In addition to the human, technological, and capital resources required for global success, the most important resource is energy. As civilization progressed, the need for everyone to use energy efficiently and rationally grew due to factors such as increasing energy demand, diminishing natural resources, and the threat of global climate change. Businesses that are conscious of controlling their energy costs have taken a more rational approach than institutions that place a low priority on this issue. Energy management is a strategic management application that expresses the sum of all measurements and management, including details and technical systems, applied in a planned manner to reduce energy consumption in an organization to the lowest possible level, which has a positive impact on business performance. Business performance, on the other hand, expresses efficiency, quality, customer satisfaction, employee satisfaction, and profitability. The purpose of this paper is to theoretically explain how energy consumption affects business performance.

Keywords: Energy Efficiency, Energy Saving, Energy Management, Business Performance.

1. Introduction

Energy, which is at the heart of most globalization-related changes, emerges as a basic input in all areas of social and economic life, including security, health, tourism, production, education, and supply. Indeed, the increase in mass production opportunities as a result of the industrial revolution, as well as the increase in trade volume as a result of globalization, increased the demand for energy. Energy, which is one of the primary drivers of many global developments, is used as a basic input in many aspects of economic and social life, including production, supply, health, security, tourism, and education. The need for energy has risen day by day as a result of increasing trade volume owing to mass manufacturing opportunities and globalization driven by the industrial revolution, and many industries have become dependent on energy supplies. As a result, delivering dependable and sustainable energy remains an essential issue that has become the focal point of mankind in the twenty-first century, with individual, organizational, national, and global aspects. In this context, it is well understood that one of the most critical challenges in businesses is the cost of energy. Indeed, it is obvious that states that have managed to keep their energy prices low give a considerable competitive edge to their businesses (Melo et al., 2012). With the influence of rising energy costs on this axis, industrial enterprises that were not constructed with energy management in mind, particularly in feasibility studies, are having challenges.

It is more likely to avoid the difficult competitive climate caused by energy management practices that do not include energy prices. As a result, every use must be energy-efficient. Sustainable energy expenditure as fulfilling energy expenditures, methods of destroying future data attributes to satisfy specifications The use of energy consumption and more efficient energy usage are the two primary components of sustainable energy (Ediger, 2009). The savings studies that will be conducted in this area will boost competitive power by optimizing energy costs (Cengiz and Mamiş, 2015).

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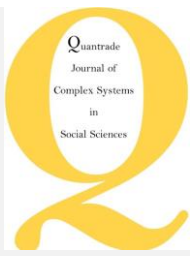
Furthermore, the intense usage of energy produces issues that endanger human health and the environment. The efficient use of energy in businesses would reduce environmental concerns, avoid the depletion of natural resources, and promote sustainable businesses as an economic production system (Erdal et al., 2007).

2. Literature Review

The continuous increase in the demand for energy sources during the globalizing world order has brought sustainability in energy supply to the agenda for both businesses and states. As for businesses, energy is vital as one of the fundamental inputs in almost every sector. Therefore, energy costs directly affect the profitability of an enterprise (Yücel, 2017). It is clear that countries that can keep their energy costs low provide their own companies with a competitive advantage (Melo et al., 2012). In this context, it is vivid that there is a strong relationship between the energy supply security of countries and their national security. The strong relationship means that when there is an inadequacy in providing energy supply, economic and political stability will deteriorate concurrently. This situation creates an intense competition environment in ensuring energy supply security (Erdoğan, 2017). Accordingly, in order to gain economic superiority in the global arena, increase the level of welfare, and increase the level of development, countries have to ensure their energy supply security. As a result, this emphasizes that sustainability in the energy supply is essential.

Energy supply security, which primarily expresses the availability of energy resources in the required amount, cost-effectively, uninterruptedly, and sustainably (UNDP, 2000), is also defined as providing uninterrupted physical access at a price that all consumers can afford within the framework of the goal of sustainable development for a well-functioning economy (European Commission, 2000).

On the other hand, the fact that fossil fuels are still the most used energy sources today jeopardizes the principle of sustainability. As the formation of fossil fuels requires many years, these resources carry the risk of being depleted (Akova, 2010). In addition to being depletable, the threats posed by fossil fuels that cause carbon emissions are not limited to this. For example, natural gas, despite having more affordable production cost and less carbon emission compared to coal or oil (Seddon, 2006) and being preferred more and more in the last fifty years, has various sectoral concerns such as obsolete infrastructure, unreliable transactions because of third party inclusions, price fluctuations. This situation jeopardizes sustainability, so the energy supply security (Zehir et al., 2022). In order to survive in the noted circumstance, both businesses and countries develop various strategies and try to contribute to their sustainability.

2.1. Energy Strategies of Countries in the Global Market

Governments implement numerous strategies to ensure the uninterrupted, affordable, and sustainable availability of demanded energy, called energy supply security. One of these strategies is named diversification. It refers to diversifying both the primary energy sources used and the suppliers for imports (Guliyev, 2012). Therefore, countries aim to avoid being dependent by investing in different sources for energy production and also pay attention to importing from diverse suppliers and through various intermediaries as much as possible.

In addition to diversification, developing relevant projects for the effective implementation of energy management is another crucial strategy applied to ensure energy supply security (Albayrak, 2011). It is noteworthy that countries, which are not rich in fossil energy resources and mostly have to obtain these resources through imports, tend to focus on energy saving and energy efficiency, as well as renewable energy investments. For example, EU countries, which show high sensitivity to environmental pollution and climate change, are expressing significant efforts in energy saving and energy efficiency to encourage projects to reduce their greenhouse gas emissions to zero in the long run (European Commission, 2018). Another common strategy is reserving energy resources both by production and import as strategic reserves as much as possible (Albayrak, 2011).

In Turkey (IEA, 2021), which has a severe risk of supply security with a high import dependency level in the oil and natural gas of 93% and 99%, respectively, the strategies mentioned have been included in the development plans in order to overcome this problem (Devlet Planlama Teşkilatı, 2000; Resmi Gazete, 2006; Kalkınma Bakanlığı, 2013; Strateji Bütçe Başkanlığı, 2019). Especially in the 11th development plan, which was last published, the energy issue took extensive coverage, and numerous agendas took place on energy trade, renewable energy sources, domestic and national production, energy efficiency, infrastructure improvements, and energy management standards (Resmi Gazete, 2019).
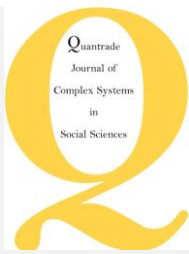
2.2. Use of Energy in Businesses and Global Strategies

The energy issue, which has strategic implications in the dimension of states, is also vital for businesses in competitiveness. Increasing energy prices, energy-related taxes, carbon levies, and risks of climate change are some of the elements of this vitality (Bierer & Götze, 2012). The energy needs of each business differ depending on the sectors, as it is used in various processes such as heating, cooling, lighting of homes and workplaces, production, and transportation. In large industrial enterprises, the energy cost reaches severe figures for several reasons, such as the large area to be heated or cooled, numerous tools and equipment, and the energy-intense machines demanding a high amount of energy. For instance, a facility that operates two shifts a day, six days a week, and fifty weeks a year costs more than a million dollars in energy per year (Laitner, 2013). For this reason, it is essential to determine the energy consumption in enterprises. Consumers who engage a large portion of their income for their energy bills, especially companies where operating costs represent a significant share, tend to maintain control of their energy costs. Businesses can save around ten or twenty percent on their energy bills with small operational changes. Energy projects with a capital cost payback period of two years or less can often provide additional savings of twenty or thirty percent. In many cases maintaining energy costs will save energy consumption and polluting emissions (Turner, 2001).

While many companies do not hesitate to spend money, time, and effort attempting to increase sales, they neglect the potential savings by maintaining energy costs. In the last two decades, energy management significantly developed with its supporting functions, especially in industrial companies. In the past, when energy prices were low and not volatile, energy costs were only a modest portion of total production costs. For managers, energy costs had little importance in the production process. Therefore, it was an overhead rather than a cost category for managers (Schulze et al., 2016).

Production costs were often a minor priority when businesses operated in competitive markets. Even in highly competitive markets where production margins are vital, a focus on reducing labor and material costs is more common. On the other hand, energy costs were often considered an uncontrollable overhead or a low priority (Etsu, 1999). Nevertheless, conscious businesses for controlling energy costs will show a more rational approach. More or lesser energy costs can be controlled, unlike raw material input. Constant monitoring will help to understand that the energy load in an organization is not always the same. Energy loads vary when the production is at different capacities (Li, Ji & Zhang, 2022).

Being conscious of environmental consequences will provide information for managers who need to redesign processes. Thus, managers can minimize the consumption of scarce environmental resources and emission pollutants and make more responsive decisions (Dury, 2018). An effective energy management strategy can ensure the allocation of low-carbon emitting resources efficiently and the operation of the system economically (Xiang et al., 2015). Especially the high correlation between consumed fossil energy sources and environmental pollution is one of the vital issues for energy-intensive company managers. A study has shown that renewable energy resources have the potential to reduce energy costs by ten to twenty-six percent and carbon emissions by five to thirteen percent compared to ordinary operations (Felice et al., 2022).

On the other hand, energy monitoring systems are becoming widespread rapidly in calculating energy consumption costs in industrial enterprises as the conditions changes. Monitoring data such as voltage fluctuations, energy consumption, power factor, frequency, and contemporary shifts has become crucial for businesses to measure energy quality. Various energy consumption values during the day are a significant factor in calculating production and consumption costs for the enterprise (Bayındır et al., 2008). As a result of the progress carried out, monitoring the instant and past energy use of the enterprises via computers. Therefore, it is possible to make an energy analysis of the past period. In this way, it becomes possible to identify the energy consumption of the enterprise in the desired time interval. In this way, opportunities such as reducing the cost of the energy used in the business have become possible by shifting the busy working hours to times when the energy price is lower (Irmak et al., 2012). Consequently, with an energy cost allocation system, management can identify which activities or cost centers consume intense energy and cause the highest energy costs. This information can focus the attention of decision-makers on areas with high energy costs and helps to evaluate whether redesigning these areas will reduce energy waste and thus contribute to efficiency.

3. Energy Management and Business Performance

Present conditions influence enterprises to give attention to energy management (Patel, Shah & Trivedi, 2022), a procedure to optimize energy consumption. It includes multi-disciplinary fields, from engineering to finance (Lee et al., 2011). The International Energy Agency (IEA) states that implementing systematic energy management is one of the most profitable options to maintain energy efficiency in enterprises since it assists businesses with applications and processes for improving sustainably and taking advantage of new opportunities (Reinaud, Goldberg & Rozite, 2012). Furthermore, applying energy management successfully in a business indicates sustainability, no matter it's in the industrial (Chowdhury et al., 2019) or the tourism sector (Tiwari, Rosak-Szyrocka & Żywiołek, 2022), as it decreases energy consumption per unit of output by optimizing procedures and systems regarding energy usage.

Energy management consists of a systematic approach to improve energy efficiency constantly, enlightened by the Deming Cycle. The cycle proposes the practices of "*plan-do-check-act*" continually, which is coordinated by an energy manager. The adoption of a standardized energy management is vital not only to improve the energy efficiency, but also to identify deviations from expected outcomes. Figure-1 demonstrates Deming PDCA (Plan-Do-Check-Act) methodology of continuous improvement:
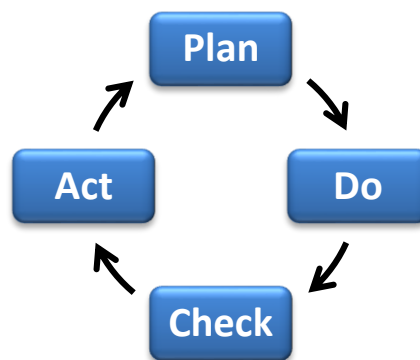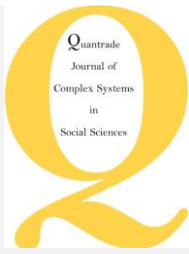

Figure 1: Demonstration of Deming Cycle (PDCA)

The planning is the first step of the Deming Cycle. Many actions are involved in planning, including thinking about, studying, analyzing, learning, and comprehending the existing situation. Once a strategy has been developed, resources identified, roles allocated, and employees trained, the plan can turn into action. Implementation is done on a modest scale or as a pilot project in the second stage (do). Following the plan, recording any changes, and tracking success are vital in this stage. The third stage (check) focuses on a review and assessment of both the original improvement plan and the outcomes obtained during the previous stage's implementation. Data on performance are summarized and assessed. As it is vivid in the figure, the process turns back to the first stage when the final stage is completed and starts over again (Reid, Koljonen & Bruce Buell, 1999).

Efficiency refers to the elements in the production process in a quantitative relationship that will bring the outcome to the optimal value as the result of reciprocal interaction. On the other hand, productivity states the sum of the relationships between the output of a process that generates products or services and the input used to achieve this output. To assess productivity, the production quantity per unit of each component participating in production in a given production period must be measured, and factor productivity must be compared throughout time. Energy efficiency is defined as lowering the quantity of energy spent without affecting the amount or quality of output, while not impeding economic progress or social welfare. Energy efficiency, in a broader sense, means preventing energy losses in gas, steam, heat, air, and electricity, recycling and reusing various wastes, or reducing energy demand without reducing production with advanced technology, more efficient energy sources, advanced industrial processes, increasing efficiency such as energy recoveries. In this context, energy management refers to the tasks of teaching, surveying, measuring, monitoring, planning, and implementing to guarantee the effective use of energy resources and energy (Uzun & Değirmen, 2018).

Business performance, on the other hand, is defined as the degree to which a business objective or job is fulfilled based on the output or result attained in a certain period (Akal, 2003). Business performance is measured to determine how well a business meets its objectives (Bakoğlu, 2001). There are several factors to consider when determining whether or not a firm is performing well. These factors cover productivity, efficiency, product quality, profitability, customer satisfaction, and overall employee contentment. In general, efficiency states producing goods while minimizing waste and ensuring the best use of available resources. Efficiency is the ratio of power generated by a system over a certain length of time to the number of resources needed to create that power over the same period of time. Quality expresses the superiority, goodness, and superior features of the produced goods or services. Quality, in the traditional sense refers to adherence to norms or the performance of functions. Quality is also a performance element that promotes resource efficiency, implements customer-focused production techniques, provides convenient products and services, and empowers engaging in social responsibility. Furthermore, one of the main objectives of the company is profit. The fact that the profit motivation is the most distinctive factor between a business and another organization. It is essentially the business's reason to exist. Customer satisfaction is a crucial non-financial performance indicator that is used to assess an organization's performance. Customer satisfaction is typically defined as the level of satisfaction customer experiences following the fulfillment of their desires and needs through the provision of goods or services or following their satisfaction with the services received. Employee satisfaction, on the other hand, is vital because they are considered the internal customers of an organization. Accordingly, employee satisfaction has a significant impact on a company's performance, which depends on improvements in the quality of its products and services as well as customer satisfaction. Increasing employee motivation and performance will boost their performance, which will increase the success of the organization (Güngör, 2022).

3.1. Contribution of Energy Management to Performance

Previous research shows that when energy efficiency is perceived as strategic, companies tend to have a high level of energy management. Energy performance is quantified by measurable results related to energy consumption, energy use and energy efficiency. On the other hand, despite the easiest, quickest and cheapest way to reduce energy consumption is to improve energy efficiency, there is still considerable potential for energy efficiency improvement and for saving energy in many companies. Investments in energy efficiency often remain undecided upon, even though they may be highly profitable Cooremans & Schönenberger, 2019).

Another aspect of energy management has come along from pure cost to quality and productivity efficiencies and is in the transition toward environmental performance efficiency. Closely related to significant improvements in environmental and economic terms, the energy efficiency topic has become important as a field that concerns businesses worldwide, going beyond traditional energy-intensive industries such as the steel, cement, and chemical industries. Over the last few years, policies and private households have also been stirred up by energy efficiency topics due to emergent media coverage and drivers such as climate change, scarcity of resources and rising energy prices May et al., 2015). A company's relationship with the environment starts with its physical location. As it runs to fulfill human needs, it is constantly affecting the environment. Businesses contribute to environmental pollution by releasing emissions during production. Environmental awareness has grown as a result of recent increases in environmental issues and their negative effects on people's lives. A business evaluation of this situation is necessary because it has become a significant problem. Businesses have come to understand how important it is to develop an environmentally friendly marketing strategy in order to stand out from the competition and appeal to environmentally conscious customers (Uydacı, 2002).

The enterprise's energy use can cause environmental pollution, which harms the operating system. This situation manifests a change in how well and effectively the employees can work. The operating system may experience disruptions due to the staff's slower working pace, which delays the work as well. The poor environmental conditions burden businesses in terms of financial and social levels. Therefore, enterprises should incorporate a healthy environment to increase employee productivity (Özbakır, 2006). Furthermore, it is shown that indoor air pollution depending on many factors such as particle detachment, resuspension and transport due to indoor human walking causes millions of illnesses and deaths (Motlagh et al., 2019). On the other hand, it is known that energy management systems are capable of ensuring environmental indoor quality while providing energy efficiency (Kumar et al., 2016). This indicates that energy management systems helps providing a quality indoor environment, which in turn increase the contentment of employees and customers.
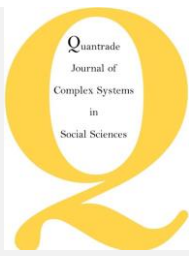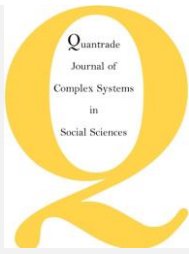
4. CONCLUSION

Energy is a crucial component of a country's economic success. According to various criteria, energy is classed as "primary and secondary energy resources" or "renewable energy resources and non-renewable energy resources." Primary energy sources are those that can be found and stored in nature. Fossil fuels (coal, crude oil, natural gas) and biomass are the most well-known primary energy sources (wood, straw). Solar energy, tidal wave energy, wind energy, nuclear energy, geothermal energy, and antigravity potential energy are some of the other key energy sources. The majority of primary energy sources are transformed into secondary energy sources for industrial usages, such as coal, oil, or natural gas, which are then turned into electricity and steam. Primary energy sources are immediately used in industry. Some basic energy sources, such as natural gas or coal, are not used as raw materials in fertilizer manufacturers and are only used to generate energy. Renewable energy is energy derived from non-depletable sources. Wind energy, solar energy, geothermal energy, tidal energy, and hydroelectric energy are examples of renewable resources (BEE, 2005). The most essential aspect of renewable energy is that it is produced without the generation of damaging pollutants. In addition to being a reliable investment, renewable energy is of great importance in terms of reducing dependency on non-renewable fuels, increasing energy diversity and preventing economic risks (Ulusoy, 2017).

Companies that wish to thrive in a world of increased competition and uncertainty must detect potential threats as early as possible, take safeguards, recognize the opportunities and threats they may face, and try to make the best option among them. Continuous monitoring of the environment, rivals, and the business itself, as well as making long-term decisions based on correct investigation and observations, remain factors to be considered for success (Şengöz, 2020). In this setting, the strategy determination process and the strategies that emerge as a result of it both fulfill organizational goals and sustain organizational existence by achieving the organization's adaptability to the environment (Koçel, 2003). A strategy or direction is a long-term plan for achieving a specific objective. Strategy is the process of making decisions on changes in the enterprise's aims and objectives, the resources to be employed in their fulfillment, the characteristics of these resources, and their distribution and usage (Chandler, 1990). Strategy ensures that all aspects of the business run smoothly, and promotes coordination at all levels of the firm. Employees are motivated by strategy. It gives employees more confidence in the future by removing ambiguity. As a result, people who are less concerned about the future and are given defined goals and aims make better use of their productive energies. Strategic management is concerned with the development, execution, monitoring, and control of organizational strategies (Güney, 2001). Instead of setting a reactive aim, energy management is the process of managing the supply, delivery, and distribution of energy steadily and dependably using proactive, aware, and planned approaches. At this time, it is evident that the country's overall security condition, threat perception, terrorism risk, and energy security are all linked. The quantity and density of pipelines moving through the nation have a direct relationship with the security measures that must be implemented (Lin et al., 2012).

Energy resource management is becoming increasingly significant since the cost of energy has become an important component in the overall volume of the society's economy. Energy management is making better use of given energy supplies while incurring the fewest additional expenditures. Energy expenses may often be reduced without the need of new technology by employing basic management approaches. The technique of using energy more efficiently by minimizing energy waste or matching verifiable energy demand with an acceptable energy supply is known as energy management. The procedure combines energy awareness and energy conservation.

According to the International Energy Agency (IEA), energy management highlights the need for assurance of regulating the always-changing environment and an organization and operating system that can react to this change, and energy efficiency is one of the most cost-effective techniques for addressing energy usage concerns. (IEA, 2014). As a result, energy efficiency is critical for maintaining long-term growth. However, many nations, particularly emerging countries with a strong reliance on natural resources, are concerned about a potential trade-off between energy efficiency and economic success. There is a worry since energy efficiency is predicted to result in lower energy consumption, yet emerging nations frequently need to boost energy production and consumption to stimulate their economies (Cantore et al., 2016). As a result, the cost of adopting energy efficiency projects must account for the corresponding productivity gains. If the advantages are properly captured, they will make energy efficiency initiatives look more cost-effective and, as a result, improve their uptake (Macharia, Ngui, & Gathiaka, 2022).

Businesses have been turning to efficient energy use, renewable energy, and energy management systems as a result of the finite fossil resources needed to fulfill the ever-increasing energy demand and their harmful impact on the environment. Reduced product costs and hence increased financial efficiency are two ways to become a market leader. One of the most important variables in lowering operational expenses is energy. The financial and environmental repercussions of energy usage should be thoroughly assessed, studied, and corrective solutions developed. To optimize an organization's energy consumption, individual variables that enhance energy consumption must be understood not only in terms of quality but also in terms of quantity. It can assess alternate energy sources to suit the enterprise's electrical demands, which is now unable to obtain natural gas energy. The firm can supply uninterrupted access to the energy it requires by taking advantage of the government's Solar Power Plant incentives.

To guarantee continuity in energy efficiency, it is advised that a person responsible for program coordination (energy manager) be appointed to establish and maintain the energy management program. Because appointing a 'private' energy manager may result in staff expenditures for this medium-sized organization, the production manager or facility manager may be held accountable for energy-related actions.

As a result, energy efficiency is critical for maintaining long-term growth. However, many nations, particularly emerging countries with a strong reliance on natural resources, are concerned about a potential trade-off between energy efficiency and economic success. There is worry since energy efficiency is predicted to result in lower energy consumption, yet emerging nations frequently need to boost energy production and consumption to stimulate their economies (Cantore et al., 2016). In conclusion, energy management consist of two main elements, energy efficiency and energy saving. And it has high impact on business performance, in terms of efficiency, quality, customer satisfaction, employee satisfaction and last but not least, profitability.
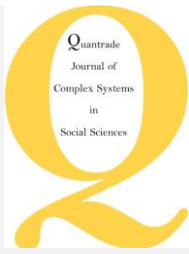
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Measuring The Industry Literacy Of Businesses In The Ovine Sector: A Research In The Center And Districts of Kastamonu

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Abstract

This study aims to show that Kastamonu central district has the right to draw individual, commercial and agricultural loans, credit industry literacy levels of credit customers in the ovine sector, and which age/gender and so on are the most likely industry literate groups. The research found that the level of industry literacy was high, with data collected using 140 businesses in the small livestock sector and face-to-face polling techniques. In light of their responses to questions raised in the survey to gage industry levels, the survey attempts to identify problems that appear to be related. Based on the results of the research, families in commercial enterprises operating in the Minor livestock sector have a high level of industry literacy. In addition, women are found to have a higher appetite for risk than men. Suggestions have been developed about what to do to improve the industry literacy of loan customers in Kastamonu. .

Keywords: Industry Literacy, Ovine Sector, Kastamonu

1.Introduction

Financial literacy has emerged as a very popular concept in the last 20 years. The banking industry is working to get people to make good financial decisions, to get the skills they need. Financial literacy means the knowledge and skills to make financial decisions. It's very clear that without having to separate the countryside, half of the adult population in the world doesn't understand financial concepts enough. In fact, a study by the OECD found that half of the population of European Union member states do not know about important definitions. Low-income groups and disadvantaged groups are also considered acute ignorance. The two main causes of this global phenomenon are the difficulty and lack of interest in accessing information (URL-1). In access to financial literacy, communities sometimes display a willingness to access information. These times, it can often be listed as "world-related war", "crisis", "covid-like epidemics, and important events." The majority of consumers are younger than most of the financial risks and financial opportunities as a result of the significant events described above. They tend to act on traditional knowledge of how debt is managed. In fact, while everyone has some information, they don't really know what information they really have. Most people don't know the concept of compound interest or money's time value. But when asked how inflation has changed the monetary dimensions over time, and what the interest rates banks charge are, the majority pretty much agrees.

In today's world, it's important to prepare for emergencies, to compete in time, to make it easier for an individual to achieve its goals, to teach future generations of information after itself, to see why seemingly unattainable goals are at least possible, to show that achieving seemingly impenetrable goals is within reach, to build one's confidence in oneself, to respond less about unpredictable outcomes, and to minimize impact about nonpredictable results.

The foundations of financial literacy require a simple skill at heart, but individuals who have difficulty managing households are afraid of taking risks

Anatolia has been home to many civilizations for many years. Each living civilization used and developed different farming practices, driven by the breadth of geography and the various climate characteristics that can be seen. Ovine sector has a considerable share in the practice of wager cultivation. Ovine breeding is an important sector among agricultural activities in our country, which is highly agricultural given its natural resources and plant diversity.

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In the world and in our country, ovine animals are not just good for the consumption of red meat, but they're good for a lot of things, like leather, milk. The number of animals in our country is indicated in the Table 1 below.[2]

Table 1: Ovine in Turkey

Year	Sheep	Goat	Total
2002	25.173.706	6.780.094	31.953.800
2003	25.431.539	6.771.675	32.203.214
2004	25.201.155	6.609.937	31.811.092
2005	25.304.325	6.517.464	31.821.789
2006	25.616.912	6.643.294	32.260.206
2007	25.475.293	6.286.358	31.761.651
2008	23.974.591	5.593.561	29.568.152
2009	21.749.508	5.128.285	26.877.793
2010	23.089.691	6.293.233	29.382.924
2011	25.031.565	7.277.953	32.309.518
2012	27.425.233	8.357.286	35.782.519
2013	29.284.247	9.225.548	38.509.795
2014	31.140.244	10.344.936	41.485.180
2015	31.507.934	10.416.166	41.924.100
2016	30.983.933	10.345.299	41.329.232
2017	33.677.636	10.634.672	44.312.308
2018	35.194.972	10.922.427	46.117.399
2019	37.276.050	11.205.429	48.481.479
2020	42.126.781	11.985.845	54.112.626
2021	45.177.690	12.341.514	57.519.204
2022	46.122.627	12.324.928	58.447.555

Source: TUIK, Retrieved 23.10.2022

In our country, the province of Kastamonu, in the Western Black Sea Region of the Black Sea, has a surface area of 13,108.1 m^2, of 1.7% of the country's territory. It is 775 meters above sea level. Kastamonu, comprised of mostly rough terrain, has 74.6% mountain and forest area, 21.6% plateaus and 3.8% plain formation. Livestock is denser and brings more snow to Kastamonu, where the land structure is inappropriate, the long and harsh winter, the lack of irrigation facilities, the 59% of its land being forested, and vegetable agriculture is not diverse. Kastamonu, which has 20 counties and 1,073 villages, is the third largest village after Sivas and Sanliurfa. In Kastamonu, milk production and nurturing are the most common of animal farming. The number of ovine in the province of Kastamonu is shown in Table 2.

Table 2: Ovine in Kastamonu City (center and Districts)

Year	Sheep	Goat	Total
2002	81413	26587	108.000
2006	83710	20122	103.832
2007	70653	18217	88.870
2008	66289	17458	83.747
2009	57278	13202	70.480
2010	54569	15692	70.261
2015	70.074	30.369	100.443
2016	69.018	30.372	99.390
2017	63.944	28.872	92.816
2018	65.671	24.744	90.415
2019	69.816	28.247	98.063
2020	82.162	2.691	109.072
2021	83.358	25.630	108.988

Source: TUIK, Retrieved 23.10.2022

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[2] Access Address: URL-2

Ovine breeders use cash credit and credit cards from banks to finance their operations, as do manufacturers in other agricultural areas. Credit cards have a broad user base in the world and in our country, and are especially effective with use opportunities that vary from industry to industry. Although there is not much variation in usage logic, the popularity of the user and the user base is increasing due to the range of various characteristics such as implementation of private campaigns, introduction of different payment terms, and regulation of limit information.

2. Literature Review

A survey of farmers in Tokat province's Central District found that each farmer has a credit card and a majority of one credit card, while the amount of credit card use is influential in age and agricultural product sales, professional experience has shown how many individuals in the family have an education level and the amount of land that doesn't have an impact (Sayılı and Adıgüzel, 2011).

Based on a survey of credit card users in Turkey, there is a significant relationship between socio-economic and demographic characteristics and the use of credit cards (Çavuş, 2006).

According to the survey, which was answered by Vocational School students at Dumlupinar University, the "Impact of Economic Literacy and Credit Card Attitude on Rational Credit Card Use", the height of economic literacy influences the more informed and rational realization of economic decisions (Ünal et.al., 2015).

A survey conducted with employees of the Manisa Forest Service found that credit card use is associated with people's ages, educational conditions and income levels. Furthermore, as a preferred reason for credit card use, it has been determined that there are benefits available through interest rates in order to replace cash usage (Örücü, 2003).

A study in the Erzurum city center aimed at identifying the prevalence of credit card use and factors that affect card use has found that certain major factors influencing credit card ownership are occupations, monthly incomes, cards are beneficial, and the payment method preferred for purchases (Oktay et.al., 2009).

The study of academics' credit card preferences concluded that while it was the bank from which the salary was received for preference reasons and that the bank's image was more influential, the height of the card limits and the influence of being recommended by its relatives was minimal (Çiçek ve Demirdelen, 2010).

A study of credit card users in China found that the prevalence of credit card use declined from the age of 26 to 58 and then began to increase again (Nai et.al., 2018).

The findings of a study in Delhi, India, where credit card use is more intense, show that age, academic competence, marital status, employment status, and income have a significant impact on credit card selection criteria. It is understood from research results that credit card use is higher at 21-40 years of age, that credit card usage is increasing as education is increased; that workers use more cards than non-employees, and that weighted usage is seen by employees in an institution rather than in-house (Banerji and Farooqi, 2017).

3. Method

The survey was used, and surveys were applied to 140 ovine breeders operating in the center and districts of the city of Kastamonu, where results were analyzed. The small number of samples is a significant constraint in research. Due to the difficulties in reaching them, it has been studied with a limited sample.

The first part of a survey conducted asked questions about the demographic characteristics of the survey respondents; the second focus was on the bank's most studied bank and preference reasons; the most common banking product; the problems experienced if any; the use of credit cards; the use of other banking products; and the preferences related to the personnel at the bank, whose use is being studied on how well informed. In addition, recognition of North Anatolian Development Agency (KUZKA) and Agricultural and Rural Development Promotion Agency(TKDK), which were in operation in Kastamonu, was measured.

4. Analyzing Survey Results

Ulusoy and Çelik (2019) also used the scale they made in Kastamonu Provinces and Counties. According to research conducted mainly in the districts of Kastamonu, the vast majority of respondents were working with public banks. It is also stated that interest rates are decisive when applying to the bank. The literacy level of minors is 99.1%, and with their responses to survey questions, people who do not use credit cards are found to be around 1%. One could argue that the business owners have a predominantly 1-3 credit cards. Business owners are often found to be of an individual type of business, and are not capital firms, which tend to give more weight to cash transactions. They complain that banks generally have densities. The widespread availability of the branch network is not considered a lack. This is usually

attributable to the work of public banks and the fact that banks have branches in each county. When studying similar practices, it is well known that our country's rural areas do not pay much attention to post-expenditure checks. When asked if the annual transaction fee was deducted from the credit card, this issue was clearly followed. It is surprising that when a credit card is spent, it is answered that 85% of the slip from the machine is checked. Manufacturers are more interested in farm credit. It is also the result that the manufacturers themselves worked out the bank transactions with the people around them.

The manufacturer does not know where to turn except to the bank when there is a problem with the banks. It is possible to clarify this in the following way in bilateral discussions. When the manufacturer has problems with the bank, it contacts the call-center or the bank's general manager. However, when she is dissatisfied with the overall implementation of the bank, she has a problem with exactly how to communicate it and even where to put it. She is not familiar with such transactions as the Credit Bureau or Findeks Credit Rating.

86.7% of manufacturers already have a loan to pay. A large majority controls the statement of the credit card. In fact, the oral interviews stated that the slip from the pos device compared the card statement, and that it was assisted by family members.

The manufacturer is not interested in capital market instruments. The stock is aware of financial means such as bonds. But she doesn't use it.

Table 2: Descriptive Statistics

Residence	Central	25.7
	District	74.3
Gender	Female	50.7
	Male	49.3
Age	18-30	7.1
	31-51	30.0
	51 >	62.9
Marital Status	Married	85.7
	Single	0.7
	Other	13.6

Identifying statistics given in Table 2. According to Table 2, most of the participants live in district. While the percentage of men and women is equal, the participants in the interview have been found to be highly aged 50 years or older. Given their marital status, many of the participants are married.

Table3: Answers to survey questions

Base Variable	Sub variable	Percent %
Which bank do you work with the most?	Public	67.9
	Private	32.1
Why do you prefer this bank?	Interest rates	64.3
	Products	5.7
	Familiar advice	8.6
	Interest-free banking	7.1
	Worker interest	14.3
Which is the maximum you are performing?	Credit transactions	39.3
	Cash transactions	60.7
What's your bank handicap?	Credit transactions	21.4
	Branch incompetence	7.1
	Lack of information	17.9
	Density	53.6
How many credit cards do you have?	Not Available	2.1

	1	26.4
	2	25.0
	3	32.1
	4	7.9
	5 and more	6.4
Is the annual operating fee deducted from your credit card?	Yes, I do	25.0
	I don't know	14.3
	No, no	60.7
When you spend it on a credit card, can you check the slip from the machine?	Yes, I do	72.1
	Sometimes	17.1
	No, no	10.7
Which type of loan do you prefer most often?	Consumer	19.3
	Agriculture	57.9
	Other	22.9
How do you get the statement?	Mail	67.9
	Electronics	6.4
	No statement is coming	25.7
Do you handle the banking process for your business?	Yes, I do	62.9
	Sometimes	27.9
	No, no	9.3
Do you know where to apply when you have a problem with the banks?	Yes, I do	77.1
	No, no	22.9
Do you know what the Credit Registration Bureau or Findex is?	Yes, I do	5.7
	No, no	94.3
Do you have a loan to pay?	Yes, I do	92.1
	No, no	7.9
When you learn about your credit card's debt, can you check the monthly statement that came to you?	Yes, I do	92.9
	No, no	7.1
Do you make use of stock market instruments, such as bonds, etc.?	Yes, I do	2.1
	No, no	97.9
Do you read the papers they signed at the bank?	Yes, I do	20.7
	No, no	79.3
Does the gender of the officer at the bank who takes care of you matter?	Yes, I do	5.0
	No, no	95.0
Does the age of the officer at the bank who takes care of you matter?	Yes, I do	8.6
	No, no	91.4
Does it matter that the clerk in the bank who takes care of you is from Kastamonu?	Yes, I do	67.1
	No, no	32.9
Do you do banking online?	Yes, I do	24.3
	No, no	75.7
Do you do banking with a mobile phone?	Yes, I do	11.4
	No, no	88.6
Are you in the bank's private pension fund or have you had private health insurance?	Yes, I do	6.4

		No, no	93.6
Do you know the North Anatolian Development Agency and its activities?		Yes, I do	19.3
		No, no	80.7
Do you know the Agency and activities for Promotion of Agriculture and Rural Development?		Yes, I do	95.7
		No, no	4.3

Manufacturers generally declared that they had signed the bank. When asked if the gender or age of the officer dealing with them at the bank is significant, it is highly irrelevant. But the fact that the countryside is in the province and the demographic nature of the province makes it more likely that the bank officer was born in Kastamonu to make the deal possible. The breeder mostly handles banking from the branch. The uncommon activity of internet banking or mobile banking may be attributed to a lack of concentration in payment instruments, or even specific transactions during the month, with little or no transactions during the other days of the month.

Breeders are aware of private health insurance, but do not control the specifics of the private pension fund. They don't know the activities of the North Anatolian Development Agency. The Rural Development Promotion Agency is well known. If we sort here,, we might say the level of consciousness decreased in the order below.

- Rural Development Promotion Agency
- Chamber of Commerce and Industry
- Commodity Exchange
- North Anatolian Development Agency

Again, one has to remind you that the reputation of the banks or the organizations that operate most is at the forefront of the industry.

5.   Result

Financial literacy is an important skill that every individual needs to learn absolutely nowadays. The ability to use earned money (income) and understand variables in the marketplace is a necessity, no matter the situation on the ground. People who do not have financial literacy skills, whether they are an employer or a student or a pensioner, can often have a very difficult time making decisions, even though they usually have adequate economic backlog. They have a hard time concluding their finances, especially when they have multiple choices.

A certain age makes it harder for a particular vocational group. It's almost impossible to make a financial plan or a budget for people who don't have a certain financial knowledge. Understanding the concept of what existence is, how debt is managed, is considered to be fully effective in age, gender, professional groups.
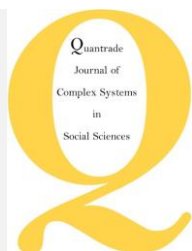
People who have no access to technology, or even have a degree of education, are more likely to have access to information. The ovine sector is one of these sectors. The rural employees who want to get an insight into how the money will be used can most comfortably obtain it from their bank branches. It is possible to learn the alternatives in time, but with regular bank visits, it becomes almost impossible to take advantage of the Internet and tools otherwise.

Because each person can have different expectations, promotional efforts by banks "in line with the expectations of the rural community" can help overcome existing problems. As shown in the analysis of the study, the producers of the Kastamonu Ovine Sector are fully aware of the face-to-face banking processes, but are not aware of other businesses and transactions due to both access to the Internet and the relationship of mobile devices with age. Face-to-face negotiations have also shown them to be reluctant. This is because the concept of "speed" is thought to follow the so-called "reliability" concept, and even the concept of "speed" is not needed. The confidence factor is again taking the citizen to face banking status. The following conclusions are possible with regard to this:

Local businesses in Kastamonu operating in the ovine sectorry, coming together in intra-scale and off-scale conversations;

- They are informative about basic concepts.
- It does not deal with second-generation and third-generation of the sector.
- No financial literacy training was taken.

- Basic banking information is at a high level.
- They feel they don't need Internet or mobile banking information.
- Banking comes from two words: Cash and credit.
- They are regularly working on the revenue-expense account and under the registration.
- When asked what they understand about achieving material success, they describe the point of origin.
- When asked which of the economic variables they are following, two words, "Dollar Index," "Oil price," appear to follow.
- When asked if economic news is being watched, they say that economic news is being watched in major news releases or passed on word of mouth.
- When asked what comes to mind in terms of savings, the answer is "gold."
- They believe that financial literacy is important for the next generation.

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Corporate Services And Employees' Business Satisfaction: A Study of the Libyan Oil Sector[1]

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Abstract

Changes with modern technologies lead to the decrease in the role of oil and seriously threaten the well-being of oil exporting countries. The oil and gas industry, in particular, ranks high in the Libyan economy, and is one of the factors that could affect the country's future and enable its development. The idea of enterprise quality of service has gained popularity, particularly as a result of its impact on both consumers and employees (internal customers) in terms of behavioral factors. Is there a relationship between the perception of the quality of service at Mellitah Oil and Gas Company in Libya and the level of employment satisfaction of employees? Does the sub-dimensions of corporate quality of service at the Mellitah Oil and Gas Company in Libya have an impact on workers' job satisfaction levels? The research included four hundred (400) participants actively working in the company. Two scales have been selected to measure main variables, the scale of service quality and the scale of business satisfaction. The results revealed that employees' perceptions of quality of service are at lower levels. Employees at the Mellitah Oil and Gas Company in Libya have found that their work satisfaction perceptions are high. Statistically significant and positive relationships between quality of service perception and level of business satisfaction have been concluded. Research also found that higher levels of internal service, in the working environment, increased employee satisfaction. The most effective demographic variables include gender and education variables. Female participants received higher average scores on both scales than male participants. One of the study's key recommendations is that Libya's Mellitah Oil and Gas Company (LMOGC) should focus on not only material factors, but on factors of quality of service. This will enable the company to be sustainable, sustained, competitive.

Keywords: Business Service, Employee Fulfillment, Quality of Service, Libyan Mellitah Oil and Gas Company

Introduction

The objective of this study is to examine the relationship between business services and employee satisfaction. In this case, employees can express it using social media and other means of communication when they are not satisfied, which could damage the credibility of the institution. For this reason, private industry organizations, policymakers, should be aware of the factors that can affect employee satisfaction and should be aware of how it can affect the institution. To address this, the study seeks to discover the relationship between reliability, solidity, responsiveness, empathy and assurance factors, and employee satisfaction and loyalty known as quality of service. It is important to keep in mind that the concept of job satisfaction is understood as a feeling that can positively or negatively impact employee roles and responsibilities, and that there is no single way to satisfy all employees involved in the workplace. Job satisfaction can also be described as an emotional response to a range of business-related factors, including an employee's assessment of pleasure, convenience, trust, reward, personal development and upward mobility, recognition and monetary value, and a value of merit (Robbins et.al., 2007). Every society needs a variety of jobs to maintain continuity. These needs have existed for centuries and will continue to exist in the future. Employee satisfaction is a key component of organizational sustainability and stability. Some theorists describe employee satisfaction or job satisfaction as positive perceptions and

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attitudes about a person's job. Work satisfaction differs from the quality of work life, which is interpreted as one of many consequences of work quality. Business quality is not only affected by business satisfaction (Chakrabarty et.al., 2008). It has been found in many studies that a high-level employee can be a productive and loyal employee. It has a significant impact on the quality of business life, organizational identity, job satisfaction, partnership, job search, job performance and organizational change response. The quality of work life depends on the desirability of the individual's workplace and his feelings about what exists in that place. It is also about an individual's experience in the field of work. Employees' satisfaction is encouraged and sought to improve. Meanwhile, job satisfaction increases productivity. Thus, the relationship between business-quality components and business satisfaction plays an important role in identifying effective factors in improving service delivery.

The Problem of Research

The research problem has been identified as identifying the relationship between the quality of service and the level of employment of employees operating in the organization.

This work feature is intended to answer the following questions;

Is there a relationship between the quality of the business services of the Libyan Mellitah Oil and Gas Company and the employment satisfaction of the workers?

Does the institutional quality of service dimensions of the Libyan Mellitah Oil and Gas Company have any effect on workers' business satisfaction?

What sub-dimension of the quality of business services prevails in the Libyan Mellitah Oil and Gas Company?

Are there statistically significant differences between the sub-dimensions of the quality of the business services and the demographic data of the employees at the Libyan Mellitah Oil and Gas Company?

Are there statistically significant differences between the employment satisfaction of workers at LMOGCand the demographic data of those employed?

Based on all these questions, the fundamental problem of the research is that there is a relationship between the employment satisfaction of employees of the Libyan Mellitah Oil and Gas Company and the quality of the company's corporate services? In addition, the study attempted to determine whether there is a relationship between quality of business services and business satisfaction.

Research Hypotheses

The following hypotheses were developed based on the objectives and problem of the study.

H_1: There is a correlation between the quality of the institutional services provided by LMOGCand the employment satisfaction of the employees.

H_2: Subdimensions of the quality of business services provided by the Libyan Mellitah Oil and Gas Company are effective on employee satisfaction.

$H_{2.1}$: There is a statistically significant relationship between physical specifications and the workers' work satisfaction variables.

$H_{2.2}$: A statistically meaningful relationship exists between reliability and those variables of employee satisfaction.

$H_{2.3}$: There is a statistically meaningful relationship between enthusiasm and the workforce satisfaction variables.

$H_{2.4}$: There is a statistically significant relationship between trust and employee job satisfaction variables.

$H_{2.5}$: There is a statistically significant relationship between empathy and the workers' job satisfaction variables.

H_3: The subdimensions of the quality of business services provided by the Libyan Mellitah Oil and Gas Company are equally prevalent.

H_4: There is a statistically significant difference between the quality of the business services of the Libyan Mellitah Oil and Gas Company and the demographic data of the employees.

H_5: There is a statistically significant difference between the employment satisfaction of employees of the Mellitah Oil and Gas Company of Libya and the demographic data of those employed.

Purpose of Research

In general, the aim of this study is to determine the relationship between the quality of institutional services at the Libyan Mellitah Oil and Gas Company and the satisfaction of employees in their work. Various quality factors of service will be discussed and analyzed. It is intended to identify the relationship between service quality dimensions (concrete, sensitive, reliability, empathy and security, quality of service) that contribute the most to the employment satisfaction level of workers involved in the Libyan Mellitah Oil and Gas Company. There are three main objectives of the study;

Qualifying the relationship between the quality of institutional services at LMOGCand the level of employment satisfaction of employees.

Identification of the relationship between the subdimensions of the quality of the business service and the sub-dimensions of the business satisfaction levels at Libya's Mellitah Oil and Gas Company.

Establishing the dominant quality of corporate service that exists in the Libyan Mellitah Oil and Gas Company.

Limitations of Research

This work is restricted to the Libyan Mellitah Oil and Gas Company. For this reason, results can be generalized on behalf of similar organizations in question. In addition, the principal employees in this study are employees involved and involved in the company, but other employees may have differing opinions because they have a different work environment, different management and a different social environment. Work satisfaction in work is one of the variables. It may differ from day to day depending on the events that may occur in working life. Other demographic features, such as age, culture, education level and job position, should be taken into account in future research as well. Enterprise quality of service has been widely accepted as a precedent for business satisfaction. This is why neglect can compromise the competitiveness of organizations with regard to the service, as the level of satisfaction and competitiveness of those organizations are related to it. Thus denying or neglecting the importance of quality of service is tantamount to putting the sustainability and competitiveness of organizations at risk.

Research, like most other research, has a certain time and budget limit. The work has been completed within the required time. There is a limited budget for this study as there is no research funded by the researcher. The research is limited to the Mellitah Oil and Gas Company, which is limited to the Libyan branch, and is not included in the research of the entire company.

Importance of Research

Many satisfactory theories have been worked out to explain the nature of employees' work attitudes and how they can be motivated to improve employee performance. Theories have been greatly interested in understanding the factors that influence the concept of job satisfaction, and in showing factors that motivate workers to increase their performance. But there are still many aspects to explore and many things to learn. In developing countries, such as Libya, the motivation for higher levels of labor is driving high levels of satisfaction and reducing labor returns for employees. One of these theories is the business properties theory of Hackman and Oldham (1975), which provides a set of implementation principles to enrich business in corporate environments with a high level of institutionalism. Given the above-mentioned, this study is primarily intended to identify five sub-dimensions of business satisfaction and to identify the relationship between five sub-dimensions of enterprise quality of service. Second, the proposed model aims to help oil companies achieve their corporate goals by improving the relationship between their managers, managers and employees. Employees' work satisfaction is important in assessing the quality of business services. This study also aims to provide useful information, results and advice to Mellitah Oil and Gas in Libya. Business satisfaction plays a key role in the success of business quality of service. With today's attention, companies in this era care most about quality-of-service behavior. This is because the employee factor is also considered a determining factor in business success. The study is also important for basing on final references. Furthermore, the study is important in that it is the first study that, according to the researchers, discusses work satisfaction levels and business quality variables together.

Research Method

Under this heading, the research model selected for the purpose of this study and the reasons for this selection are discussed in detail. The tools used for collecting data and the procedures followed during the study are outlined. Also, the methods used to analyze the data are addressed in subheadings. Finally, the ethical issues followed.

The approach that will be determined is of great importance to the study. The approach is the basis for determining concepts, data collection tools, study population, and sample. The study preferred a descriptive-analytical approach to the subject of research, describing facts and events. Employees of the Mellitah Oil and Gas Company of Libya are the main universes of this work. To achieve more accurate and reliable results, the focus is on investigating the impact of business quality of service on employee satisfaction levels.

In particular, the data collection process involved in field studies refers to the researcher collecting information about the relevant variables and measuring the data. Participation in the data collection process and evaluating the results are important on behalf of the data collection process. The data collection process is an important part of the research process in all areas of study including science, social sciences, and humanities. Even if data collection methods differ, it is

important to collect accurate and accurate data. The main purpose of the data collection process is the ability to obtain qualified evidence for the defense of the information and hypotheses obtained by the analysis.

The study involves two main variables: institutional quality of service and workers' job satisfaction. The selected scales were approved by the consultant of this study, and translated into Arabic by the authoritative translation agency. A cover page has been prepared to explain the procedures involved in responding to the two scales. In addition, five demographic variables are provided to participants in order to identify employee gender, age interval, education levels, current job positions, and experience times.

The quality of service scale, also known as SERVQUAL, was developed by Parasuraman, et.al. in 1988. Scale is in the literature as one of the most effective ways of evaluating the quality of services available to consumers. The relevant scale is already used today for measuring quality service offerings in a number of services industries, including mobile banking, health management, telecommunications, online education, tourism. Survey forms are distributed to company employees through the directors of various departments within the organization. A text of information has been included in the surveys to familiarize people with research, so that participants do not feel a sense of doubt or distrust about the research. This information text is intended to motivate participants to participate in the study, answer questions, and explain how to complete questionnaires.

The scale used to measure responses to participants consists of 22 substances in total and five sub-dimensions. These sub-dimensions are physical traits, reliability, enthusiasm, trust and empathy. Responses were asked to be given on the Likert scale of five (1= Duly Disagree, 2= Disagree, 3= Undecided, 4= Agree, and 5= Strictly Agree).

Research universe

The Libyan Mellitah Oil and Gas Company employs a total of 1,800 Libyan national staff, including men and women (Access Address: https://mellitahog.ly/en/employee-login/, 19.01.2022). The research universe is made up of all of these employees.

Sampling process and socio-demographic variables

The example is described as a subset of the main mass that attracts the researcher's attention. Saunders. (2012) argued that the greater the sample size, the less likely the universe is to generalize errors. They also argued that a researcher should pay attention to the following aspects of choosing sample size; first, the level of trust that the researcher attaches to the data, second, the margin of error that can be ignored in a particular study, third, the analysis techniques that will be favored by the researcher and finally the total size of the universe in which the sample is determined. In literature, it should discuss how to determine the appropriate sample size in field research (Khine, 2013; Westland, 2010). Some researchers, such as Singh (2006), argue that there is no agreed rule on how to determine the appropriate sample size, while other scientists, including Pallant (2000), argue that the greater the sample, the more consistent results can be achieved.

The study included 400 individuals, including executives and general manager of the company from which the research was carried out in the study specification, as part of the description of the universe. A total of three meetings have been held with two senior executives of LMOGC to explain the objectives and obtain permission. An article explaining the purpose of the study and specifying that the data generated will be used only for this work name is also presented to administrators. The 95% trust level, 0.5% standard deviation, and +/- 5% margin of error (confidence) are preferred to detect the sample.

Four-hundred (400) surveys were distributed to participants using a face-to-face polling technique in 20/5/2021-30/6/2021, together with two company employees. With this method, the entire data collection tool has been deployed and collected without loss of data. The number of specimens is thus determined to be 400, while the study has the power to represent 22.2% of the total universe.

Data Analysis

The defining statistical method is preferred to be able to present and summarize the data obtained by the study. The research mainly preferred inference statistics, particularly correlation matrix and multiple regression analysis. According to Cooper and Schindler (2009), the method allows researchers to understand the vast amount of data achieved and effectively communicate the results of the study. The Statistical Package for Social Sciences package program is used to analyze the data. The resulting Intel data has been analyzed using content analysis. The data is primarily organized into categories, sorted for interpretation of responses.

The SPSS package program also facilitated discussion and provided necessary frequencies. Analyzed through open-ended qualitative responses, data demotion and result generation, the findings are summarized. The defining statistics are used to simplify and provide comfortable understanding of the information obtained.

Mellitah Oil & Gas Company

The company Mellitah Oil and Gas was founded in accordance with the General People's Committee resolution 253, published on 04/12/2008, as the basis of the agreement between the NOC. Implementation of the INI North African Company was launched on 16/10/2007, incorporating the assets and activities of the Eni Oil Company and the Mellitah Gas Company.

NOC signed a shareholders' contract with INI North Africa on 30.10.2008, under which the Mellitah Oil and Gas Company was assigned to manage and operate oil operations of the contracting fields signed on 12/6/2008. The agreement was agreed to produce about 600,000 barrels of oil per day (crude oil, natural gas, propane gas condensates, butane and nafta) and about 450 tons of sulfur per day.

The company manages a number of land oil fields, three offshore platforms, and offshore fields represented by a floating tank, scattered across parts of Libya. A network of land pipelines of various sizes extending over thousands of kilometers is operated by the firm. Some of the processed natural gas from this is exported by the Mellitah Industrial Corporation via a marine pipeline (32 inches in diameter and 516 km in length) connecting the sea. Mellitah Oil and Gas Company is located on the southern coast of Italy. It is managed by the company "Green Stream". This is the first link between Libya and Europe.

The Mellitah Oil and Gas Company also contributes to the supply of a large portion of the domestic consumption needs of the natural gas and citizens that feed the power plants.

Mellitah Oil and Gas Company is located about 22 km east of Zorah. The company owns an area of about 355 hectares, including oil and gas processing plants as well as crude oil and other liquid products storage tanks, export facilities (SPMs). It also has all the necessary facilities, including scaffolding, steam and gas turbines, in order to manufacture.

The Mellitah Oil and Gas Company is a facility capable of natural refinement of gas extracted from the city of Ghadames from two different fields, Al Wafa and the Sabrata plateau in the Mediterranean. The company exports most of its gas through the Green Stream pipeline (gas contract with Italy). The rest of the gas is used to meet local market needs.

The company is headquartered in Tripoli, Libya. This central location of the company offers many advantages in terms of well-managed, accountable management services, security, legal matters, comfortable use of communication tools, and logistics as mentioned. The company's key growth components can be in the form of concentrating on key markets, creating effective and efficient labor, manpower supplies, materials resources and time utilization. Effective and efficient use of these resources includes economic optimization. The company focuses strongly on and pays attention to the principles of quality assurance and the international standard criteria in all of its processes and services. This focus has allowed the company to grow internationally and to be sustained.

The combination of all these basic principles in the company ensures that the enterprise can survive on its own, participate in projects at the public or private level, implement multi-level engineering services, implement maintenance projects, conduct construction, supply and business acquisitions at the national and international level. It also makes it easier for them to accept the company on a global level, to continue to operate in an institutional way.

The Mellitah Oil and Gas Company activities include:

Abu Al-Tefel oil field production capacity: Despite security challenges and logistical constraints, the Mellitah Oil and Gas Company recently made significant gains in the Abu Al Tafel oil field. On October 13, 2018, the company completed work tests of the TC5 solar and gas turbines in the region, increasing the amount of low-pressure well gas production, and then becoming part of a low-pressure burn project that was moved to the gas liquidation station (NGL). Through all of these projects, the company managed to increase its condensate supply to about 2,000 barrels, bring total output to 9,500 barrels per day, and reduce the percentage of gases emitted to zero.

Mullet oil field production capacity: The Mellitah Oil and Gas Company announced that it had successfully completed drilling an oil well at the Albury site using smart control equipment technology located at the bottom of the oil rigs. Mellitah Oil and Gas Company's off-shore platform number 52-52 began production on September 25, 2018 in the well

which had a daily production capacity of 1,850 barrels. This project also marks the beginning of a new era for the development and expansion of production capacity at the Albury site where this modern technology was applied to stimulate the oil industry and in the wells that are planned to be opened in the future.

Loyalty oil field production capacity: The area involved is about 540 km southwest of Tripoli, about 160 km south of Ghadames under the NC-A16 concession. It is also a border area along the Libyan-Algerian border. The southern portion of the site was discovered by Shell Corp. D1 well drilling in 1964, while the most northern part was discovered by Sirte Gas Company in 1991 by A1 well drilling. Development of the Wafa site requires drilling for 37 oil and gas wells that entered production in September 2004. The average daily production from the Wafa field is 37,290 barrels of crude oil and 22,503 barrels of LNG.

Sabratha oil platform production capacity: The Sabratha Platform is located on the site of Bahr El Salam, one of the largest oil and gas installations installed at sea, 110 km from the coast of Libya, at a depth of 190 meters. The platform has all the facilities necessary for the disassembly and initial processing of the generated gas, as well as equipment for the maintenance of wells (FMWR). It has 120 capacity habitats and a dock for the helicopter.

Elephant oil field production capacity: It is an oil field in the N-174 parcel in the Murzuq Basin in southwest Libya. By 2007, it was the largest oil field in the Murzuq basin, with more than 1.2 billion barrels of reserves. Management of the site is a joint venture between NOC and Italian INI. On 3 April 2008, the Italian company INI gave a third stake in the oil field associated with Russia's Gazprom. Thus, management of the oil field was given to a structure that included shares of the three states and their rights of words.

Research Findings

The assessment of the findings of the research is based on the determination of hypotheses, one of the first stages of research. The work's hypotheses were created based on the relationships and interactions between the variables in the study. During the study, each hypothesis was tested by different methods of statistical analysis. It is important which direction the interchangeable connections are in, or whether there are statistically significant differences between them. In this study, different methods were chosen for the use of hypotheses. First, it took advantage of the analysis of correlation and regression in order to determine the direction of relations between variables. It was then used for T-Test and ANOVA testing to determine whether the relationship between the two variables was meaningful. The Tukey test from Post-Hoc analyzes was then preferred to understand which variables had meaningful relationships in case of meaningful relationships.

Testing the First Hypothesis

Scales have been scaled between 1 and 5. The average of the scale is 3 points. The lower dimensions of the Quality of Service Scale show that the highest average (3,005) belongs to the physical properties sub-dimension, while the lowest average is 2,564 to the reliability subdimension. Based on the entire scale, the average was 2,701. It is important to note that this value is less than the average of 3. This analysis may lead to the conclusion that employees at LMOG Cassessed the quality of service at a slightly higher than average. Averages are higher, one might say, based on the scale that determines the level of Employee satisfaction. On a business satisfaction scale, colleagues belong to the lower size, with a peak average of 3,483, while the lowest average size of 2,741 is lower than the wage. The average score for the scale is 3,182. One can interpret the fact that workers at LMOGCare satisfied with their jobs.

Pearson Correlation analysis is preferred to identify the relationship between service quality and job satisfaction variables. The stated analysis aims to determine the level and direction of the relationship between the two variables. Related analysis is often preferred in the literature in order to explain the relationship between two variables without offering any cause and effect relationships.

Pearson Correlation analysis has been applied to identify the relationship between the quality of the institutional service offered by LMOGC and the work satisfaction variables of the employees. The meaningfulness level of all correlation coefficients, other than the correlation coefficient (0.061) between worker's business satisfaction and lower-dimension Business/Business Activities and quality-of-service scale subdimension (0.061), is meaningfully determined at level 0.05. In addition, all five sub-dimensions of the service quality scale are found to be meaningful among themselves and to have positive correlation, the scale of quality of service has exactly positive correlation, and are statistically significant. Additionally, the five sub-dimensions involved in the workplace-measuring scale have positive correlation between them and the full scale of job satisfaction.

The positive outcome of all correlation coefficients is an indication of the increase or decrease in the total scores of both scales, or change in equilibrium. It is important to note that correlation values must be minimized in order to be told that this change will be counterproductive. In line with the results, the first hypothesis was supported, "There is a correlation between the quality of institutional services provided in the LMOGC" and the workers' job satisfaction.

Testing the Second Hypothesis
"The sub-dimensions of the quality of business services provided by the LMOGC have an impact on employee employment satisfaction".

Testing the first sub-hypothesis
"There is a statistically significant relationship between the physical specifications and the workers' employment satisfaction variables."

The simple linear regression method, one of the methods of statistical analysis, was used to test the corresponding hypothesis. Statistical analysis shows a statistically meaningful relationship between Physical Values and Employee ^{Job} $^{Satisfaction\ variables.}$ It is important to note that this relationship is at ($p<0.05$) level. The $^{value\ of\ the}$ 'R^2' coefficient is 0.116, which means that the argument (physical values) explains 11.6% of the total variance caused by the dependent variable (business satisfaction). It should be said that the f = 53.361 derived from the results of the ANOVA test is statistically significant. A 7,305 value derived from the T-test indicates that the argument is meaningful. A 1-unit change in physical values subsize will also result in a 217-unit co-directional movement on the scale of business satisfaction. This result supports the first sub-hypothesis that "physical assets have a significant impact on the employment satisfaction of employees".

Testing the second sub-hypothesis
Data shows a statistically significant relationship between Reliability and Employee Job Satisfaction variables. It is important to note that this relationship is at ($p<0.05$) level. The ^{value} of the coefficient 'R^2' is 0.049, which means that it accounts for 4.9% of the total variance caused by the argument (reliability) over the dependent variable (business satisfaction). It should be said that the f = 21.765 derived from the results of the ANOVA test is statistically significant. A 4,665 value derived from the T-test indicates that the argument is meaningful. A 1-unit change in reliability sub-dimension will also result in a 154-unit co-directional movement on the scale of business satisfaction. This result supports the second subhypothesis that "Reliability subdimension has a significant impact on employee satisfaction." Reliability, on the other hand, can be interpreted as increasing employee satisfaction.

Testing the third subordinate hypothesis
"There is a statistically significant relationship between eagerness and workers' work satisfaction variables."

According to the data, a statistically meaningful relationship has been detected between the Variables of Enthusiasm and Employees Job Satisfaction. It is important to note that this relationship is at ($p<0.05$) level. The value of the R^2 ^{coefficient} is 0.114, which means that it accounts for 11.4% of the total variance caused by the argument (enthusiasm) over the dependent variable (work satisfaction). It should be said that the f = 52.365 derived from the results of the ANOVA test is statistically significant. A 7,236 value derived from the T-test indicates that the argument is meaningful. A 1-unit change in reliability sub-dimension will also result in a 230-unit co-directional movement on the scale of business satisfaction. This result supports the third subhypothesis that "the lower dimension of enthusiasm has a significant impact on employee satisfaction."

Testing the fourth sub-hypothesis
"A statistically meaningful relationship between trust and employee job satisfaction variables has been detected in a statistically meaningful relationship between the variables of Trust by Data and Employee Employment Satisfaction. It is important to note that this relationship is at ($p<0.05$) level. The $^{value\ of\ the}$ $R^2\ ^{coefficient}$ is 0.190, which means that it describes 19% of the total variance caused by the argument (trust) over the dependent variable (work satisfaction). It should be said that the f = 94.783 derived from the results of the ANOVA test is statistically significant. A value of 9,735 derived from the T-test indicates that the argument is meaningful. This result supports the fourth subhypothesis that "Trust sub-dimension has a significant impact on employee satisfaction."

Testing the fifth subordinate hypothesis
"There is a statistically meaningful relationship between empathy and employee job satisfaction variables." According to data, a statistically significant relationship has been detected between Empathy and Employee Job Satisfaction variables. It is important to note that this relationship is at ($p<0.05$) level. The $^{value\ of\ the}$ $R^2\ ^{coefficient}$ is 0.152, which means

that it accounts for 15.2% of the total variance caused by the argument (trust) over the dependent variable (work satisfaction). It should be said that the value f = 72.430 derived from the results of the ANOVA test is statistically significant. An 8,511 value resulting from the T-test indicates that the argument is meaningful. This result supports the fifth subhypothesis that "Empathy subdimension has an important impact on employee satisfaction."

Data shows a statistically significant relationship between the parameters of Enterprise Quality of Service and Employee Job Satisfaction. It is important to note that this relationship is at (p<0.05) level. The $^{\text{value of the}}$ $R^{2\ \text{coefficient}}$ is 0.452, which means that the argument (trust) explains 45.2% of the total variance caused by the dependent variable (work satisfaction). It should be said that the f = 129.801 derived from the results of the ANOVA test is statistically significant. The value of 11,393 resulting in the T-test indicates that the argument is meaningful. This result supports the hypothesis that "There is a statistically meaningful relationship between Quality of Service for Business and Employee employment satisfaction".

Analysis results of the second hypothesis

"The sub-dimensions of the quality of business services provided by the Libyan Mellitah Oil and Gas Company have an impact on workers' job satisfaction."

A complete subset of the enterprise service scale has been included in the analysis of multiple regression so that the conceptual framework can be analyzed accurately in statistical terms. These sub-dimensions are physical things, dependability, enthusiasm, assurance and empathy. In brief, the model shows how much of the variance in work satisfaction of workers who are dependent variables is described by the model. According to the data, a value of $R^2 = 283$ indicating that 28.3% of the variance explains it. Durbin-Watson was found to be d=2.124, indicating the average impact of Quality of Service on Employee Job Satisfaction and expected to be in the range of 1.5 <d> <2.5. Therefore, no first degree linear correlation has been detected in multiple linear regression data. A 32,427 value derived from the F-test indicates a statistically significant relationship exists. With all these analysis results, Employee Job Satisfaction can be explained by dependent variables and a relationship can be said to exist between the subdimensions of the scale of enterprise quality of service. Also, when strong correlations were detected between two or more of the procedure variables, the multilink appeared. In other words, one prediction variable can be used to predict the other.

The data has been enabled by the multi-linear regression model to check for multiple connections between variables. For all variables accepted in the literature and contained in the model, the corresponding VIF value is expected to be between > 0.1 (or VIF < 10). The study shows that all values are within accepted ranges.
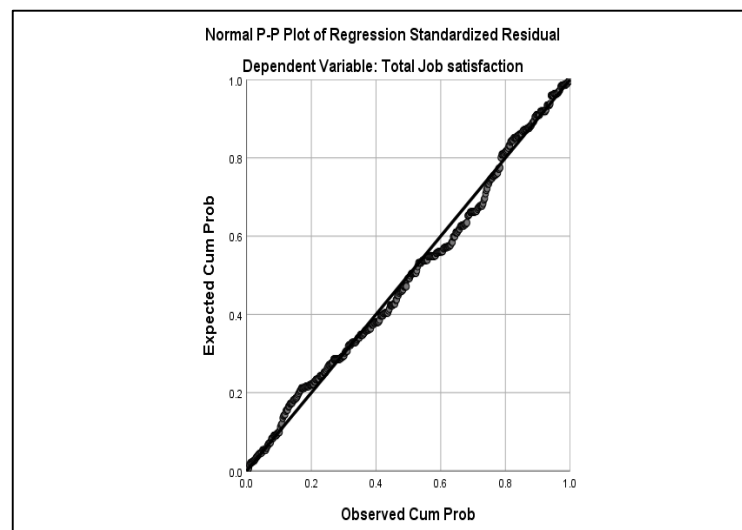

Figure 1: The normality distribution of the workers' work satisfaction scale

In addition to the data obtained in the study, the normal P-P chart now examines the normality of the data. Figure 1 shows that points typically follow a straight (diagonal) line, but have no sharp or strong deviations. So you can say that the data has normal distribution.

Analyzes have shown that t-test values for Reliability sub-dimension (1,056) and Sentiment sub-dimension (.851) are trivial and related sub-dimensions have no significant impact on workers' business satisfaction. However, three other variables, physical self, have been identified with meaningful t-test values for trust and empathy. Depending on the beta and t-test values, the effective forces of the three variables can be sorted by empathy, physical self, and trust. These results demonstrate that not all five sub-dimensions of the scale of enterprise quality of service have a statistically meaningful impact on employee satisfaction.

Testing the Third Hypothesis

"The sub-dimensions of the quality of business services provided by the Libyan Mellitah Oil and Gas Company are equally prevalent".

Each expression of the scale is rated from 1 to 5, hence the average (middle score) is represented by 3. The average score of only one subdimension is shown to be nearly equal to the midpoint of the scale (Physical Equity). =3,005). The average of the other four sub-dimensions was less than 3 points. Participants are understood to have not assessed the quality of service by those employed at the Libyan Mellitah Oil and Gas Company on the basis of their average scores for five sub-dimensions. These values gave an overview of the quality of service provided by the Libyan Mellitah Oil and Gas Company.

T testing has been used to determine whether the differences between average scores of participants and midpoint of the scale (3.0) are meaningful or not. An analysis found that the average score (3,005) of participants was measured in relation to the physical self sub-dimension and the midpoint of the scale (3,000). The T-Test result was found to be meaningless as a result of the .138 value (P>.05).

For the other four sub-dimensions, the average scores of participants are less than the midpoint (3.00) and all corresponding t-test values have been statistically meaningfully detected at the P<.05 level. Therefore, the sub-dimensions of Reliability, Enthusiasm, Assurance and Empathy are lower than average levels based on the assessments of the participants in the study. The results are not equally dominant among employees in the Institutional Quality of Service components of the Libyan Mellitah Oil and Gas Company. Thus, the third hypothesis was rejected.

Testing the Fourth Hypothesis

"There is a statistically significant difference between the quality of institutional services at LMOGCand the demographic data of the employees."

T-test has been used for independent averages to understand the meaningful differences between participants' perceptions of gender and enterprise quality of service. The results show that women have a higher average across all five sub-dimensions. However, the t-test found a meaningful relationship between gender and perception of corporate services in terms of reliability, enthusiasm, and subscale itself. For this reason, it is "one can say that there is a statistically meaningful relationship between the gender of the workers at the Libyan Mellitah Oil and Gas Company and their perceptions of the quality of the institutional service.

The average of responses given by participants in the survey in five sub-dimensions and the average of responses to all of the scale are relatively close to each other. The ANOVA test is used to determine whether there are meaningful differences between the quality of business services perception and age variablesTest values show that only in two sub-dimensions age groups differ statistically in the argument of perceived corporate service. Related sub-dimensions can be sorted as Physical Properties (F=2.848, P<.05) and Empathy (F=4.115, P<.05). Tukey was analyzed to determine the age of this differentiation.

Turns out that the Tukey test was used in Post-Hoc analysis to determine what groups of meaningful differences between variable groups. Given the physical specifications, the average scores of participants under the age of 25 and those on average scores between 25-34 and 45-54 years of age have been found to be statistically significant differences. Participants under the age of 25 have a lower average than participants aged 25-34 and 45-54. For the empathy sub-dimension, statistically significant differences have also been detected between average scores of participants under the age of 25 and average scores of participants aged 35-44 and over 55. Participants under the age of 25 have a higher average than participants aged 25-34 and 45-54.

The ANOVA test was used to examine the average score and relationship between participants' institutional quality of service perceptions and training levels. In general, it shows that participants at the Ph.D. level have a higher average than other participants with higher education levels. Participants with low education also have a low average. However,

the values of the ANOVA test were found to differ significantly in four sub-dimensions, including Physical specifications (F=2.467, P<.05), Reliability (F=6.940 P<.05), Sentiment (F=4.672, P<.05), Trust (F=6.277, P<.05), and in all of the Quality of Service Scale (F=5.038, P<.05). A Tukey test has been conducted to determine which groups these meaningful differences can occur between.

The Tukey HSD test from post hoc analyzes has been preferred to determine the direction of differences in the sum of reliability, enthusiasm, confidence and scale. In the reliability sub-dimension, participants with secondary school-level education may be found to have the lowest average. Statistically significant differences have been detected between the average scores of participants with secondary school-level instruction and the average scores of participants with high school, bachelor's and doctoral degrees. Additionally, participants with bachelor's degrees can be found to have higher averages than participants with master's degrees and differ significantly.

Enthusiasm has a lower mean than participants with primary education level training at the bachelor's and doctoral levels, and is statistically different. In addition, participants with graduate-level training have significantly higher average than those with graduate-level education. Statistically significant differences have been detected between the average scores of participants with graduate-level training and the average scores of participants with doctoral-level instruction. Participants with Ph.D.-level training should also be told that they have a higher average and differ significantly.

Regarding trust subsize, participants with doctoral-level training have been found to have significantly higher averages. In addition, participants with graduate-level training can be said to have higher averages than participants with graduate-level training and to differ statistically significantly. Finally, participants with secondary school-level instruction appear to have lower scores and differentiated significantly from participants with post-graduate, bachelor's and doctoral degrees in relation to the full scale of the quality of service. Attendees with graduate-level training are found to have lower averages than their peers with Ph.D.-level training.

ANOVA testing is used to examine the senses of the scale of enterprise quality of service and the meaningful differences between the participants' in-business positions. The F-test values indicate significant differences in three sub-dimensions, only physical properties (F=4.112, P<.05), reliability (F=2.980, P<.05) and empathy (F=4.03, P<.05). The Tukey Test was conducted to determine which groups these meaningful differences were in.

Physical characteristics are found to differ statistically between the workers in position in relation to the sub-dimension of the workers, and it is understood that the workers place a greater emphasis on physical competence. In the reliability sub-dimension, meaningful differences have been detected between the response averages of the administrators and the response averages of the senior managers. It may be said that senior executives place a greater emphasis on credibility in a significant way. As for the size of empathy, workers appear to have lower averages than managers. Managers are among the most highly empathetic groups.

ANOVA testing is used to examine the understanding of scale of enterprise quality of service and the meaningful differences between the participants' uptime in the institution. F-test values can be trusted only (F=2.846, P<.05), Answer. (F=3.785, P<.05) and trust (F=4.971, P<.05) indicate significant differences in all three sub-dimensions and service quality scale (F=3.629, P<.05). The Tukey Test was conducted to determine which groups these meaningful differences were in.

The meaningful differences in reliability sub-dimension have been identified between participants with 3-5 years experience and participants with 16 years and more experience. Responses to participants with little working experience have been found to have a higher average. In addition, participants who have 0-2 years working experience in the collection of enthusiasm, confidence, and quality of service can be found to differ statistically from other participants and to have lower average responses.

Testing the Fifth Hypothesis
"H_5: Statistically significant differences exist between employment satisfaction of workers at the Mellitah Oil and Gas Company of Libya and demographic data of those employed."

T-test is used to investigate meaningful differences between the gender variable and employee employment satisfaction perceptions. When the results are examined, women generally have higher averages across all five areas. However, the t-test showed that the test values are statistically significant only on business activities and wages.

Therefore, when participants' gender and work satisfaction perceptions are evaluated, it can be said that meaningful differences remain confined to two sub-dimensional levels.

The study found that participants' responses for five sub-dimensions are relatively close to each other, given their average and their age variability. However, the ANOVA test was used to investigate meaningful differences between participants' ages and perceptions of job satisfaction. Related analyzes have found only statistically significant differences in business activities (F=3.059, P<.05) and control (F=3.261, P<.05) subdimensions. Of these age groups

The Tukey HSD test from Post-Hoc analysis is used to examine the direction of meaningful differences in the average score of participants. Significant differences in business activity were identified between participants under the age of 25 and participants aged 45-54. On the subsize of the audit, the mean scores of participants aged 25-34 were found to be significant differences between average scores of participants aged 35-44. Participants under the age of 25 have been found to have more perceptions of job satisfaction than participants aged 35-44.

ANOVA testing has been used to identify meaningful differences between participants' work Satisfaction Perceptions and relationships based on training levels. In general, participants with lower education levels may find that they have lower perceptions of job satisfaction than those with higher education levels. However, significant differences have been detected in the four sub-dimensions of the ANOVA test values, business activities (F=4.478, P<.05), wages (F=2.508, P<.05), promotion (F=2.808, P<.05), colleagues (F=4.065, P<.05), and work satisfaction scale (F=3.405, P<.05).

The Tukey HSD test has been used to identify statistically significant differences in the four-horse size and business satisfaction scale. In the lower size of Business Activities, participants with secondary school-level education levels were found to have lower averages and differentiated significantly from those who had higher education levels than those who had undergraduate or higher education levels. There are meaningful differences in the promotion sub-dimension between the average responses of participants with secondary school level education and those with high school level education levels, and the responses of participants with doctoral level education. As for the colleague subsize, high school graduates differ statistically from graduate graduates. Taking into account the overall scale of business satisfaction, participants with a Master's degree level of education have more perceptions of job satisfaction than those with a high school level of education.

The ANOVA test was used to examine the meaningful differences between participants' work satisfaction perceptions and in-business positions. The F-test values were found to be only statistically significant differences in the entire scale of the promotion sub-dimension (F=6,989, P<.05) and work satisfaction (F=3,507, P<.05). The Tukey Test, a Post-Hoc analysis, is preferred to identify the significant differences between which groups.

There are statistically significant differences between the average score of workers and the average score of managers and the average scores of senior managers, and those of employees who are principal, regarding the promotion sub-dimension. Executives and senior executives received lower average scores than managers. On the job satisfaction scale, statistically significant differences have been identified only between workers and those in the executive position.

The ANOVA test was used to examine the meaningful differences between participants' work satisfaction perceptions and their working time. F-test values were found to be only statistically significant differences in the wage subsize (F=4.246, P<.05) and colleagues subsize (F=7.363, P<.05). The Tukey Test, a Post-Hoc analysis, is preferred to identify the significant differences between which groups.

It was found among participants with 10 years of experience. Participants with 2 years or less experience appear to be valuing the wage subsize more. In addition, employees with the same subsize, 3-5 years experience differ statistically from those with 16 years and more experience. Workers with a 0-2 year experience in their colleagues' sub-size have a higher average than participants with 11-15 years and 16 years and more experience. Additionally, employees with 6-10 years experience have a statistically high average compared to those with 11-15 years and 16 years and more. Beyond these meaningful differences, no meaningful differences have been detected.

The main goal of the study is to assess the relationship between employee perceptions of corporate quality of service and work satisfaction in the Mellitah Oil and Gas Company of Libya. Also, it is one of the other research objectives to determine to what extent enterprise quality sub-dimensions impact business satisfaction, whether there is a relationship between them. Based on the results of the analysis, employees have been found to have lower than average responses to the scale of enterprise quality of service, but greater than average responses to the scale of business satisfaction. Those

results show that the enterprise is lacking in quality of service, but above average in satisfying its employees. Statistically meaningful positive relationships are detected between quality of service and all child dimensions of business satisfaction. Other results include the improved quality of business satisfaction on the scale of all sub-dimensions of the enterprise service.

In addition to these analyzes, multiple linear regression analysis revealed that not all five sub-dimensions have a meaningful effect on employee satisfaction perceptions. Only empathy, physical properties and sub-dimensions of assurance have been found to have a statistically significant effect on business satisfaction perceptions. Enthusiasm and reliability are found to have no effect in increasing or decreasing business satisfaction. The most important aspects that empathy sub-dimension impacts job satisfaction may be in the ranks of peer-to-employee relations, management strategies, employee motivation, and individual lifestyles. These include working as sub-dimensions of the work satisfaction scale. Training and performance of customer service representatives should include relational aspects that enable them to understand and communicate their customer needs. Balinado, J.R. (2021), discovered that reliability and empathy sub-dimensions are strongly linked to customer satisfaction in Toyota Dasmarinas-Cavite, a Philippine company implemented by the SERVQUAL scale. Surprisingly, he found that physical traits, enthusiasm, and precision have no statistically meaningful relationship between them with business satisfaction.

The result of this study was found to be statistically significant differences between gender and the perception of corporate quality of service. Although the responses of women and men were lower than the average of the scale, female participants were found to have higher perceptions of institutional quality of service than male participants. Female participants outnumbered male participants in only the lower dimensions of accountability and enthusiasm. Female participants have a more positive outlook than their male counterparts. Women's expectations were found to be very different. This can be explained because management reactions to employee requests differ according to their gender. Furthermore, results showed that female employees have higher levels of employment satisfaction but that differences do not make statistical sense. In view of this information, the results of our study may be interpreted as evidence that male and female employees may have different expectations and value certain things differently.

Employee perceptions of education, quality of service, and job satisfaction are recognized as the most important considerations that differentiate significantly between participants. Many previous studies have found that as employees' levels of education increase, their job expectations go up. This is why an increase in the level of education of employees can give them a sense of dissatisfaction with their work (Günes, 2002). This study shows that participants with bachelor's, master's and PhD levels of education have significantly diverged in expectation. So having a higher level of education can make a significant difference in how employees perceive their work.

Other analyzes have shown significant variations in the age variable related to employee perceptions of enterprise quality of service and job satisfaction. However, these differences may not generally be regarded as having an effective role. This can be attributed to a similar working environment in which participants of different ages work. Also, it is important for senior management in the company to treat all employees equally, given that older employees can contribute to their work experience.

Results

When the study analyzes the data through the relevant programs, the following results have been achieved. These results are sorted as follows:
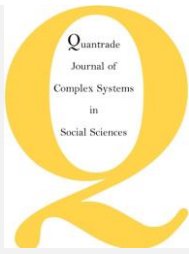
The perceived levels of the quality of business services offered in the company specification studied have fallen below the average score of the lickert scale of 3. Employees, in fact, are unhappy with the quality of their corporate services.

Employees of the Libyan Mellitah Oil and Gas Company, who were surveyed in the study's case, expressed a high level of understanding of business satisfaction. Employees may be satisfied or satisfied with their work.

Statistically meaningful and positively oriented relationships have been detected between Quality of Service and Scale of Business Satisfaction. The bottom line here is that quality of service has impacted the level of job satisfaction.

The five sub-dimensions of the Quality of Service scale (concrete things, reliability, responsiveness, assurance and empathy) are significantly positive in relation to the work satisfaction levels of employees. This relationship is also statistically significant.

The five sub-dimensions of the Quality of Service scale (concrete things, reliability, responsiveness, assurance, and empathy) are each in a positive way affecting the work satisfaction levels of the individual workers.

The analysis of multiple linear regression results in these sub-dimensions with a statistically meaningful effect only of empathy, embodiment, and assurance subdimensions.

The service quality scale sub-size, which implies the tangible, has the highest average compared to other sub-dimensions.

As employee-perceived internal service climate increases, it is determined that employees at the institution receive higher levels of work satisfaction than their working environment.

Given the perception of job satisfaction and the quality of service, the most effective demographic variables are identified as gender and education variables. Female participants received higher average scores on both scales than male participants. And the way female participants viewed those two things is that they've evolved a lot more. Based on the higher level of education variable, employees are more concerned with quality of service and business satisfaction perceptions.

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