A STUDY OF SAUDI MANUFACTURING FIRMS ON QUALITY COSTS' MEDIATING ROLE IN THE LINK BETWEEN FINANCIAL PERFORMANCE AND MANAGEMENT ACCOUNTING SYSTEMS

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Abstract: This study aimed to ascertain the consequences of cost quality as a moderator in the relationship between manufacturing firms' financial performance on the Saudi Stock Exchange and management accounting systems. To gather data to answer the study questions, three questionnaires were developed. The first section addresses quality costs, the second section addresses the management accounting system (value chain, target cost, and just-in-time), and the third section addresses financial performance. The findings: Financial performance is statistically affected by the value chain, target cost, and just-in-time, and quality costs are also statistically affected by these factors. Value chain, target cost, and just-in-time relationships are all impacted by quality expenses, which have a partial mediating effect on financial performance due to their statistically significant impact. The link between financial performance and management accounting systems (value chain, target costs, and just-in-time) in Saudi manufacturing enterprises is consequently accounted for by the quality costs' statistically significant mediating effect. The researcher recommended that more research be done in a variety of economic domains to examine the mediating role that quality costs have in the link between financial performance and management accounting systems, as well as the manner in which quality costs function as a moderator in different national contexts.

Keywords: Quality Cost, Management Accounting systems, Financial Performance, Saudi Stock Exchange, and Saudi Manufacturing Firms.

1. INTRODUCTION:

The present period is recognized as the information and fast-technology era. Data and information that need to be interpreted, treated, measured, and analyzed have grown significantly in recent years. Systems for management accounting are being used more often because of the mediator aspects (quality costs, just-in-time, target cost, and value chain). Techniques in management accounting are regarded as advanced techniques. Given that conventional techniques are insufficient for assessing a company's prospects of survival and success (Hasan et. al, 2023).

One method that has become popular for identifying issues brought on by the contemporary production environment is the quality cost system. The inability to identify the issues could result in industrial enterprises failing. As a result, industrial businesses react quickly to

difficulties posed by the competition and strive to adjust more flexibly and effectively (Al-Mekhlafi and Othman, 2023).

The rationale lies in financial performance, which also serves as an indication and a prerequisite for ensuring its continuation. Since money is a company's lifeblood, financial performance metrics help organize, manage, and come to wise conclusions. By identifying and addressing negative anomalies, businesses seek to enhance their financial success. It is evident how important performance is in revealing the advantages and disadvantages of the financial hub. One of the key markers for identifying and avoiding weaknesses and maintaining and increasing strengths in a company is its financial status (Al-Mekhlafi, 2023).

Most businesses closely track the costs associated with preserving product quality. Common types of expenses associated with quality include preventive, assessment, internal, and external failure costs. The management uses a quality-cost report, updated regularly, to monitor and control the costs associated with supplying high-quality goods and services (Hilton & Platt 2020).

1.1 Study's Problem

The usage of outdated management accounting systems by industrial businesses directly impacts the cost and quality of their products since they have not kept up with newer systems, procedures, and approaches. Local products risk losing their competitive edge and being unable to compete with imported goods, which could lead to their withdrawal from domestic and international markets (Al Junidi & Warrad, 2022). The link between competitive prices and market costs is not understood by management. As quality costs are the Treasury's revenue stream, it is imperative to closely examine how the management accounting system is used and how this affects the financial performance of industrial firms. You support it with receipts for any income taxes paid and other costs. Each nation's development, progress, and prosperity largely depend on its industry and its level of success. The study's problem can be defined as being restricted to providing answers to the following questions:

Main question: How do the financial performance and the management accounting system dimensions of manufacturing firms listed on the Saudi Stock Exchange relate to quality costs as a middleman factor?

Sub-questions:

1. How do quality expenses as a middleman affect the link between the financial performance and the value chain of manufacturing firms listed on Saudi Stock Exchange?

2. How do quality expenses as a middleman affect the link between the financial performance and the target costs of manufacturing firms listed on Saudi Stock Exchange?

3. How do quality expenses as a middleman affect the link between the financial performance and just-in-time of manufacturing firms listed on Saudi Stock Exchange?

1.2 study's Objective

This study aims to analyze the influence of quality costs as a middleman on the link between the financial performance and management accounting systems of manufacturing enterprises listed on Saudi Stock Exchange.

2. Contextual Theory and Review of Literature

2.1 Contextual Theory

2.1.1 Conceptions

1. Quality Cost: A product is said to have high conformance quality if it fulfills or surpasses its design standards and is free from flaws that impair its functionality or appearance. Encountering, locating, and resolving errors that lower compliance quality results in four quality expenses: assessment, internal, external, and prevention costs. Preventive costs fund initiatives meant to stop faults before they start. The purpose of appraisal expenses, also known as inspection charges, is to find defective products before they are distributed to customers. Finding flaws before products are distributed to customers reduces internal failure costs. Delivering a defective product to clients results in external failure costs (Garrison et. al, 2021).

2. Value chain: a cost that, should it be removed, would lower the actual or perceived value that users derive from the good or service. Within the Provalue instance, value-added costs refer to particular product characteristics and aspects that consumers find appealing, like dependability, sufficient memory, preinstalled software, and timely customer support (Datar & Rajan, 2021).

3. Target Costs: encompass all costs, variable and fixed, in the short term, as a company's pricing and revenues must eventually outpace its overall costs to stay in business. On the other hand, managers consider costs that fluctuate in the short term when making judgments about short-term pricing (Warren & Tayler, 2020).

4. Just-in-time concept: The point at which a business has all the resources required to produce a product and the point at which the production process is finished. In contrast to other lead times, this one should be entirely controllable internally and is dependent on internal elements, including manpower, waste, machinery downtime, PPE availability, and equipment efficiency. Businesses in supply chains, manufacturing, and project management look at lead times before, during, and after processing. Through the process of comparing results to pre-established benchmarks, they can detect inefficiencies (Bhimani et. al, 2019).

5. Financial Performance: defined as the accomplishment of the firm's financial objectives over a predetermined length of time, including the acquisition and allocation of money based on variables including profitability, leverage, efficiency, and sufficient capital. To make decisions based on financial performance or the enterprise's capacity to monitor and manage its assets, corporate managers can use data from capital change, profit and loss, balance sheet, and cash flow (Celestin, 2021).

Financial performance is frequently evaluated using indicators such as return on equity, profit margin, return on assets, earnings per share, price/earnings ratio, excess value, return on capital, and economic value added (Atkinson et. al, 2019).

2.2 Literature Review

Al-Khalidi (2015) aimed at classify the impacts of management accounting techniques according to the factors deemed most important for the subject matter of the study (target costs, timely manufacturing, management-based activities, balanced scorecards, and cost-based activities in the make decision process of Kuwaiti manufacturing enterprises). Most noteworthy finding concerns the decision-making procedures in Kuwaiti industrial businesses and

management based on activities. It has to do with the factors associated with management accounting systems and their statistically significant impact (cost based on activities, balanced scorecard, target cost, and timely manufacturing). The primary recommendation is that Kuwaiti manufacturing enterprises should employ systems for management accounting as a means of communicating with and respond to economic and social forces, taking into consideration their many domains.

Bani Younis and Abu Hussein (2018) aimed to assess the effect of prompt procedure of manufacturing outputs within the rivalry approaches of Jordanian corporations with public shares in the manufacturing sector. One of the majority notable findings is that, when compared to competitive strategies such as cost leadership, differentiation, and concentration strategies at the level of statistical significance, the outcomes of the proper technique for manufacturing —which include lowering manufacturing costs, enhancing the quality of the products and cutting waste, lowering the time factor and gaining a competitive edge—have a statistically significant impact on corporations with public shares in the manufacturing sector in Jordan. Most crucial advice is to enhance the leaders' and departments' comprehension of the results, efficiency, and product quality of the manufacturing method.

Adu-Gyamf et. al (2020) aimed to investigate how Ghanaian manufacturing enterprises' performance was affected by management accounting methods. Data from 200 managers of manufacturing companies were gathered for the study using a quantitative research methodology, and the managers the probability simple random sampling procedure was used to select them. With SPSS, data analysis was carried out. Regression analysis was used to look into the relationship between management accounting practices and performance. As per the research outcomes, Manufacturing firms in Ghana mostly employ strategic management, performance evaluation, budgeting, and information for decision-making as management accounting techniques. Also, the performance of the industry is enhanced by these procedures. The researchers recommended that to enhance performance, managers must follow the majority of these management accounting practices.

Asikogu et. al (2021) aimed to examined management accounting techniques' effects on Nigerian construction companies' business performance. The goals were to evaluate the level of firm performance of Nigerian construction enterprises and investigate the impact of strategic analysis, budgeting techniques, and activity-based costing (ABC) on firm performance. The 35 largest construction companies made up the study's target population, and it employed a quantitative research design. Thirteen companies made up the sample. 170 managers' answers to a questionnaire were utilized in the study to collect data. Descriptive statistics and inferential analysis were employed in the investigation. The study discovered a positive correlation between firm performance and strategic analysis, budgeting procedures, and management accounting methodologies. As per the research outcomes, the businesses used modern management accounting strategies to boost productivity. As per the research outcomes, the majority of businesses employed both internal and external analysis to boost output. The survey comes to the conclusion that many businesses did not include all departments in the budgeting process. According to the report, businesses should allocate more resources to projects in order to finish them on schedule. The study suggests that in order to improve the business climate and realize better performance from construction enterprises, the policies should be strengthened through research and ongoing review.

Saymeh (2021) aimed to understand how certain management accounting instruments affect financial performance. Financial managers and accountants employed by these organizations were given study questionnaires to complete; of these, 100 were collected, 96 of which were deemed legitimate for analysis. The researchers employed the statistical software SPSS to test the study assumptions. The results of the study demonstrated that, in contrast to the value chain and target costs, which had no discernible effects on the evaluated organizations' financial performance, time and quality costs had a considerable beneficial impact.

Farayola et. al (2022) aimed to assess how management accounting practices affect the financial performance of Nigerian manufacturing companies. This study aims to ascertain whether management accounting techniques are useful for performance evaluation in manufacturing companies, as well as to assess the correlation between manufacturing firms' success and their use of these techniques. Additionally, it seeks to ascertain whether management accountants in manufacturing firms use these techniques for data analysis. Secondary and primary sources of information were consulted. However, because this is a survey study, the data will be gathered via questionnaires and interviews. The sample technique utilized in the study is simple random sampling. Sixty-seven staff members were chosen at random from the intended group to participate in the study. The study's conclusions demonstrate that management accounting strategies have a big impact on how manufacturing firms are evaluated for success. The study's recommendations were based on the findings, which stated that companies should hire qualified accountants, familiarize themselves with the different financial records that must be kept, and learn about the laws that impact their business model before beginning operations. It is evident from the results that organizations rely heavily on management accounting to help them make decisions, and that management accounting procedures are indispensable. Techniques that would support the achievement of corporate goals should be adopted by management. The methods used should be evaluated frequently to eliminate any potential weak points.

Alrjoub et. al (2023) aimed at the middleman quality expenses influence on the link between financial performance and management accounting techniques of the manufacturing enterprises listed on Amman Stock Exchange. A customized survey instrument was employed to gather information from a randomized sample of 311 individuals. The findings indicate that quality cost functions as a statistically significant mediating factor in the link between the financial performance and (target cost, just-in-time production, and value chain) of manufacturing enterprises listed on Amman Stock Exchange. The researchers suggested applying artificial intelligence, big data, and data science methods since these are important and useful instruments for raising the standard of financial performance and significantly advancing the primary goal.

Baliyan et. al (2023) aimed to investigating how management accounting techniques affect Botswana's manufacturing companies' performance. The study used a quantitative research methodology, and information was gathered from four significant Botswana manufacturing businesses throughout a range of sectors, including building and food processing. A deliberate selection of forty participants was made from managers and accounting staff at particular organizations. Regression modeling and the statistical software for the social sciences (SPSS)

version 25.0 were employed in the data analysis. Regression analysis was employed in order to look into the relationship between management accounting practices and performance. Strategic management, budgetary systems, performance assessment systems, costing systems, and information for decision-making are the main management accounting strategies used by Botswana's manufacturing enterprises, according to the study. The performance of the nation's manufacturing businesses is improved by these efforts. Additionally, the researcher recommends that managers adhere to most of these management accounting principles in order to enhance performance.

Oladele et. al (2023) aimed to assess how SMEs' performance relates to management accounting methods (as demonstrated by balance scorecards, benchmarking, and value chain accounting); The research also examined the role that accounting information quality plays as a middleman in the link between the performance of SMEs and the management of accounting practices. 207 owners and managers of SMEs in Oyo State, Nigeria, were sampled for the study, which used a survey research approach. Primary Study-related data were acquired via a survey, and partial least squares (PLS) techniques were then utilized to examine the information. The study's conclusion showed a significant favorable direct correlation between SMEs' performance and balanced scorecards and benchmarks. The findings, however, indicate that there is little correlation between value chain costing and the success of SMEs. Furthermore, this study only discovered a strong positive mediation influence of accounting information quality on the performance of SMEs and the balanced scorecard relationship. Therefore, the study concludes that the performance of SMEs is positively correlated with management accounting techniques (balanced scorecard, value chain costing, and benchmarking) and that the quality of accounting information mediates the relationship. The researcher suggested that in order to manage their business processes and position themselves for continuous improvement, balanced scorecards, benchmarking, and the use of high-quality accounting information as a decision-support tool are all things that owners and managers of SMEs should put into practice.

3. methodology and study's design

3.1 Study's Design

The study used an exploratory and descriptive methodology. To address research issues and achieve the study objectives, questionnaires were created.

3.2 Hypotheses of the study

H1: Quality costs do not significantly affect the link between the manufacturing enterprises' financial performance and the value chain on the Saudi Stock Exchange.

H2: Quality costs do not significantly affect the link between the manufacturing enterprises' financial performance and the target costs on the Saudi Stock Exchange.
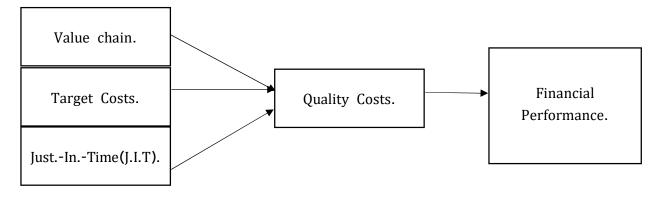
H3: Quality costs do not significantly affect the link between the manufacturing enterprises' financial performance and the just-in-time on the Saudi Stock Exchange.

3.3 Sample, Analysis Unit, and Population

This study looked at the moderating quality expenses influence on the link between financial performance and the management accounting systems of manufacturing enterprises (42 enterprises) listed on Saudi Stock Exchange. Accountants, financial managers, assistant managers, and General managers that work for Saudi manufacturing businesses that produce

"Raw Materials" and are listed on Saudi Exchange —make up the research population at the end of first quarter 2023 (197 staff). The entire population was represented in the sample.

3.4 Figure #1 highlights the research paradigm.
The research model is depicted in the following figure.

3.5 Findings and Discussion
In order to respond to the research questions
Each of the three dimensions of management accounting systems is treated independently using Baron & Kenny's Steps approach, as follows:
A. To ascertain the influence of quality expenses as a middleman factor on the connection between the financial performance and the value chain of Saudi Stock Exchange-listed manufacturing companies. Steps method used by Baron and Kenny (Baron & Kenny, 1986).
Stage #1: A simple linear regression determines the direct link between the dependent variable (financial performance) and the independent variable (value chain).
Table1. Displays conclusions of a simple linear regression research investigation looking at the link between financial performances and the value chain, path (A).

Regression coefficient.	Estimate	Standard Error	t	Sig.
Constant	3.953	0.197	13.976	0.0000
value chain	0.456	0.038	4.785	0.0000

Table (1) indicates value chain has (t = 4.785) having statistical significance level (0.000), less than the statistical significance threshold (0.05). Given that the value chain's direct influence's regression coefficient is statistically significant, this suggests that the value chain has an effect on financial performance is (0.456), with (0.038) as the standard error.
Stage #2: A simple linear regression determines the direct connection between the dependent variable (quality cost) and the independent variable (value chain).
Table2. Demonstrates the outcomes of a simple linear regression investigation into the link between quality cost and the value chain, path (B).

Regression coefficient.	Estimate	Standard Error	t	Sig.
Constant	2.909	0.252	12.764	0.000
value chain	0.288	0.063	4.610	0.000

Table (2) indicates value chain has (t = 4.610) having a statistical significance level (0.000), less than the statistical significance threshold (0.05). Given that their direct effect's regression coefficient is statistically significant, the value chain's influence on quality costs is evident is (0.288), with (0.063) as the standard error.

Stage #3: A simple linear regression determines the direct influence between quality costs and value chain, also between financial performances and value chain.

Table3. Demonstrates the findings of a simple linear regression investigation of the connection between financial performance, quality-costs, and the value chain, path (C).

Regression coefficient.	Estimate	Standard Error	t	Sig.
Constant	1.595	0.292	5.410	0.000
Value chain	0.143	0.063	3.715	0.000
Quality Costs	0.578	0.043	8.021	0.000

Table (3) indicates value chain has (t = 3.715) having statistical significance level (0.000), less than the statistical significance threshold (0.05). This suggests that the quality cost has a value and value chain affects the financial performance in a statistically meaningful way (t = 8.021) having statistical significance level (0.000), less than the statistical significance threshold (0.05). This implies that the quality cost and financial performance have a statistically significant link.

As such, prior findings clarify that the link between financial performance and value chain is subject to a partial middleman impact from quality costs. Where the amount of their indirect effect's magnitude was (0.143)*(0.578) =0.083.

When Sobel's (Sobel, 1982) test was used to find the indirect effect's (z) value, the result (3.832), It surpasses the statistical significance threshold of 0.05 (Z = 0.05 = 1.96). The findings indicate a statistically significant link between value chain and financial performance, with a partial middleman effect of the quality-related variable.

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B. To ascertain the influence of quality expenses as a middleman factor on the connection between the financial performance and the target cost of Saudi Stock Exchange-listed manufacturing companies. Steps method used by Baron and Kenny (Baron & Kenny, 1986; Imai, Keele & Yamamoto, 2010).

Stage #1: A simple linear regression determines the direct link between the dependent variable (financial performance) and the independent variable (target cost).

Table1. Displays conclusions of a simple linear regression research investigation looking at the link between financial performance and the target cost, path (A).

Regression coefficient.	Estimate	Standard Error	t	Sig.
Constant	2.634	0.251	10.713	0.0000
target cost	0.283	0.064	6.544	0.0000

Table (1) indicates target cost has (t = 6.544) having statistical significance level (0.000), less than the statistical significance threshold (0.05). Given that their direct influence's regression coefficient is statistically significant, this suggests that the target cost has an effect on financial performance is (0.283), with (0.064) as the standard error.

Stage #2: A simple linear regression determines the direct connection between the dependent variable (quality cost) and the independent variable (target cost).

Table2. Demonstrates the outcomes of a simple linear regression investigation into the link between quality cost and the target cost, path (B).

Regression coefficient.	Estimate	Standard Error	t	Sig.
Constant	3.675	0.121	10.276	0.0000
target cost	0.417	0.036	4.604	0.0000

Table (2) indicates target cost has (t = 4.604) having a statistical significance level (0.000), less than the statistical significance threshold (0.05). The target cost's statistically significant influence on quality costs is demonstrated by the regression coefficient of their direct effect is (0.417), with (0.036) as the standard error.

Stage #3: A simple linear regression determines the direct influence between quality costs and target cost, also between financial performances and target cost.

Table3. Demonstrates the findings of a simple linear regression investigation of the connection between financial performance, quality-costs, and the target cost, path (C).

Regression coefficient.	Estimate	Standard Error	t	Sig.
Constant	1.434	0.264	5.152	0.000

Target cost	**0.146**	**0.043**	**2.641**	**0.000**
Quality Costs	**0.573**	**0.054**	**7.264**	**0.000**

      Table (3) indicates target cost has (t = 2.641) having a statistical significance level (0.000), less than the statistical significance threshold (0.05). This suggests that the quality cost has a value and target cost affects the financial performance in a statistically meaningful way (t = 7.264) with a statistical significance level (0.000), less than the statistical significance threshold (0.05). This implies that the quality cost and financial performance have a statistically significant link.

      As such, prior findings clarify that the link between the financial performance and target cost is subject to a partial middleman impact from quality costs. Where the amount of their indirect effect's magnitude was (0.146)*(0.573) =0.084.

      When Using Sobel's test to find the indirect effect's (z) value, the result (3.891), It surpasses the statistical significance threshold of 0.05 (Z = 0.05 = 1.96). The findings indicate a statistically significant link between target cost and financial performance, with a partial middleman effect of the quality-related variable.

C. To ascertain the influence of quality expenses as a middleman factor on the connection between the financial performance and the Just-in-time of Saudi Stock Exchange-listed manufacturing companies. Steps method used by Baron and Kenny (Baron & Kenny, 1986; Imai, Keele & Yamamoto, 2010).

Stage #1: A simple linear regression determines the direct link between the dependent variable (financial performance) and the independent variable (just-in-time).

Table1. Displays conclusions of a simple linear regression research investigation looking at the link between financial performances and the just-in-time, path (A).

Regression coefficient.	Estimate	Standard Error	t	Sig.
Constant	2.132	0.235	8.966	0.0000
just-in-time	0.376	0.062	6.534	0.0000

      Table (1) indicates just-in-time has (t = 6.534) having statistical significance level (0.000), less than the statistical significance threshold (0.05). Given the regression coefficient of their direct influence, this suggests that just-in-time has a statistically significant effect on financial performance is (0.376), with (0.062) as the standard error.

Stage #2: A simple linear regression determines the direct connection between the dependent variable (quality cost) and the independent variable (just-in-time).

Table2. Demonstrates the outcomes of a simple linear regression investigation into the link between quality cost and the just-in-time, path (B).

Regression coefficient.	Estimate	Standard Error	t	Sig.
Constant	1.623	0.245	10.814	0.000
just-in-time	0.241	0.039	7.349	0.000

Table (2) indicates just-in-time has (t = 7.349) having statistical significance level (0.0000), less than the statistical significance threshold (0.05). As evidenced by their direct effect's regression coefficient, just-in-time has a statistically significant effect on quality expenses is (0.241), with (0.039) as the standard error.

Stage #3: A simple linear regression determines the direct influence between quality costs and just-in-time, also between financial performances and just-in-time.

Table3. Demonstrates the findings of a simple linear regression investigation of the connection between financial performance, quality-costs, and just-in-time, path (C).

Regression coefficient.	Estimate	Standard Error	t	Sig.
Constant	1.342	0.178	3.623	0.000
Just-in-time	0.319	0.064	5.628	0.000
Quality Costs	0.413	0.063	7.648	0.000

Table (3) indicates just-in-time has (t = 5.628) having a statistical significance level (0.000), less than the statistical significance threshold (0.05). This suggests that the quality cost has a value and just-in-time affects the financial performance in a statistically meaningful way (t = 7.648) with a statistical significance level (0.000), less than the statistical significance threshold (0.05). This implies that the quality cost and financial performance have a statistically significant link.

As such, prior findings clarify that the link between the financial performance and just-in-time is subject to a partial middleman effect from quality costs. Where the amount of their indirect effect's magnitude was (0.319)*(0.413) =0.132.

When Using Sobel's test to find the indirect effect's (z) value, the result (6.246), It surpasses the statistical significance threshold of 0.05 (Z = 0.05 = 1.96). The findings indicate a statistically significant link between just-in-time and financial performance, with a partial middleman effect of the quality-related variable.

4. Study's Conclusion and Recommendations Made:
4.1 Study's Conclusion

The findings of the study of Saudi manufacturing firms on the mediating role of quality costs in the
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the connection between financial performance and management accounting systems:

1. Financial performance and quality costs are two areas in which the value chain influences are statistically significant.
2. The link between financial performance and the value chain is susceptible to a partial mediation effect from quality expenses, given the statistical significance of quality costs' influence on financial performance.
3. Both quality costs and financial performance are statistically significantly impacted by the target costs.
4. The link between financial performance and target costs is susceptible to a partial mediation effect from quality costs, given the statistical significance of quality costs' influence on financial performance.
5. Both financial performance and the costs associated with quality are statistically significantly impacted by just-in-time.
6. The link between financial performance and just-in-time is vulnerable to a partial mediation effect from quality expenses, given the statistical significance of quality costs' influence on both.

Finally, Quality expenses were found to have a statistically significant intermediary influence in the link between the financial performance of Saudi manufacturing enterprises and management accounting techniques (just-in-time, target costs, and value chain).

4.2 Study's Recommendations

Based on the findings, the number of recommendations that the researcher can determine is as follows:

1. Additional studies in various economic sectors are needed to examine the middleman role that quality expenses play in the link between financial success and management accounting systems.
2. Examine how the link between financial success and management accounting systems varies across nations and how quality costs affect it.
3. To learn more about the way that quality expenses influence the link between financial success and management accounting systems, students should visit firms.

5. Research Restrictions and Ideas for Further Research
5.1 Research's Restrictions

1. The study only included manufacturing companies that produced raw materials listed on the Saudi Exchange at the end of the first quarter of 2023.
2. The study population consists of employees working in manufacturing firms, including general managers, assistant managers, finance managers, and accountants (197 respondents).

5.2 Ideas for Further Research

Future researchers are advised to collect more samples from a larger number of items in order to ensure that the data will not dramatically decrease if part of the data is not

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consistently dispersed. To verify the veracity of the findings, carry out a second study with a sample of manufacturing firms and other industries.

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