

The impact of asset management on achieving competitive advantage for companies in the petroleum services sector, Al-Khobar – Kingdom of Saudi Arabia.

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Graduation Project – 2

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Dedication

“In heartfelt gratitude to Dr. Mona Mustafa Al-Ashry and Midocean University For their unwavering support and guidance throughout this project.”

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بسم الله الرحمن الرحيم

Chapter 1: Introduction

1.1. Research Background

The impact of asset management on achieving competitive advantage for Companies in the petroleum services sector.

Companies dealing with dilapidated assets face a multitude of challenges, stemming primarily from neglected asset management practices. These practices can negatively impact various aspects of the organization, leading to a domino effect of problems.

Dilapidated assets refer to assets that are in a state of disrepair or ruin due to neglect, lack of maintenance, or obsolescence. When companies have dilapidated assets in their portfolio, they may encounter difficulties in terms of operational efficiency, regulatory compliance, financial performance, and overall reputation.

Asset management is a process that involves planning, acquiring, operating, maintaining, and disposing of physical and intangible assets in an organization. It aims to optimize the performance, value, and risks of assets throughout their lifecycle. Asset management is especially important in the oil and gas industry, where assets are costly, complex, and critical for the production and delivery of energy. However, many oil and gas companies face challenges in managing their assets effectively,

Due to factors such as aging infrastructure, volatile market conditions, environmental regulations, and technological changes. These challenges can have negative impacts on the efficiency, profitability, and sustainability of the companies, as well as their competitive advantage. (Ford, G. L., Ancell, G., Hill) (2022).

The concept of competitive advantage refers to the ability of an organization to create and sustain superior value for its customers and stakeholders, relative to its competitors. Competitive advantages can be achieved by exploiting the unique resources and capabilities of the organization, or by implementing distinctive strategies that create differentiation or cost leadership. In the oil and gas industry, competitive advantage can be influenced by various factors, such as the quality and quantity of reserves, the operational efficiency and reliability, the innovation and technology adoption, the customer satisfaction and loyalty, and the social and environmental responsibility. (G. Chattopadhyay, H. K. Menta Venkata) (2022).

Competitive advantage in the oil and gas industry is crucial for companies to thrive in a highly competitive market. Organizations must leverage their resources, capabilities, and strategies to differentiate themselves from competitors and create superior value for their stakeholders. Factors such as reserves quality and quantity, operational efficiency, innovation, customer satisfaction, and social responsibility play a significant role in determining competitive advantage in this industry. (Al-Qahtani, S., & Zayed, T.) (2012).

Neglected asset management practices can result in increased maintenance costs, decreased asset lifespan, safety hazards, regulatory fines, and potential legal liabilities. Moreover, the presence of dilapidated assets can tarnish the company's image and credibility among stakeholders, including customers, investors, and regulatory bodies. Addressing these challenges requires a strategic approach to asset management, including regular inspections, proactive maintenance programs, timely repairs and upgrades, and proper documentation of asset conditions. Companies dealing with dilapidated assets must prioritize effective asset management practices to mitigate risks, ensure compliance with regulations, optimize operational performance, and safeguard their reputation in the market. (Hiba,1998).

Operational efficiency and reliability are critical for maintaining a competitive edge the oil and gas sector. Companies that can optimize their operations, minimize downtime, and ensure consistent production levels are better positioned to meet market demands and outperform competitors. Efficient operations also contribute to cost savings and profitability, further enhancing competitive advantage. Innovation and technology adoption are key drivers of competitive advantage in the oil and gas industry. (Rau et al., 2017).

Companies that invest in research and development to enhance exploration, production, and extraction processes can gain a significant edge over rivals. Adopting cutting-edge technologies allows companies to improve efficiency, reduce costs, and differentiate their offerings in the market. Building strong customer relationships through exceptional service, reliability, and responsiveness can be a source of competitive advantage for oil and gas companies.

Satisfied customers are more likely to remain loyal to a company's products or services, providing a stable revenue stream and a competitive edge in the market. (Rau et al. ,2017). Companies that prioritize customer satisfaction can differentiate themselves from competitors and strengthen their market position. Social and environmental responsibility have become increasingly important factors in determining competitive advantage in the oil and gas industry. That demonstrates a commitment to sustainable practices, environmental stewardship, and community engagement can enhance their reputation, attract investors, and build trust with stakeholders. Embracing social responsibility not only differentiates companies from competitors but also contributes to long-term success and resilience in a rapidly changing business environment. (Baek & Lee, 2023).

The study delves into the intricate challenges faced by companies dealing with deteriorating assets and the repercussions of neglecting asset management protocols. It investigates the multifaceted impacts on various organizational performance metrics. The analysis provides a comprehensive examination of the core issues and their far-reaching consequences.

Maintenances expenses, straining financial resources, and diminishing available resources for further investments can lead to underestimation of costs. The swift depreciation of well-maintained

assets reduces their book values, complicates financing, and hampers businesses in attracting investors. All these factors, whether positive or negative, have implications on the company's reputation and competitive edge. (Porter & Millar, 1985)

While existing literature provides valuable insights into asset management and its relationship to competitive advantage and investment in preventive maintenance, there are many shortcomings that need to be addressed. Some of these shortcomings include limited focus on the role of planning and lack of commitment to effective implementation in successful asset management. Failure to apply proper asset management practices and instructions from leaders and their impact on competitive advantage and business and enterprise loss. By identifying these shortcomings, we can narrow the focus of our research and contribute to filling gaps in current knowledge by sensitizing companies, managers and staff to engage in asset-care training and preventive maintenance and thus solving the problem. This study reveals the complex issues facing companies dealing with their degraded assets, as well as the consequences of ignoring asset management procedures. The study explores the complex impacts on a range of organizational function variables. (Ngulumbu & Waswa, 2022).

This is a thorough examination of key issues and their wide implications.

Increased maintenance costs, pressure on financial resources and reduced resources available for additional investments could lead to lower costs. The rapid decline in the value of well-maintained assets reduces its book value, makes financing more difficult and makes it difficult for firms to attract investors. All these factors reflect positively or negatively on the company's reputation and competitive advantage. Senior managers use strategically important information that influences their beliefs, actions, and commitments, which is known as strategic intelligence, generation and transformation of information or knowledge that can be employed in high- level decision-making is referred to as strategic intelligence. Strategic

Intelligence entails bringing together various sorts of intellectuals and forming synergies between business intelligence, competitive intelligence, and knowledge management to give value-added data and knowledge for strategic decision-making in organizations. As a result, the right quality of the provider's system is required for organizational benefit and success, since it is favorably associated with increased profitability and competitive advantage.

Organizations, on the other hand, are beginning to realize that a strategic approach to asset management can provide long-term competitive advantages and survival in a turbulent environment. The various levels of organizational strategy correspond to asset management strategies. Strategic Asset management is a holistic approach to long-term sustainable development that centers on the asset portfolio, allowing for Decision-making and the development of competitive advantages throughout the organization. (Vanier, D. J. "Dana") (2001).

1.2. Research Problem

Research problem the research problem around "The impact of asset management on achieving Competitive advantage for companies in the petroleum services sector." Pose significant challenges for organizations.

1.2.1. Theoretical Gaps

This study aims to explore these challenges comprehensively, offering insights into the potential solutions for fostering a positive work environment and improving environmental sustainability working in Utilizing key performance indicators (KPIs) to identify areas for improvement and optimize asset utilization, contributing to both employee satisfaction and environmental sustainability. (Keykhosravi et al., 2023).

Implementing technologies like RFID technology predictive maintenance and condition monitoring to provide real-time insights, reduce downtime, and improve overall working conditions. Employee awareness and participation in asset care foster responsible usage and timely reporting of issues, contributing to a positive workplace culture. Comprehensive Asset Management Plan Developing a plan outlining maintenance schedule, budget allocations, and risk mitigation strategies to ensure a conducive work environment. (Duffuaa & Raouf, 2015)

1.2.2. Practical Gaps

Through a thorough examination of these issues, this study hopes to shed light on Viable strategies for enhancing environmental sustainability and creating a healthy work environment in the petroleum services industry. Employers may lower their environmental effect, increase employee Happiness, and gain a sustained competitive edge in the market by using key performance in employee (KPIs) to pinpoint areas for improvement and maximize asset usage. (Agyekum et al., 2021) Organizations face substantial obstacles as a result of asset

management's influence on gaining a competitive edge for businesses providing petroleum services. Enhanced operational efficiency, Competitive advantage, and resource optimization are the main reasons why businesses in this industry need to implement effective asset management. However, there are unique challenges and difficulties

Associated with asset management in the oilfield services sector. Illustrate the importance of Organizations continually improving their asset management capabilities, to systematically Improve performance or service levels, modeling and forecasting costs, managing fail systematically Finding strategies to fund both their long-term investment needs. In addition, reported that innovation Capacity, the intangible assets of a company, such as knowledge management and intellectual capital, Have a favorable impact on competitive advantage. Furthermore, the competitive edge has a positive Impact on the company's performance. (McMillan, 2017).

Main Research Question: What are the long-term economic and social benefits of investing in preventive maintenance and enhancing asset care within organizations?

1.3. Research Significance

The findings aim to guide decision-makers, HR professionals, and operations managers in adopting Proactive measures that not only improve the working conditions but also contribute to a sustainable and responsible corporate culture. This research is significant in offering practical solutions for Investment in Preventive Maintenance Advocating for regular maintenance practices to identify and Address issues early, preventing costly breakdowns and promoting a positive workplace atmosphere. Organizations to enhance employee morale and business sustainability.

1.3.1. At the theoretical level

The findings above are concurred to by (Duffuaa & Raouf, 2015) when he suggests that reliability-Centered Maintenance (RCM) seeks to achieve, among others, the following Greater safety and Environmental integrity – RCM considers the safety and environmental implications of every failure Mode. Improved operating performance (output, product quality and customer service) – RCM Recognizes that all types of maintenance have some value and provides guidance in deciding which is the most Suitable in every situation. Greater maintenance cost-effectiveness – RCM Focusses on the Maintenance activities which have the most effect on the performance of the plant. Longer lifespan of Assets successful implementation and sustainability of asset management is dependent on employee. Believing in the benefits this phenomenon has on business as well as individuals.

1.3.2. At the practical level

It is revealed that most of the employees believe that discipline cohesion (bringing the different organization disciplines closer together) is the most important benefit of implementing Asset Management processes. Further to discipline cohesion stated above, the research also reveals that employees believe that the following, in order of their importance, are also the important benefits of implementing asset Management processes; Improved decision making. The organization learning experience implementing process. Enhanced systems thinking in terms of equipment life cycle view.

Becoming the learning organization (continuous improvement). Process transparency. It is clear from the above that employees believe there are benefits in implementing the processes of asset management. To succeed in implementing and sustaining asset management, obstacles and challenges should be identified and eliminated.

1.4. Research Questions

Main Research Question: What are the long-term economic and social benefits of investing in preventive Maintenance and enhancing asset care within organizations?

Sub-Question 1: What is the effectiveness of preventive maintenance strategies, leveraging KPIs and Technologies like RFID and predictive maintenance, in addressing challenges associated with dilapidated assets?

Sub-Question 2: How can promoting employee awareness and participation in asset care contribute to improving working conditions and fostering a culture of responsible asset use in organizations?

Sub-Question 3: How can the findings of this study inform decision-makers, HR professionals, and operations managers to adopt proactive measures that simultaneously improve working conditions and promote a sustainable corporate culture?

Sub-Question 4: How does the size and budget of an organization influence its ability to implement effective asset management practices?

1.5. Research Objectives

Research objectives are essential in guiding a research study. They help to clarify the Objective Of the research and outline what the researcher aims to achieve. Here are some criteria for good Research objectives:

Explore the effectiveness of various preventive maintenance strategies,
Leveraging KPIs and technologies like RFID and predictive maintenance, in addressing challenges
Associated with dilapidated assets in the petroleum services sector.

Investigate how promoting employee awareness and participation in asset
Care contributes to improving working conditions and fostering a culture of responsible assessed
within organizations in the petroleum services sector.

Determine how the findings of this study can inform decision-makers, HR
Professionals, and operations managers in adopting proactive measures that simultaneously
improve Working conditions and promote a sustainable corporate culture in the petroleum services
sector.

Analyze the influence of an organization's size and budget on its ability to
Implement effective asset management practices. Focusing on specific practices is clear in stating
the Relationship preventive maintenance independent leads to increased operational efficiency
dependent through reduced downtime and higher equipment availability. It is specific by
mentioning a specific Practice of preventive maintenance and measurable outcomes downtime,

availability, efficiency. It is Testable through data collection on maintenance practices, equipment performance metrics, and Operational efficiency measures.

1.6. Research Hypotheses

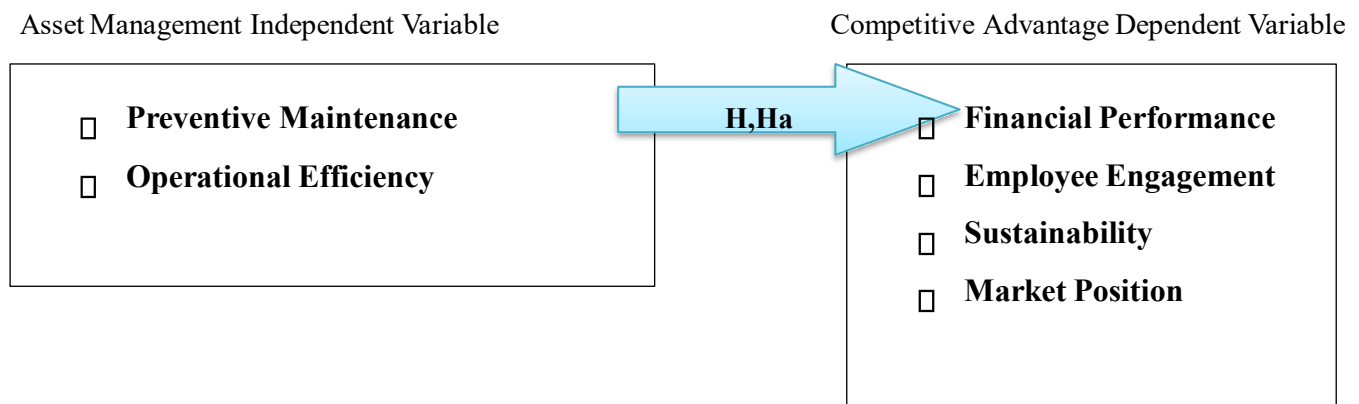
Focusing on specific practices is clear in stating the relationship preventive maintenance independent leads to increased operational efficiency dependent through reduced downtime and higher Independent Availability. It is specific by mentioning a specific practice of preventive maintenance and measurable Outcomes downtime, availability, efficiency. It is testable through data collection on measurable Practices, equipment performance metrics, and operational efficiency measures.

Focusing on employee involvement is specific in focusing on employee involvement independent and its impact on failure rates and maintenance costs dependent. It provides a clear cause-and effect Relationship, with employee involvement expected to lead to better asset care, fewer failures, and reduced maintenance costs. It is testable through data collection on employee training programs, Equipment failure records, and maintenance cost data.

Focusing on long-term benefits takes a broader view, focusing on long-term asset management Strategies independent and their impact on sustained competitive advantage dependent through Resource optimization and environmental performance. It is specific in mentioning the long-term Approach and its expected benefits. While testing might require a longer timeframe, it can be done by comparing the performance of companies with different asset management strategies over time.

1.7. Research Model

Impact of Asset Management on Competitive Advantage in Petroleum Services relationships the model proposes that effective asset management practices, implemented through a combination of Preventive maintenance, employee engagement, and resource allocation, positively influence various Dimensions of competitive advantage. Preventive maintenance can lead to reduced downtime operational Efficiency and lower maintenance costs financial performance. Employee engagement in asset care can Contribute to improved equipment availability operational efficiency and a positive brand reputation market Position. And resource allocation plays a crucial role in enabling these practices, as sufficient budget and skilled personnel are essential for effective asset management.



Proposed study model Source: Student

1.8. Scope of the Study

Al Masood is a privately held and highly diversified Group, based in Abu Dhabi. Its companies and partnerships span activities and expertise in 18 different market segments. Its primary goal is growth through a deep understanding of its marketplace, the quality of its products and services and an uncompromising quest for customer satisfaction.

From its early foundations as a small trading house some 50 years ago, Al Masood has become one of the largest integrated industrial, commercial and service organizations in the Middle East. Khobar Saudi Arabia The Al Masood Company holds Abu Dhabi Chamber of Commerce registration number one.

With activities spanning most key economic sectors, the Al Masood Group represents the collective business interests of the Al Masood family.

Suggested Project Structure

Chapter 1: Introduction

Chapter 2: Literature Review

Chapter 3: Research Methodology

Chapter 4: Statistical Analysis

Chapter 5: Findings` Discussion and Conclusion

Chapter 1: Introduction

Chapter 2: Literature Review

Chapter 3: Research Methodology

Chapter 4: Statistical Analysis

**Chapter 5: Findings` Discussion and
Conclusion**

1.9. Project Structure

Chapter One: An overview of fixed assets and their relationship to competitive advantage. In this chapter, the concept of competitive advantage and its connection to fixed assets will be reviewed. Its relationship will be analyzed with fixed assets and the impact of the company's reputation and profits through studying in-depth references to previous research and theories related to this relationship.

Chapter Two: Factors affecting fixed assets and competitive advantage.

This chapter reviews the multiple factors that affect fixed assets and periodic maintenance in detail. Each variable will be carefully analyzed, including fixed assets, competitive advantage, maintenance, and facility culture. The impact of each factor on fixed assets and competitive advantage.

Chapter Three: Research methodology and data analysis this chapter focuses on the research methodology used, which is based on a quantitative study using questionnaires. It will be done distribute questionnaires to a sample of employees, then collect and analyze data using data analysis software

SPSS will use statistical methods to analyze the relationship between fixed assets and competitive advantage, and provide conclusions and recommendations based on the results of the analysis.

Chapter 2: Literature Review

2.1. Introduction

In today's dynamic global market, organizations must respond quickly and efficiently to meet client expectations. To remain competitive, organizations must optimize asset utilization. (Mendez, D).

In such a situation, organizations strive to enhance their production procedures, respond more quickly and effectively to market demands, maintain product quality, and reduce costs. As a result, they must seek out new management and organizational tools and focus on working in areas under their direct control, beginning with the manufacturing floor. Historically, maintenance tasks were only performed when the equipment was unsuccessful, and many saw them as a "necessary evil" [8,9]. Now, maintenance is a vital area to address changes, such as boosting competitiveness, increasing the quality of products or services, the flexibility of processes, and the training and valorization of their people resources. In this setting, organizations attempt to optimize their manufacturing processes, responding more rapidly and efficiently to market.

2.2. Asset management

Asset management is the planning, acquisition, operation, maintenance, and disposal of a business's physical and intangible assets. It strives to improve asset performance, value, and risk management throughout their lives. Asset management is particularly crucial in the oil and gas business, because assets are expensive, complicated, and critical to energy manufacturing and shipping. However, many oil and gas businesses struggle with properly handling their assets due to aged infrastructure, uncertain market situations, environmental requirements, and technological advancements. These problems can have a negative impact on a company's efficiency, profitability, and sustainability, as well as its competitiveness. (Ford, G.)

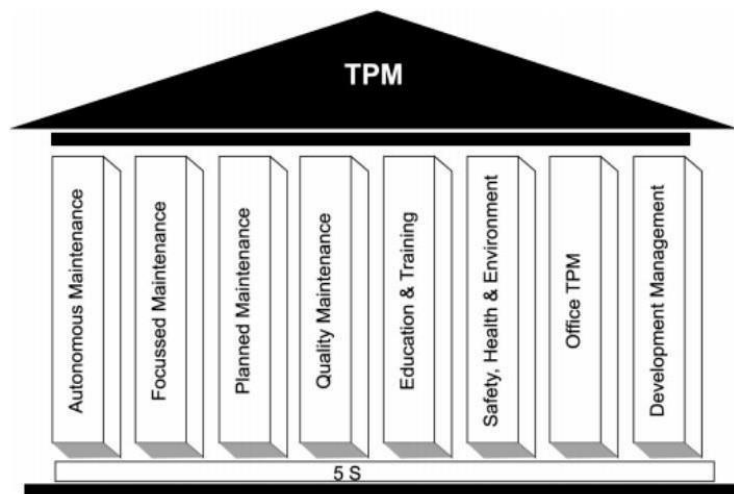
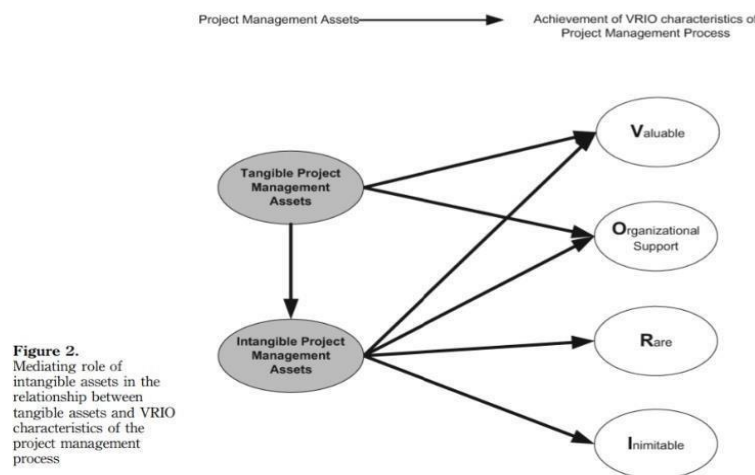


Figure 3. TPM implementation pillars suggested by the Japan Institute of Plant Maintenance [36].

2.3. The dependent variable

Competitive advantage refers to the ability of an organization to create and sustain superior value for its customers and stakeholders, relative to its competitors. Competitive advantage can be achieved by exploiting the unique resources and capabilities of the organization, or by implementing distinctive strategies that create differentiation or cost leadership. In the oil and gas industry, competitive advantage can be influenced by various factors, such as the quality and quantity of reserves, the operational efficiency and reliability, the innovation and technology adoption, the customer satisfaction and loyalty, and the social and environmental responsibility.(G. Chattopadhyay).

This study aims to bridge the gap between the resource-based view of the business and project management, arguing that effective project administration can provide a competitive edge. Our conceptual model, founded on the VRIO framework, suggests that intangible managing projects. Assets make the process more valuable, rare, and unique, but tangible assets do not. In this paradigm, we conceptualize an intermediary role for intangibles. (Gita Mathur).



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2.4. The relationship between asset management and achieving competitive advantage.

Increased maintenance costs, pressure on financial resources and reduced resources available for additional investments could lead to lower costs. The rapid decline in the value of well-maintained assets reduces its book value, makes financing more difficult and makes it difficult for firms to attract investors. All these factors reflect positively or negatively on the company's reputation and competitive advantage. Senior managers use strategically important information that influences their beliefs, actions, and commitments, which is known as strategic intelligence.

2.5. Conclusion

The intricate between asset management and competitive advantage in the petroleum services sector has been the focal point of this research project. The investigation exposed the detrimental consequences of neglecting Proper maintenance, leading to the rapid deterioration of assets and hindering organizational performance across multiple dimensions. Business development and asset management are intricately connected, fostering a symbiotic relationship that drives growth and profitability in the petroleum services sector.

Business development professionals leverage a company's well-maintained assets and proven asset Management practices as key selling points when securing new contracts. They highlight the company's Commitment to reliability, efficiency, and cost-effectiveness, demonstrating a competitive advantage in the Marketplace, it explored the multifaceted benefits of implementing effective asset management practices, Highlighting positive impacts on operational efficiency, financial performance, market position, and Sustainability. The research model proposed a comprehensive approach to asset management, encompassing Preventive maintenance, employee engagement, and resource allocation, as a key driver of sustainable Competitive advantage. It further acknowledged the potential moderating influence of factors like company Size, industry

standards, and technological advancements on the effectiveness of these practices. The impact of asset management extends far beyond the proposed model, significantly influencing the strategic Landscape of businesses within the petroleum services sector. Effective asset management practices directly contribute to enhanced Business Analysis Capabilities By gathering and analyzing data on asset Performance, maintenance costs, and resource utilization, companies gain valuable insights for informed Decision-making. This empowers business analysts to identify trends, predict potential equipment failures, and optimize resource allocation strategies. Improved Business Development Efforts a strong asset Management framework fosters a culture of reliability and operational efficiency, which translates into a Competitive advantage during business development activities. Companies can leverage their well- Maintained assets and proven track record of performance to build trust with potential clients and secure lucrative contracts. Selecting the most appropriate key performance indicators (KPIs) is crucial for Monitoring and controlling asset management practices. Successful business development efforts translate into increased revenue streams. This influx of capital allows for further investment in asset management Initiatives. Companies can allocate resources for preventive maintenance programs, employee training, and the adoption of new technologies that enhance asset performance and overall operational efficiency. This Virtuous cycle strengthens the company's competitive edge and positions it for long-term success in the Dynamic and challenging world of petroleum services, the research model provides a valuable theoretical Framework, translating these concepts into practical application requires a multi-pronged approach.

Executive leadership plays a crucial role in fostering a culture of asset care within the organization.

3. Research Methodology

3.1. Introduction

In the view of Pacaiova, Glatz, and Kacvinsky (2012), the most important objective of any business strategy is to lower costs while increasing profit. In today's highly interconnected businesses, success relies on providing more customer value or running at reduced costs (Porter 1985). The introduction of ISO 55000 standards for asset management has increased interest in the area. There is a growing dispute about the distinction between asset and maintenance management. Effective physical management of assets is key to achieving competitive performance (Schuman & Brent, 2005). Maintenance has always been a crucial aspect of industrial enterprises, encompassing various activities, resources, measurements, and management. In recent years, the necessity of competent maintenance management has increased. The need to manage different aspects of maintenance more effectively has increased the importance of the role of maintenance in organizations (Simões, Gomes, & Yasin, 2011).

3.2. Operational definitions for research variables

Asset management is a process that involves planning, acquiring, operating, maintaining, and disposing of physical and intangible assets in an organization. It aims to optimize the performance, value, and risks of assets throughout their lifecycle. Asset management is especially important in the oil and gas industry, where assets are costly, complex, and critical for the production and delivery of energy. However, many oil and gas companies face challenges in managing their assets effectively.

The competitive advantage refers to the ability of an organization to create and sustain superior value for its customers and stakeholders, relative to its competitors. Competitive advantage can be achieved by exploiting the unique resources and capabilities of the organization, or by implementing distinctive strategies that create differentiation or cost leadership.

3.3. Research design (research onion)

3.3.1. Research Methodology:

For Investigating the Impact of Asset Management on Competitive Advantage in Petroleum Services.

3.3.2. Research Philosophy: Interpretivist:

This research will adopt an Interpretivist philosophy, acknowledging the subjective experiences and interpretations of individuals and organizations regarding asset management practices and their impact on achieving competitive advantage.

3.3.3. Research Approach: Mixed Methods:

A combined deductive and inductive approach will be utilized. The study will begin by reviewing existing literature and theories on asset management and competitive advantage (deductive), followed by the collection of qualitative and quantitative data to gain deeper understanding and explore the phenomenon in the context of the petroleum services sector (inductive).

3.3.4. Research Strategy: Survey (Case Studies):

This project will employ a multiple case study design, focusing on company in the petroleum services sector, Al-Khobar – Kingdom of Saudi Arabia the petroleum services sector, asset

management practices, and competitive positions. This approach allows for in-depth exploration of the real-world complexities and potential variations in the relationship between asset management and competitive advantage.

3.3.5. Mixed Methods: Qualitative and Quantitative

This research will combine both qualitative and quantitative data collection and analysis techniques to gain a comprehensive understanding of the phenomenon.

3.3.6. Qualitative data: Semi-structured

Interviews with key personnel (managers, engineers, maintenance technicians) from each case study company to gather insights on their experiences, perceptions, and challenges regarding asset management practices and their perceived impact on the organization's performance. Document analysis of company reports, policies, and procedures related to asset management. Quantitative data Collection of secondary data from industry reports, financial databases, and relevant performance metrics (maintenance costs, equipment downtime, productivity levels, customer satisfaction) to assess the potential associations with asset management practices.

3.3.7. Techniques and procedures: Questionnaire and statistical analysis Statistical analysis:

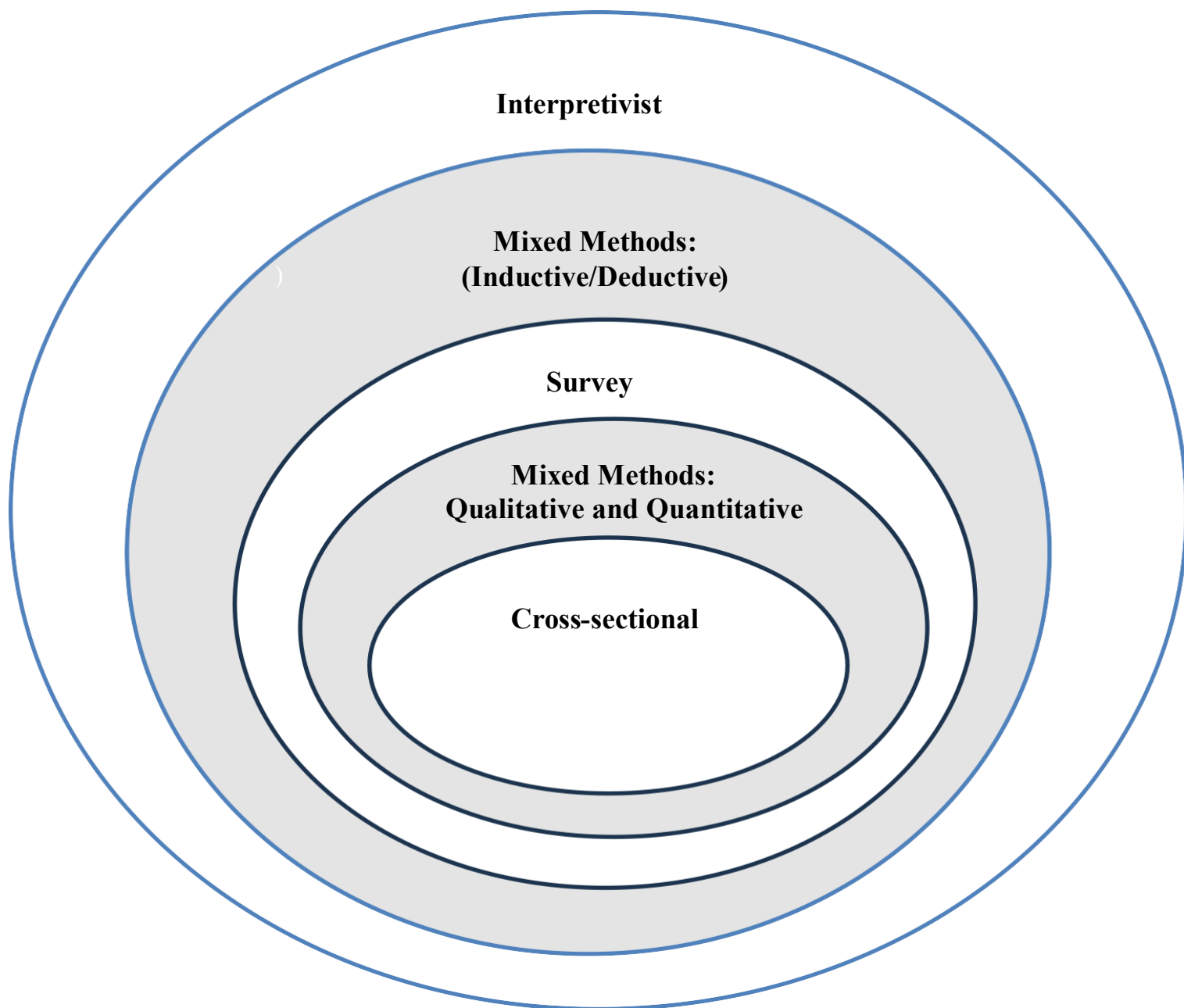
Statistical analysis is the process of collecting and analyzing large quantities of data to identify trends and develop valuable insights. It is used to extract meaningful interpretations from data, whether from internal or external sources.

3.3.8. Questionnaire

A questionnaire is a list of questions or items used to collect data from participants. Questionnaires can be used to gather both quantitative and qualitative information about individuals' experiences, opinions, or perspectives.

3.3.9. Cross-sectional:

This study will capture data at a single point in time, offering a snapshot of the current state of asset management practices and their perceived impact on competitive advantage within the selected case.



Summary of the study Source: Student

3.4 Research population & Sampling methods and technique

3.4.1. Study population

In this section, I will provide detailed information about the research community in my study, which was applied to Al Masood. It is one of the leading companies in the petroleum sector.

Company and sector: This study was implemented at Al Masood Company Communications in the Kingdom of Saudi Arabia.

Size of the study population: The study population consists of 30 individuals, working in various departments and levels within the company.

Community classification: There is no specific classification for community members, as they include a wide range of employees from various specializations and administrative levels within the company. The sample was chosen to represent various departments and levels.

This includes senior, middle and technical management personnel, ensuring a comprehensive representation of the community within Al Masood.

3.4.2. Sample Size:

Sector or company name	Sample Size	Number of employees
Almsood.co	30	200

3.4.3. Sampling methods and techniques

In my study, a probability method was used to select the sample, specifically systematic random sampling. This was selected the method is to ensure the representativeness of the sample and generalize the results to the study population comprehensively. Thanks to this method, I was able to be collecting a large sample consisting of a diverse number of participants in different regions of the Kingdom, which contributes to increasing accuracy and objectivity of the results drawn

3.5. Data collection method:

This section explains the tools that were used to collect the data necessary to answer the research questions and test its hypotheses. The researcher used the survey method to collect quantitative data using questionnaires. The type of questionnaire is a five-point Likert, where 1 represents “strongly disagree” and 10 represents “strongly disagree.”, "Strongly Agree".

The phrase	So very dissatisfied	Very dissatisfied	dissatisfied	Unsure	Unsure	Satisfied	Very Satisfied	Very Satisfied	So Very Satisfied
Degree of approval	1	2	3	5	6	7	8	9	10

3.5.1. The independent variable (Asset Management)

The researcher relied on the questionnaire of Mahmoud (2024). To measure the independent variable (Asset Management), in terms of three dimensions namely: M1a, M1b, with overall 4 items for the whole variable. As, M1a dimension consists of 2 items, M1b dimension consists of 2 items. The instrument type is 10 – points Likert- scale type. Hence, 1= strongly disagree, while 10= strongly agree

Table (1) for the instrument of the independent variable (Asset Management)

Variable	Dimensions	Number of Items	Sources
M1	M1a	2	(Mahmoud, 2024)
	M1b	2	
	Over all	4	

Sources: The student

3.5.1. The Dependent Variable (Competitive Advantage)

The researcher is relied on the questionnaire of Mahmoud (2024). In order to measure the dependent variable (Competitive Advantage), in terms of three dimensions namely: M2a, M2b, M2c, M2d, with overall 5 items for the whole variable. As, M2a dimension consists of 1 item, M2b dimension consists of 1 item, M2c dimension consists of 1 items M2d dimension consists of 2 items. The instrument type is 10 – points Likert- scale type. Hence, 1= strongly disagrees, while 10= strongly agree.

Table (2) for the instrument of the dependent variable (Competitive Advantage)

Variable	Dimensions	Number of Items	Sources
M2	M2a	1	(Mahmoud, 2024)
	M2b	1	
	M2c	1	
	M2d	2	
	Over all	5	

Sources: The student

3.6. Types of data

3.6.1. Primary data

With questionnaires specifically designed to measure Al Masood Company, this data was collected directly from employees in the company. Asset management and its impact on competitive advantage. Questionnaires were distributed and data were collected randomly and systematically. A diverse group of employees in Al-Khobar, Saudi Arabia, which contributes to broader representation and increased accuracy of results.

3.6.2. Secondary data

This data includes previous sources such as previous research that dealt with the topic of fixed assets and competitive advantage, in addition to books, articles, and scientific dissertations that address these topics. These sources contribute to enriching the study with previously published theories and results that may confirm or complement the results of the current study.

3.7. Statistical analysis procedures

Statistical analysis procedures after collecting data, it becomes necessary to analyze the information extracted to reach relevant conclusions version 28 for SPSS analysis. In this context, the Statistical Package for the Social Sciences was used aggregated data.

- A sample characterization test was conducted using descriptive analysis, to obtain a comprehensive understanding of the characteristics of a population of the sample. This analysis helps researchers learn about demographics, preferences, and other information Related to the individuals participating in the study.
- Validity and reliability tests are crucial in ensuring the accuracy and consistency of the data collected. Validity tests (Exploratory factor analysis) to determine whether research tools measure what they purport to measure, while they do Reliability tests (Cronbach alpha test) evaluate the stability of results over time.
- A sample characterization test was conducted, through descriptive analysis, to gain insight into the characteristics of a population of the sample. It helps researchers understand the demographics, preferences, and other information relevant to individuals Study participants.
- A sample characterization test was conducted, through descriptive analysis, to gain insight into the characteristics of a population the sample. It helps researchers understand the demographics, preferences, and other information relevant to individuals Study participants.
- A sample characterization test was conducted, through descriptive analysis, to gain insight into the characteristics of a population of the sample. It helps researchers understand the demographics, preferences, and other information relevant to individuals Study participants.

3.8. Conclusion

This conclusion depends on clarifying the research population studied and the methods used in sampling, in addition to Explain the data collection processes that were carried out. However, the results are not presented in this chapter, as the results The analysis and extraction of the data is not yet complete. The researcher plans to present the results in the next chapters

Conduct the necessary statistical analyses. It is expected that these results will contribute to clarifying the relationships discovered between the studied variables complete the full picture of the study, which contributes to achieving the research objectives with greater accuracy and comprehensiveness.

Chapter 4: Statistical Analysis & Findings

4.1 Introduction

This chapter presents the results of the field study that were statistically analyzed using the statistical programs **SPSS** version **28**. The current chapter of statistical analysis includes descriptive statistics for the sample under study using **SPSS** version **28**. Testing the validity and reliability of the questionnaires used to collect the required data from the current study sample. To test the research hypotheses and the suitability of the model, simple linear regression analysis was conducted via **SPSS 28**.

4.2 Characteristics of the study sample.

The study sample was distributed according to gender -age group -number of years of experience - nature of work and educational level. Frequencies and percentages were calculated for the study sample members and are represented by demographic information that includes:

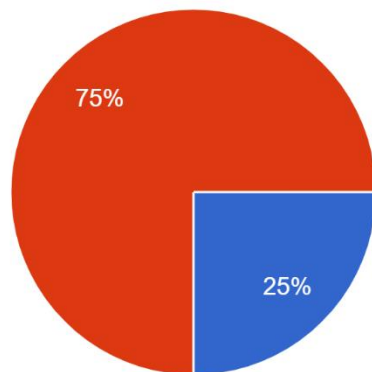
- Gender includes (male, female).
- The age group includes (less than 30 years, from 30 to 40 years, from 41 to 50 years, and more than 50 years).
- Number of years of experience, including (less than 5 years, from 5 to 10 years, from 11 to 20 years, from 21 years or more).
- Nature of work, including (leaders/employees/technicians)
- Educational level includes (secondary/university/postgraduate).

Variable	Variable classes	The number	Percentage of the total sample
Gender	Male	6	6%
	Female	4	4%
	Total	10	10%
The age group	Less than 30 years	6	6%
	From 30 to 40 years	3	3%
	From than 50 years	1	1%
	Total	10	10%
Number of years of experience	Less than 5 years	5	5%
	From 5 to 10 years	4	4%
	From 21 years or more	1	1%
	Total	10	10%

The table contains details of the personal questions of the questionnaire.

الجنس || Gender

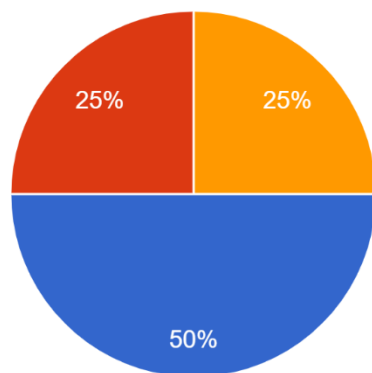
4 responses



● ذكر || Male
● انثى || Female

العمر || Age

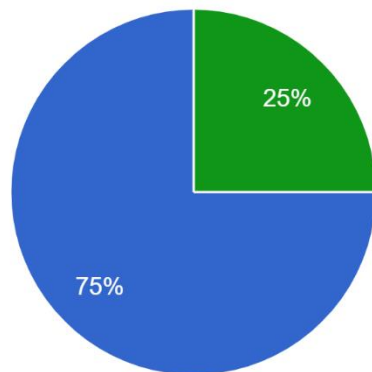
4 responses



● 20-29
● 30-39
● 40-49
● 50+ || أكثر من 50 || More than 50

المستوى التعليمي || Educational Level

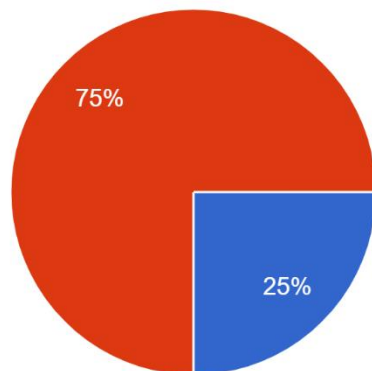
4 responses



- جامعي || Collectors
- ثانوي || High School
- متوسط || Intermediate
- جامعي

الخبرة || Experience

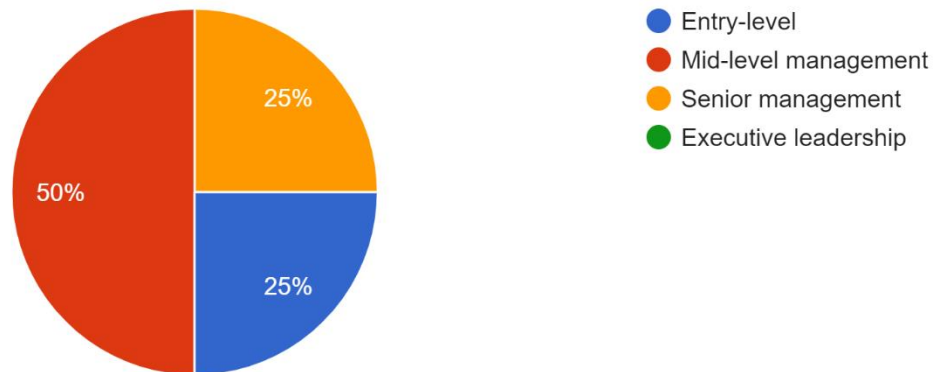
4 responses



- أقل من 5 سنوات || Less than 5 years
- 5-14
- 15--20
- أكثر من 20 || More than 20

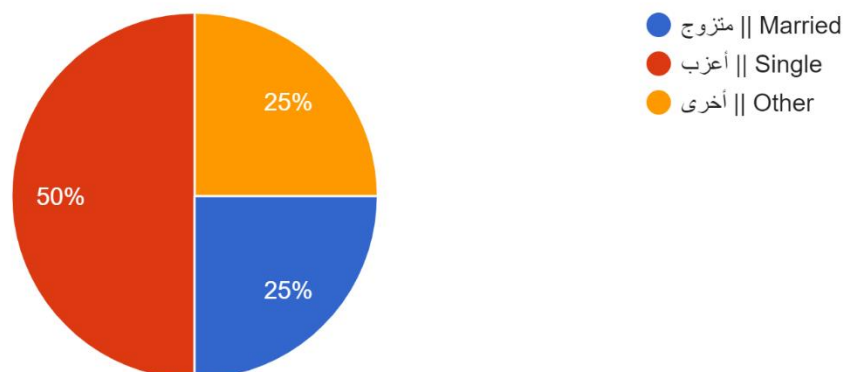
المنصب || Position

4 responses



الحالة العائلية || Marital Status

4 responses



4.3 Measuring the validity and reliability of study instruments.

To verify the validity and reliability of the measures used in the study, the internal consistency validity of the questionnaires used to measure the study variables was tested, in addition to measuring the convergent validity by measuring the Average Variance Extracted (AVE). While the reliability of the measures used in the study was measured by Measuring the value of Cronbach's alpha, through the structural equation modeling (SEM), using the statistical analysis program SPSS version 28. The following paragraphs and tables explain this.

4.3.1 Validity of the measures used in the study

The internal consistency validity of the scales used to measure the study variables was tested, in addition to measuring the convergent validity by measuring the average variance extracted.

Internal consistency validity: It means the extent to which each statement of the questionnaire is consistent with the variable to which it belongs. Therefore, the researcher measured the internal consistency of the questionnaires by calculating the correlation coefficients between the score of each statement and the total score of the variable to which it belongs. According to Kaiser (1974) study, a correlation coefficient of less than 0.5 is removed from the questionnaire.

Convergent Validity: The average variance between statements that measure the same scale is measured by calculating the average variance extracted (AVE), whose value must be greater than 0.5 according to Hair et al (2006).

The following tables show the statistical results for (correlation coefficients, standard deviation, calculated T value, and P value between the score of each statement and the total score of the variable to measure the validity of the internal consistency of the questionnaires. Also, calculating the value of the average variance extracted (AVE) to measure the convergent validity of the questionnaires through the equation model. Structural **SPSS** version **28**, as follows:

Variable	Statements	KMO	Factor loadings	Standard deviation	P. Values	Average variance extracted
Asset Management	Ma1	0.760	0.042	39.192	0.00	0.597
	Ma2	0.798	0.039	41.923	0.00	
Competitive Advantage	Ma1	0.830	0.051	43.898	0.00	0.748
	Ma2	0.798	0.035	42.721	0.00	
	Ma3	0.901	0.0602	59.978	0.00	
	Ma4	0.859	0.0610	42.784	0.00	

Source: Prepared by the researcher based on the results of the statistical analysis of the field study data

The scale of applying the first variable: All correlation coefficients for all statements are strongly correlated with the variable asset management and preventive maintenance and operational efficiency at values greater than 0.7. In addition, the values of all correlation coefficients for the statements are statistically significant at a significance level less than 0.001. Accordingly, the internal consistency validity of the scale has been achieved. Also, from the results above related to

the value of the average variance extracted AVE, its value for the variable of applying the variable asset management is $0.597 > 0.5$. Accordingly, the convergent validity of the questionnaire has been achieved.

The scale of applying the second variable: All correlation coefficients for the statements that measure dependent variable achieving competitive and financial performance and employee engagement and sustainability and market position have a value greater than 0.7. In addition, the values of all correlation coefficients for the statements are statistically significant at a significant level less than 0.0001. Accordingly, the internal consistency validity of the scale has been achieved in its three dimensions. Also, from the results above related to the value of the average variance extracted AVE for the variable of dependent variable achieving competitive, which is equal to achieved .0.748, the values of the average variance extracted dependent variable achieving competitive are: 0.748, the convergent validity of the questionnaire has been

4.3.2. Reliability of the study tool

The stability of the questionnaire refers to the stability of the questionnaire results and their non change significantly if they were redistributed to the sample individuals several times during specific time periods. To measure the stability of the questionnaires used to measure the study variables, Cronbach's alpha values were calculated using SPSS version. According to 2010 Hair et al, the value must be greater than 0.7 for the scale to be stable.

	Number of Statements	Cronbach's alpha	
Asset management	Preventive maintenance	2	
	Operational efficiency	2	

Source: Prepared by the researcher based on the results of the statistical analysis of the field study data

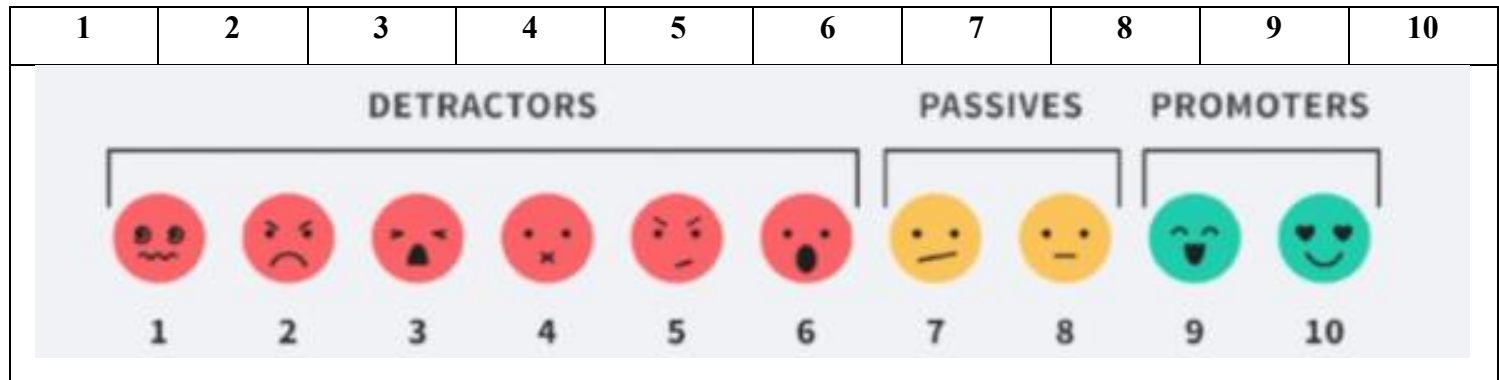
	Number of Statements	Cronbach's alpha	
Variable achieving competitive	financial performance	1	
	employee engagement	1	
	Sustainability market position	1 2	

Source: Prepared by the researcher based on the results of the statistical analysis of the field study data

4.3.4 Descriptive analysis of study variables

Descriptive analysis of study variables.

The responses of sample members to the scale items were measured. According to the five-point scale, as follows:



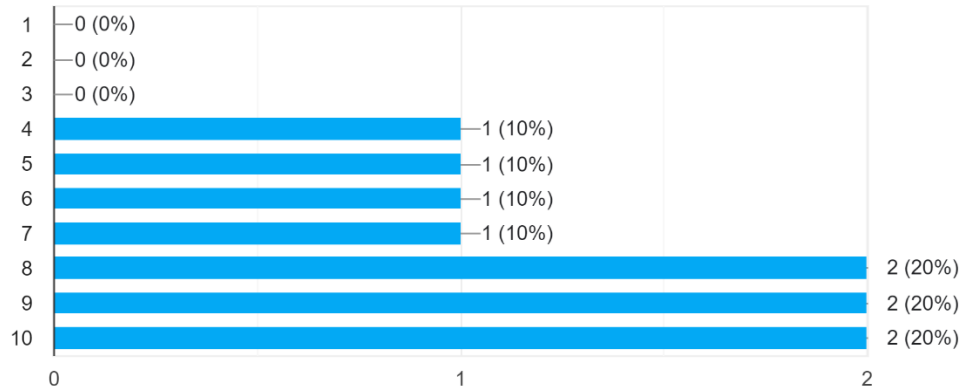
The level of importance was calculated according to the following equations:

Calculating the relative weight corresponding to each category by the arithmetic mean in (100 ÷ 10) the five-point scale is 20%

The following table shows Independent Variable: Asset Management the significance of the arithmetic means as follows:

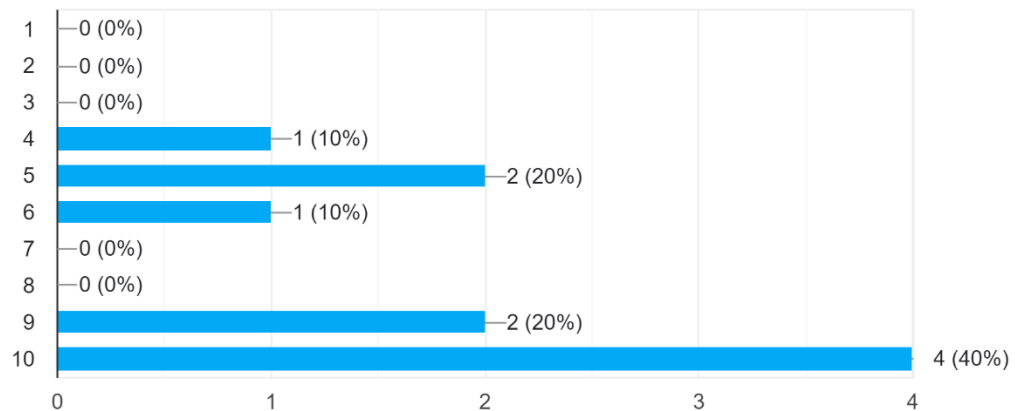
When buying an asset like a computer/work car, is a routine weekly, monthly, annual check-up done? ؟ عند شراء أحد الأصول مثل جهاز كمبيوتر /سيارة عمل، يتم إجراء فحص روتيني أسبوعي وشهري وسنوي ؟

10 responses



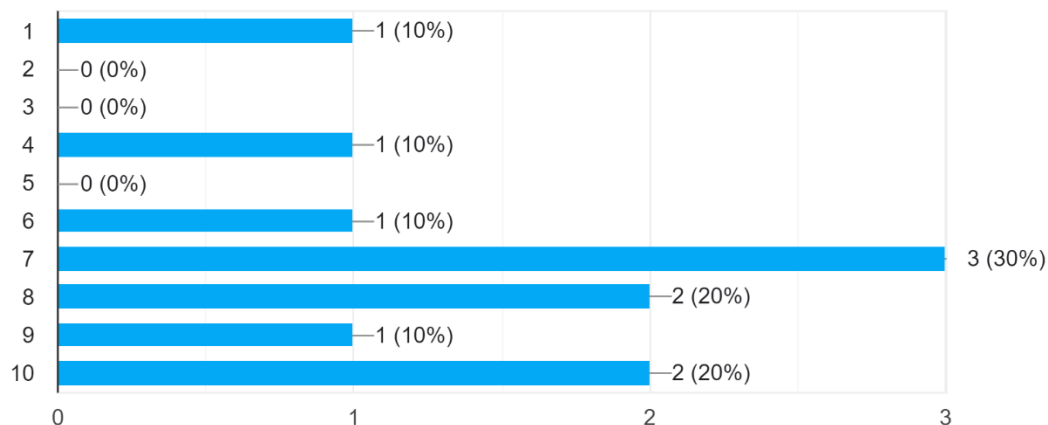
Is maintenance carried out for the asset when it needs repair or malfunction Such as car air conditioner or office equipment in 24 working hours ؟ هل ... مثل مكيف السيارة أو المعدات المكتبية في 24 ساعة عمل ؟

10 responses



Are there dilapidated assets in the company that are still in the company's location or warehouses, such as an unused or neglected asset or a car with many ...؟ زنها، كأصل غير مستخدم أو مهمل أو سيارة بها أعطال كثيرة؟

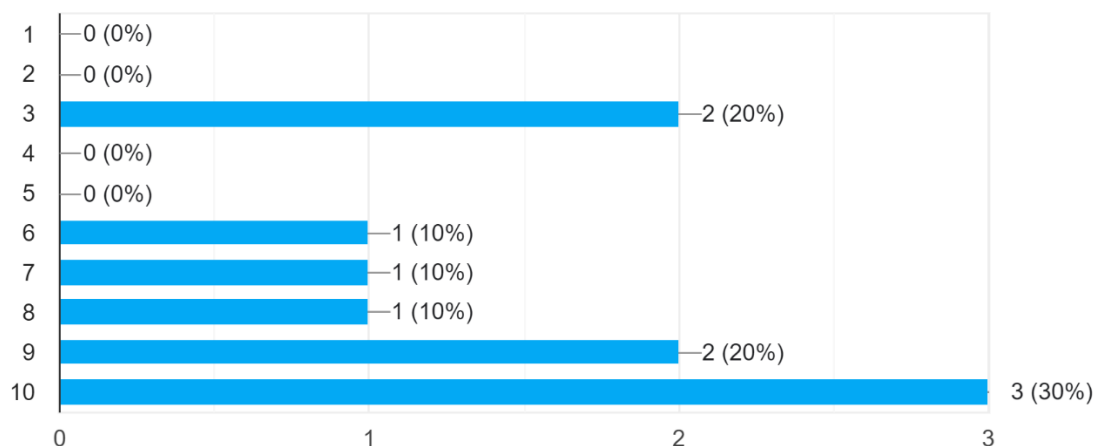
10 responses



Do you notice a culture of preventive maintenance in your company? هل تلاحظ ثقافة الصيانة الوقائية على

شركتكم؟

10 responses



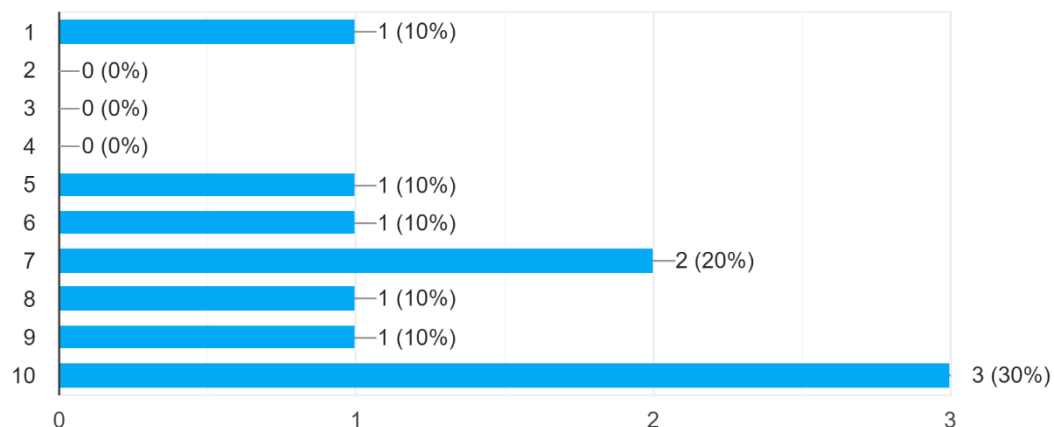
The level of importance was calculated according to the following equations:

Calculating the relative weight corresponding to each category by the arithmetic mean in (100 ÷ 10) the five-point scale is 20%

The following table shows Dependent Variable: Competitive Advantage significance of the arithmetic means as follows:

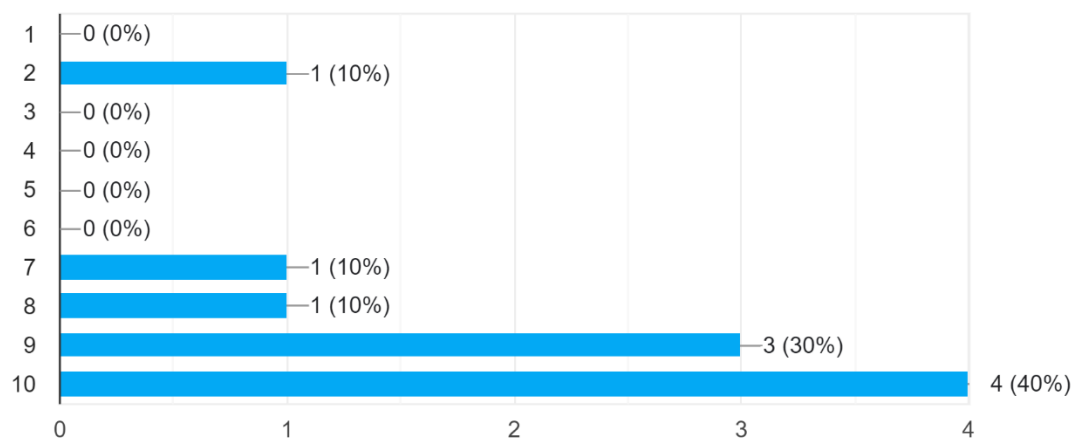
Is there a budget to maintain the assets in good and efficient condition and a regular maintenance plan for the assets ? هل هناك ميزانية للحفاظ على الاصول بحالة جيدة وكفاءة وخطة صيانة دورية للأصول ؟

10 responses

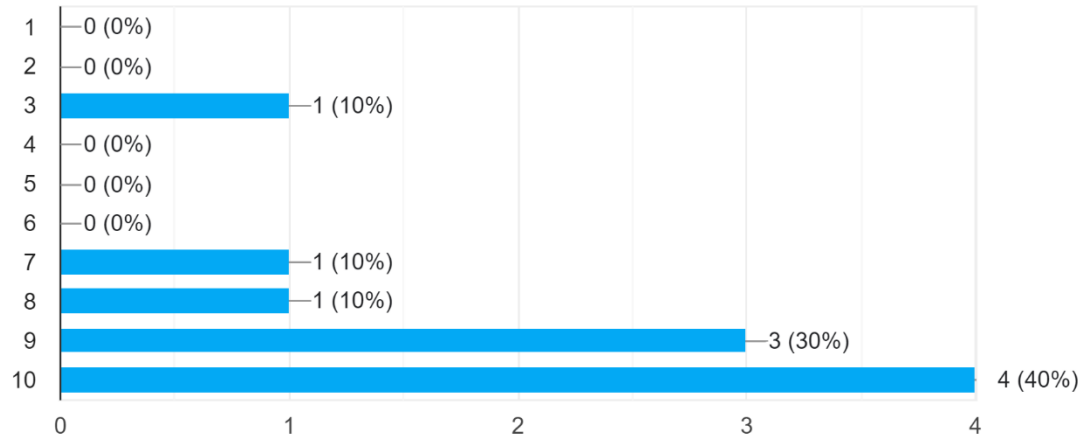


Does enhancing employee awareness and participation in asset care contribute to improving working conditions and promoting a culture of responsibility...؟ العمل وتعزيز ثقافة الاستخدام المسؤول للأصول في المنظمات؟

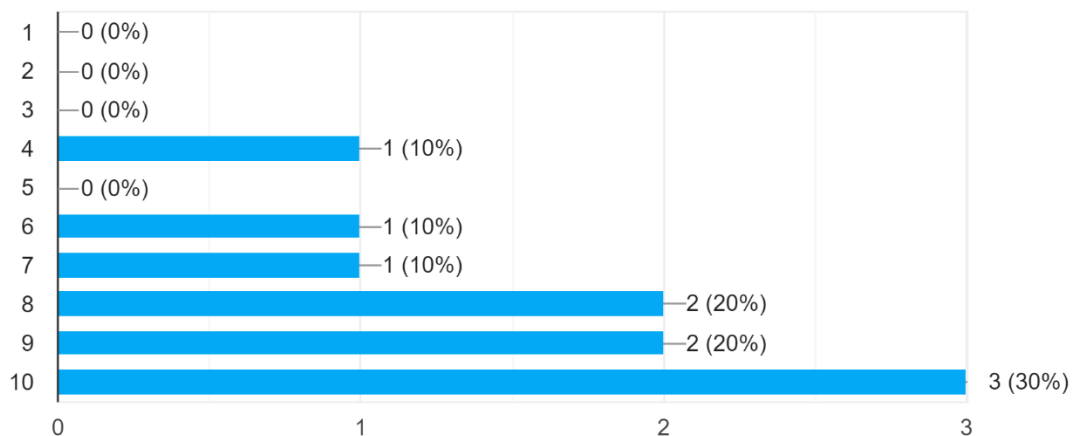
10 responses



Is it the long-term economic and social benefits of investing in preventive maintenance and enhancing asset care within organizations? هل الفوائد الاق...ثمار في الصيانة الوقائية وتعزيز رعاية الأصول داخل المنظمات؟
10 responses

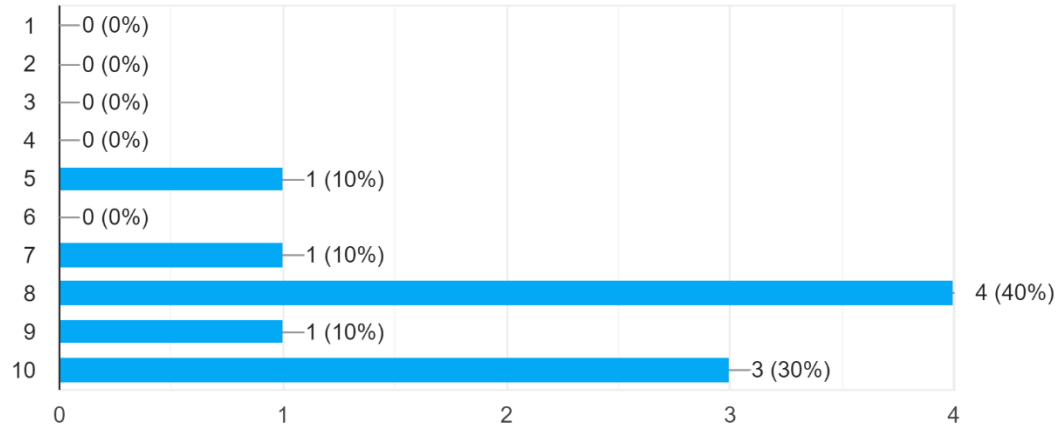


How do the size and budget of an organization affect its ability to implement effective asset management practices? كيف يؤثر حجم وميزانية المنظمة على قدرتها على تنفيذ ممارسات إدارة الأصول الفعالة؟
10 responses



can inform decision-makers, HR professionals, and operations managers to adopt proactive measures that simultaneously improve working condition...؟
 قمت على تحسين ظروف العمل وتعزيز ثقافة الشركة المستدامة؟

10 responses



4.3.5 Linear correlation coefficients between study variables

According to the descriptive results of the study variables, the descriptive statistical results regarding the independent variable (asset management application) indicated that the general trend among the study sample is approval and that its application in the sector is low, while the descriptive statistical results for the dependent variable (asset management practices) and its dimensions were at a low level in the private sector, from the point of view of the study sample.

It was found that there is a strong positive significant correlation (0.548) between the application of asset management as an independent variable and competitive advantage (total) as a dependent variable at a significance level of less than (0.01).

- It was found that there is a strong positive significant correlation between the impact of competitive advantage as an independent variable and each dimension of asset management

practices). (At a correlation coefficient: 0.756, 0.783, 0.72 0 respectively, as a dependent variable at a significance level of less than (0.01).

- It is noted from the above that the values of the correlation coefficients between the study variables are high, which indicates the strength of this correlation.

Linear correlation between the dimensions of asset management practices and the variable of competitive advantage effects, and between each other:

It is clear from the results of the previous table that there is a positive significant correlation between competitive advantage improvement practices and their dimensions). (At a significance level of (0.01)

4.3.6 Results of testing the study hypotheses

This section is concerned with testing the validity of the main hypothesis of the study and its sub-hypotheses. The statistical results that were reached using both the statistical package SEM-PLS and SPSS V.28 are presented as follows:

The main hypothesis of the study:

- There is a positive relationship with statistical significance between the application of asset management and asset management practices to the competitive advantage of companies.

Results of testing the main hypothesis of the study:

This hypothesis states that "- There is a positive relationship with statistical significance between the application of asset management and competitive advantage.

To test this hypothesis, the Simple Linear Regression Analysis method was used between the application of asset management under study as an independent variable and its impact on overall competitive advantage as a dependent variable.

Model Summary

	Model R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.806 ^a	.638	.748	.503

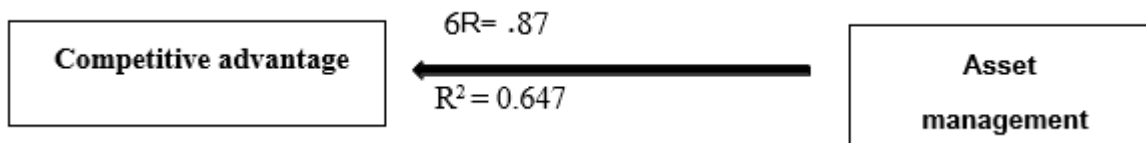
a. Predictors: (Asset management)

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	97.147	1	93.157	678.478	<.001 ^b
	Residual	50.721	349	.164		
	Total	154.778	417			

a. . Dependent Variable

b. Predictors: (Constant asset management)



The above tables show the following:

The significance level of the F-test (sig. F) is less than 0.01, which indicates the significance of the simple linear regression model at a significance level of 0.01.

The value of the correlation coefficient ($R = 0.87$) indicates a strong positive correlation between the application of asset management and overall competitive advantage.

The adjusted coefficient of determination ($2R$) indicates that 647% of the variance in overall asset management can be explained by the variance in the level of digital transformation application.

The (T). Value indicates the significance of the regression coefficient beta (β), as the calculated significance level for the t-test is less than 0.01.

Based on the previous results, the validity of the main hypothesis is accepted, which states that there is a positive statistically significant correlation between the application of asset management as an independent variable and overall competitive advantage as a dependent variable.

Chapter 5: Research limitations, Recommendations & Conclusion

5.1 Introduction

This chapter deals with the theoretical contribution and practical applications of the study, in addition to the Recommendations, study's limitations, Future studies, and the conclusion, as follows:

5.2 Theoretical contribution

The method of selecting research variables, as the research variables were not linked in a single research model and the number of previous literature linking the variables was sufficiently large, so the researcher was able through his current study to build the theoretical framework in a way that enhances the importance of science and the application of theoretical knowledge to the study variables and was able to determine the dimensions of the variables and determine the most appropriate methodology to achieve its objectives, and the appropriate tool for collecting data from the study sample was questionnaires.

5.3 Practical applications

The importance of this research lies in its practical application to Almasood Company, as the company can, for example, benefit from the research results in developing asset management and meeting the needs of service beneficiaries. In addition, the company can invest in improving asset management improvement processes, periodic maintenance, and artificial intelligence technology to improve asset management processes, which contributes to reducing costs, improving product quality, and strengthening the competitive advantage in the market. Almasood Company can also establish partnerships and expand its business to meet the market needs with good performance.

5.4 Recommendations

Considering the study results, the researcher recommends the following:

- The necessity of raising awareness about the concept of the study has highlighted the strategic importance of asset management practices as a cornerstone for securing new contracts and establishing a market edge.
- The necessity of encouraging managers to use the proposed research model advocates for a holistic asset management strategy, integrating preventive maintenance, employee engagement, and judicious resource allocation as pivotal elements for fostering sustainable competitive advantage.
- The necessity of a strong asset management framework is essential for nurturing a culture of reliability and operational efficiency, which in turn, serves as a competitive lever during business development pursuits. The selection of pertinent key performance indicators (KPIs) is vital for the oversight and governance of asset management practices. Like ISO 55001 can help establish consistent.
- The researcher suggests that Companies can leverage their well- maintained assets and proven track record of performance to build trust with potential clients and secure lucrative contracts. Selecting the most appropriate key performance indicators (KPIs) is crucial for monitoring and controlling asset management practices.

5.5 Study's limitations

5.5.1 Objective Boundaries:

The study is limited to stating the reality of management with the first asset management with its dimension's preventive maintenance and operational efficiency, and the competitive advantage with its dimension's financial performance and employee engagement and sustainability and market position.

5.5.2 Human Boundaries:

The study is limited to (mentioning the study sample of employees and administrative and managers)

5.5.3 Spatial Boundaries:

The study is limited to the geographical scope of Almsood company in the Al Khobar region

5.5.4 Temporal Boundaries:

The study will be conducted within the course of the 2024 academic year.

5.6 Future studies

Through the results reached by this study, which showed the close relationship between the asset management and its dimensions preventive maintenance and operational efficiency, and the competitive advantage and its dimensions financial performance and employee engagement and sustainability and market position, the researcher recommends that others who want to continue studies on the same topics unify these results in work environments and focus on one of the sub-hypotheses and its relationship to the study questions.

Conclusion

The intricate between asset management and competitive advantage in the petroleum services sector has been the focal point of this research project. The investigation exposed the detrimental consequences of neglecting proper maintenance, leading to the rapid deterioration of assets and hindering organizational performance across multiple dimensions. Business development and asset management are intricately connected, fostering a symbiotic relationship that drives growth and profitability in the petroleum services sector.

The study has highlighted the strategic importance of asset management practices as a cornerstone for securing new contracts and establishing a market edge. Business development professionals have been shown to capitalize on well-maintained assets and robust asset management protocols to underscore a company's dedication to reliability, efficiency, and cost-effectiveness. The proposed research model advocates for a holistic asset management strategy, integrating preventive maintenance, employee engagement, and judicious resource allocation as pivotal elements for fostering sustainable competitive advantage.

Business development professionals leverage a company's well-maintained assets and proven asset management practices as key selling points when securing new contracts. They highlight the company's commitment to reliability, efficiency, and cost-effectiveness, demonstrating a competitive advantage in the marketplace, it explored the multifaceted benefits of implementing effective asset management practices, highlighting positive impacts on operational efficiency, financial performance, market position, and sustainability. The research model proposed a comprehensive approach to asset management, encompassing preventive maintenance, employee engagement, and resource allocation, as a key driver of sustainable competitive advantage. It further acknowledged the potential moderating influence of factors like company size, industry

standards, and technological advancements on the effectiveness of these practices. The impact of asset management extends far beyond the proposed model, significantly influencing the strategic landscape of businesses within the petroleum services sector. Effective asset management practices directly contribute to enhanced Business Analysis Capabilities By gathering and analyzing data on asset performance, maintenance costs, and resource utilization, companies gain valuable insights for informed decision-making. This empowers business analysts to identify trends, predict potential equipment failures, and optimize resource allocation strategies. Improved Business Development Efforts a strong asset management framework fosters a culture of reliability and operational efficiency, which translates into a competitive advantage during business development activities. Companies can leverage their well- maintained assets and proven track record of performance to build trust with potential clients and secure lucrative contracts. Selecting the most appropriate key performance indicators (KPIs) is crucial for monitoring and controlling asset management practices. Successful business development efforts translate into increased revenue streams. This influx of capital allows for further investment in asset management initiatives. Companies can allocate resources for preventive maintenance programs, employee training, and the adoption of new technologies that enhance asset performance and overall operational efficiency. This virtuous cycle strengthens the company's competitive edge and positions it for long-term success in the dynamic and challenging world of petroleum services, the research model provides a valuable theoretical framework, translating these concepts into practical application requires a multi-pronged approach. Executive leadership plays a crucial role in fostering a culture of asset care within the organization.

The cultivation of a strong asset management framework is essential for nurturing a culture of reliability and operational efficiency, which in turn, serves as a competitive lever during business development pursuits. The selection of pertinent key performance indicators (KPIs) is vital for the oversight and governance of asset management practices. Like ISO 55001 can help establish consistent asset management policies, objectives, processes, and governance. This ensures that asset documentation aligns with the organization's strategic goals and complies with global

standards. The successful execution of business development strategies leads to augmented revenue streams, facilitating further investments in asset management initiatives. This creates a virtuous cycle that fortifies a company's competitive position and paves the way for enduring success in the dynamic and demanding realm of petroleum services.

This research has meticulously examined the interplay between asset management and competitive advantage within the petroleum services sector. The findings underscore the perilous outcomes of neglecting asset maintenance, which precipitates a swift degradation of assets and a consequent decline in organizational performance across various dimensions. The symbiotic relationship between business development and asset management has emerged as a critical driver of growth and profitability within the industry.

The research acknowledges the moderating role of external factors such as company size, industry benchmarks, and technological advancements on the efficacy of asset management practices. The impact of these practices extends significantly, shaping the strategic framework of businesses within the sector. Effective asset management is revealed to be instrumental in bolstering Business Analysis Capabilities, enabling companies to harness data for informed decision-making, trend identification, and optimization of resource allocation.

Executive leadership is paramount in instilling an ethos of asset stewardship within the organization, ensuring that asset management is not merely a policy but a fundamental aspect of the corporate identity. It is this commitment to excellence in asset management that will ultimately distinguish industry leaders from the rest, propelling them towards a future of sustainable growth and competitive superiority.

List of references

Carnero, M. C., & González-Prida, V. (2016, August 24). Optimum Decision Making in Asset Management. <http://books.google.ie/books?id=eYPvDAAAQBAJ&printsec=frontcover&dq=Asset+management+is+a+process+that+involves+planning>

G. Chattopadhyay, H. K. Menta Venkata, T. Oseni, V. Reddy, A. Singh and H. Kandra, “Issues and Challenges with Information Systems for Asset Management, Maintenance and Reliability,” Doi: 10.1109/ICMIAM56779.2022.10146822. 2022). Issues and Challenges with Information Systems for Asset Management, Maintenance and Reliability.

Ford, G. L., Ancell, G., Hill, E. S., Levine, J., Reali, C., Rijks, E., & Sanchis, G. (2022). Strategic Asset Management. In Power System Assets: Investment, Management, Methods and Practices (pp. 97-140). Cham: Springer International Publishing.

Al-Qahtani, S., & Zayed, T. (2012). The importance of asset management in oil and gas industry: A case study of Saudi Aramco. In SPE Kuwait Oil & Gas Show and Conference (pp. 1943-1954).

Society of Petroleum Engineers.

Hiba, J. C. (1998, January 1). Improving Working Conditions and Productivity in the Garment Industry. International Labour Organization. <http://books.google.ie/books?>

Rau, C., Zbiek, A., & Jonas, J. M. (2017, April 28). Creating Competitive Advantage from Services. Research-Technology Management, 60(3), 48–56. <https://doi.org/10.1080/08956308.2017.1301003>

Rau, C., Zbiek, A., & Jonas, J. M. (2017, April 28). Creating Competitive Advantage from Services.

Research-Technology Management, 60(3), 48–56. <https://doi.org/10.1080/08956308.2017.1301003>

Baek, S., & Lee, D. H. (2023, September 4). Can R&D investment be a key driver for sustainable development? Evidence from Korean industry. Corporate Social Responsibility and Environmental Management. <https://doi.org/10.1002/csr.2607>

Porter, M. E., & Millar, V. E. (1985, January 1). How information gives you competitive advantage. <http://books.google.ie/books?>

Ngulumbu, B. M., & Waswa, F. (2022, January 22). Abdul, G., A., & Sehar, S. (2015). Conflict management and organizational performance: A case study of Askari Bank Ltd. Research Journal of Finance and Accounting. 6(11), 201. Adhiambo, R., & Simatwa, M. (2011). Assessment of conflict management and resolution in public secondary schools in Kenya: A case study of Nyakach District.

International Research Journal 2(4), 1074-1088. Adomi, E., & Anie, S. (2015). Conflict management in Nigerian University Libraries. Journal of Library Management, 27(8), 520-530. <https://doi.org/10.1108/01435120610686098>

Vanier, D. J. “Dana” (2001). “Why Industry Needs Asset Management Tools”, Journal of Computing in Civil Engineering. American Society of Civil Engineers. 15: 35-43.

Doi:10.1061/(ASCE)0887- 3801(2001)15:1(35). S2CID 110643751.

Keykhosravi, M., Dehyouri, S., & Mirdamadi, S. M. (2023, December). Modeling the environmental performance by focusing on environmental behavior rural farmers. Environmental and Sustainability Indicators, <https://doi.org/10.1016/j.indic.2023.100309>

Duffuua, S. O., & Raouf, A. (2015, July 11). Planning and Control of Maintenance Systems. Springer. <http://books.google.ie/books?>

Agyekum, K., Botchway, S. Y., Adinyira, E., & Opoku, A. (2021, May 28). Environmental performance indicators for assessing sustainability of projects in the Ghanaian construction industry. Smart and Sustainable Built Environment, 11(4), 918–950. <https://doi.org/10.1108/sasbe-11-2020-0161>

McMillan, C. (2017, October 1). ASSET RESOURCE STRATEGIES AN INTEGRATED FRAMEWORK TO ORCHESTRATE LONG TERM COMPETITIVE ADVANTAGE.

International Journal of Strategic Management, 17(2), 75–96. <https://doi.org/10.18374/ijsm-17-2.6>

Duffuaa, S. O., & Raouf, A. (2015, July 11). Planning and Control of Maintenance Systems. Springer. <http://books.google.ie/books?>

The impact of strategic intelligence and asset management on enhancing competitive Advantage: The mediating role of cybersecurity.

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<https://www.connectedpapers.com/main/575d72acf3f5244bd531e0011256477864dc8b0d/Asset-managementtechniques/graph>.

<https://doi.org/10.3390/pr11071956> .

DOIDOI 10.1108/01409170710759694

Appendices Chapter

Questionnaire

Dear Participant,

We are conducting a study on the “Impact of Asset Management on Achieving Competitive Advantage” which is a crucial aspect of our research for obtaining a bachelor’s degree in project management. Your insights and experiences are invaluable to us, and we would greatly appreciate your participation in this questionnaire. The following questions are designed to understand your perspective on how effective asset management can contribute to a company’s competitive edge. We assure you that all responses will be kept confidential and will only be used for academic research purposes. Please take a moment to provide your honest and thoughtful responses to each question. Your cooperation is highly appreciated. Thank you for your time and valuable contribution to this study.

Best regards

Introduction

The research study focuses on their impact of asset management on competitive advantage in the petroleum services business. We believe to gain insight into how successful asset management strategies, resource allocation, and employee engagement impacts multiple dimensions of competitive advantage. Our study uses a mixed methodologies approach, including key persons and quantitative data analysis. Through case studies.

Research Philosophy: Interpretivist:

This research will adopt an Interpretivist philosophy, acknowledging the subjective experiences and interpretations of individuals and organizations regarding asset management practices and their impact on achieving competitive advantage.

Research Approach: Mixed Methods:

A combined deductive and inductive approach will be utilized. The study will begin by reviewing existing literature and theories on asset management and competitive advantage (deductive), followed by the collection of qualitative and quantitative data to gain deeper understanding and explore the phenomenon in the context of the petroleum services sector (inductive).

Research Strategy: Survey (Case Studies):

This project will employ a multiple case study design, focusing on company in the petroleum services sector, Al-Khobar – Kingdom of Saudi Arabia the petroleum services sector, asset management practices, and competitive positions. This approach allows for in-depth exploration of the real-world complexities and potential variations in the relationship between asset management and competitive advantage.

Mixed Methods: Qualitative and Quantitative

This research will combine both qualitative and quantitative data collection and analysis techniques to gain a comprehensive understanding of the phenomenon.

Qualitative data: Semi-structured interviews with key personnel (managers, engineers, maintenance technicians) from each case study company to gather insights on their experiences, perceptions, and challenges regarding asset management practices and their perceived impact on the organization's performance. Document analysis of company reports, policies, and procedures related to asset management. Quantitative data collection of secondary data from industry reports, financial databases, and relevant performance metrics (maintenance costs, equipment downtime, productivity levels, customer satisfaction) to assess the potential associations with asset management practices.

Cross-sectional:

This study will capture data at a single point in time, offering a snapshot of the current state of asset management practices and their perceived impact on competitive advantage within the selected case companies.

Research design

In this template, we'll present a structure that covers five important methodological matters (as outlined above). This structure is loosely based on "research onion".

Research philosophy (interpretivist)
Research approach (deductive)
Research strategy (survey, case study.)
Research choice (mixed)
Time horizon (cross-sectional)
Data collection and analysis techniques
Research Design:

Research Philosophy: Interpretivist Research Approach: Deductive Research Strategy: Survey,
Case Study Research Choice: Quantitative
Time Horizon: Cross-sectional
Data Collection and Analysis Techniques: Statistical analysis of survey results

Research population & Sampling methods and technique

This research was conducted at petroleum services. Time The study was conducted for one month from the distribution of the questionnaires to the collection of related questionnaires. The measurement scale that the researcher uses is a data processing system using a Likert Scale which aims to measure a person's attitude towards a statement, for example, agree, disagree, good, not good, happy, or not happy. Each variable was given ten answer options on a scale of 1 to 10 which were needed for quantitative analysis. So, the population in this study were employees of petroleum services. The total population in the study is as many as 30 respondents. Therefore, the sample is employees of petroleum services. and the research criteria are employees who know the management of fixed assets at petroleum services. The sample in this study was 30 employees with the following details:

The independent variable (Asset Management) the researcher is relied on the questionnaire of Mahmoud (2024). To measure the independent variable (Asset Management), in terms of three dimensions namely: M1a, M1b, with overall 4 items for the whole variable. As, M1a dimension consists of 2 items, M1b dimension consists of 2 items. The instrument type is 10 – points Likert-scale type. Hence, 1= strongly disagree, while 10= strongly agree

Table (1) for the instrument of the independent variable (Asset Management)

Variable	Dimensions	Number of Items	Sources
M1	M1a	2	(Mahmoud, 2024)
	M1b	2	
	Over all	4	

Sources: The student

The Dependent Variable (Competitive Advantage) researcher is relied on the questionnaire of Mahmoud (2024). In order to measure the dependent variable (Competitive Advantage), in terms of three dimensions namely: M2a, M2b, M2c, M2d, with overall 5 items for the whole variable. As, M2a dimension consists of 1 item, M2b dimension consists of 1 item, M2c dimension consists of 1 items M2d dimension consists of 2 items. The instrument type is 10 – points Likert- scale type. Hence, 1= strongly disagree, while 10= strongly agree

Table (2) for the instrument of the dependent variable (Competitive Advantage)

Variable	Dimensions	Number of Items	Sources
M2	M2a	1	(Mahmoud, 2024)
	M2b	1	
	M2c	1	
	M2d	2	
	Overall	5	

Sources: The student

Table of research instruments:

Thephrase	Degree agree
Independent Variable Asset Management	1_2_3_4_5_6_7_8_9_10
When buying an asset like a computer/work car, is a routine weekly, monthly, annual check-up done?	
Is maintenance carried out for the asset when it needs repair or malfunction Such as car air conditioner or office equipment in 24 working hours?	

Are there dilapidated assets in the company that are still in the company's location or warehouses, such as an unused or neglected asset or a car with many faults?	
Do you notice a culture of preventive maintenance in your company?	

Dependent Variable Competitive Advantage	1_2_3_4_5_6_7_8_9_10
Is there a budget to maintain the assets in good and efficient condition and a regular maintenance plan for the assets?	
Does enhancing employee awareness and participation in asset care contribute to improving working conditions and promoting a culture of responsible use of assets in organizations?	

Is it the long-term economic and social benefits of investing in preventive maintenance and enhancing asset care within organizations?	
How does the size and budget of an organization affect its ability to implement effective asset management practices?	
Can inform decision-makers, HR professionals, and operations managers to adopt proactive measures that simultaneously improve working conditions and promote a sustainable corporate culture?	

Conclusion

The intricate between asset management and competitive advantage in the petroleum services sector has been the focal point of this research project. The investigation exposed the detrimental consequences of neglecting proper maintenance, leading to the rapid deterioration of assets and hindering organizational performance across multiple dimensions. Business development and asset management are intricately connected, fostering a symbiotic relationship that drives growth and profitability in the petroleum services sector.

Business development professionals leverage a company's well-maintained assets and proven asset management practices as key selling points when securing new contracts. They highlight the company's commitment to reliability, efficiency, and cost-effectiveness, demonstrating a competitive advantage in the marketplace, it explored the multifaceted benefits of implementing effective asset management practices, highlighting positive impacts on operational efficiency, financial performance, market position, and sustainability. The research model proposed a comprehensive approach to asset management, encompassing preventive maintenance, employee engagement, and resource allocation, as a key driver of sustainable competitive advantage. It further acknowledged the potential moderating influence of factors like company size, industry standards, and technological advancements on the effectiveness of these practices. The impact of asset management extends far beyond the proposed model, significantly influencing the strategic landscape of businesses within the petroleum services sector. Effective asset management practices directly contribute to enhanced Business Analysis Capabilities By gathering and analyzing data on asset performance, maintenance costs, and resource utilization, companies gain valuable insights for informed decision-making. This empowers business analysts to identify trends, predict potential equipment failures, and optimize resource allocation strategies. Improved Business Development Efforts a strong asset management framework fosters a culture of reliability and operational

efficiency, which translates into a competitive advantage during business development activities. Companies can leverage their well-maintained assets and proven track record of performance to build trust with potential clients and secure lucrative contracts. Selecting the most appropriate key performance indicators (KPIs) is crucial for monitoring and controlling asset management practices. Successful business development efforts translate into increased revenue streams. This influx of capital allows for further investment in asset management initiatives. Companies can allocate resources for preventive maintenance programs, employee training, and the adoption of new technologies that enhance asset performance and overall operational efficiency. This virtuous cycle strengthens the company's competitive edge and positions it for long-term success in the dynamic and challenging world of petroleum services, the research model provides a valuable theoretical framework, translating these concepts into practical application requires a multi-pronged approach. Executive leadership plays a crucial role in fostering a culture of asset care within the organization.

جامعة ميدأوشن

كلية الإدارة

بكالوريوس إدارة المشاريع



أثر إدارة الأصول في تحقيق الميزة التنافسية للشركات في قطاع الخدمات البتروولية، الخبر – المملكة العربية السعودية

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