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RESEARCH ARTICLE

New Mechanisms of Management Accounting in Achieving Competitive Advantage: Petrochemical Industries Approach in Iraq

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ABSTRACT

Today, the competitive ability of an organization among a large variety of small and large competitors has become one of the key factors for success in the business environment. Having competitive advantage is defined as a distinction in the characteristics or dimensions of each organization, ¬so the purpose of this study is to investigate the impact of strategic management accounting on competitive advantage as well. In this regard, the study examines six important factors affecting strategic managerial accounting and we also paid competitive advantage. For this important purpose, a questionnaire has been used that the statistical population of the present study is Iraqi petrochemical companies accepted in the Iraqi stock exchange, so in this study 80 questionnaires were sent to existing companies, only 62 questionnaires were collected and analyzed. In this study, the econometric method of ordinary least squares has been used. Accordingly, the results of the research indicate that six underlying factors (STR, QIT, STRDEL, MRT, CMPT, PEU, SIZE) have a positive and significant relationship with strategic management accounting. On the other hand, the final results of the research, which include the main purpose of the research, indicate that six underlying factors all have a positive and significant effect with competitive advantage. ¬ STR*SM, QIT*SM, STRDEL*SM, MRT*SM, CMPT*SM and PEU*SM all have a positive and significant impact with CA, i.e., competitive advantage, accordingly, if the percentage increase of one percent, each of the mentioned variables affecting competitive advantage will increase by 23.3%, 15.33%, 8.33%, 5.32%, 36.22% and 9.37%, respectively.

1. INTRODUCTION

Nowadays, the competitive ability of an organization among a multitude of small and large competitors has become one of the key factors in achieving success in the business environment. Having a competitive advantage is defined as a distinction in the characteristics or dimensions of any organization, which makes it able to provide better services to customers compared to other competitors (Li & Liu, 2018) and this allows the firm to use the resources at its disposal efficiently and while increasing the company's potential value, they will be able to improve their intangible assets. In fact, it can be said that a company's competitive advantage can improve its performance, increase the company's market share and even accelerate the development of new products (Dan et al., 2019). Based on the theory of competitive advantage introduced in the early 1960s to explain environmental impacts on corporate strategies at Harvard University, companies operating in a similar industry If they receive the same data and employ the same strategies, they will achieve the same results, so there will be no possibility of creating a competitive advantage for these firms. An enterprise will have a competitive advantage when it creates many different values than its competitors (Nejat and Karimi Khozai, 2020). In fact, competitive advantage is known as a category of strategies that add value through lower costs or differentiation. Thus, every organization strives to outperform its competitors in this way and be the leader in the competitive environment. Competitive advantage can also be It has a direct relationship with the desired value of the customer,

in such a way that the goods and services offered by the company are closer to the values of customers, it can be said that the company has a competitive advantage in comparison with its competitors in one of several criteria (Mehri and Khodadad, 2004). In other words, competitive advantage is an agent (or combination of factors) or the ability to attribute a company in the business environment. It gives superiority to competitors because other companies cannot easily imitate those abilities and factors. Therefore, it should be said that in order to achieve competitive advantage, an enterprise must both pay attention to external conditions and factors and must use internal factors and capabilities in such a way as to add more features and values than other competitors. The company can achieve goals such as improving financial performance and increasing the firm's market share (Azadbakht va Khani, 2017). Therefore, one of the external factors that have presented managers with new challenges is the changes that have been brought about in recent decades through globalization of trade, growth of knowledge-based economies, reducing product life cycle and intensifying competition in the business environment. Thus, managers in the processes of planning, decision making and control, in order to achieve competitive advantages and improve organizational performance, The need to evolve traditional management accounting information (financial and historical) information with non-financial and prospective information (McManus, 2013). Hence, due to the problems of traditional management accounting and management information need in the present time and related criticisms of past management accounting systems, developments in management accounting including activity-based costing, accounting methods and techniques of production and strategic management accounting have emerged. In addition, studies believe that considering changes in the business environment, especially in the sector, Manufacturing and process products, decision-makers will need information that measures internal efficiency, timely quality, and flexibility of companies and helps them address problems as soon as they arise. Furthermore, these studies indicate that management accounting tools lack the required innovations in the face of changing corporate needs (Zubi, 2011).

Based on this, the use of management accounting systems with more advanced approaches have been suggested. In response to these criticisms and feeling the need for changes in management accounting tools, new methods and mechanisms have been presented that have more business-oriented features and strategy support; Methods such as activity-based pricing, balanced scorecard, modeling the best, target costing, quality cost management, customer profitability analysis and value chain analysis (Simon, 2006). Simultaneously with the emergence and introduction of new management accounting methods, research on their application in companies has become an important field in accounting research (Hopwood, 2008). The results obtained from the researches carried out in this field show that despite the many advantages provided by modern management accounting methods, traditional methods have still maintained their popularity. In addition, traditional approaches provide a better understanding of the benefits obtained than new methods. On the other hand, some other studies also show that traditional systems provide general and accumulated information and are irrelevant for information decisions. This belief comes from the fact that management accounting systems and methods have not been able to progress in parallel with the emergence of new production innovations and today's competitive conditions. Thus, considering the importance of competitive advantage in the development and improvement of companies' performance, and on the other hand, management accounting systems can also be effective in achieving this goal, this study tries to investigate the relationship between These are two important variables. Finally, according to the investigations carried out in the current subject area, it is concluded that having a competitive advantage is a vital factor for the survival of companies in today's dynamic and competitive environment, and companies should be to strengthen the competitive power of their products in creating value for customers, consider the necessary measures. On the other hand, management accounting was also evaluated as an influencing factor on companies' information systems, which can affect all the functional aspects of a company by affecting various dimensions of the company. In the meantime, the surveys showed that although there is still public favor towards the use of traditional management accounting methods, in general, traditional systems cannot meet the needs of today's companies. In this way, new mechanisms should be considered more in the discussion of management accounting. But as it is clear from the studies, the analysis of the relationship between the new mechanisms of management accounting and its effects on the competitive advantage of companies has not been considered as it should be, and the existing

researches in this discussion have gaps. Therefore, this study tries to fill the aforementioned gap and provide useful findings in this field.

1. THEORETICAL FOUNDATIONS

Competitive Advantage

Competitive advantage shows that the company can surpass its competitors only if it can create differences to maintain itself. The company must deliver more value to customers or create the same value at a lower cost (Sengel, 2018). According to the research done by Porter (1966), he presented three general strategies and stated that these strategies can lead to the creation of strategic advantages in the organization. These strategies, which are called generic strategies, include: cost leadership strategy; Differentiation strategy and focus strategy. In the differentiation strategy, the company's activities are focused on providing and making a unique product or service. Differentiation strategy aims to provide better products or services to meet customer needs and involves producing differentiated products or services that differentiate a company from its competitors. These products and services must be accepted by customers as unique, special and different from any similar products or services that serve the same purpose in the market. The meaning of a cost leadership strategy is that business units will create a position for themselves in which their situation will have a cost competitive advantage over their competitors in the industry. In fact, cost leadership strategy refers to the set of integrated activities carried out to produce goods or services with characteristics that are acceptable at the lowest cost compared to competitors (Khaki, 2012). Therefore, the goal of the cost leadership strategy is for the company to be a low-cost producer in an industry. This strategy is realized through experience, investment in mass production facilities, use of savings and careful monitoring of total operating costs (Mirbaha et al., 2019). The focus strategy also states that the company can achieve its limited strategic goal more efficiently and effectively than other competitors. When using this strategy, an organization clearly defines its marketing objectives and satisfies market needs, either through low cost, differentiation, or both. Today, in order to survive and thrive in complex conditions, companies must develop their dynamic capabilities to create, expand and modify methods that guarantee their survival (Siotis and Anagnos Topoulos, 2016). Competitive advantage puts a company in a favorable position using terms of brand value and profit among other important measures. This advantage takes place through the way in which an organization obtains resources and uses strategies to optimize them (Roy, 2017). Competitive advantage is defined as the lack of similarity or differentiation in any of the aspects or factors of the company that allows the company to serve customers in a better way (compared to competitors) and thus create more value for customers and performance. Get better.

New Mechanisms of Management Accounting

The difference between traditional and modern methods is strategy-oriented and the combination of financial and non-financial information in modern management accounting methods (Chen Hall, 1998). Management accounting innovations are considered as strategic management accounting that connects the organization's strategies to its value chain and links all the organization's activities to cost issues. Abernethy and Bowens (2005) consider management accounting system innovations as the design of a new system or its redesign. Usually, the adoption of technical innovations in the organization is the result of the organization's search for identifying potentially profitable innovations. Therefore, they are demand oriented. On the contrary, modern management accounting systems are very supply-oriented. The adoption of these new systems often leads to their availability through various sources such as universities and consulting companies that have done the necessary research and development to support the initial development of the innovation. In general, there is no general agreement about the mechanisms that create management accounting innovations (Kadz and Gilding, 2008) and management accounting researchers have put some methods in the group of management accounting innovations in their research. Some of these researches have directly studied the new methods of management accounting, and others have examined their relationship with management processes or innovations. Freyera (2001) listed the new methods of management accounting as follows: balanced scorecard, activity-based budgeting, activity-based costing, target costing, customer profitability analysis, economic added value, life cycle costing. Product and its costing, modeling, reverse costing, accounting of constraints and kaizen costing. In general, by

carefully examining the methods that are known as new management accounting mechanisms based on research, they can be classified into three distinct groups. Some of these methods are actually extensions of traditional methods, some others are methods that are not similar to traditional methods and have been introduced recently, and some others can be considered as methods that are under, they are under the general title of strategic management accounting (Zolgadr, 2019).

Molina, Pino, Rodríguez (2004) have reviewed the literature related to the competition of companies and concluded in relation to competitive advantage that first, resource-based theories emphasize the vital importance of internal resources for sustainable competitive advantage, and second. , there is a positive relationship between intangible resources (i.e. research and development, software investment, advertising costs and trademarks) and competitive advantage, third, managers play an important role in achieving competitive advantage and are able to understand and describe The economic performance potential of companies. Fourth, the understanding of managers is a critical factor in the implementation of strategies leading to long-term business success. Or Hilton (2008) claimed in his study that strategic management accounting can help the organization in achieving appropriate and consistent coordination between management accounting and the organization for strategic goals in the first place and creating high possibilities to achieve favorable competitive advantages. Strategic management accounting is defined as a fundamental practice that plays an important role in identifying and evaluating strategic competitive policies that lead to achieving higher performance and competitive advantages. On the other hand, according to McManus (2013), achieving and maintaining competitive advantages, in addition to having historical, financial and internal information, requires external, non-financial and future information. According to this argument, traditional management accounting (such as budgeting, costing and profitability analysis) is no longer a suitable solution for achieving competitive advantages. New management accounting mechanisms such as strategic management accounting can play an important role in providing information about markets, products, suppliers, competitors and customers. This external orientation information is the main source of analyzing the competitive position of companies. In addition, strategic management accounting also provides key information, prospective information for strategic planning.

Weir (2014) states in his research that quality is an important competitive advantage that refers to the correct performance of work to provide products that meet the needs of customers; Therefore, the cost of quality flexibility innovation delivery Companies that do not provide quality products that meet the needs and wants of customers and their expectations, cannot survive and succeed or ultimately remain competitive. or Saber Jaff et al. (2015). In a study, it examines the effect of management accounting techniques on differentiating factors and competitive advantage in Iraqi soft drink companies. In this study, the percentage of questionnaires answered by the participants was 78%. The results show that there is a significant relationship between management accounting techniques and competitive advantage. Also, this is a selected study in terms of management accounting theory and practice, which discusses the relationship between management accounting techniques and competition. As a result, the final results of his and his colleagues' research show that management accounting has a significant impact on competitive advantage. On the other hand, Matt D. Peters et al. (2016). In a study aimed at the impact of business intelligence and diagnostic and interactive aspects of management control systems on competitive advantage. Therefore, the purpose of this study is to better understand how the quality of a business intelligence (BI) system improves the diagnostic and interactive dimensions of management control systems (MCS), thereby increasing performance measurement capabilities, which in turn are associated with competitive advantage. are. By integrating theory from performance measurement, organizational learning, and the knowledge-based perspective of the firm, a theoretical model has been developed that examines the three concepts of BI quality (infrastructure integration, performance, and self-service) and the roles they play in diagnostic and diagnostic enhancement. will take into account Interactive Performance Measurement Capabilities Data collected through a survey of 324 CEOs and CFOs support the theorized effects of BI quality on performance measurement capabilities. These capabilities, in turn, are positively related to competitive advantage.

Yu et al. (2017). In a study titled the relationship between CSR disclosure and competitive advantage, they also examined the relationship between sustainable disclosure and competitive advantage.

Therefore, the purpose of this study is to apply signaling theory to investigate whether corporate social responsibility (CSR) disclosure can provide stakeholders with effective signals to increase the company's competitive advantage in China. Whether ownership patterns or environmental sensitivity make a significant difference in the relationship between corporate CSR disclosure and competitive advantage is also investigated. To accomplish this goal, the researchers used data analysis based on the regression model, which content analysis is used to convert the qualitative CSR information of Chinese companies into quantitative data, while intellectual capital (IC) is used as a variable for competitive advantage. It is used in his and his colleagues' study. Finally, the research findings of the difference in the reduction of competitive advantage between environmentally sensitive industries (ESIs) and non-environmentally sensitive industries (NESIs) are significant. Further comparisons on the relationship between overall CSR disclosure and competitive advantage among public companies, private companies, ESI and NESI show that the relationship is negative. Or Sang-leol-ryu and Jae-won-won (2018). In a study titled the relationship between competitive advantage and the relevance of accounting information value. Investigated competitive advantage and accounting information. Therefore, the above study examines the relationship between competitive advantage and the value of accounting information. The advantage that a company has over its competitors can be defined as its relative efficiency in converting the performance of key success factors into company profitability. In this study, in order to achieve the objective of the observation of the year, the company has been classified in the stages of the life cycle and the efficiency has been measured using data envelopment analysis (DEA) in each of the different stages of the life cycle. The results show that efficiency has a positive relationship with a company's stock price, and that the relationship reduces (or increases) the book value per share (BPS) (or earnings per share (EPS)). The present study shows the competitive advantage of a company with a single efficiency score and shows that efficiency has a positive effect on the value of the company. On the other hand, Alavi et al. (2019). In a research study titled compatibility between lean accounting and cleaner production to achieve competitive advantage. They investigated the competitive advantage with regard to lean accounting and cleaner production. The purpose of this study is to demonstrate the compatibility between lean accounting and cleaner production technology, as well as to demonstrate their role in increasing competitive advantage and productivity. For this purpose, data was collected from 500 manufacturing companies in Thailand. Managers of the accounting and production department are responsible for this research. The results showed that lean accounting increases clean production in the organization and this clean production increases the competitive advantage of the organization. Therefore, the adoption of various technological technologies by international industrial companies has played a fundamental role in creating a set of key features that enable them to achieve a competitive advantage, such as lean accounting and cleaner production technology.

Siti Quiria, Yvonne Augustin Sudibiu (2020). In a study entitled competitive advantage, organizational culture and sustainable leadership in the success of accounting information management system implementation, they also investigated the competitive advantage of the organization with regard to accounting information. The purpose of this study was to empirically investigate the relationship between competitive advantage, organizational culture and sustainable leadership on the successful application of Management Accounting Information System (MAIS). Using primary data obtained from the distribution of questionnaires in several manufacturing companies in Bekasi, West Java. The research tool, competitive advantage, is adapted from Porter's diamond model questionnaire consisting of five indicators, organizational culture from four indicators and sustainable leadership from three indicators. Data processing uses partial least squares SEM. In this study, competitive advantage, organizational culture and sustainable leadership have a positive and significant relationship with the successful implementation of MAIS. On the other hand, Kalabi and Sharai (2021) in a study entitled Designing a competitive advantage model by explaining the role of innovation speed and creative destruction in the fast-moving consumer goods industry, state that today the success and failure of companies in creating a competitive advantage depends on factors It is an environment where this point is of double importance for entering the international markets. Data analysis of this research was done using quantitative method, regression equation modeling, PLS approach and SmartPLS version 2 software. The results have shown that market turbulence and competition intensity have a positive and significant effect on creating

competitive advantage indirectly with coefficients of 25% and 23%, respectively. The speed of innovation and operational flexibility directly create a competitive advantage with coefficients of 41% and 29%, respectively. Also, creative destruction positively moderates the relationship between speed of innovation and competitive advantage with a coefficient of 26%. Or Ameripour (2022) in an article titled the role of strategic management accounting on the dimensions of the competitive advantage of companies, the concept of competitive advantage is the company's ability to formulate and implement strategies that use better technical, physical, and financial capabilities and resources. And it defines an available organization to create a better position for itself than its competitors. Therefore, it is very important to change management accounting from a traditional to a strategic approach to provide the information needed to contemporary companies and make strategic decisions to gain competitive advantages and improve the future performance of the company, as a result of creating value for customers, the views Managers should be changed because in the past, much attention was paid to reducing costs, production and volume, but in the present time, quality, after-sales service, timely delivery, cost management and differentiating products, as well as appropriate response to demands Customers are taken care of. and finally, Xiaojing Jiao (2023). With the title of business sustainability for competitive advantage: identifying the role of green intellectual capital, accounting for environmental management and energy efficiency, they also investigated competitive advantage. Therefore, in the present study, three potential solutions of green intellectual capital, environmental management accounting and energy efficiency have been evaluated for the excellence of organizational operations towards business sustainability and achieving competitive advantage. With the help of "Partial Least Squares Structural Equation Modeling" on a dataset of 364 respondents from manufacturing organizations in China, the result reported a positive and significant impact of all potential solutions studied on excellence and increasing business sustainability and competitive advantage.

2. RESEARCH METHODOLOGY

According to the investigations, it can be seen that until now the majority of studies have used partial least squares methodology and questionnaires, so in this study, we will first use the econometric method to distinguish the above study from other previous studies. did Therefore, it should be noted that the research design, population and sample selection of this research was carried out with a quantitative research design and survey method. The research population includes Iraqi petrochemical companies that are listed on the main board (first tier security market) of the Iraqi Stock Exchange (ISX). A total of 10 companies that met this inclusion criteria were included in the study. A structured questionnaire was used to collect primary data from the companies. Three (8) copies of the questionnaire were sent to each company to be completed by senior financial personnel on behalf of their company, and a total of 80 copies were implemented, and 62 questionnaires were collected from the total of 80 questionnaires sent. Previous studies have used a similar multi-informant strategy to improve the reliability of survey data (e.g., Gholami, 2011; Kraijnbrink and Spender, 2011). Therefore, to examine the above study, the hypotheses can be examined and the research model will be as follows:

3-1 The first hypothesis. Strategic management accounting has a positive and significant impact with a competitive advantage.

3-1-1 dependent variable

1. SM: Strategic Management Accounting. The use of SM techniques may provide a competitive advantage for companies that use them intensively (Behimani and Longfield-Smith, 2007). This comes from the consideration that SM as a set of innovative management accounting techniques is driven by strategy. Organizations that implement SM are constantly looking for strategies to outwit competitors. SMA's external emphasis causes organizations implementing the techniques to constantly search for opportunities in the external business environment and take advantage of first-mover advantage. The market-driven nature of SM causes organizations to heavily use techniques to be concerned with meeting and exceeding customer expectations, which may lead to increased patronage and repeat business. The long term emphasized by SM encourages organizations to be proactive by looking to the future and implementing a sustainable course of action that leads to the realization of organizational goals (Boakye et al., 2020; Oyewo, 2021). Therefore, the use of SM can

create and maintain a competitive advantage. There is a body of literature that provides empirical evidence that the use of SMA techniques adds value to organizations (e.g., Fuller, 2001; Wegman, 2002; Yazdifar & Askani, 2010; Gholami, 2011; Kreijnbrink et al. Spender, 2011, 2012, Saeed, 2012; Obo and Ejibolade, 2017).

Therefore, in this study, a ranking method was used to measure SMA (strategic management accounting). First, companies were given a list of nineteen SMA techniques and asked to rank these techniques according to the extent to which their company used them. In this rating, a five-point scale was used, ranging from 1 (indicating "not used at all") to 5 (indicating "extremely used"). Then the scores were summed and averaged to obtain an index for the intensity of SMA use. This index shows the usage of SMA. A similar method has been used in previous research to measure SMA.

2. CA: Competitive advantage. The measures of competitive advantage were adapted from Cades and Gilding (2008), who modified a version of the Hook and James (2000) instrument by including two measures. Hook and James' (2000) main dimensions are: (1) return on investment, (2) sales margin, (3) capacity utilization, (4) customer satisfaction, and (5) product quality. The two dimensions added by Cades and Golding (2008) are: (6) new product development and (7) market share, which make up a total of seven (7) performance indicators. Respondents were asked to rate their company's performance compared to competitors over the past five years on seven dimensions: (1) return on investment, (2) sales margin, (3) capacity utilization, (4) customer support, (5) product quality, (6) product development. New and (7) market share. A 5-point scale from 1 ("much below average"), 2 ("below average"), 3 "average"), 4 ("above average"), to 5 ("above average") to obtain Answers used. . The ranking of these criteria was averaged to determine the competitive advantage (CA) index for each company. Previous studies have used a similar approach to measure organizational performance (e.g., Govinderjan, 1988; Brown and Gulich, 2002; Abukasim and Minaei, 2009; Kadz and Gilding, 2012; Alsoboa et al., 2015).

3-1-2 independent variable

3-2 The second hypothesis. The organizational structure of the company has a positive and significant relationship with strategic management accounting.

1. Organizational structure (STRC): This variable is measured using a scale developed by the organization, in which the respondents were asked to indicate on a scale of 1 (not at all) to 5 (very much). (i). The level of power given to department managers or department heads, (ii). Degree of responsibility to branches or degree of responsibility to direct subsidiaries. For the above two situations, people have been asked to provide a certain scale from one to five.

3-3 The third hypothesis. The quality of information technology has a positive and significant effect on strategic management accounting.

2. Quality of Information Technology (QIT): It has been measured by adapting the scale developed by Teneg et al. (1995). Respondents were asked to rate their information systems on a 5-point conical scale from 1 (very little) to 5 (very much) in terms of (i) accuracy, (ii) accuracy, (iii) reliability, (IV) rate its completeness. and (v) communication.

3-4 the fourth hypothesis. Business strategy has a positive and significant effect on the company's strategic management accounting.

1. Business strategy was measured in terms of deliberate strategy formulation (STR DEL) using Kads and Goulding's (2012) measure. (Kadz and Goulding 2008, 2012) based on the terminology of Mintzberg (1978a) developed the following statements, which were also adopted in this study: (i) “In our company, strategic decision makers usually think of everything before strategy; (ii) “In our company, strategic goals are rarely achieved with little or no deviation” and (iii) “In our company, strategic action is usually developed in the absence of strategic intent.” Next to each statement, a five-point scale A point was provided that ranged from 1 (“strongly disagree”) to 5 (“strongly agree”).

3-5 The fifth hypothesis. Market orientation has a positive and significant effect on strategic management accounting.

2. Market orientation (MKT) was measured using the scale applied in previous studies (e.g., Cravens and Gilding, 2001; Gilding and McManus, 2002; Al-Mawali, 2015). On a 5-point scale ranging from 1 ("not at all") to 5 ("to a great extent"), respondents were asked to indicate their degree of agreement with the following statements: "(i) My company has a strong understanding of its customers; (ii) my company's functions work closely together to create superior value for our customers, (iii) management in my organization thinks in terms of serving the needs and demands of well-defined markets, long-term growth, and their profit potential for the company, and (iv) my company has a strong market orientation.

3-6 The sixth hypothesis. Market intensity has a positive and significant effect on strategic management accounting.

1. Intensity of market competition (CMPT) using the scale developed by Hansen and van der Stede (2004). Measured Respondents were asked to rate the intensity of market competition on a scale of 1 (not at all intense), 2 (not intense), 3 (somewhat intense), 4 (intense), and 5 (very intense).

2. PEU was measured using the Kern and Kerr (1993) instrument developed from the Miles and Snow (1987) measure. Respondents were asked to indicate their perception of the predictability of the actions of certain stakeholders: (i) customers, (ii) suppliers, (iii) competitors and (iv) the government.

3-1-3 control variables

3-7 The seventh hypothesis. The size of the organization has a positive and significant effect on strategic management accounting.

3. Organizational size: Organizational size (SIZE) was counted as a control variable. While various measures of proxy size have been used in the literature such as total assets (Abdulkader and Luther, 2008; Paulatos, 2011; Chikzi et al., 2014; Iredell et al., 2017), total annual turnover/income (Kadz and Gilding, 2008; Sinkini and Tanuchi, 2010; Ahmad and Zobari, 2015) and the number of employees (Yap et al., 2013; Al-Mawali, 2015), organizational size (SIZE) was operationalized using total revenue. The average total revenue for three years (2015-2017) was calculated from the annual audited SMA Impact on Competitive Advantage report for each company. To normalize the data, the logarithmic transformation of the average total income was used (Kadz and Gilding, 2008; Ahmad and Zobari, 2015).

* The first model for examining research assumptions regarding strategic management accounting is as follows:

$$\boldsymbol{SM = \beta_0 + \beta_1 STRC + \beta_2 QIT + \beta_3 STRDEL + \beta_4 MKT + \beta_5 CMPT + \beta_6 PEU + \beta_{ctr} SIZE} + \varepsilon \quad (1)$$

where in:

β1 to β6 are the regression coefficients, βctr is the coefficient of the control variable, and ε_ is the random error term for the first model. Model 1 is a selection approach to contingency theory. The selection approach examines the relationship between contextual variables and organizational structure. The included variables are the contingency variables that influence the use of SM. Company size was retained as a control variable because many studies have shown that organizational size affects management accounting performance (Bjornnak, 1997; Abdulkader and Lotter, 2008; Ahmed and Zobari, 2015; Oyo, 2017). In addition, the studied firms differ in size based on turnover. Some previous studies have also used company size as a control variable (such as Cadz and Gilding, 2008; Sinkini and Tenucci, 2010; Paulatos, 2011; Elmwali, 2015).

** The second model for examining research assumptions about the impact of strategic management accounting on competitive advantage will also be as follows:

$$CA = \beta_0 + \beta_1 SM + \varepsilon \quad (2)$$

Where:
CA: Competitive Advantage Indicator. SM: Strategic Management Accounting.
β0 is constant, β1ε_{it} is the regression coefficient, and the random error expression for model 2.

Finally, Model 2 will be used to examine the following main assumptions as models (3, 4, 5, 6, 7 and 8).

3-8 Hypothesis 8. There is a positive and significant relationship between strategic management accounting based on organizational structure and competitive advantage.

$$CA = \mu_0 + \mu_1 SMA + \mu_2 STRC + \mu_3 SMA * STRC + \varepsilon \quad (3)$$

3-9 Hypothesis 9. There is a positive and significant relationship between strategic management accounting based on the quality of information technology and competitive advantage.

$$CA = \mu_0 + \mu_1 SMA + \mu_2 QIT + \mu_3 SMA * QIT + \varepsilon \quad (4)$$

3-10 Hypothesis 10. Strategic management accounting based on deliberate strategy has a positive and significant relationship with competitive advantage.

$$CA = \mu_0 + \mu_1 SMA + \mu_2 STRDEL + \mu_3 SMA * STRDEL + \varepsilon \quad (5)$$

3-11 Hypothesis 11. Strategic management accounting based on market orientation has a positive and significant relationship with competitive advantage.

$$CA = \mu_0 + \mu_1 SMA + \mu_2 MKT + \mu_3 SMA * MKT + \varepsilon_{it} \quad (6)$$

3-12 Hypothesis 12. Strategic management accounting based on the intensity of competition in the market has a positive and significant relationship with competitive advantage.

$$CA = \mu_0 + \mu_1 SMA + \mu_2 CMPT + \mu_3 SMA * CMPT + \varepsilon \quad (7)$$

3-13 Hypothesis 13. Strategic management accounting based on perceived environmental uncertainty has a positive and significant relationship with competitive advantage.

$$CA = \mu_0 + \mu_1 SMA + \mu_2 PEU + \mu_3 SMA * PEU + \varepsilon \quad (8)$$

In which:

CA: Competitive Advantage Index, SMA: Strategic Management Accounting,
STRC: Organizational Structure, QIT: IT Quality,
STR-DEL: Deliberate Strategy, MKT: Market Orientation,
CMPT: The intensity of competition in the market, PEU: perceived environmental uncertainty.

Therefore, six possible variables were investigated as moderators of the relationship between SMA use and competitive advantage based on their repetition in literature as the main determinants of SMA usage.

3. DATA AND INFORMATION ANALYSIS

4-1 Validity of the questionnaire

The reason why the need for the validity of the questionnaire is felt is how much the measurement tool produces the same results under the same conditions. And how much correlation between one set of answers and another set of answers in an equivalent test is obtained independently on a subject group. Therefore, tables (1) and (2) that examine the validity and correlation between the data This study also indicates high reliability of the data collection tool in this research.

Table (1). Information about reliability statistics of research variables

ROW	Variable	symbol	Cronbach's alpha	The number of items of information gathering tools
1	Competitive Advantage	CA	0.785	**7**
2	Strategic management accounting	SM	0.892	**5**
3	Organizational Structure	STRC	0.715	**2**
4	Information technology quality	QIT	0.635	**5**
5	Deliberate strategy	STRDEL	0.741	**3**
6	market trending	MKT	0.510	**4**
7	The intensity of competition in the market	CMPT	0.641	**4**
8	Perceived environmental uncertainty	PEU	0.713	**4**
9	Cronbach's alpha of the overall research		0.792	**30**

Source: research findings

According to the results of the research listed in table (1), it can be seen that all the variables of the research have been calculated more than 0.7, this indicates the reliability of the measurement of the research data is in a better state. In other words, Cronbach's alpha can be used to check the validity of the questionnaire. Cronbach's alpha coefficient is an internal measure that is used to measure the correlation between different items of a questionnaire. The value of Cronbach's alpha coefficient is between 0 and 1, and values above 0.7 are considered as the optimal value for the validity of the questionnaire.

According to the information provided, Cronbach's alpha coefficient for CA, SM, STRC, QIT, STRDEL, MKT, CMPT and PEU variables is 0.785, 0.892, 0.715, 0.635, 0.741, 0.510, 0.641 and 0.713 respectively. These values show that the internal correlation between questionnaire items is relatively strong for these variables. Also, the Cronbach's alpha coefficient for the entire research is 0.792, which shows that the internal correlation between all the investigated variables is acceptable and the questionnaire has an acceptable validity. Therefore, according to these results, it can be concluded that the questionnaire is acceptable in measuring the attitude that has value for showing the relationship between variables and can be used as a suitable tool for collecting information in research.

4-2**Pearson correlation test**

Pearson's correlation test is one of the famous and important methods to investigate the relationship between two variables. The use of this test in research is very common because of the following advantages:

.1Measuring the relationship: Pearson correlation test makes it possible to measure the linear relationship between two variables. If you intend to check the linear relationship between two variables, this test is very suitable for its evaluation and measurement.

.2Range of usability: Pearson's correlation test can be used in a wide range of research. This test is used from the simplest cases such as examining the relationship between two characteristics to more complex analyzes of the relationship between more variables.

.3Robust measurement: Pearson's correlation test has a convenient calculation method that is easy to use and interpret. This test will show you useful information about the strength of the relationship between two variables and also the direction of this relationship.

Also, it is important to note the importance of paying attention to the conditions necessary to use the Pearson correlation test, including the common hypothesis that the distribution of the two variables is normal, that there are no systematic errors in the data, and that the data are independent of each other. Therefore, the results of the Pearson test for this research are as follows:

Table (2). Pearson correlation test for the first models of research

$SM = \beta_0 + \beta_1 STRC + \beta_2 QIT + \beta_3 STRDEL + \beta_4 MKT + \beta_5 CMPT + \beta_6 PEU + \beta_{ctr} SIZE + \varepsilon$			
ROW	Variable	SM	**P_VALUE**
1	STRC	0.7521	**0.0000**
2	QIT	0.5421	**0.0012**
3	STRDEL	0.6352	**0.0050**
4	MKT	0.8931	**0.0001**
5	CMPT	0.9641	**0.0033**
6	PEU	0.4985	**0.0000**
7	SIZE	0.4896	**0.0042**

Source: research findings

According to the results in table (2). It can be seen that the numerical correlation coefficient is between 1 and -1, where the number 1 indicates a direct and complete correlation, while -1 indicates an inverse and negative correlation. Therefore, zero correlation coefficients indicate no relationship between two variables. On the other hand, according to the p_value, which are all coefficients smaller than 0.05, it can be seen that the relationship between the research variables has full significance. In other words, it can be said that according to the Pearson correlation test results between the SM

variable and STRC, QIT, STRDEL, MKT, CMPT, PEU, SIZE variables, we can express the results as follows:

• There is a significant correlation between SM variable and STRC (P-value = 0.0000).

• There is a significant correlation between SM variable and QIT (P-value = 0.0012).

• There is a significant correlation between SM variable and STRDEL (P-value = 0.0050).

• There is a significant correlation between SM and MKT variables (P-value = 0.0001).

• There is a significant correlation between SM variable and CMPT (P-value = 0.0033).

• There is a significant correlation between SM and PEU variables (P-value = 0.0000).

• There is a significant correlation between SM and SIZE variables (P-value = 0.0042).

As a result, it can be concluded that all STRC, QIT, STRDEL, MKT, CMPT, PEU, SIZE variables have a significant correlation with the SM variable. The P-value for all these variables is less than 0.05, which indicates that the relationship found is not a possible random error and that these relationships are significant. Also, considering the positive or negative values smaller than 1 for the beta (β) coefficients, it can be concluded that there is a relatively strong correlation between the SM variable and the investigated variables.

Table (3). Pearson correlation test for other research models

$CA = \beta_0 + \beta_1 SM + \varepsilon$			
ROW	**Variable**	**CA**	**P_VALUE**
1	SM	0.8214	**0.0000**
$CA = \mu_0 + \mu_1 SM + \mu_2 STRC + \mu_3 SM * STRC + \varepsilon$			
3	STRC	0.6321	**0.0035**
4	SM*STRC	0.8801	**0.0004**
$CA = \mu_0 + \mu_1 SM + \mu_2 QIT + \mu_3 SM * QIT + \varepsilon$			
5	STRC	0.7852	**0.0048**
6	SM*QIT	0.8631	**0.0000**
$CA = \mu_0 + \mu_1 SM + \mu_2 STRDEL + \mu_3 SM * STRDEL + \varepsilon$			
7	STRC	0.6352	**0.0049**
8	SM* $STRDEL$	0.7936	**0.0023**
$CA = \mu_0 + \mu_1 SM + \mu_2 MKT + \mu_3 SM * MKT + \varepsilon$			
9	STRC	0.7441	**0.0050**
10	SM*MKT	0.8931	**0.1421**
$CA = \mu_0 + \mu_1 SM + \mu_2 CMPT + \mu_3 SM * CMPT + \varepsilon$			
11	STRC	0.5362	**0.0063**
12	SM*CMPT	0.7632	**0.0001**
$CA = \mu_0 + \mu_1 SM + \mu_2 PEU + \mu_3 SM * PEU + \varepsilon$			
13	STRC	0.6324	**0.0022**
14	SM*PEU	0.8931	**0.0000**

Source: research findings

According to the results of the Pearson correlation test between the variable CA (competitive advantage) and the variables SM (strategic management accounting), STRC (organizational

structure), QIT (quality of information technology), STRDEL (business strategy), MKT (market orientation). , CMPT (market competition intensity) and PEU (environmental uncertainty), we can provide the interpretation of these results:

- Regarding the relationship between SM and CA variables, the P-value = 0.0000, which is less than the significance threshold of 0.05. This result shows that there is a significant correlation between these two variables.

- Regarding the relationship between STRC and CA variable, the P-value = 0.0035, which is less than the significance threshold of 0.05. This result shows that there is a significant correlation between these two variables.

- Regarding the relationship between the variable SM*STRC and CA, the value of P-value = 0.0004, which is less than the significance threshold of 0.05. This result shows that there is a significant correlation between these two variables and their interaction.

Similarly, the results for the relationship between the variables SM*QIT and CA, SM*STRDEL and CA, SM*MKT and CA, SM*CMPT and CA, and SM*PEU and CA also show that there is a significant correlation between these variables. (with P-value values less than the significance threshold of 0.05).

Therefore, it can be concluded that SM, STRC, QIT, STRDEL, MKT, CMPT and PEU variables have a significant correlation with CA. Also, the interaction between some of these variables also has a significant effect in relation to CA.

Therefore, considering that we have confirmed the validity of the questionnaire and the correlation between the research variables, now it is time to continue to examine the research results. In this section, we will also examine the econometrics of the research. will also be:

3-4 stationarity and normality test of research data

Table (4). Dickie Fuller and Jark-Bra

ROW	Variable	Jarque-Bera	Probability	t-statistic	prob	Manadari level
1	CA	6.296767	0.442921	-5.391850	0.0000	**I (0)**
2	SM	5.564977	0.861884	-5.339629	0.0000	**I (0)**
3	STRC	7.307787	0.225890	-5.633427	0.0000	**I (0)**
4	QIT	4.765332	0.292304	-6.382592	0.0000	**I (0)**
5	STRDEL	0.115392	0.943937	-6.655016	0.0000	**I (0)**
6	MKT	11.71173	0.502862	-3.441233	0.0132	**I (0)**
7	CMPT	6.242855	0.244094	-5.326755	0.0000	**I (0)**
8	PEU	5.542487	0.262584	-2.922399	0.0496	**I (1)**
9	SIZE	1.503675	0.471499	-7.099630	0.0000	**I (1)**

Source: research findings

According to the results listed in table (4). At first, it is clear that all the research data follow the normality of the data. Therefore, according to the results of the Jarque-Bera test for the difference from the normal distribution in the case of CA, SM, STRC, QIT, STRDEL and MKT variables, we can interpret these results:

 For the CA variable, the P-value = 0.442921, which is greater than the significance threshold of 0.05. This result shows that the CA variable follows a normal distribution.

 In the case of the SM variable, the P-value = 0.861884, which is greater than the significance threshold of 0.05. This result shows that the SM variable follows a normal distribution.

 For STRC variable, P-value = 0.225890, which is greater than the significance threshold of 0.05. This result shows that the STRC variable follows a normal distribution.

 In the case of the QIT variable, the P-value = 0.292304, which is greater than the significance threshold of 0.05. This result shows that the QIT variable follows a normal distribution.

 For the STRDEL variable, the P-value = 0.943937, which is greater than the significance threshold of 0.05. This result shows that STRDEL variable follows a normal distribution.

 In the case of the MKT variable, the P-value = 0.502862, which is greater than the significance threshold of 0.05. This result shows that the MKT variable follows a normal distribution.

Therefore, based on the results of Jarek-Bera test, we can conclude that all variables (CA, SM, STRC, QIT, STRDEL and MKT). They follow the normal distribution and there is no problem in terms of normal distribution. After the normality of the data has been determined, it is time to check the stationarity of the data, for this important purpose, the Dickey-Fuller test has also been used, so according to the results in table (4), it can be seen that all the data The research has complete stability, that all research variables except PEU and SIZE have reached stability in order and without differentiation, while PEU and SIZE variables have reached stability in the first order and with one differentiation. Considering that the normality of the data and the stability of the data were confirmed and it was determined that the results of the research are not false, we will also examine the research models in order to examine the hypotheses.

4-4 Checking the first model to check assumptions (2-3 to 3-7).

Table (5). Examining the first research model

ROW	Variable	Std. Error	t-statistic	prob
Dependent variable: SM **Method: Least squares**				
1	C	3.079180	0.643409	**0.5227**
2	STRC	0.076626	1.520300	**0.0001**
3	QIT	0.070834	2.325141	**0.0025**
4	SRTDEL	0.156604	5.120679	**0.0000**
5	MKT	0.100617	6.325144	**0.0142**
6	CMPT	0.072214	2.325144	**0.0000**
7	PEU	0.000121	3.321001	**0.0095**
8	SIZE	0.001068	3.362514	**0.0932**
9		R-squared		**0.74%**
10		Adjusted R-squared		**0.71%**
11	F	statistic		**22.58978**
		Prob (F-statistic)		**0.00000**

Source: research findings

All research variables (C, STRC, QIT, SRTDEL, MKT, CMPT, PEU, SIZE) are interpretable in the model because the p-value corresponding to each of them is smaller than the threshold of 0.05. In other words, according to the results of table (5). It can be seen that all research variables have a positive and significant relationship with strategic management accounting. In a way that if each of the research variables increases by one percent, in this case strategic management accounting will also increase by (1.5%, 2.3%, 5.1%, 6.3%, 2.3%, 3.3%, 3.3%) respectively. . On the other hand, according to the model fit criteria, namely R-squared & Adjusted R-squared, it can be seen that our model is well fitted and our independent variables clarify 74% of the results for us. In other words, it can be said that R-squared: R-squared value is about 0.745437. This statistic shows that about 74.54% of the variation of the dependent variable (SM) is explained by the explanatory variables of our model. Therefore, your model fits the data well and the explanatory variables have a significant effect on the dependent variable. On the other hand, according to Adjusted R-squared, the value of Adjusted R-squared is about 0.712438. This statistic shows that about 71.24% of the variation in the dependent variable is explained by the explanatory variables of your model. This value is slightly lower than R-squared and is probably due to the number of additional explanatory variables in the model. Therefore, considering that the value of F-statistic is about 22.58978 and the probability (Prob. F) is very close to zero (approximately 0.000000). This statistic shows that the model is generally meaningful and at least one of the variables in the model has a significant effect, which can be seen according to the probability of all the research variables that all the research variables except the

width of the origin have significance. Finally, according to this interpretation, it can be concluded that our model generally fits the data and a number of explanatory variables have a significant effect on the dependent variable. However, it is better to do a more thorough review of your model and a more detailed analysis of correlations and other statistics. In the following, we will examine the Breusch-Godfrey Serial Correlation LM Test, and the research results are as follows:

Table (6). Brush-Godfrey test

		Breusch-Godfrey Serial Correlation LM Test		
ROW	F-statistic	Obs*R-squared	Prob. F (2, 52)	Prob. Chi-square (2)
1	5.606068	10.99713	0.2514	0.5214
Test Equation **Dependent Variable: RESID** **Method: Least Squared**				
2	Variable	Std. Error	t-Statistic	**Prob**
3	C	2.848886	-0.09731	**0.9228**
4	STRC	0.070927	1.322154	**0.0014**
5	QIT	0.000321	2.362514	**0.0000**
6	SRTDEL	0.093087	52.32142	**0.0089**
7	MKT	0.093087	52.32142	**0.0000**
8	CMPT	0.012142	4.632514	**0.0145**
9	PEU	0.112142	8.632514	**0.0145**
10	SIZE	0.012111	1.895214	**0.0121**
11	RESID (-1)	0.144575	3.162715	**0.0026**
12	RESID (-2)	0.147822	4.325144	**0.0121**
13	R-squared			**0.86%**
14	Adjusted R-squared			**0.86%**

Source of research findings

According to the results of the Breusch-Godfrey serial errors test, we can conclude:

1. Prob. Chi-square (2): The probability of the chi-square statistic in the test is equal to 0.5214. This shows that the zero assumption of independence of errors (absence of serial correlation in errors) is acceptable.

2. Prob. F (2, 52): The probability of Stewart's F statistic in the test is equal to 0.2514. This shows that the null hypothesis of independence of serial errors is acceptable.

3. Obs*R-squared: The value of Observations * R-squared statistic is equal to 10.99713. This statistic shows that our model explains at least 10.99713% of the observed variation.

4. F-statistic: The value of F-statistic is equal to 5.606068. This statistic shows that our model is generally valid and significantly explains the amount of changes in the dependent variable.

In the following, the table of test results of the test equation is also given. This equation specifies which variables are used in the model to describe changes in the dependent variable (RESID). For each variable, the Prob corresponding to the coefficient emphasizes whether the coefficient is statistically significant or not. According to the interpretation of these results, we can conclude that STRC and QIT variables are statistically significant in our model. Also, the variables SRTDEL, MKT, CMPT, PEU, SIZE and the two variables RESID (-1) and RESID (-2) also significantly have the ability to describe changes in the dependent variable. model and the ratio of model accuracy to the number of observations. Therefore, in order to know in our model whether our independent variables have a correct and non-false explanation for our dependent variable or not, in other words, in order to have false and incorrect conclusions, we will also have the following results, which are as follows are also:

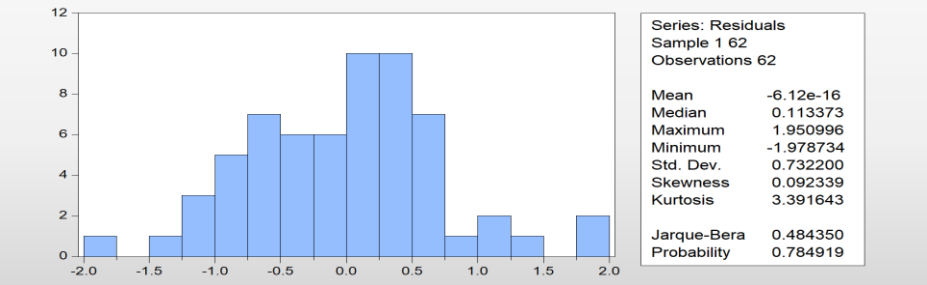

figure (1). Checking the normality of disturbance component of the first model
Source: research findings

According to figure (1). It can be seen that our final output is correct and the obtained results are not false. Because the normality of the data residual according to the probability of the Jarque-Bera test, which is equal to 0.784919, indicates that the null hypothesis of the Jarque-Bera test cannot be rejected, therefore it can be said that the residual of the research data has It is also a normal distribution, which indicates the correct estimation of the model.

4-5 failure review and evaluation of research data

Table (7). Chow's test

				Chow Breakpoint Test: 10 55		
ROW	**F-statistic**	**Log likelihood ratio**	**Wald statistic**	**Prob. F (16, 38)**	**Prob. Chi-square (16)**	**Prob. Chi-square (16)**
1	1.515257	30.59562	24.24411	0.1448	0.0151	0.0843
Quandt-Andrews unknown breakpoint test						
Row			statistic		Value	Prob
2			Maximum LR F-statistic (obs. 42)		3.614201	0.0066
			Maximum Wald F-statistic (obs. 42)		28.91364	0.0066
3			Exp LR F-statistic		1.010798	0.00674
			Exp Wald F-statistic		11.09447	0.0068
4			Ave LR F-statistic		1.931769	0.0171
			Ave Wald F-statistic		15.45415	0.0171

Source: research findings

According to the results of the Chow Breakpoint and Quandt-Andrew's test, the following conclusion can be reached:

The results of the Chow Breakpoint test show that the null hypothesis of stopping the model at a certain point is not acceptable. Considering the corresponding probability (Prob. Chi-square) which is equal to 0.0843, we can conclude that stopping the model at a certain point cannot be statistically justified. Also, according to the corresponding probability of the F statistic (Prob. F) which is equal to 0.1448, it can be seen that it is not possible to accept the null hypothesis of stopping the model at a specific point. The values (Wald statistic) and (Log likelihood ratio) also indicate the existence of a stop in the model at a certain point. On the other hand, the results of the Quandt-Andrews test also show that the presence of a stop in the model is reasonable. According to the relevant probability (Prob) calculated for different components of the statistic, it can be seen that the presence of a stop at the desired point (probability of the desired component) is acceptable. Therefore, according to this interpretation, it can be concluded that there is a stop in the model at a specific point. This point may

be in values of 10 or 55. Therefore, for the final review of the first model, we will use the following output:

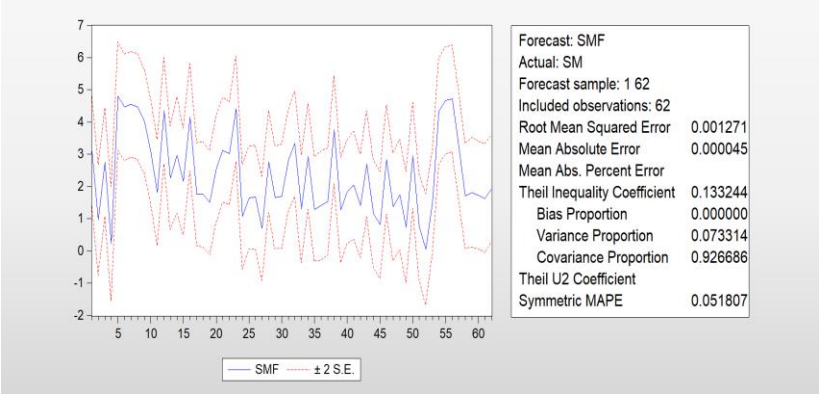

figure (2). Evaluation of research data for the first model

Source: research findings

Based on this information, a predictive evaluation has been performed on the data. Below is a description of each of the criteria used in this evaluation:

.1Root Mean Squared Error (RMSE): The mean squared absolute error (excess value) between the prediction and the actual results. Here the RMSE is equal to 0.001271. This value shows that usually the prediction error is around 0.001 units.

.2Mean Absolute Error (MAE): The mean absolute error between the prediction and the actual results is equal to 0.000045. This measure shows that the average prediction error is about 0.0004 units.

.3Theil Inequality Coefficient: This measure shows the ratio of the average prediction error to the relative asymmetry between the prediction and the actual results. In this case, its value is equal to 0.133244. Zero indicates no asymmetry. Therefore, a value less than one indicates that the prediction is typically close to the actual results.

.4Bias Proportion: It is the ratio of the prediction deviation part to the overall error. Here its value is equal to 0, which indicates no deviation.

.5Variance Proportion: It is the ratio of the forecast variance to the overall error. Here its value is equal to 0.073314, indicating the usual contribution of variability to the total error.

.6Symmetric MAPE: the average absolute error percentage compared to the actual value. Its value here is 37.51807, which represents the mean relative absolute error between the prediction and the actual results.

Each of these measures indicates how close the predictions are to the actual data and how the error in the predictions is distributed. These criteria can be used to evaluate and improve the performance of forecasting models and methods. Therefore, according to the results, the prediction was very accurate and close to the real results. Prediction error metrics such as Root Mean Squared Error (RMSE) and Mean Absolute Error (MAE) are significantly low and relatively close to zero, indicating that the predictions were almost error-free. And on the other hand, criteria such as Theil Inequality Coefficient and the amount of deviation and diversity (Bias Proportion, Variance Proportion and Covariance Proportion) also have relatively suitable values, which show that the prediction was balanced and acceptable. Therefore, Symmetric MAPE also shows with a value of 0.051807 that the percentage of absolute error is very low and acceptable compared to the actual value. Therefore, it can be concluded that the prediction was very accurate and error-free, and the prediction error measurements compared to the actual results are acceptable and appropriate.

Finally, it should be said that the assumptions of 3-2 to 3-7 of the research are as described in the following table:

Table (8). Examining rejection or confirmation of hypotheses 2-3 to 7-3

ROW	hypothesis	Reject	approve
1	The organizational structure of the company has a positive and significant relationship with strategic management accounting.	✓	
2	The quality of information technology has a positive and significant effect on strategic management accounting.	✓	
3	Business strategy has a positive and significant impact on strategic management accounting.	✓	
4	Market orientation has a positive and significant effect with strategic management accounting.	✓	
5	Market intensity has a positive and significant effect on strategic management accounting.	✓	
6	The size of the organization has a positive and significant effect on strategic management accounting.	✓	

4.6 The Impact of Strategic Management Accounting on Competitive Advantage

Table (9). Investigating the Assumptions of the Impact of Strategic Management Accounting on Competitive Advantage

$CA = \beta_0 + \beta_1 SM + \varepsilon$				
ROW	Variable	Std. Error	t-statistic	**Prob**
1	SM	0.011251	8.637848	**0.0000**
2		R-squared		**0.56%**
3		Adjusted R-squared		**0.56%**

Source: research findings

According to the results listed in table (9). It can be seen that the value of t statistic is equal to 8.637848. This number shows that the coefficient related to the SM variable is significantly different from zero. According to the statistical significance, it can be concluded that there is an unbalanced relationship between the SM variable and the response variable. On the other hand, according to the standard error, it is equal to 0.011251. This number represents the closest transition we can make to the actual value of the SM coefficient. Due to the smallness of this error, we can say with high confidence that this estimate is the most accurate estimate. Therefore, according to the information provided, the SM variable is the only independent variable used in the analysis. Finally, the value of R square is equal to 0.56%. This number indicates that the SM variable explains only a very small percentage of the variation in the response variable. In other words, only 0.56% of the variance of the response variable can be explained by the SM variable. Therefore, the adjusted R-square value is also 0.56%. This number indicates that the adjustment for the number of independent variables in the model has not been applied. Therefore, in the following, we will examine the normality of the residual of the second model, which is as follows:

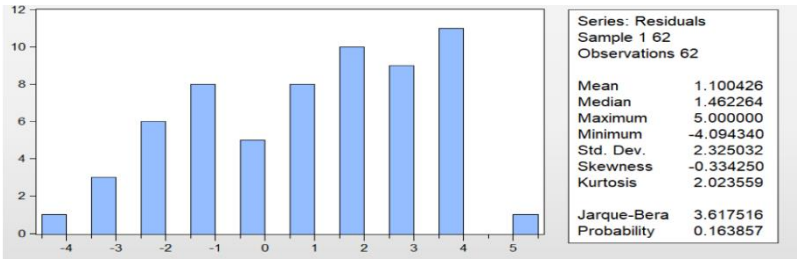

Figure (3). Residual normality test of the second model
Source: research findings

Therefore, according to figure (3). It is said that the output of the second model in table (9) is correct and its results are non-false, because the probability of the Jarque-Bra test follows the normality of the residual. Therefore, this means that the main hypothesis of the research is hypothesis 1-3. It is also confirmed, that is, this conclusion states that the existing hypothesis means the existence of a

positive and meaningful relationship between strategic management accounting and competitive advantage is confirmed. Now, we will continue to examine the impact of strategic management accounting practices on competitive advantage, the results of which will be as follows.

Table (10). The impact of strategic management accounting based on organizational structure on competitive advantage

$CA = \mu_0 + \mu_1 SM + \mu_2 STRC + \mu_3 SM * STRC + \varepsilon$				
ROW	Variable	Std. Error	t-statistic	**Prob**
1	SM	0.000112	36.32141	**0.0000**
2	STRC	0.001421	2.352114	**0.0031**
3	SM*STRC	0.000012	23.32521	**0.0638**
4		R-squared		**0.92%**
5		Adjusted R-squared		**0.92%**
6		Probability Jarque-Bera		**0.142064**

Source: research findings

 The value of 0.0000, 36.32141 and 0.000112: these results are related to the variable or "SM" category in the regression model. The value of 36.32141 indicates that with one unit increase in "SM", the dependent variable increases by approximately 36.32141 units. The residual value of 0.0000 shows that this interpretation is valid and also the p-value of 0.000112 shows that the effect of "SM" is statistically significant.

 The value of 0.0031, 2.352114 and 0.001421: these results are related to the variable or category "STRC" in the regression model. The value of 2.352114 indicates that with one unit increase in "STRC", the dependent variable increases by approximately 2.352114 units. The residual value of 0.0031 shows that this interpretation is valid and also the p-value of 0.001421 shows that the effect of "STRC" is statistically significant.

 The value of 0.0638, 23.32521 and 0.000012: these results are related to the interaction term between "SM" and "STRC" in the regression model. The value of 0.0638 shows that the interaction between these two variables has an effect of about 0.0638 units in changing the dependent variable. The residual value of 0.000012 shows that this interpretation is valid and also the p-value of 0.0638 shows that the interaction between "SM" and "STRC" is statistically significant.

 0.92% value: This value shows R-squared, which measures the ratio of changes in the dependent variable to the independent variables. Here this value shows that the independent variables in the model have the ability to explain approximately 0.92% of the dependent variable changes.

 0.92% value: This value shows Adjusted R-squared, which adjusts R-squared according to the number of variables and observations in the model. This value shows that the ability of the model to explain, while taking into account the number of variables and observations, has approximately 0.92% of the variation of the dependent variable.

 The value of 0.142064: This value shows the Jarque-Bera probability that tests the hypothesis of normality of the residuals of the model. If the p-value for the test is less than the specified significance level (usually 0.05), we can reject the hypothesis and say that the residuals fall outside the normal distribution. Considering the p-value of 0.142064, we cannot reject the hypothesis of normality of the residuals.

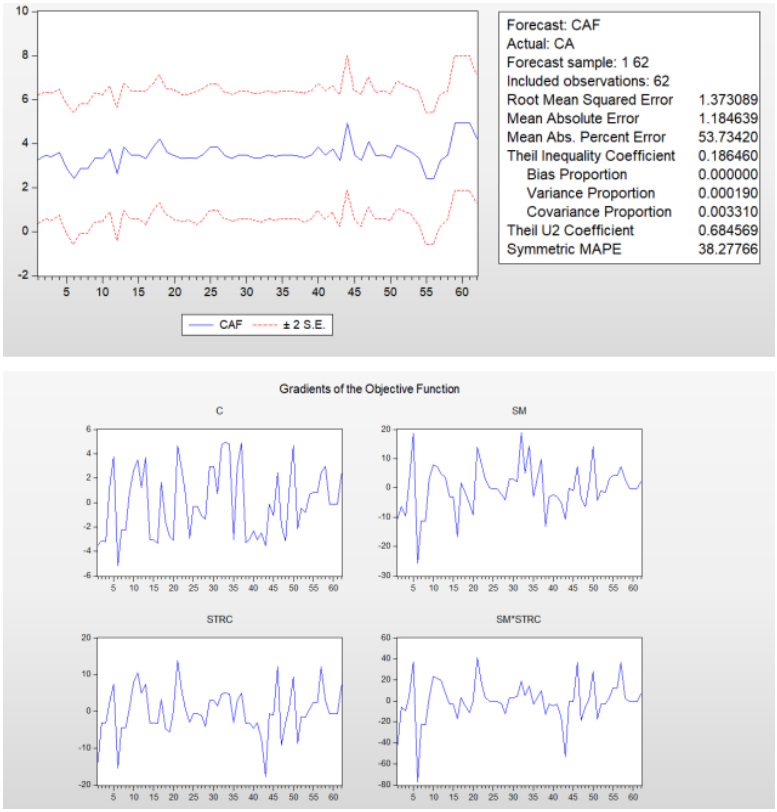

Figure (4). Checking the evaluation of variables
Source: research findings

According to figure (4). The model prediction for the CAF variable and the actual values for the CA variable are obtained in a sample that includes 62 observations. Some evaluation criteria to evaluate the quality of prediction are: 1- Root Mean Squared Error is equal to 1.373089. 2- Mean Absolute Error is equal to 1.184639. 3- Mean Absolute Percent Error is equal to 53.73420%. 4- Theil Inequality Coefficient is equal to 0.186460. 5- Theil U2 coefficient is equal to 0.684569. 6- The average absolute percentage error of the profile (Symmetric MAPE) is equal to 38.27766 percent. There are also criteria called Bias Proportion, Variance Proportion and Covariance Proportion for quantitative evaluation of prediction using Theil's inequality coefficient, whose values here are 0, 0.00019 and 0.003310 respectively. Finally, according to table (10) and figure (4). It can be seen that the hypothesis of positive and meaningful relationship of strategic management based on organizational structure on competitive advantage has been confirmed.

Table (11). The impact of strategic management accounting based on information technology quality on competitive advantage

$CA = \mu_0 + \mu_1 SM + \mu_2 QIT + \mu_3 SM * QIT + \varepsilon$				
ROW	**Variable**	**Std. Error**	**t-statistic**	**Prob**
1	SM	0.000120	4.321010	**0.0012**
2	QIT	0.012200	6.321145	**0.0123**
3	SM*QIT	0.000015	15.32151	**0.0000**
4	R-squared			**0.96%**
5	Adjusted R-squared			**0.95%**
6	Probability Jarque-Bera			**0.346072**

Source: research findings

SM and QIT variables have probability values of 0.0012 and 0.0123, respectively. This shows that the probability of using these variables in the model is not very low and they can be trusted. It can also be seen that the correlation variable SM*QIT has a probability value of 0.0000. This shows that this variable also has a significant effect in the model and should not be ignored. Therefore, the value of t-statistic for all three variables SM, QIT and correlation SM*QIT is greater than 2. This shows that their influence in the statistical model is valid and acceptable. On the other hand, the value of R-

Squared is about 96%. This shows that the model was able to explain about 96% of the changes in the dependent variable. This means that the independent variables in the model explain well the differences and changes in the dependent variable. Therefore, the value of Adjusted R-Squared is also about 95%. This also shows that the model has a good match with the real data and by fitting and explaining the independent variables to the model, the changes in the dependent variable can be explained accurately and strongly. Finally, Jarque-Bera probability is 0.346072, which is close to a normal random number. This means that the distribution of the data fits well with the normal distribution. Finally, according to all the above results, it can be concluded that the model, using SM, QIT and SM*QIT correlation, has worked well to explain and predict the dependent variable. In other words, these variables can reliably and meaningfully interpret changes in the dependent variable. Finally, it should be said that the hypothesis, the positive and significant effect of strategic management accounting based on the quality of information technology on the competitive advantage of the organization is confirmed.

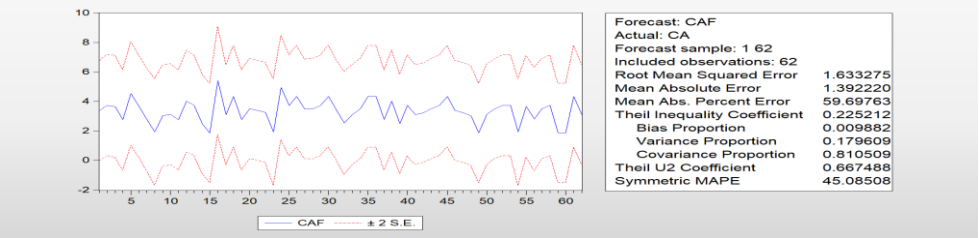

Figure (5). Checking the evaluation of variables
Source: research findings

 The error criterion is the root mean squared error (Root Mean Squared Error) is equal to 1.63. This measure shows that the average difference between the prediction and the actual data is about 1.63. This criterion is used to evaluate the accuracy of the model.

 Mean Absolute Error is equal to 1.39. This measure also shows the average difference between the forecast and the actual data.

 Mean Abs. Percent Error is equal to 59.70. This measure displays the average absolute error ratio and shows that the average percentage difference between the forecast and the actual data is about 59.70%.

 Theil Inequality Coefficient is equal to 0.23. This criterion shows the ratio of the prediction error to the average error, and a coefficient value less than 1 indicates excessive equality and greater than 1 indicates excessive inequality.

 Theil U2 Coefficient is equal to 0.67. This measure shows the ratio of the prediction error to the actual average error, and a value less than 1 indicates excessive equality and greater than 1 indicates no excessive equality.

 The average symmetrical absolute percentage error (Symmetric MAPE) is equal to 45.08. This measure represents an average percentage of absolute errors between the forecast and the actual data.

Also, the results show that the error is divided into bias, variance and correlation. These values show the ratio of error to different factors.

In general, it can be said that according to the results, the prediction model for the CAF variable has some error and has a significant difference with the real data. It is necessary to improve the model to improve the accuracy of predictions.

Table (12). The impact of strategic management accounting based on deliberate strategy on competitive advantage

$CA = \mu_0 + \mu_1 SM + \mu_2 STRDEL + \mu_3 SM * STRDEL + \varepsilon$				
ROW	**Variable**	**Std. Error**	**t-statistic**	**Prob**
1	SM	0.052413	2.352144	**0.0014**

2	STRDEL	0.000214	3.632514	**0.0023**
3	SM* $STRDEL$	0.023251	8.325144	**0.0000**
4	R-squared			**0.85%**
5	Adjusted R-squared			**0.85%**
6	Probability Jarque-Bera			**0.896782**

Source: research findings

1. SM and STRDEL variables have probability values of 0.0014 and 0.0023, respectively. This shows that the probability of using these variables in the model is valid and can be trusted.

2. It can be seen that the correlation variable SM*STRDEL has a probability value of 0.0000. This shows that this variable also has a significant effect in the model and should not be ignored.

3. The value of t-statistic for all three variables SM, STRDEL and correlation SM*STRDEL is at least 2. This shows that the influence of these variables in the statistical model is acceptable and valid.

4. The value of R-Squared is about 85%. This shows that the model explains about 85% of the changes in the dependent variable. This means that the independent variables in the model partially explain the differences and changes in the dependent variable.

5. The value of Adjusted R-Squared is also about 85%. This also shows that the model has a good match with the real data and by fitting and describing the independent variables to the model, the changes in the dependent variable can be well explained.

6. The Jarque-Bera probability is 0.896782, which shows that the data distribution also fits the normal distribution well to some extent.

Finally, according to all the above results, it can be concluded that the model, using SM, STRDEL and SM*STRDEL correlation, has worked well to explain and predict the dependent variable, and it can be interpreted with confidence in the accuracy of the model. Changes in the dependent variable of payment. Finally, it should be said that the hypothesis, the positive and significant impact of strategic management accounting based on deliberate strategy on the organization's competitive advantage is confirmed.

Table (13). The impact of strategic management accounting based on market orientation on competitive advantage

$CA = \mu_0 + \mu_1 SM + \mu_2 MKT + \mu_3 SM * MKT + \varepsilon$				
ROW	**Variable**	**Std. Error**	**t-statistic**	**Prob**
1	SM	0.001251	3.325141	**0.0536**
2	MKT	0.331620	2.362541	**0.0001**
3	SM*MKT	0.148832	5.321451	**0.0012**
4	R-squared			**0.83%**
5	Adjusted R-squared			**0.82%**
6	Probability Jarque-Bera			**0.163293**

Source: research findin gs

In this analysis, we have different values and statistics for the relationship between SM, MKT variables and the combination of SM*MKT in our model. The results of this analysis are very important for the interpretation and evaluation of the generalization and accuracy of the model. Based on these results, the SM variable indicates the probability of its use in the model being valid (probability value 0.0536) and has a significant effect on the dependent variable, which is confirmed by the t-statistic value of 3.325141. Also, the MKT variable with a probability value of 0.0001 and t-statistic of 2.362541 indicates a significant effect on the dependent variable. Finally, the combined variable SM*MKT with a probability value of 0.0012 and t-statistic equal to 5.321451 shows that it has a significant effect on the dependent variable. Therefore, the adjusted R-squared coefficient is equal to 0.82%. This value shows that the independent variables have the ability to explain about 0.82% of the changes in the dependent variable. Therefore, our model is well able to explain the changes in the dependent variable. And the Jarque-Bera probability with a value of 0.163293 shows that the distribution of our data is close to the normal distribution. Therefore, according to these

results, it can be concluded that the variables SM, MKT and the combination of SM*MKT have a significant effect on the dependent variable and our model has high transparency. These results can help us in interpreting the factors influencing changes in the dependent variable and help in improving the accuracy of the model. Finally, it should be said that the hypothesis, the positive and significant impact of strategic management accounting based on market orientation on the organization's competitive advantage is confirmed.

Table (14). The impact of strategic management accounting based on the intensity of market competition on competitive advantage

$CA = \mu_0 + \mu_1 SM + \mu_2 CMPT + \mu_3 SM * CMPT + \varepsilon$				
ROW	**Variable**	**Std. Error**	**t-statistic**	**Prob**
1	SM	0.023687	7.325142	**0.0082**
2	CMPT	0.023603	43.45678	**0.0000**
3	SM*CMPT	0.008342	36.21414	**0.0000**
4	R-squared			**0.99%**
5	Adjusted R-squared			**0.99%**
6	Probability Jarque-Bera			**0.231463**

Source: research findings

In this analysis, different results and statistics for Prob value, t-statistic, Std. We have Error and Variable for our model. These results help us to evaluate the influence and importance of SM, CMPT and the combination of SM*CMPT on the dependent variable. Based on these results, the SM variable with a probability value of 0.0082 and t-statistic of 7.325142 shows that it has a significant effect on the dependent variable. Also, the CMPT variable with a probability value of 0.0000 and t-statistic of 43.45678 also shows that it has a significant effect on the dependent variable. Finally, the combined variable SM*CMPT also has a significant effect on the dependent variable with a probability value of 0.0000 and t-statistic equal to 36.21414. Therefore, the adjusted coefficient of R-squared and Adjusted R-squared are both equal to 0.99%. These values show that the independent variables have the ability to explain about 0.99% of the changes in the dependent variable. Therefore, our model is well able to explain the changes in the dependent variable. On the other hand, the Jarque-Bera probability with a value of 0.231463 shows that the distribution of our data is relatively close to the normal distribution. According to these results, we can conclude that the variables SM, CMPT and the combination of SM*CMPT have a significant effect on the dependent variable and our model has high transparency. These results can help us in interpreting and investigating the influencing factors on changes in the dependent variable as well as in improving the accuracy of the model. Finally, it should be said that the hypothesis, the positive and significant impact of strategic management accounting based on the intensity of market competition on the organization's competitive advantage is confirmed.

Table (15). The impact of strategic management accounting based on environmental uncertainty on competitive advantage

$CA = \mu_0 + \mu_1 SM + \mu_2 PEU + \mu_3 SM * PEU + \varepsilon$				
ROW	**Variable**	**Std. Error**	**t-statistic**	**Prob**
1	SM	0.012587	2.362514	**0.0125**
2	PEU	0.005218	5.632514	**0.0005**
3	SM*PEU		9.362444	**0.0000**
4	R-squared			**0.77%**
5	Adjusted R-squared			**0.76%**
6	Probability Jarque-Bera			**0.373882**

Source: research findings

In this analysis, different results for Prob, t-statistic, Std. We have Error and Variable for our model. These results help us to evaluate the influence and importance of SM and PEU variables and the combination of SM*PEU on the dependent variable. Based on these results, the SM variable with a probability value of 0.0125 and t-statistic of 2.362514 shows that it has a significant effect on the dependent variable. Also, the PEU variable with a probability value of 0.0005 and t-statistic of

5.632514 also shows that it has a significant effect on the dependent variable. Finally, the combined variable SM*PEU has a significant effect on the dependent variable with a probability value of 0.0000 and t-statistic equal to 9.362444. Therefore, the adjusted R-squared coefficient is equal to 0.76%. This value shows that the independent variables have the ability to explain about 0.76% of the changes in the dependent variable. Therefore, our model has the ability to explain changes in the dependent variable. Therefore, the probability of Jarque-Bera with a value of 0.373882 shows that the distribution of our data is close to the normal distribution. Therefore, according to these results, we can conclude that the variables SM, PEU and the combination of SM*PEU have a significant effect on the dependent variable and our model has high transparency. These results can help us in interpreting and investigating the factors affecting the changes of the dependent variable and also be effective in improving the accuracy of the model. Finally, it should be said that the hypothesis, the positive and significant impact of strategic management accounting based on environmental uncertainty on the organization's competitive advantage is confirmed.

4. CONCLUSION

5-1 According to the results of the first model, the general conclusion will be as follows:

According to the statistics used by you, it is concluded that all the studied variables STRC, QIT, SRTDEL, MKT, CMPT, PEU, SIZE can be interpreted. In other words, the p-value of each of these variables is smaller than 0.05, which indicates that there is a significant relationship between these variables and strategic management accounting. Therefore, according to the values of R-squared and Adjusted R-squared, your model is well connected to the data and the independent variables partially explain the changes of the dependent variable. The value of R-squared is close to 0.745437, which means that about 74.54% of the variation of the dependent variable is explained by the explanatory variables of the model. Also, the Adjusted R-squared value is close to 0.712438, which indicates that about 71.24% of the variation in the dependent variable is explained by the explanatory variables in your model. These values show that the explanatory variables have a significant effect on the dependent variable. As a result, it can be concluded that your model fits the data well and a number of research variables have a significant impact on strategic management accounting. However, to have a more complete and accurate interpretation, it would be useful to read more and analyze the model and data you are using. In other words, by analyzing the data, we initially conclude that the existence of a strong organizational structure in the company improves strategic management accounting. That is, a strong organizational structure can help the company to effectively implement management strategies and improve strategies. Also, the quality of information technology plays an important role in strategic management accounting. With up-to-date and advanced information technology, the company can accurately and timely review and analyze information related to financial strategies and performance. In addition, business strategy and market orientation have a positive effect on strategic management accounting. That is, choosing a suitable strategy and correctly understanding the needs and requirements of the market will help the company to achieve the goal of strategic management and experience good growth and development. In addition, market intensity is one of the factors that has a positive effect on strategic management accounting. This shows that companies that operate in competitive and dynamic markets are more successful in implementing better strategies and strategies. Finally, with the increase in the size of the organization, it can be said that strategic management accounting will also increase. In general, it can be said that the research results show that various factors, including organizational structure, information technology quality, business strategy and market orientation and market intensity, organization size have a great impact on strategic management accounting. However, the use of explanatory variables may be different according to the specific conditions of the company and the industry under investigation.

5-2 Conclusions based on the assumptions of the impact of strategic management accounting on competitive advantage

According to the research results, it has been determined that there is a significant relationship between strategic management accounting based on organizational structure, information technology quality, business strategy based on deliberate strategy, market orientation, market intensity and environmental uncertainty with competitive advantage. In general, strategic

management accounting based on organizational structure, information technology quality, business strategy in terms of deliberate strategy, market orientation, market intensity and environmental uncertainty have a significant impact on competitive advantage. However, this means that organizations that implement strategic management accounting appropriately according to the mentioned parameters will benefit from a competitive advantage. In other words, receiving and optimally using strategic management information and planning in strategic decisions will significantly improve the performance of organizations. Also, improving the quality of information technology can have a significant impact on competitive advantage. Organizations that improve the extent of their information technology and use it in strategic management accounting are able to achieve a stronger competitive advantage in the market. In other words, having appropriate and efficient information technology can allow the organization to better manage and analyze information, facilitate increasing productivity and reducing costs, and ultimately improve quality and customer satisfaction. Based on this, since the interaction between strategic management accounting and organizational structure also has a significant effect on competitive advantage, it can be concluded that in order to achieve a stronger competitive advantage, there is a need to create interaction and coordination between these two factors. In other words, organizations should strive to harmonize strategic management accounting and their organizational structure in order to create a stronger competitive advantage over competitors. This coordination can be achieved through the adaptation of accounting practices and strategic processes with the needs and goals of the organization.

Therefore, based on the statistical analysis mentioned in Table (12), it can be concluded that SM and STRDEL variables have a significant effect in the model separately and in combination. Also, these analyzes show that the correlation between SM and STRDEL variables also has a significant effect on the model and should be considered in the analyses. Therefore, considering the above information, it can be concluded that strategic management accounting based on deliberate strategy has a positive and significant effect on the organization's competitive advantage. This result means that by using optimization of management strategies, the competitive advantage of the organization can be increased. Also, according to the value of R-Squared about 85% and Adjusted R-Squared about 85%, it can be concluded that the model explains well the changes of the dependent variable and has a good match with the real data. Therefore, it is possible to interpret the changes of the dependent variable with confidence in the accuracy of the model. On the other hand, according to the aforementioned analyzes and interpretations, it can be concluded that there is a positive and significant effect of strategic management accounting based on deliberate strategy on the organization's competitive advantage. This result means that by correcting and implementing management strategies, it is possible to improve the competitive advantage of the organization and help to improve the performance and success of the organization. According to all the results, it can be concluded that the use of strategic management accounting Based on the deliberate strategy, it has a significant and positive effect on the competitive advantage of the organization. These influences can help the organization to adopt the best management strategies to realize its goals and improve its competitive advantage. Finally, the use of strategic management accounting can help the organization in choosing and implementing deliberate strategies. By using this type of accounting, the organization can monitor and evaluate the financial and performance improvements that are the result of applying deliberate strategies. This enables the organization to make the best decisions in choosing its strategy and allocating its resources. Meanwhile, through strategic management accounting, the organization can compare its performance with its competitors and identify favorable changes in its competitive advantage. These results can help the organization to identify its strengths and weaknesses and adopt strategies to improve its competitive advantage. In general, the use of strategic management accounting based on a deliberate strategy can help the organization to make continuous improvements in its efficiency and performance and ultimately strengthen its competitive advantage. Therefore, based on the results presented in table (13), it shows that strategic management accounting has a significant effect on the organization's competitive advantage. Also, market orientation (SM) and marketing (MKT) strategy variables alone and in combination (SM*MKT) have a significant effect on the dependent variable. These results show that management strategy in terms of market and strategic management accounting have a strong impact on the organization's competitive advantage. From this analysis, it can be concluded that the organization

is able to make proportional improvements in its competitive advantage by adopting the appropriate market orientation strategy and using strategic management accounting. These results can help the organization to choose and adjust the appropriate strategies to have continuous improvements in the performance and performance of the organization and ultimately strengthen its competitive advantage. Therefore, our model has high accuracy and transparency and shows that the variables under our study have the ability to justify the changes of the dependent variable. In addition, the data distribution is close to the normal distribution, which shows that our statistical inference criteria are valid and reliable. Finally, according to all the obtained results, it can be concluded that strategic management accounting based on market orientation has a positive and significant effect on the competitive advantage of the organization. These results can help the organization in interpreting and analyzing factors affecting competitive advantage and help in modifying and improving management plans and strategies. On the other hand, according to the results presented in table (14), it is clear that strategic management accounting has a significant effect on the competitive advantage of the organization based on the intensity of market competition. Market orientation (SM) strategy variables, along with a combination of market competition intensity (CMPT) variables, have a significant effect on the dependent variable. Therefore, the results show that the management strategy by emphasizing the appropriate market orientation and paying attention to the intensity of the market competition, is able to have significant improvements in the competitive advantage of the organization. These results can help the organization in choosing and setting appropriate strategies and programs to have continuous improvements in the organization's performance and organizational performance and ultimately strengthen its competitive advantage. Therefore, our model has high accuracy and transparency and shows that the variables under our study have the ability to justify the changes of the dependent variable. Moreover, the distribution of the data is relatively close to the normal distribution, which indicates that our statistical inference criteria are valid and reliable. Accordingly, according to all the results obtained, we can conclude that strategic management accounting has a positive and significant effect on the competitive advantage of the organization based on the intensity of market competition. These results can help the organization in interpreting and analyzing factors affecting competitive advantage and help in modifying and improving management plans and strategies. Finally, based on table (15), it is clear that strategic management accounting based on environmental uncertainty has a significant effect on the organization's competitive advantage. The variables of market orientation strategy (SM) and environmental uncertainty (PEU), along with their combination (SM*PEU), have a significant effect on the dependent variable. In a way, the results show that the management strategy by emphasizing the appropriate market orientation and paying attention to the uncertainty of the environment is able to have significant improvements in the organization's competitive advantage. These results can help the organization in choosing and setting appropriate strategies and programs to have continuous improvements in the organization's performance and organizational performance and ultimately strengthen its competitive advantage. Therefore, our model has high accuracy and transparency and shows that the variables under our study have the ability to justify the changes of the dependent variable. In addition, the distribution of the data is relatively close to the normal distribution, which indicates that our statistical inference criteria are valid and reliable. Considering all the results obtained, we can conclude that strategic management accounting based on environmental uncertainty has a positive and significant effect on the competitive advantage of the organization. These results can help the organization in interpreting and analyzing factors affecting competitive advantage and help in modifying and improving management plans and strategies. Finally, according to these results, it is possible to understand a positive and valid meaning between strategic management accounting and competitive advantage in petrochemical industries of Iraq.

5. Practical suggestions of research

1. Market orientation strategy: Based on these results, it is recommended that organizations pay special attention to market orientation strategy, because this strategy has a significant impact on competitive advantage. Keep in mind that the marketing strategy must be clearly defined and in harmony with the organization's needs and goals.

2. Attention to the uncertainty of the environment: the results show that the uncertainty of the environment has a significant effect on the competitive advantage. Therefore, it is recommended that

organizations provide tools and methods to measure and manage their environmental uncertainty. Planning to organize and manage improvements made to deal with environmental uncertainty can significantly improve the organization's competitive advantage.

3. The combination of SM and PEU: Based on the research results, the combined variable SM*PEU shows a significant impact on competitive advantage. Therefore, organizations can use the combination and simultaneous use of appropriate market orientation and attention to environmental uncertainty as a sustainable strategy to strengthen competitive advantage.

4. Management of transparency and accuracy: the results show that the model has a good potential ability to describe and predict changes in the dependent variable. To improve the accuracy of the model, you can pay attention to expanding the volume of data, improving modeling techniques, and using advanced statistical methods.

5. Establishing an appropriate organizational structure: It is recommended that organizations design and adjust their organizational structure in a way that is compatible with business strategies and organizational goals. A suitable organizational structure can help in creating interaction and coordination between strategic management accounting and other organizational units and is of great importance for the optimal use of strategic management information and the effective implementation of strategic decisions.

6. Improving the quality of information technology: One of the important practical suggestions is the optimization of information technology. Organizations should improve their information technology and use it in strategic management accounting. This includes updating systems, using optimal tools for gathering and analyzing strategic data, and using new technologies such as artificial intelligence and data analysis. Information technology is a powerful tool for improving the organization's performance and can be effective in creating and developing a competitive advantage.

7. Attention to business strategy: Organizations should coordinate their business strategies with the main accounting strategy of strategic management. Business strategy can determine the goals and applications of strategic management accounting. In this case, strategic management accounting is used as a tool to track and predict strategic performance in line with business strategies.

8. Improving market orientation and customer knowledge: accurate knowledge of market orientation and customer needs can help organizations improve their competitive advantage. Comprehensive and accurate information about the market, competitors and customers can be effective in strategic decisions and strategic management accounting. This includes assessing the market and competition, conducting marketing research, developing customer relationships, and using market analysis tools.

9. Paying attention to the organizational structure: Empowering a strong organizational structure and improving relationships between different units and departments of the company can help in the effective implementation of strategies and strategies. Therefore, managers should constantly evaluate their organizational structure and make necessary adjustments.

10. Information Technology Update: Using updated and advanced information technology can help the company to accurately and timely review and analyze information related to financial strategies and performance. Therefore, it is necessary to pay attention to new and innovative technologies and implement them in the company's strategic management accounting systems.

11. Attention to business strategy and target market: Choosing the right strategy and understanding the needs and requirements of the market will help the company to achieve the goal of strategic management and experience good growth and development. Therefore, managers should thoroughly examine their target market and implement strategies that improve the efficiency and performance of the company.

12. Market intensity and competition: Operating in competitive and dynamic markets can help the company to implement its strategies and strategies more effectively. Therefore, you should familiarize yourself with the competition and intensity of your market and try to change your strategies accordingly.

13. Organizational growth: increasing the size of the organization can have a positive effect on strategic management accounting. Therefore, companies can move towards further growth and development by increasing their revenues and improve their strategic management accounting.

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