

## Contextual Factors as Determinants of Management Accounting Practices Adoption and its Impact on the Performance of Egyptian Firms

Rola Nowar <sup>a,\*</sup>

<sup>a</sup> Faculty of Commerce, Cairo University, Giza, Egypt

\* *Corresponding author*: rola\_nawar@foc.cu.edu.eg

### Abstract

This research aimed to analyze the association between contextual factors existing within the business firms operating in Egypt. They represent determinants of the adoption level of management accounting practices (MAPs). In addition, examining the effect of MAPs adoption on firm performance. A study was conducted on a sample of firms operating in divergent industry sectors in Egypt and was carried out in mid-2022. Results of multiple regression analysis revealed that only firm competitiveness as a contextual variable can be considered as a determinant of MAPs adoption. However, contextual factors such as firm size and firm strategy have a significant negative relationship with MAPs adoption level. Furthermore, the type of activity has no impact on MAPs adoption. Moreover, MAPs adoption level has an impact on sampled firms' performance. The limits of the research were mostly related to the analyzed MAPs since the analysis was confined to only some of the commonly used traditional/strategic MAPs in practice. This is in addition to the fact that all firms of the sample were representative of profit-making business firms, which indicates that the results are to be only generalizable to that category of business entities. The research contributes to the literature addressing MAPs' recent adoption level in the Egyptian firms from two aspects. First, it identifies the recent contextual factors to be considered as determinants of the implementation level of MAPs whether traditional MAPs (TMAPs) or contemporary/strategic MAPs (CMAPs/SMAPs). Second, it explores the effect of implementing MAPs on firm performance measured by both financial and non-financial indicators.

### Keywords

Management accounting practices; determinants; contextual factors; Egyptian firms; firm performance

### Article history

Received: 27 February 2023 • Accepted: 27 May 2023

## **1. Introduction**

The global business environment is facing massive challenges and divergent changes that dramatically affect all market participants. From technological advances whether in product design and functionality, services features, production processes, changing business models, markets new entrants competitiveness, and uncertainties in business entities' political and economic surroundings. All of such factors mark the dynamic market in which business firms globally operate. These challenging forces require that business managers adopt dynamic techniques of growth and competitive strategies which allow business firms to keep pace with the changing environment, enhance their sustainable performance, and maintain their growth prospects.

Small and medium entities (SMEs) are the cornerstone of emerging economies within developing countries. SMEs play an integral role in the development process of many economies by creating jobs, reducing the unemployment rate in many industry sectors, and adding to the national income of developing countries. Classification of entities into small, medium, and large can be conducted using three criteria, namely: number of employees, annual revenue and assets value. Since 1990, SMEs in Egypt have been growing largely (CAPMAS, 2021). Reforms conducted in Egypt, whether economic or legitimate, participated in the development of SMEs.

Laws and policies have been formulated to support SMEs' operation in the Egyptian business environment by providing the required financial, technical, and advisory support to such entities. Introducing divergent tools of digitization across industry sectors, better governance mechanisms, and application of financial inclusion were among other advancements initiated primarily to assist SMEs in overcoming establishment and operation obstacles, maintaining their contribution to national income and economic growth, and sustaining their performance and growth. The most significant challenges facing SMEs are; access to finance, change in customers' orientation and preferences, various global forces such as global competitiveness, vast technological advancements, financial crises, or spreading pandemics like COVID-19 and its economic consequences. In Egypt, business managers are required to be creative when structuring sources of finance, provide innovative business solutions, and present reliable information for better investment decisions. In addition, they should continuously assess and align the supply chain with the surrounding changing business environment.

Management accounting can be viewed as a set of practices adopted to provide managers with timely, reliable and relevant financial and non-financial information to help them make rational strategic decisions, effectively control available resources, and consequently, achieve competitive advantages (Smith, 2009). Management accounting systems adapt to organizational change, which is often driven by three major challenges facing business firms: technological advancement, globalization, and changing customer needs and preferences (McWatters et al., 2001). In accounting literature, effective management accounting practices (MAPs) are employed by business firms, as essential strategic tools, to manage and evaluate their operations, whether these practices are used in costing, budgeting, performance evaluation,

decision-making, and strategic analysis activities within firms. These practices help organizations' management in planning, and controlling operating costs and achieving planned income targets.

Management accounting practices (MAPs) have been classified in prior studies according to two main bases, namely; the evolutionary historical development of practices and the fields of usage of these practices by business managers. The International Federation of Accountants (IFAC, 1998) classified MAPs chronologically into four phases; the first phase was pre-1950, during which the objective of MAPs application was focused on cost determination. In the second phase, from 1950-1965, MAPs were applied mainly to produce needed information for management planning and control functions. During the third phase, from 1965-1985, MAPs were applied with a special focus on reducing resource waste in business processes. The fourth phase, from 1985-1995, was during which management accounting practices were concerned with a special focus on creating value through the efficient use of resources.

MAPs are commonly classified in literature, according to their usage by business managers. MAPs were grouped and classified into either practice applied for costing purposes, budgeting, performance evaluation, decision support, or strategic analysis purposes (Abdel-Kader, and Luther, 2006; Joseph and Ronald, 2014; Pavlatosa, and Kostakis, 2015; Hussein, 2018). MAPs were also classified by some accounting authors into TMAPs, and CMAPs/SMAPS (Abdel-Meaksoud, 2011; Abdel-Meaksoud et al., 2016; Farouk and McLellan, 2011).

Despite the criticism that it only explains the effect of contextual factors on divergent MAPs across different firms in the adoption phase and not in the implementation phase (Chenhall, 2003), contingency theory is considered the most widely used and accepted theory in management accounting literature as the basis of analyzing and studying the reasons that lead to the divergent application of MAPs across different firms. Several contextual factors, whether internal factors such as firm size, firm structure, firm strategy, type of activity, technology level, or, external factors such as tax, economic legislation, and external environment, have been studied (Porter, 1980; Brownell, 1985; Lee and Yang, 2010; Jermias and Gani, 2004; Boulianne, 2007; Cadez and Guilding, 2008; Anderson and Lanen, 1999; Agbejule and Burrowes, 2007).

Results of studies exploring the influence of MAPs on firm performance revealed a relationship between MAPs and firm performance within developed or developing countries context (Noordin et al., 2015; Cadez and Guilding, 2008; Sedevich-Fons, 2018; Ojra, 2014; Oboh and Ajibolade, 2017; Alabdullah, 2019). It's worth mentioning that although the numerous studies in accounting and business literature addressed contemporary management accounting practices (CMAPs) or strategic management accounting practices (SMAPS), their importance to keeping pace with dynamic changes in the business environment, and their adoption impact on firm performance and firm value, yet several studies pointed to the gap between theory and practice concerning MAPs adoption. According to real practice, and

across different contexts and due to divergent causes, business firms have a higher tendency to adopt traditional management accounting practices (TMAPs) rather than SMAPs (Chenhall, 2007; Pavlatos and Paggios, 2009; Abogun and Abomide, 2013; Al-Mawali, 2015; Oyewo, 2022).

Consequently, this research, based on a survey of Egyptian firms operating in divergent industries, aims at contributing to the literature related to studying the impact of adopting MAPs on business firms and the contextual factors influencing the implementation level of such practices. The results focus on exploring the variables that may determine the implementation of TMAPs or SMAPs within business firms. The variables include company size, type of activity, strategy, and competitiveness. Firm competitiveness is new concerning studies discussing MAPs and contextual variables influencing them.

The main question addressed in this research is: To what extent MAPs implementation level can be explained by contextual variables such as firm strategy, company size, competitiveness and type of activity? The remainder of the research is organized as follows. Section 2 presents the literature review and hypotheses development, followed by the research method in Section 3. Section 4 shows the data analysis and discussion. Section 5 addresses conclusions, limitations, and avenues for future research.

## **2. Literature review and hypotheses development**

The results of prior studies for each of the variables are presented to elaborate the research hypotheses to be tested in this research. Therefore, the literature review addressed three groups of literature. First, MAPs adoption within the context of some emerging economies. Second, contextual variables as determinants of MAPs adoption. Third, MAPs and firm performance.

### **2.1 MAPs adoption within the context of some emerging economies**

Firms tried to employ SMAPs such as Activity-based costing (ABC), Balanced Scorecard (BSC), Just-in-Time (JIT), and competitors and customers analyses, to achieve sustainable performance and growth. Nevertheless, TMAPs, such as cost-volume-profit analysis, variance analysis, standard costing and traditional budgeting will not enable business firms to meet the competitiveness and challenges of the business environment (Sulaiman et al., 2004). In this research, emerging economies comprise some Arab countries and some countries in Asia.

El-Ebaishi et al. (2003) noted that TMAPs are heavily used by Saudi manufacturing firms at the expense of SMAPs. Results indicated that a limited number of firms use SMAPs such as ABC and JIT. The same results were extracted by Al-Nimer (2009) who studied the level of MAPs sophistication within Jordan's business firms. The findings showed that Jordanian firms are still using TMAPs rather than SMAPs. Leftesi (2008) also examined the adoption level of TMAPs and SMAPs in medium and large manufacturing firms in Libya. The results revealed that

Libyan firms implement MAPs at a lower level comparative to other developing countries. The main findings of El-Ebaishi et al. (2003), Al-Nimer (2009) and Leftesi (2008) are similar to the results of studies conducted in developed countries.

SMEs have to maintain their growth and enhance their competitiveness to achieve targeted sustainable performance and preserve their existence in the market (Forsman, 2008). Egypt represents one of the most important developing and emerging economies, it has witnessed great economical and structural reforms that helped in the emergence and development of SMEs. The government played a crucial role to support SMEs in Egypt, whether by passing supporting laws, and marketing or by enlarging the scale of digitalization and financial disclosure concepts. Although strategic management practices are considered an important growth tool for firms' sustainable performance, few studies in the literature have been conducted to examine the adoption level of MAPs whether TMAPs or SMAPs in Egyptian business firms, with a majority of studies conducted focusing on manufacturing sector only (Abdel-Maksoud, 2011; Hussein, 2018; Yousef, 2021).

Abdel-Maksoud (2011) investigated the implementation of MAPs in 240 Egyptian manufacturing firms by mid-2005. The results of the study provided evidence supporting the significant relationship hypothesized between the implementation level of innovative manufacturing techniques and the implementation level of SMAPs. Hussein (2018) examined the adoption and implementation of 40 MAPs in a sample of 171 Egyptian business firms operating across different industries. Results indicated that the relative adoption of TMAPs is higher than SMAPs, although top management of Egyptian companies had an awareness of the importance of SMAPs. The key barrier limiting the implementation of SMAPs was the high cost of implementation. Within the same context, Yousef (2021) investigated the implementation level of MAPs in Egyptian public-sector manufacturing firms. Results revealed that TMAPs are extensively employed in Egyptian manufacturing firms at the expense of SMAPs, although the adoption level of SMAPs is considered acceptable compared with similar studies conducted in other developing countries.

Ghosh and Kai Chan (1997) examined the adoption of MAPs in large manufacturing and service companies in Singapore. Results indicated a high level of adoption of budgeting practices and very low adoption of ABC. This result further confirms the preference for employing TMAPs at the expense of SMAPs by business firms as concluded by prior studies. Sulaiman et al. (2004) conducted a review of the literature to examine the extent to which TMAPs and SMAPs are being used in some Asian countries such as Malaysia, China, India, and Singapore. Results revealed the use of TMAPs at the expense of strategic practices.

According to Yap et al. (2013), most of the management accounting literature addressing the adoption of MAPs, whether traditional or strategic, was within the developed countries' context. The results showed that few studies focused on the adoption of MAPs in developing/emerging economies. Furthermore, their study indicated that SMAPs were developed to provide information for strategic planning and decision-making in continuously dynamic and challenging business

environments. However, studies conducted in developed countries demonstrated that firms' adoption level for such practices was low. Their study was conducted to identify MAPs adopted by 118 Malaysian companies. Findings revealed the adoption rates for MAPs were relatively lower than other countries. The analysis also revealed that the techniques used were TMAPs, such as budgeting, breakeven analysis, variance analysis and Cashflow. Few of the sample companies initiated the adoption of SMAPs such as ABC, BSC, benchmarking, and product profitability analysis.

Rashid et al. (2020) analyzed the empirical studies in the literature conducted on SMAPs within the context of both developed and developing economies. Results revealed that several SMAPs such as clients and competitors analysis, benchmarking and strategic pricing have been adopted at high levels in developed countries while the majority of other practices remained at lower adoption levels. Developing economies still applied TMAPs. The review demonstrated core differences in SMAP adoption level, contextual factors, and effects of adoption between the two sets of economies.

## **2.2. Contextual variables as determinants of MAPs adoption**

The contingency theory of management accounting is based on the logic that no sole or unified management and cost control system is appropriate and can be applied to all business firms in all contexts. Characteristics of a particular management accounting system applied in a business firm will depend upon the specific factors in which such a business firm operates. Management accounting system effectiveness depends on its ability to adapt to changes in external circumstances and align with internal factors within firms (Chapman, 1997; Ittner and Larcker, 2001; Chenhall, 2003; Scapens, 2006). Numerous studies in the literature that addressed management accounting and control systems are based on the contingency theory approach. However, few of these studies have been conducted within the context of developing countries.

Cadez and Guilding (2008) indicated that the firm strategy, market orientation, strategy formulation pattern, and firm size, are critical contextual factors affecting the choice of management and cost control systems in a firm. Subasinghe and Fonseka (2009) investigated the implementation level of MAPs by 22 firms in Sri Lanka through questionnaires and depth interviews. The results illustrated that top management should be strategically oriented and adopt SMAPs for a better decision-making process that is more adaptive to changing business environment. The study also indicated that higher levels of MAPs adoption could be attained through improving awareness of types and usage of MAPs among top management and assigning more importance to management accounting functions within business firms. Many studies have showed that there are main contextual factors that should be considered concerning the implementation of SMAPs. Cinquini and Tenucci (2010) surveyed several Italian companies, focused on classifying and grouping SMATs and investigated the factors that could justify the usage of SMATs within companies.

They considered firm size, industry and strategy positioning as contextual variables. Results revealed that SMATs, such as strategic pricing, and customer analysis were significantly used. Firm size and industry variables did not show any effect on SMAT adoption level.

Amara and Benelifa (2017) used the contingency approach to determine the contextual factors that explain the adoption of MAPs of a sample of Tunisian firms operating across different industry sectors. Results of the study showed that the Tunisian context is the same as other developing countries' context because the majority of companies apply TMAPs. Furthermore, there is no impact of the business firm type of activity or ownership structure, as contextual variables, on the application of MAPs. Contrary to prior studies results showed that firm size was not found to have an impact on MAPs application within sample firms.

Yap et al. study (2013) demonstrated that factors such as lack of top management awareness, resources availability, and staff required to support the change to SMAPs, affected the usage of TMAPs. Within the same stream, Ahmed and Leftesi (2014) examined the adoption level of TMAPs and SMAPs in Libyan manufacturing companies. In agreement with prior studies, results indicated that Libyan manufacturing companies use extensively TMAPs, at the expense of SMAPs. Some of the factors that affected such low adoption rates of SMAPs included firm ownership, high cost of implementation, lack of trained employees, and lack of top management awareness of the benefits of advanced practices. Pavlatos (2015) suggested that environmental uncertainty, firm structure, firm age, strategy and size were among the contextual factors that affect SMAP adoption in the hospitality industry in Greece.

Abdulselam and Dembel (2020) employ a structured survey questionnaire, which investigated the level of adoption of MAPs and the factors affecting the adoption of those practices in 91 manufacturing companies in Ethiopia. Results revealed that the Ethiopian manufacturing firms were gradually adopting MAPs and that the widely adopted MAP was a budgeting control tool. TMAPs were found to be significantly implemented in selected manufacturing companies. The main factor affecting the adoption of these practices was the intended purpose of their usage since the majority of sampled companies used MAPs for budgeting decisions. Nevertheless, the least used practices were employed for performance evaluation purposes.

Alroqy (2020) examined the impact of contextual factors on MAPs in manufacturing firms in Saudi Arabia. The results showed that some contextual factors such as; the competitive business environment, firm size, level of information technology applied, and staff qualification have significant relationships with the adoption level of MAPs. Fadaly (2016) investigated the firm internal factors that influenced the adoption of MAPs in the Egyptian pharmaceutical firms. Results revealed that some internal factors affect the adoption of MAPs. Those factors as indicated by the study were employee number, personnel competency, computerization level, ownership type, and financial resources available.

Shil et al. (2021) hypothesized that some factors such as usage of information technology, cost structure, competition, product diversity, size, and firm age drive the implementation level of SMAPs by manufacturing firms in Bangladesh. Results indicated that all the factors except firm age, have a weak relationship with the level of adoption of SMAPs by sampled firms. Authors believed that the institutional theory approach is followed, in the area of MAPs adoption where firms usually imitate each other, when selecting a particular management accounting practice for adoption in Bangladesh.

Whited et al. (2022) presented a review of management accounting literature from 1980 until 2020. The results highlighted that the research methods based on regression analysis dominate the literature, as the percentage of studies using regression analysis greatly increased from 2000 until 2020. The study criticized the extensive use of control variables for causal inference by most prior literature and indicated that the number of control variables has increased significantly during the last 20 years. Therefore, contextual factors require further analysis to determine the extent to which such factors impact MAPs adoption level and firm performance.

Based on prior studies, the following hypotheses are postulated concerning the most commonly and arguably used contextual factors relevant to MAPs literature.

### **2.2.1 Firm strategy**

Firms that adopted strategy had been classified into differentiation, cost leadership, and focus strategies (Porter, 1980). Arguably, companies adopting cost leadership strategies are expected to use mainly traditional costing systems although competitors' analysis would be more beneficial. Contrarily, companies following a differentiation strategy focus on marketing and differentiation costs. It could be expected that the SMAP implementation level is higher in firms applying a differentiation strategy than in firms applying a cost leadership strategy. Furthermore, SMAPs addressing cost information are expected to be implemented at a higher level in firms applying cost leadership, than those applying differentiation strategy (Shank & Govindarajan, 1992b). A combination of both cost leadership and differentiation strategies while specializing in a particular market to better serve it, the focus strategy was found to have an impact on SMAP adoption by a few developing economies (Alsoboa and Aldehayyat, 2013). Based on the previous argument, this research employs firm strategy as a contextual factor of MAPs adoption level, and the first hypothesis is postulated as follows:

***H1: There is a significant association between MAPs adoption level and firm strategy.***

### **2.2.2 Firm competitiveness**

Competitiveness is treated as a dependent or independent variable in prior studies. Some studies emphasize the impact of contextual factors such as firm strategy, structures, and ability to innovate, on their competitive success, and in such cases; competitiveness is treated as a dependent variable (Doz and Prahalad, 1987; Bartlett and Ghoshal, 1989). Other studies analyze the result of the firm operation,



such as revenue and market share, as the outcomes of firm competitiveness, and in such cases, competitiveness is treated as an independent variable (Vlachvei et al, 2016; Lalinsky, 2013; Vilanova et al., 2009). Thus, the second hypothesis is postulated as follows:

**H2: There is a significant association between MAPs adoption level and firm competitive practices.**

### 2.2.3 Firm size

Some studies in literature illustrated that firm size is a critical contingency factor that affects the firm choice of SMAPs, pointing out that larger-sized business firms tend to use SMAPs more than small-sized firms (Cadez and Gulding, 2008; Gulding, 1999; Merchant, 1981; Gulding & McManus, 2002). Other studies did not include firm size within the contingency factors that affect SMAP usage (Gordon and Narayanan, 1984; Ojra et al., 2021). Thus, the relation between firm size and MAPs implementation level can be further studied within different contexts. Thus, the third hypothesis is postulated as follows:

**H3: There is a significant association between MAPs adoption level and firm size.**

### 2.2.4 Firm type of activity

In management accounting literature several researchers identified the type of activity as a factor influencing management accounting technique/control use and design (Abdel-Kader and Luther, 2006; Abdel-Maksoud et al.2016; Nowar, 2017). Hence, the fourth hypothesis is postulated as follows:

**H4: There is a significant association between MAPs adoption level and firm type of activity.**

The multiple regression model was used to test the previous four (H1, H2, H3, and H4) hypotheses. It includes MAPs as the dependent variable and some of the contextual variables as independent variables. Therefore, the relationship between MAPs adoption level and contextual variables can be represented by regression equation (1):

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon \quad (1)$$

Where Y represents MAPs adoption,  $\alpha$  represents regression equation constant,  $\beta_1$  represents regression coefficient resulting from a change in contextual variable  $X_1$  (firm strategy),  $\beta_2$  represents regression coefficient resulting from a change in contextual variable  $X_2$  (firm competitiveness),  $\beta_3$  regression coefficient resulting from a change in contextual variable  $X_3$  (firm size), and  $\beta_4$  regression coefficient resulting from a change in contextual variable  $X_4$  (type of activity),  $\varepsilon$  is the random error of the regression equation.

### **2.3 MAPs and firm performances**

The main objective of management accounting systems is to provide accurate, timely, reliable, and relevant information for decision-making purposes. Proper decisions at the right time will enhance the firm performance through rationalizing costs, mitigating loss, increasing revenue, and/or enhancing income. Therefore, several studies in management accounting literature examined the relationship between the use of MAPs and firm performance.

Alvarez et al. (2021) empirically examined the impact of MAPs on SMEs' performance in Argentina. The costs, inventory, and liquidity management practices, were used as proxies for MAPs, while return on investment (ROI) is the proxy used for firm performance. The results indicated that there is a significant relationship between MAPs, whether TMAPs or SMAPs and SMEs performance. Etim et al. (2020) examined the effect of MAPs on 40 SMEs' performance in Nigeria. Results revealed that there is a significant relationship between firm performance and different groups of MAPs (costing, budgeting, performance evaluation, decision support, and strategic analysis). The study recommended that SMEs should employ SMAPs to maintain sustainable profits and growth.

The impact of employing BSC on firm performance was investigated by some studies. Davis and Albright (2004) revealed that the financial performance of banks adopting the BSC was better compared to non-adopting banks. Maiga and Jacobs (2003) examined the complementary effect between BSC and ABC. Results showed that ABC, when combined with BSC, has a significant positive impact on firm performance. Hoque and James (2000) investigated the impact of using non-financial measures on performance by surveying Australian manufacturing firms. Results indicated that BSC implementation has a significant relationship with firm performance. Banker et al. (2000), and Anderson et al. (1994), pointed out that customer satisfaction, a non-financial performance indicator, was significantly related to accounting return on investment. In exploring the relationship between another management accounting practice, which is ABC, and performance, Shields (1995) illustrated a significant relationship between the adoption of ABC and firm success.

Despite the results indicating the significant relationship between the use of MAPs and firm performance, there are a few studies that revealed contrary results. Dahal et al. (2020) examined the impact of MAPs on business firms' performance in the presence of rationalized managerial decisions as a mediator for this relationship. The results of analyzing data gathered from Nepal's sampled manufacturing firms revealed that MAPs had no significant impact on firm performance. Consistent with the results of Ittner et al. (2002), which revealed that there is no significant association between ABC implementation and return on assets. In the USA, Gordon and Silvester (1999) investigated the impact of announcing that firms were implementing ABC on firm value. They found that the announcement of ABC implementation did not affect firm value represented by stock value.

Ittner and Larcker (1998) designated that the firm's top management's ability to relate non-financial measures such as; customer satisfaction to a firm performance indicator such as, stock price returns is weak. Perera et al. (1997) revealed that there is no relationship between the use of non-financial measures and performance in firms that follow a focused strategy. Klammer (1973) examined the relationship between budgeting technique and firm performance, results indicated that there is no significant relationship between performance and budgeting techniques.

Based on the above arguments, testing the relationship between the implementation of MAPs and firm performance requires further analysis focusing on MAPs adoption and its impact in emerging economies. Hence, the fifth hypothesis is postulated as follows:

***H5: There is a significant association between MAPs adoption level and firm performance.***

The multiple regression equation was formulated to test the fifth hypothesis (H5), including firm performance as the dependent variable and both contextual variables and MAPs adaption as independent variables. Therefore, the relationship between firm performance and MAPs adoption determined by contextual variables can be represented by regression equation (2):

$$FP = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 Z_1 + \varepsilon \quad (2)$$

Where FP represents firm performance,  $\alpha$  represents regression equation constant,  $\beta_1$  represents regression coefficient resulting from a change in contextual variable  $X_1$  (firm strategy),  $\beta_2$  represents regression coefficient resulting from a change in contextual variable  $X_2$  (firm competitiveness),  $\beta_3$  represents regression coefficient resulting from a change in contextual variable  $X_3$  (firm size), and  $\beta_4$  represents regression coefficient resulting from a change in contextual variable  $X_4$  (type of activity),  $\beta_5$  represents regression coefficient resulting from a change in the MAPs adoption variable  $Z_1$ ,  $\varepsilon$  is a random error in the regression equation.

In other words, equation (2) includes two types of research variables. Contextual variables (xi), and the main variables of the research: MAPs adaption and firm performance. Equation (2) also summarizes the research hypotheses, which can be represented by the research model as shown in figure (1). Figure (1) summarizes the proposed conceptual research model illustrating the relationship among the two main variables deduced from literature and considered for analysis and measurement through the research method (MAPs adoption and firm performance).

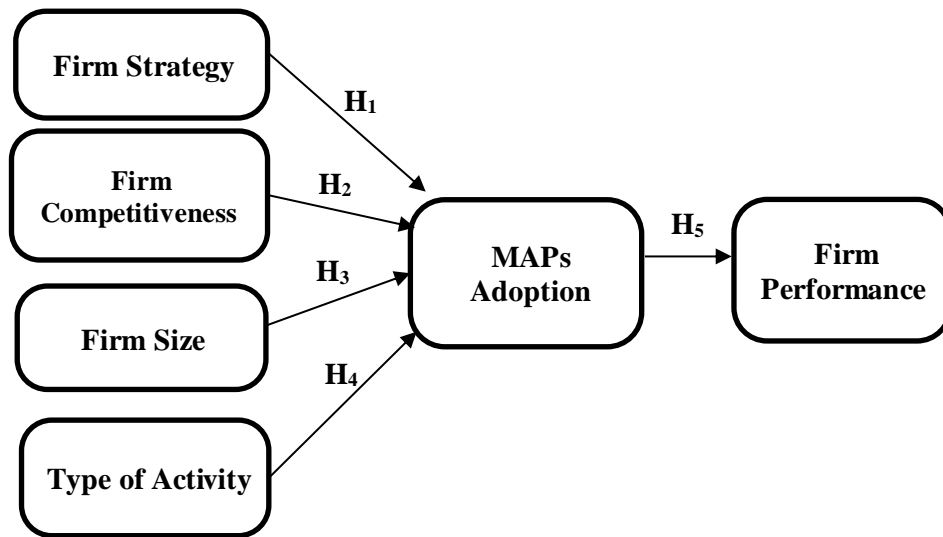


Figure 1. Research Model

### 3. Research Method

The empirical study of this research is based on collecting data through a group of questions, each question or a group of questions represent an indicator(s) relevant to each variable included in the research model. After conducting several pilot interviews with some practitioners and academics specialized in the area of management accounting, some adjustments were conducted as recommended through the pilot study, and the questionnaire was adjusted and distributed to intended business firms.

Collected data are linked with each other, through some statistical analysis techniques, and according to statistical relationships that fit the nature of the associations to be examined and analyzed. It should be noted that the empirical study does not end at the limit of identifying the relationship between the variables. Meanwhile, it is furthermore concerned with discussing the results of the statistical analysis, as an essential step for deciding and recommending which relationship should exist between the variables covered by the research. The empirical part of the research deals with sample selection and data collection, measuring the variables, determining the appropriate statistical technique to test the research hypotheses, analyzing the data statistically, and discussing the results of the statistical analysis, as an essential step towards accepting or rejecting research hypotheses and reaching research conclusions.

#### 3.1 Sample selection and data collection

Roscoe's (1975) Rule of Thumb selection, which indicates that the minimum size for the sample is 50, is applied to determine the appropriate sample size in the presence of the two basic variables in addition to a set of contextual variables (firm size, type of activity, the strategy that the firm follows, and competitive practices) included in this research. To achieve this minimum that must be relied upon for data collection, a survey form was distributed to 200 business firms, and within these 200

survey forms distributed representing the sample under study, 73 forms were received (with a response rate of 36.5%), and among these 73 forms of the survey received, 6 forms were excluded due to their invalidity as a result of not answering more than 10% of the questions in the list (Anh et al., 2018), and 67 survey forms (with a percentage of 33.5% usable rate) were relied upon for use as the inputs of the Statistical Package for Social Science (SPSS) as statistical analysis program package.

The participating firms were selected randomly. The criteria for selecting participating firms are that (a) the firms should be for-profit operating firms, (b) the participants must be the Chairman/Managers/Chief Executive Officer (CFO) of the businesses firms operating in the Egyptian market, (c) the respondents should be participants in the decision-making process, and have good information about the operation of the business, (d) the business firms selected should be located along different Egyptian governorates.

Sampled firms included firms operating in different industry sectors across different regions within Egypt. The sample was selected as a sample of the total population of all the business firms within a specific geographical location. Given the confidentiality attached to the exchange of information in Egypt, 200 respondents were chosen because they are representative enough for the research work.

Primary data for the study was obtained through the use of a self-guided questionnaire to produce data on relevant variables. The questionnaire was provided initially to a group of academics and professionals in the field, as a pilot study and the final adjusted questionnaire was translated into Arabic language (to avoid misinterpretation of statements), and distributed to participating firms to determine the level of MAPs adoption therein. Information gathered from the survey, includes the implementation level of a set of traditional and strategic MAPs, firm divergent contextual factors, a set of competitive practices, and a set indicator measuring consequential firm performance, to test the research hypotheses. Data were collated from business firms' chairmen, heads of departments, and accountants, and were analyzed statistically to establish the findings.

The questionnaire had three sections; the first section included statements related to business firm demographics (type of activity, firm size, firm strategy, competitive practices). The second section comprised statements related to the implementation level of TMAPs and SMAPs, classified into 5 main groups. The classified list of MAPs used in the questionnaire was developed based on many prior similar studies such as Abdel-Kader and Luther (2006), Mbawuni and Anertey (2014), and Pavlatos and Kostakis (2015). The third section incorporated statements related to financial and non-financial indicators of firm performance.

The research hypotheses were tested using a questionnaire employing a 5-point Likert scale response options, structured and customized in line with the study research hypotheses, to reflect the direction of respondents' perceptions toward the given questionnaire statements. Multivariate analysis is used to test the five research hypotheses through; Analysis of Variance (ANOVA), Pearson Correlation, and

multiple regression analysis, which were used for data analysis; to measure the relationship between a set of contextual variables and the implementation level of MAPs and their consequential impact on firm performance.

### 3.2 Variables measurement

#### 3.2.1 MAPs adoption

Prior studies used MAPs as an independent variable that was measured by identifying the diffusion/adoption level of different sets of MAPs, whether TMAPs or SMAPs, that include: a) Standard Costing ((Lucas (1997); Fleischman and Tyson (1998); Guilding et al. (1998); Marie and Rao (2010); Badem (2013)).b) Budgeting ((Chenhall and Brownell (1988); Shields and Young (1993); Libby (1999); Wentzel (2002); and Church et al. (2012)). c) Cost-Volune-Profit Analysis ((Atkinson et al. (2012); Weetman (1999); Anthony and Govindarajan (1995); Hilton et al. (2006); Horngren et al. (2011)). d) Activity Based Costing ((Askarany and Smith (2005); Askarany et al. (2007a,b); Pavlatos and Pagglos (2009); Rahmouni (2008); Innes (2000); and Ittner (et al. (2002)).

Based on prior literature, the researcher classified MAPs into five groups namely; costing, budgeting, performance evaluation, decision-making, and strategic analysis. A set of 38 management practices is used to measure the adoption of MAPs groups within the sampled Egyptian firms. Table (1) presents some of the MAPs used to proxy for the adoption of the grouped practices.

Table 1: Measuring indicators of MAPs adoption

MAPs Groups	Indicators
Costing	Quality costing
	Variance analysis
	Activity-based costing
	Target costing
Budgeting	Long term budget
	Zero-based budget
	Flexible budgeting
	Activity-based budgeting
Performance Evaluation	Performance indicators related to clients
	Performance indicators related to employees
	Financial measures
	Benchmarking
	Customer analysis
	Product analysis
	Cost-volume-profit analysis
Strategic Analysis	Supply chain analysis
	Strategic pricing
	Industry analysis
	Product life cycle analysis

### **3.2.2 Firm performance**

Firm performance had always been regarded as an important construct in strategic management since strategy-making was perceived to have a great effect on the performance of firms (Selvam, 2016). Most strategic management literature measuring firm performance, as a dependent variable, suffered from multiple problems concerning the employment of various indicators of firm performance that lacked either consensus or dimensionality. Financial or accounting-based ratios as measures for the firm performance were extensively utilized with concentrated employment of profitability measures, such as: profit margin (Jiang and Peng, 2010; Bauwhede, 2009; Premuroso and Bhattacharya, 2007), return on sales (Bøhren and Strøm, 2010; Filatotchev, Isachenkova and Mickiewicz, 2007), earnings per share (Yue, Lan and Jiang, Luan, 2008; Filatotchev, Lien and Piesse, 2005), return on equity (Ibrahim and AbdulSamad, 2011; Chaghadari, 2011; Chamberlain, 2010; Yue, Lan and Jiang, 2008; Luan and Tang, 2007), and return on assets (Chiang and Lin, 2011; Kim and Yoon, 2007; Xu, Zhu and Lin, 2005). Furthermore, more advanced SMAPs, such as BSC, were developed to help management in evaluating the firm performance from multi-focal aspects; financial and non-financial, indicators of firm performance measured more than the financial aspect of business firms.

Selvam (2016) classified firm performance determinants across nine indicators, which are further grouped into two main aspects of firm performance (i.e., financial performance and strategic performance). The financial performance aspect includes three dimensions of performance, namely; growth, market value, and profitability. The strategic performance aspect includes other dimensions of performance (e.g., corporate governance, employee and customer satisfaction, environment, and social performance). The satisfaction of different stakeholders was adopted by some studies as an indication of firm performance (e.g., Kaplan and Norton, 1992; Clarkson, 1995; Agle et al., 1999; Carneiro et al., 2007; Richard et al., 2009). Stakeholders include any party that is directly affected by firm performance and results that comprise suppliers, customers, employees, shareholders, trade unions, and government (Freeman, R. E., 1984; Donaldson and Preston, 1995). Based on prior literature, the research uses many financial and non-financial indicators to assess the impact of MAPs on firm performance.

### **3.2.3 Firm size, firm strategy, competitiveness, and type of activity**

As indicated earlier, prior studies in management accounting propose that firms size, firm type of activity, competitive practices, and firm strategy may influence the adoption of MAPs and in turn performance. These studies utilize firm size, firm type of activity, competitive practices, and firm strategy as independent variables. Several methods such as sales, number of employees, and assets' value are used to measure firm size (Zadeh and Eskandari, 2012). Table (2) summarises the proposed contextual variables used in the research model and their related measurements.

Table 2: Contextual Variables Measurement

Contextual Variables	Measurement
Firm size	Total firm assets value
Type of activity	Industry sectors: Commercial is given value (1) Industrial (2) Service (3) Real Estate (4) Other (5)
Firm strategy	Cost leadership is assigned (1) Differentiation (2) Focus (3)
Firm competitiveness	Preparedness to copy competitors' innovative strategies
	Business firm board of directors' awareness of divergent business models
	Have entrepreneurship perception and long-run plans
	Harmonization in implementing different levels of business strategy
	Responding to factors stimulating the business to need to internationalize
	The commitment of business owners to internationalization

## 4. Data analysis and discussion

To conduct data analysis, a one-way analysis of variance (ANOVA) is used, Pearson correlation is conducted to determine the potential associations among the variables, and finally, the multiple regression model is employed to test the research hypotheses. The author regressed the contextual variables against the main variable (MAPs adoption level) to examine the significance of contextual variables as determinants of MAPs adoption level in Egyptian firms. In addition, the independent variable (MAPs adoption level) is regressed against the dependent variable (firm performance) to examine the association between them.

### 4.1 Descriptive statistics

The sample consists of 67 usable questionnaires representing business firms working in Egypt. Demographics distribution of the sample reveals the following: (1) the type of activity as the first contextual variable is as follows: Industrial sector (37.3%), Service sector (23.9%), Real Estate sector (22.4%), and Commercial sector (16.4%). (2) Firm strategy as the second contextual variable is as follows: Cost Leadership (43.3%), Differentiation (37.3%), and Focus (19.4%). (3) Firm size as the third contextual variable is as follows: small enterprises (35.8%), medium enterprises (44.8%), and large enterprises (19.4%). The descriptive analysis of firm size indicated that the structure of the Egyptian economy is dominated by SMEs as indicated earlier.

Descriptive statistics related to the main variable (MAPs Adoption Level) are presented in Table (3), where the MAPs analyzed, whether traditional or contemporary, are classified into 5 groups; costing, budgeting, performance evaluation, decision support, and strategic analysis. The average adoption rate of each group within the sampled firms is given based on frequency descriptive analysis for each practice within a given group. The adoption rate reveals that budgeting and decision support MAPs, then costing practices, and to a lower level the strategic analysis then performance evaluation practices are adopted. This indicates that



sampled firms are more oriented to adopt operating MAPs at the expense of strategic and evaluating practices.

Table 3: Descriptive Statistics for MAPs

	Average Adoption Rate
Costing	80%
Budgeting	81%
Performance Evaluation	72%
Decision Support	81%
Strategic Analysis	76%

Since statistical techniques are used to test research hypotheses, inferential statistics analysis is required to test the normality of data collected; i.e., the extent to which the distribution of the sample data is considered to be normally distributed. The Kolmogorov-Smirnov test is used to test the normality of the data collected. The significance level of Kolmogorov-Smirnov is greater than 0.05 (0.097) for all the research constructs, as shown in figure (2), therefore it can be concluded that all data are normally distributed. Moreover, the error is normally distributed since the significance level of Kolmogorov-Smirnov (0.2) is greater than 0.05. Given that normally distributed data can be analyzed using parametric tests of hypotheses.

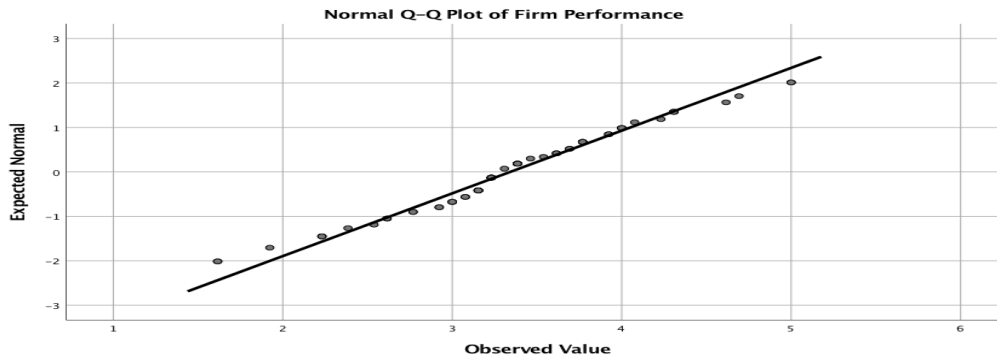


Figure 2: Normal Distribution Test for Research Model Constructs

#### 4.2 Reliability Tests

The reliability of sampled firms’ responses to the items included in the questionnaire is tested, before statistically analyzing which of the identified contextual variables have an impact on MAPs adoption level and analyzing the impact of such adoption on firm performance. Cronbach's alpha is the widely used measure of reliability coefficient. As denoted by Hair et al. (2007), Cronbach's Alpha measure of reliability with values of 0.6 to 0.7 is deemed the lower limit of acceptability. Thus, it is used in this research to measure the validity of sampled firms' responses regarding the measures suggested as contextual variables (i.e., firm type of activity, firm strategy, firm size, firm competitive practices) and MAPs adoption level as the main independent variable. According to data analysis, the reliability coefficient and intrinsic validity for research dimensions are (0.971) and (0.972) respectively. This refers to high internal consistency based on the average inter-item correlation. Table (4) shows the model summary with an adjusted R2 of

0.774 indicating that about 77% of the variation in firm performance can be explained by MAPs adoption level. Therefore, the dependent variable is highly explained by the independent variables.

Table 4: Explanatory Level of the Model

R	R <sup>2</sup>	Adjusted R <sup>2</sup>	St. Error of the Estimate	Durbin-Watson
0.890	0.791	0.774	0.33658	1.585

-Predictors: (Constant), MA adoption level, Firm size, Firm strategy, Type of activity, Firm competitiveness

-Dependent Variable: Firm performance

Table (5) presents the model summary with an adjusted R<sup>2</sup> of 0.252 revealing that about 25% of the variation in MAPs adoption level traced can be explained by contextual variables proposed by the research model. Hence, the dependent variable is moderately explained by the independent contextual variables.

Table 5: Explanation level of the contextual variables

R	R <sup>2</sup>	Adjusted R <sup>2</sup>	St. Error of the Estimate	Durbin-Watson
0.546	0.298	0.252	0.71922	1.288

-Predictors: (Constant), Firm size, Firm strategy, Type of activity, Firm competitiveness

-Dependent Variable: MAPs Adoption Level

### 4.3 Pearson correlation

Table (6) displays the correlation among variables where the Pearson correlation matrix is used to detect the expected multicollinearity between any two or more independent variables. Anh et al. (2018) stated that multicollinearity exists if the Pearson correlation coefficient is greater than 70% between any two independent variables. According to the correlation matrix given in Table (6); correlation coefficients between all contextual variables with each other are less than 70%.

A significant opposite relationship exists between firm size, firm strategy and MAPs adoption level and firm performance. A significant relationship between MAPs adoption level and firm performance exists at a 1% level of significance. An insignificant opposite relationship exists between firm competitiveness and MAPs adoption level and firm performance. An insignificant relationship exists between the type of activity and MAPs adoption level.

The results of the correlation matrix disagree with proponents or the majority of researchers using the contingency theory approach to management accounting. On the basis that there is no single accounting or control system that is appropriate and can be applied to all business firms in all contexts. Although numerous studies in the literature addressing management accounting and control systems were based on contingency theory, few of these studies have been conducted within the context of developing countries. This could explain the contrasting results of the correlation matrix when data were analyzed within the context of a developing country such as Egypt.

Table 6: Pearson Correlation Matrix

Variables		Type of Activity	Firm Size	Firm Strategy	Firm Competitiveness	MA Adoption	Firm Performance
Type of Activity	Pearson Correlation	1					
	Sig. (2-tailed)						
Firm Size	Pearson Correlation	0.306*	1				
	Sig. (2-tailed)	.012					
Firm Strategy	Pearson Correlation	0.241*	-0.121	1			
	Sig. (2-tailed)	.049	0.330				
Firm Competitiveness	Pearson Correlation	0.422**	0.676**	-0.213	1		
	Sig. (2-tailed)	.000	.000	0.084			
MA Adoption	Pearson Correlation	-0.188	-0.336	-0.287*	.003	1	
	Sig. (2-tailed)	0.127	.005	.019	0.982		
Firm Performance	Pearson Correlation	-0.309*	-0.383**	-0.255*	-0.141	0.873**	1
	Sig. (2-tailed)	0.011	.001	.037	0.257	.000	

\*\*Correlation is significant at the 1% level (2-tailed).

\*Correlation is significant at the 5% level (2-tailed).

For further exploration of the relationship between research model variables, regression analysis will be carried out twice; first to test the validity of hypotheses from H1 TO H4 related to contextual variables as determinants of MAPs adoption level, and second, to test the validity of H5, related to the relationship between MAPs adoption level and firms' performance.

#### 4.4 Analysis of variance (ANOVA) (appropriateness of the model)

ANOVA results are presented in Table (7) indicating that the research model is consistent greatly with the actual data and that the independent variable is linearly correlated with the dependent variable with a 99% confidence level and Sig = 0.000 (Sig.  $\leq$  0.01).

Table 7: Analysis of Variance- ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	26.205	5	5.241	46.263	.000
Residual	6.911	61	.113		
Total	33.116	66			

-Dependent Variable: Firm Performance

-Predictors: (Constant), MA adoption level, Firm size, Firm strategy, Type of activity, Firm competitiveness

The results of the multicollinearity test through the Variance Inflation Factor (VIF) are displayed in Table (8). It shows that the VIF coefficients of all the factors in the model are smaller than 5, and tolerance greater than 0.2, proving that the independent variables are not closely related.

Table 8: VIF Multicollinearity test among independent variables

	Collinearity Statistics	
	Tolerance	VIF
(Constant)		
Type of Activity	.697	1.434
Firm Size	.421	2.373
Firm Strategy	.767	1.303
Firm Competitiveness	.405	2.472
MA Adoption	.702	1.424

-Dependent Variable: Firm Performance

#### 4.5 Regression analysis

Regression analysis is carried out twice; first to explore if MAPs adoption level is related to firm performance. According to regression coefficients' significance levels shown in Table (9); the variable MAPs adoption level has a Sig. < 0.05 (.000), therefore, the relation is statistically significant with the dependent variable, firm performance, at the confidence level of 95%. Furthermore, regression analysis indicated that there is no significant relationship traceable between research model selected contextual variables (i.e., type of activity, firm size, firm strategy, and firm competitiveness) and firm performance since they have a Sig. > 0.05 (.141, .963, .922, and .267, respectively).

According to regression analysis results, it can be concluded, as per the coefficient of determination, that the independent variable 'MAPs adoption level, explains 77% of the variation of the firm performance as a dependent variable. The remaining percent is due to either random error in the regression model or other independent variables not included in the regression equation.

Table 9: Regression Analysis (MAPs Adoption Level Relationship with Firm Performance)

	Unstandardized Coefficients		Standardized Coefficients Beta	T	Sig.
	B	Std. Error			
(Constant)	1.512	.348		4.348	.000
Type of Activity	-0.73	0.049	-0.105	-1.492	0.141
Firm Size	.003	0.061	0.004	-0.047	.963
Firm Strategy	-0.006	0.062	-0.007	-0.098	0.922
Firm Competitiveness	-0.114	0.102	-0.103	-1.121	0.267
MA Adoption	.726	.059	.853	12.221	.000

-Dependent Variable: Firm Performance

Second, Regression analysis is carried out to explore to what extent the proposed contextual variables can be considered as determinants of MAPs adoption level in sampled business firms as shown in Table (10). According to regression coefficients' significance levels; The contextual variables: firm size, firm strategy, and firm competitiveness, have Sig. < 0.05, therefore, their relationship is statistically significant but negative (in the case of firm size and firm strategy) with the dependent

variable, MAPs adoption level, at the confidence level of 95% or more. The type of activity variable has Sig. > 0.05, thus, the relationship is statistically insignificant with the dependent variable, MAPs adoption level, at the confidence level of 95%.

Table 10: Regression Analysis (Contextual Variables as Determinants of MAPs Adoption Level)

	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
	B	Std. Error			
(Constant)	3.537	.592		5.976	.000
Type of Activity	-0.095	0.103	-0.117	-0.924	0.359
Firm Size	-0.487	0.116	-0.608	-4.205	.000
Firm Strategy	-0.267	0.128	-0.244	-2.081	0.042
Firm Competitiveness	0.537	0.207	0.412	2.589	0.012

-Dependent Variable: MAPs Adoption Level

According to regression analysis, it can be concluded, as per the coefficient of determination, that the contextual variables explain 25% of the variation of MAPs adoption level in sampled firms, the remaining percent is due to either random error in the regression equation or other independent variables not included from the regression equation.

Table (11) summarizes the results of testing the research hypotheses based on data analyses.

Table 11: Hypotheses Testing Results

Hypotheses	Accepted <input checked="" type="checkbox"/> Rejected <input type="checkbox"/>	Relationship orientation	$\beta_i$
<i>H<sub>1</sub>: There is a significant relationship between MAPs adoption level and firm strategy</i>	<input checked="" type="checkbox"/>	Negative	-0.267
<i>H<sub>2</sub>: There is a significant relationship between MAPs adoption level and firm competitive practices</i>	<input checked="" type="checkbox"/>	Positive	0.537
<i>H<sub>3</sub>: There is a significant relationship between MAPs adoption level and firm size</i>	<input checked="" type="checkbox"/>	Negative	-0.487
<i>H<sub>4</sub>: There is a significant relationship between MAPs adoption level and firm type of activity</i>	<input type="checkbox"/>	No Relationship	-
<i>H<sub>5</sub>: There is a significant relationship between MAPs adoption level and firm performance</i>	<input checked="" type="checkbox"/>	Positive	.726

In summary, the regression analysis is carried out twice; first to explore to what extent the contextual variables in the research model can be considered as determinants of MAPs adoption level in sampled business firms, and second, to explore if MAPs adoption level is related to firm performance. Results of the analysis revealed that there is a negative significant relationship between firm strategy and MAPs adoption level in Egyptian firms. The significance of the negative relationship between the firm's strategy and the MAPs comes as a result of ranking the company's strategy in the used questionnaire, where the cost leadership strategy is given (1), differentiation strategy is given (2), and the focus strategy is given (3). This

significance of the negative relationship indicates that the MAPs level adopted by the company decreases in the case of the differentiation strategy compared to the cost leadership strategy. Moreover, the MAPs decrease in the case of the focus strategy compared to the cost leadership strategy or differentiation strategy.

The interpretation of this result can be that in the case of a cost leadership strategy, the company needs information regarding each activity, product, marketing channel, etc. Additionally, it requires information to control all these types of costs. Furthermore, it needs information about competitors, suppliers, and customers to achieve cost leadership. This leads to more MAPs providing more information compared with differentiation strategy or focus strategy needs. However, in the case of a differentiation strategy, although the cost of a company's activities is important, yet it is not as much important compared to external information needed about competitors, supply chains, or customers' needs. Finally, regarding focus strategy, MAPs are reduced compared with cost leadership strategy or differentiation strategy, as a result of less information needed about customers and competitors. This result is supported by the state of disagreement in the literature, as to which management accounting and costing techniques are better used with different firm strategies. There was a debate on whether cost leadership strategy in a firm implies using traditional costing techniques, and whether strategic management accounting techniques are best suited to differentiation strategy or cost leadership (Shank & Govindarajan, 1992a).

The significance of the negative relationship between the firm's size and the MAPs comes as a result of ranking the company's size in the used questionnaire, where small firms are given (1), medium firms are given (2), and large firms are given (3). This significance of the negative relationship indicates that the MAPs level adopted by the company decreases in the case of medium firms compared to small firms. Furthermore, the MAPs adoption level decreases in the case of large firms compared to small and medium firms. This result revealed that in the case of Egypt, where the MAPs adoption level is higher in SMEs than the level of adoption in large firms. This, in turn, may be explained by the fact that Egypt's economic structure is dominated by SMEs, which are challenged to apply SMAPs in addition to TMAPs, to keep pace with the speedy changing and competitive business environment for sustainable growth and development.

The significant relationship between firm competitiveness and MAPs in Egyptian firms indicates that the adoption of MAPs can be related to firms' contextual factors such as innovation ability, firm competencies, and competitiveness (Bartlett and Ghoshal, 1989; Doz and Prahalad, 1987). The significant relationship between MAPs adoption level and firms' performance agrees with the prior studies' results that indicated the positive impact of MAPs on firm performance (Hoque and James, 2000; Davis and Albright, 2004). The insignificant relationship between the firm type of activity and MAPs in Egyptian firms does not go along with prior literature on management accounting that extensively uses industry sector or type of activity as contextual or control variable (Abdel-Kader and Luther, 2008; Abdel-Maksoud et al., 2012).

## **5. Conclusion, limitation and future research**

This research examined the association between some of the common contextual factors characterizing business firms operating in Egypt, as determinants of the adoption level of MAPs, and the impact of such adoption level on firm performance. A survey is conducted in mid-2022 on a sample of business firms operating in divergent industry sectors in Egypt.

Although numerous management accounting studies addressing MAPs adoption in business firms operating within different contexts were based on contingency theory. In addition to that, the reasoning that no single management and control system can fit all business entities with their variant contextual factors, the majority of these studies were conducted in developed countries. Results of data analysis of the current research revealed that when MAPs adoption was studied in a sample of firms operating in a developing country such as, Egypt, not all contextual variables considered explained the level of MAPs adoption in such firms. This implies that changing the context within which MAPs are adopted can influence the theory or the approach followed in adopting TMAPs or SMAPs. The business firms in Egypt, which are mostly SMEs (CAPMAS, 2021), should keep pace with the dynamic business environment and put great emphasis on creativity, innovative business solutions, and presenting accurate information to key stakeholders to maintain their growth. Thus, MAPs adoption are mostly adopted as a result of developing countries' governments' speedy introduction of new technologies and techniques of doing business to sustain its growth rather than adapting management accounting systems in business firms to its internal and external factors. Hence, the institutional theory stands as a better approach to MAPs adoption in developing countries rather than the contingency theory.

The limitations of the research are mostly related to the analyzed MAPs since the analysis was confined to only some of the commonly used TMAPs/SMAPs in practice. This is in addition to the fact that all items of the sample were representative of profit-making business firms, which indicates that the results are to be only generalizable to that category of business entities. Future research on the adoption of SMAPs in SMEs within developing countries context is recommended to understand the motives behind adoption and the barriers hindering the adoption of such practices.

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