

Strategy, Management Accounting Systems, and Performance of Iranian Petrochemical Companies in the Light of Contingency Theory

Abbas Alimoradi^{1*} and Sepideh Borzoupour²

¹ Assistant Professor, Department of Accounting, Petroleum University of Technology, Tehran, Iran

² M.S. Student, Department of Accounting, Qom University, Qom, Iran

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Abstract

In the present business atmosphere, an organization should be able to respond to environmental needs occasioned by rapid and dynamic evolution as quickly as possible. It is obvious that such ability is impossible without a proper strategic approach, strategic thinking, and a suitable management accounting system. This study attempts to investigate the relationships between strategy, management accounting systems, and the performance of Iranian petrochemical companies under the framework of contingency theory. It is assumed that matches between organizational strategies and the content variables of organizational structure in controlling environments such as management accounting systems could produce an optimal level of performance. The statistical population of the study is Iranian petrochemical private companies, and the required information has been gathered by questionnaire the internal reliability of which is confirmed by a Cronbach's alpha coefficient of 83.4%. Structural equation modelling with LISREL software has been used for data analysis and hypotheses testing. The results not only confirm the direct association between strategy, management accounting systems, and company performance, but also support the effect of management accounting system as a mediating variable on the relationship between strategy and performance. According to the results, it might be concluded that contingency theory postulates are applicable to the Iranian petrochemical industry, and this conclusion may shed some light on the way in which these companies are managed and controlled.

Keywords: Strategy, Performance, Contingency Theory, Management Accounting Systems, Structural Equation Modelling

1. Introduction

The commercial environment is dynamic as a result of changes in the work environment such as globalization; technological changes; increased competition; the focus on customers' needs; and social, political, and cultural conditions. Production, marketing, finance, and the control process should be designed very differently by utilizing more information in decision-making and management. The survival of a company in today's competitive global markets depends on the

* Corresponding Author:

Email: alimoradi@put.ac.ir

management accounting team, whose duty is to successfully evaluate the competitive situation of the company.

Management accounting systems (MAS) are employed to assist companies achieving two objectives: facilitate managerial decision making (i.e., support subunit managers' decisions) and control subunit manager's behavior by superiors (i.e., support the superior's performance evaluation decisions) (Abernethy and Bouwens, 2005). Management accounting systems are developed partly in response to the firm-specific and external contingencies faced by every single company (Abdel-Kader and Luther, 2008). Strategic planning and management attempts to recognize opportunities offered, threats posed by the external environment, and the weakness of the internal environment of the organization by investigating the external and internal environments of the organization and proposing strategies that decrease the risk of organizational failure according to the organizational perspectives and purposes. It tries to guarantee companies' survival and improvement by changing those strategies into long- and short-term plans and by improving resource allocations. As a result, companies compile strategies to achieve their targets in order to improve their performance. They should have the ability to react and respond to these contingency variables of the environmental conditions and changes.

Management accounting studies focus on the relation between the strategies and controlling systems (the management accounting) and the performance (Langfield-Smith, 1997; Toker et al., 2009). Many research results show that the relation between the management accounting system and the adopted strategy improves the performance (Mousavi Shiri and Shakeri, 2015; Abrandi and Goteri, 1994). Previous studies show that organizations design and conduct different strategies to respond to the environment, and adaptations among strategy, the external environment factors, and organizational traits have important effects on the company performance (Porter, 1980).

In addition to this point that the strategy should be supported by a proper organizational structure and management accounting system, a company with a suitable management accounting system will produce a better performance (Mia and Clark, 1999), and the adaptation of a suitable management accounting system and strategy improves the performance (Mousavi Shiri and Shakeri, 2015). Based on the above-mentioned explanations, the main aim of this study is to investigate the relation among strategy, the management accounting system, and the performance of Iranian private petrochemical companies. The study will seek to investigate this relation in the light of contingency theory.

The rest of this paper comprises five main sections. The next section reviews theoretical bases and previous relevant studies, pointing to the research gap in this area. The third section is devoted to the hypotheses development. The methodology of the study, including the statistical sample and population, the way of measuring the variables, data collection methods and instruments, and data analysis methods forms the fourth section. The fifth section includes a summary and analysis of the data and the testing of the hypotheses. The last section discusses the findings, reaches some conclusions, and highlights the research contributions and limitations.

2. Literature research

Traditional management theoreticians tried to investigate the best methods for managers to conduct their activities in different situations. However, researchers discovered that companies sometimes have to ignore certain traditional principles in order to achieve better results; hence, contingency theory started to take shape (Rezayian, 2000). Contingency theory emerged in the 1960's. The British sociologists Tom Bernz and Gorge Staker and the American theoreticians Poul Lowrens and Yi

Loursh were the first to reason that the organizational structure must match the changing conditions of the environment.

The principles of contingency theory have been employed by management accounting researchers since the 1970's. Many studies have been conducted in this area and different aspects of management accounting have been considered by this approach. More than forty contingent variables have been investigated and many theoretical methods, data-gathering tools, and hypothesis-testing techniques have been used. The main contingent variables which have been considered in management accounting so far are environmental factors, organizational structures and systems, and their components (such as controlling systems, management accounting systems, and management information systems), national and organizational culture, production technology, and organization size and strategy (Alimoradi, 2012). In this study, we focus on strategy as a contingent variable.

By "strategy", we mean the pattern of decision-making in the organization that shows and determines the organization's purposes and goals. It is a source of the main policies and plans of the organization and a path for achieving the organization's objectives. This pattern describes the range and kind of the organization's activities and the methods of managing its economic and human resources in order to reach its goals and satisfy shareholders, staff, costumers, and other stakeholders (Mintzberg, Quinn, and Ghoshal, 1998). Among all the definitions and classifications of strategy, those by Snow and Miles, and Michel Porter are the most important ones, as can be seen in Table 1.

Table 1
Classification of the strategies.

| | | | | |
|----------------------------------|--------------------------|-------------------|--------------------------|------------------|
| Snow and Miles (1987) | Prospector strategy | Defender strategy | Analyzer strategy | Reactor strategy |
| Michael Porter (1989) | Differentiation strategy | Focus strategy | Cost leadership strategy | |

The main focus of this research is on Snow and Miles' classification. In Snow and Miles' classification, the companies using a prospector strategy are companies which look for new products and markets via a continuous and prospective approach; they are called creators of innovation in the market. On the other hand, there are companies whose key value is effectiveness; they try to maintain their positions in the market, and their strategies are therefore assessed as those of defenders. Defender and prospector strategies are at the opposite ends of the scale. The analyzer strategy occupies a place between defenders and prospectors; hence, it is at the intermediate point. However, companies with reactor strategies are different as they cannot follow just one of these strategies, but react differently in different situations.

The other variable of this study is the management accounting system. Management accounting is a system whose task is to measure and provide financial and operational information as if it directs managers' activities, stimulates suitable behaviors, and creates and supports the necessary values for achieving the strategic objectives of organizations. Institutions and organizations that conduct economic and social activities differ in terms of objectives, legal entities, capital structure, and kinds of activities. However, the common aspect in all institutions is the requirement for them to be managed properly to achieve their goals. The management accounting systems focus on the goals of each organization. The management accounting system of the organization is expected to give correct, relevant, and timely information about the organization's performance to different levels of management. Previous studies suggest that the strategic priorities and suitable and effective operational activities should be supported by information systems fed by sophisticated management

accounting systems (Janson and Kaplan, 1987). An effective management accounting system should have suitable technological, behavioral, and cultural traits. In fact, these three kinds of traits are the keys to obtaining suitable information in management accounting systems. These three traits are called the “triangle of traits” (Yaghoobnejad and Razavi, 2009).

Bromwich addressed different aspects of strategic management accounting in 1988, 1990, and 1992. Although the strategic management accounting literature has developed very strongly, there is limited agreement and consensus about the exact meaning of “strategic management accounting”. Most of the papers are only theoretical and conceptual, and just a few have considered strategic management accounting through a research approach (Lord, 1996; Zandi and Shoom, 1999; Golding et al., 2000; Kravens and Golding, 2001; Cades and Golding, 2007).

Zandi and Shoom (1999) studied 22 strategic management accounting techniques in Latin American countries. Golding et al. (2000) first identified and then tested 12 strategic management accounting techniques in their study. Kravens and Golding (2001) added three techniques to the 12 techniques of Golding et al. (2000) and retested them. Cades and Golding (2007) first selected and then classified 16 strategic management accounting techniques after considering the techniques applied in previous studies; they are as follows: attribute costing, benchmarking, brand valuation, competitive position monitoring, competitors’ cost assessment, competitors’ performance appraisal, customers’ profitability analysis, integrated performance measurement, life cycle costing, lifetime customer profitability analysis, quality costing, strategic costing or strategic cost management, strategic pricing, target costing, and the valuation of customers as assets.

Many studies have investigated the relations between strategy, performance, and management accounting system. We point out just some of the most recent and relevant ones. Cordanaej (2002) shows that, in relation to “designing and explaining the strategic interactive model, the organizational culture, and the industrial organization environment of the country”, when the organization works in a dynamic environment in order to maintain its survival and effectiveness, it uses the prospector strategy, but when the organizational environment is permanent and static, it applies the defender or reactor strategy. Khalili Eraghi et al. (2007) showed that the variables of the co-axial model, which consists of the environment risks, the company strategy, and the capital structure, affect the company performance to some extent, and applying the co-axial model has a positive effect on the company performance.

Jalalli Frizhendi and Shakiba Jamalabad (2011) found that the application of strategic management systems promotes the company performance by providing competitive information and creates conditions for obtaining competitive static advantages as a result of the competitive nature of today’s environment and the capability of these systems in the traditional management accounting systems. Mia and Clark (1999) investigated the competitive market, management accounting systems, and enterprise performance, and they hypothesized that there is a relation between the level of market competition and enterprise performance and that accounting system information moderates that relationship. Results show that companies which use management accounting system information are more successful in the competitive market and show an improved performance.

Mousavi Shiri and Shakeri (2015) investigated whether or not the adaptation of the strategic management system and the strategy improves performance. In addition, the association between strategic management accounting, strategy, and performance was examined in the companies listed in the Tehran Stock Exchange. The results show that adopting the prospector strategy and costing techniques (a type of strategic management accounting technique) improves the performance. In

addition, they illustrated that the adaptation of management accounting and strategy improves the performance. Abranding and Gotry (1994) found that a more complex management accounting system (for example, when strategic management accounting is compared to traditional management accounting) has a more positive effect on the performance of companies that apply the prospector strategy compared to those using the defender strategy.

Cinquini and Tenucci (2009) found that customer accounting, competitive position monitoring, competitor performance appraisal based on the published financial statements, and quality costing have the widest application in Italian companies, and those companies that select the defender and differentiation strategies prefer to use strategic management accounting techniques. In addition, the companies that prefer the prospector strategy should use the competitor costing, strategic decision making, and customer accounting techniques more than the other companies.

Cadez and Golding (2012) investigated whether or not the application of proportionality in the management accounting and the strategy improves the performance. According to the results of the study, which was conducted in Slovenia, they concluded that the different strategic management accounting systems and the strategy do not create any difference in the organizations performance.

According to the above reviewed studies, we find that the relations among the aforementioned variables have adequately been studied, but these studies have usually been conducted in private sectors of developed countries. In Iran, studies have covered the same ground as the other studies, but three aspects have been considered to a lesser extent. The first point is that contingency theory as the underlying theory has not been employed by these kinds of research. Secondly, the management accounting system variable has not been inserted into the models as a moderating variable thus far. Finally, there has been a lack of consideration of a particular industry that might explain the industry effect. Therefore, this study uses Iranian petrochemical private companies as its statistical population in an attempt to fill the three aforementioned gaps. In addition, the petrochemical industry appears to require more research because it plays the main role in Iran's turnover and economy; there is also an increasing need for its products, resulting in the need for more attention and capital expenditure and investment. In the next section, the research hypotheses are developed.

3. Hypotheses development

The theoretical principles of the contingency theory are used as the underlying theory in justifying the research hypotheses. It is assumed that, with the adaptation of the strategy and its background, either the external environment or the organizational traits will have the main positive effect on the company performance. The company performance will be affected by the selected strategy and its alignment with the external and internal factors (Porter, 1980). Researchers have reasoned that the contingent match between the selected strategy and its background variable will increase the performance. The experimental studies support this claim. Khalili Eraghi et al. (2009) showed that each of the co-axial model variables, which are the environment risks, the company strategy, and the capital structure, will affect the company performance. Con and Davis (2000) claimed that the adaptation degree in the organizational strategy and the external environment determines the effectiveness and efficiency level of the companies. Reasons provided by Das and Davis (1984), White (1986), Tripsi (2007), and Valipour and Saberi (2010) may be compatible with the effect of the type of commercial strategy on the company performance. Based on the above-mentioned points, the following hypotheses can be suggested regarding Iranian petrochemical companies:

First hypothesis: there is a significant relationship between the adopted strategy and performance of Iranian private petrochemical companies.

Investigations into the reasons for the success of big companies show the importance of the existence of a suitable management accounting system to develop the organizational goals. In general, the common aspect of all the institutions is that they should manage correctly to achieve their goals. The kind of management accounting system depends on the goals of all the organizational units. Mia and Clark (1999) concluded that companies which enjoy suitable management accounting system information achieve a better performance. The effectiveness of applying the strategic management accounting techniques on the company performance can be supported by the findings of Lord (1996), Zandi and Shoom (1999), Golding et al. (2000), and Hapwood (2007). Therefore, the second hypothesis is suggested as follows:

Second hypothesis: there is a significant association between the type of management accounting systems and the performance of Iranian private petrochemical companies.

Most researchers believe that if a company wants to achieve a competitive advantage and a high level of performance, it needs a clear organizational strategy. However, by itself this is insufficient as other organizational elements are necessary to support the desired strategies such as productive process, the organizational structure, and the accounting information systems (Jermias and Gani, 2004). Based on Tils' opinion (1997), the compatibility between the strategies and the management accounting systems has a direct effect on the company ability to remain competitive in the market. In addition, Hejazi and Fotoohi (2009) believe that strategy should be supported by a certain organizational structure and a proper management accounting system. Hence, the third hypothesis is suggested as follows:

Third hypothesis: there is a significant relationship between the adopted strategy and type of management accounting system of Iranian private petrochemical companies.

As we have seen, the above hypotheses predict the direct relationships between three main variables of strategy, management accounting system, and performance. In fact, research findings based on contingency theory show that the indirect relationship between strategy and performance can be mediated by management accounting systems. It is said that if a company wants to be successful in achieving a competitive advantage and having the ability to work with a high level of performance, it needs a clear organizational strategy, but this is insufficient by itself. Therefore, the strategy must be supported by other organizational elements such as productive process, organizational structure, and the accounting information system. According to the findings of Chanhali and Langfield-Smith (1998), there is a meaningful relationship between the combination of the techniques and the management accounting methods in different states of the organizational strategy by their performance. Mousavi Shiri and Shakeri (2015) claimed that the commercial strategy adoption and implementation of the strategic management accounting techniques improve the performance of the companies listed in the Tehran Stock Exchange. They also found that the match between strategy and management accounting system improves the performance. Of course, the mediator role of the management accounting system between the strategy and the performance has not clearly been tested yet, but it seems reasonable to suggest the final hypothesis according to the above explanations and reasons:

Fourth hypothesis: there is a significant relationship between adopted strategy and the performance of Iranian private petrochemical companies mediated by management accounting systems.

The next section introduces the research methodology of this study.

4. Research methodology

4.1. Population and data collection method

The philosophical approach of this study is positivism, and it uses the functionalism paradigm. The reasoning approach of this study based on contingency theory is deductive. The population of this study comprises middle managers of 35 Iranian petrochemical private companies (just producing companies, so investing companies were excluded). Five managers from each company, including executive manager, human resource manager, financial manager, sales manager, and production manager have been asked to complete the study questionnaire. As there are a limited number of Iranian petrochemical private companies, all of them are studied; hence, no sampling has been conducted and all of them have been considered as research subjects. A total of 175 managers (35 companies × 5 managers from each company) have been asked to participate.

The data collection method is a survey using a questionnaire instrument. The questionnaire is the most common instrument for data collection in studies in the area of contingency theory. Questionnaires were sent to all the above-mentioned managers of Iranian petrochemical private companies. The questionnaire questions have been designed by using the previous studies and looking at the petrochemical industry traits. In an initial pilot test, the questionnaire was sent to four managers in two different companies, and their reactions and responses were reviewed in order to modify the questions for greater validity. To test the reliability, Cronbach's alpha coefficient was estimated by SPSS software. Although the least acceptable value of this coefficient is 70%, 60%, and even 55% in some situations (Ferry and Van, 1978; Nunnally, 1978), Cronbach's alpha coefficient has been estimated in this research as 83.4%. This questionnaire has 25 questions utilizing a seven-point Likert-type scale. Structural equation modelling (SEM) by LISREL software is used for data analysis and hypothesis testing since it is the most powerful and most suitable method of analysis in behavioral and social science research.

4.2. Variable measurement

There are three main variables in this study, including strategy (the independent variable), management accounting system (the mediating variable), and company performance (the dependent variable); there is also a controlling variable, which is size of the company. It should be stated that many other controlling variables such as industry type, technology, organizational structure, competitive conditions, and culture should be inserted into the model in contingency theory-based studies. However, as the population of the study is Iranian petrochemical private companies, all the aforementioned controlling variables except size seem to be identical for all the companies; hence, size is the only controlling variable inserted in the model.

To measure strategy, we use Snow and Miles' classification and description. In fact, the studied strategy spectrum ranges from the prospector to the defender. The prospector companies primarily compete through innovation and creativity products. The defender companies work in a fairly permanent environment and have a limited range of products. Their main value is efficiency, with which they try to maintain their position in the market. Questions 1 to 8 in the questionnaire are about the company strategy. In fact, they ask how many new and different products the company has planned or targeted; how much innovation and product diversity is important for the company; and whether the organization is considering moving towards a better position and situation instead of maintaining the present situation; therefore, the strategy type is measured.

Management accounting system has been operationalized through questions 9 to 15 by asking about the extent of development in the company management accounting systems. It is determined by questions on whether the companies are using developed and new management accounting techniques or traditional systems. Companies that use strategic management accounting systems will have correct, relevant, and timely information about the organizational performance and will have the ability to access competitive information which will improve the company performance. They also employ new management accounting techniques such as activity-based costing, target costing, and balanced scorecard. This is not true of those companies that are using traditional management accounting systems.

There are many different methods of measuring organizational performance. According to Hofer and Schendel (1965), one of the performance-measuring criteria is sales growth. In addition, Huck and Jems (2000) suggested three criteria for performance: capital return, new products, and market share. The other index to have been used in most studies is the Q Tobin criterion. In contingency theory-based research, performance is usually measured by a self-evaluation method which has also been used in this study. Questions 16 to 22 are designed to measure company performance. Criteria such as the company ability to introduce and deliver services on time, the company ability to introduce new products and services, customer satisfaction, sales growth, the operating income, the company market share, and the reduction of losses have been used to measure performance in this study.

To estimate the size of the companies, questions 23 to 25 have been designed in order to cover criteria such as the company access to the capital markets, ability to attract new staff, and the number of staff currently employed by the company.

The next section summarizes the research findings, the data analysis methods, and the hypotheses testing.

5. Results and discussions

Of 175 questionnaires distributed, 116 were returned; however, six cases were omitted because the information provided was incomplete; hence, 110 cases remained for analysis. In this research, hypothesis testing and data analysis are conducted by structural equation modelling. This research estimates the latent variables by observed variables using the confirmatory factor analysis technique, accepts or rejects the study hypotheses by using the path analysis technique, and evaluates the model fitness by the model fit criteria.

Confirmatory factor analysis determines how the latent variables have been measured by some observed variables. On the other hand, the structural equation modelling, or the path analysis, investigates the cause-and-effect relations between the latent variables (Dwyer, 1983; Bollen, 1989). The model fitness is conducted both for the measuring models and for the main models by the special indices, the most famous of which are shown in Table 2. The main model criteria of this study confirm the acceptable level of model fitness indices.

The study structural model is shown by the standard estimations in Figure 1 and by the non-standard amounts in Figure 2. The standard amounts in Figure 1 show that the relationship between strategy and management accounting system is 81%, and the association between strategy and performance is 14%; both of them are positively significant. In addition, the positive significant relationship between management accounting system and performance is confirmed and is equal to 45%.

As can be seen in Figure 2, all the main variables are associated significantly at the 95% confidence level. The results of the hypothesis testing are explained next.

Table 2
The fit indices of the current study conceptual model.

| Index | Proportional limit allowed according to the reference books | Results of the study model |
|--|---|----------------------------|
| X ² /df | If the model index is smaller than 3, it will have an acceptable fit (proportional). | 2.72<3 |
| RMSEA (the root of mean square error of approximation) | Amount smaller than 0.05 shows a very good fit, between 0.08 and 0.05 shows a good fit, between 0.08 and 0.1 is a moderate fit, and higher than 0.1 fails (Hooman, 2005). | 0.065 |
| NFI (the normed fit Index) | Bigger than 0.90 shows a very good fit. | 0.93 |
| CFI (the comparative fit index) | Bigger than 90% is acceptable and shows the model fitness (Hooman, 2005). | 0.91 |
| IFI (the incremental fit index) | Higher than 90% shows a very good fit. | 0.91 |
| RFI (the relative fit Index) | Higher than 90% shows a very good fit. | 0.92 |
| GFI (the goodness of fit index) | The closer to 1, the more goodness of fit (Tabatabaie and Aghaji, 2005). | 0.92 |
| AGFI (the adjusted goodness of fit index) | The closer to 1, the more goodness of fit (Tabatabaie and Aghaji, 2005) | 0.99 |

5.1. Test of first hypothesis

There is a significant relationship between the adopted strategies and the performance of Iranian private petrochemical companies.

The hypothesis test result shows that the *t*-value of this hypothesis is 2.82, with a confidence level of 95%. This result can be seen in Figure 2. Thus, the result confirms that there is a significant positive association between the selected strategy and the performance of the petrochemical companies in Iran.

5.2. Test of second hypothesis

There is a significant relationship between the type of management accounting systems and the performance of Iranian private petrochemical companies.

The hypothesis test result shows that the *t*-value of this hypothesis is 2.21, with a confidence level of 95%. This result can be seen in Figure 2. Thus, the result confirms that there is a significant positive association between the management accounting systems and the performance of the petrochemical companies in Iran.

5.3. Test of third hypothesis

There is a significant relationship between the adopted strategy and the type of management accounting system of Iranian private petrochemical companies.

As can be seen in Figure 2, the test result shows that the *t*-value in this relationship is 3.43 which is significant statistically at a significance level of 95%. Thus, the third hypothesis is also confirmed.

5.4. Test of fourth hypothesis

There is a significant relationship between the adopted strategy and the performance of Iranian private

petrochemical companies mediated by management accounting systems.

The first three hypotheses consider the direct relationships between the variables. In the final hypothesis, the management accounting systems have been introduced as an intermediate variable between strategy and performance. Hence, we must find the indirect effect of the variable for the hypothesis test in order to assess the final hypothesis. The indirect effect will exist when a variable as an intermediate can change the relationship of the other variables. There is an indirect effect on the relationship between the dependent and independent variables when there are one or more intermediate variables between them (Boron and Kenny, 1986).

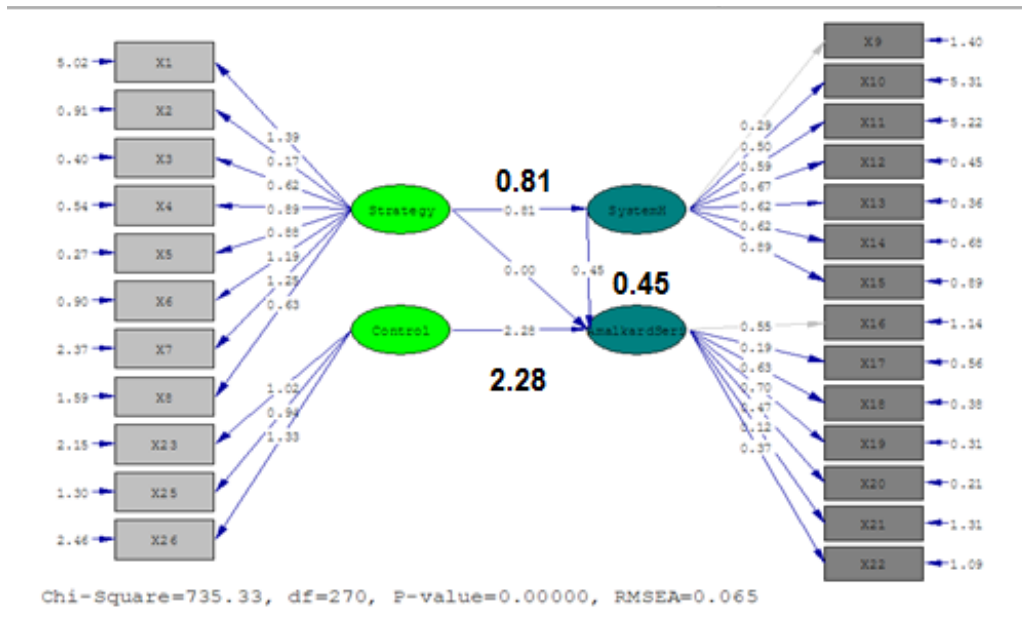


Figure 1
The current study structural model by standard amounts.

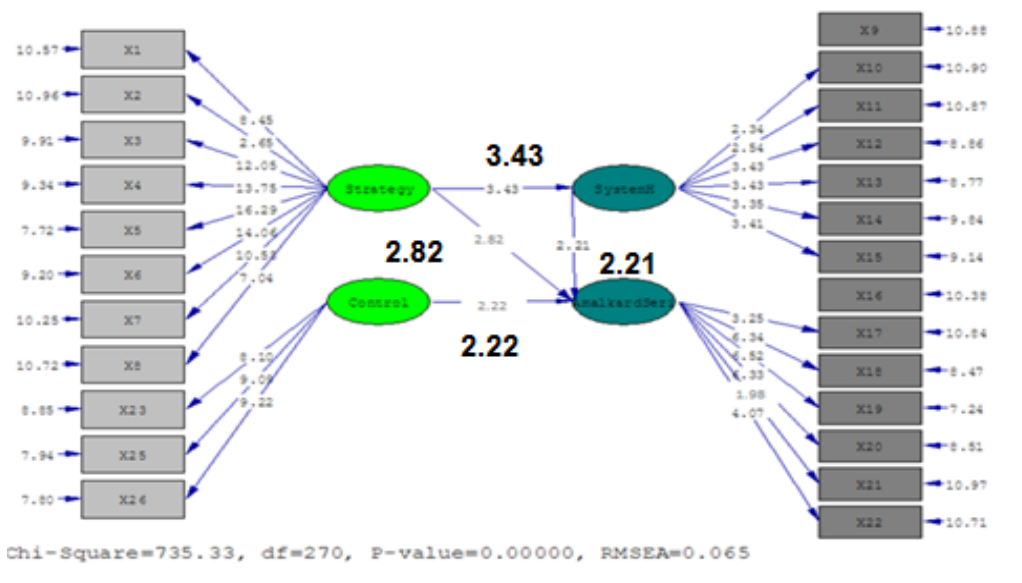


Figure 2
The current study structural model by non-standard amounts.

Based on the standard estimations and *t*-values related to the path analysis in this hypothesis (see Table 3), the strategy has a significant positive relationship with the company performance indirectly and through the management accounting system. Therefore, the fourth hypothesis is also supported. Interestingly, the standard value for the direct relationship between the strategy and the performance is 0.14, while the indirect relationship is reinforced by the presence of the management accounting system and reaches 36%. The next section discusses the results and draws some conclusions.

Table 3
Indirect relationships between the variables.

| Path | Indirect effect |
|---|------------------------------------|
| Strategy-management accounting system-performance | (81% x 45%) = 36% (3.43) (2.21) |

Note: The top figures are the path coefficients, while the lower numbers are the significance values in the path

5.5. Investigating the results and matching the findings of the research

As expected and based on the previously mentioned theoretical bases, all of the proposed hypotheses are supported by the data gathered from private petrochemical companies in Iran. According to the first hypothesis test result, we conclude that the company trend towards the differentiation and prospector strategy will improve its performance, and its trend towards the defender strategy will reduce the performance level. These findings are aligned with the results of Porter (1980), Araghi et al. (2009), Valipour and Baseri (2010), and Mousavi Shiri and Shakeri (2015).

The test results of the second hypothesis confirm the role and importance of the management accounting systems in improving the organization performance. The research findings support those of Mia and Clark (1999) and Mousavi Shiri and Shakeri (2015), as they found that employing the strategic management accounting costing techniques improves the company performance. In addition, Jalali Ferizhendy and Shakiba Jamalabad (2012) found that applying strategic management accounting systems will improve company performance, as they are more compatible with the competitive environment experienced by companies today.

As the third hypothesis was confirmed, it might be concluded that companies have already tried and are still trying to match the strategies with the related management accounting systems. The research findings support Tile's (1997) claim that the adaptation of the strategies and the management accounting systems have a direct effect on a company ability to compete and survive in the competitive market. Simon (1987) found that prospector companies need a more developed range of information than defender ones. In fact, the prospector companies must implement a more developed range of strategic management accounting techniques than other companies. In addition, the results of this study confirm the findings of Chung and Chung (1997), Fisher (1998), Cadez and Golding (2008), and Hejazi and Fotoohi (2009).

The confirmation of the fourth hypothesis denotes the mediating role of the management accounting system in the relationship between strategy and company performance. This means that should a company adopt a more suitable strategy, it will have the ability to improve its performance; however, the presence of a suitable management accounting system can play a strategic role in boosting the effect of strategy on performance. These findings support the findings of Abrandi and Goterry (1994) and, to a large extent, those of Mousavi Shiri and Shakeri (2015). However, these results contradict the results of Cadez and Golding (2012), who could not confirm the mediating role of management

accounting system in the above-mentioned relationship in Slovenia. Hence, in this regard more precise investigations seem to be necessary.

6. Conclusions

It seems that this research makes some contributions in terms of theory, methodology, and implication. As noted earlier, many studies have investigated strategy, management accounting systems, strategic management accounting techniques, and company performance, but fewer studies could be found in the Iranian context employing contingency theory concepts to shed light on these issues. This study attempted to consider simultaneously the relationship between strategy and performance mediated by management accounting systems under the contingency theory framework. Extending the above-mentioned topic to a particular industry such as the petrochemical private companies, which is an important industry in Iran, might be considered another theoretical contribution. In terms of methodology, this study has used a relatively new data analysis technique, namely structural equation modelling, which is a more robust and vigorous method for these kind of analyses. Implicationally, the results of this study may benefit policy-makers in the Iranian petrochemical industry as well as managers of those companies to improve their understanding of the importance of the match between strategy and management accounting systems to improve organizational performance.

To expand this area of research, future researches on inserting other related variables such as the monitoring process into the model and assessing their effect; investigating the effective factors of successful implementation of the management accounting techniques and strategy in a particular industry; using other classifications of strategy such as Michael Porter's model and assessing the differences; and replicating this study for other types of industries to learn more about the effect of industry type on this subject are recommended.

Nomenclature

| | |
|-------|--|
| AGFI | : Adjusted goodness of fit index |
| CFI | : Comparative fit index |
| GFI | : Goodness of fit index |
| IFI | : Incremental fit index |
| MAS | : Management accounting systems |
| NFI | : Normed fit Index |
| RFI | : Relative fit Index |
| RMSEA | : Root of mean square error of approximation |
| SEM | : Structural equation modeling |

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