

The Impact of Strategic Management on Project's Performance of Construction Firms in Egypt

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Abstract: This study focused on the performance of construction companies in Egypt by deriving a number of internal management practices. First, this study distinguished the internal variables affecting the financial performance of construction companies in Egypt. A conceptual framework was formulated to investigate the most variables predict the financial performance of construction firms. We have selected financial and non-financial internal factors to be associated. These variables together (independent variables, represent the level of firm and project's outcomes) with a single factor financial dependent variable represent the profitability, were used to develop a conceptual framework model that focusing in financial performance. our finding show that, owner manager characteristics affects the construction management practices. As well as, management practices is important in the field of construction management practices. In addition, owner manager characteristics affects the management practices. As the first objective from this research is to collect accurate data represents the current situation of construction field, subsequently, this research depends only on the participants who have interviewed rather than working with unstudied sample.

Keyword: Project's Performance, Construction Management, Owner Manager characteristics & Management Practices, construction firm.

I. INTRODUCTION

Today's, and according to the effect of globalization, the organization required a more unique and dynamic performance measurement system. Moreover, today's business characteristics and according to increase in the competitiveness environment, organization require a multidimensional perspectives of performance measurement. Therefore, organization needs a different approach to evaluate their performance different from the 1960s and 1970s. For many years, performance measurement has emerged as a successful business tool as well as it has gained enormous popularity amongst researchers and practitioners. Moreover, at the beginning of the 20th century, organization's performance assessed based on its financial performance, [1]. Subsequently, at the beginning of 1990s, organizations as well as managers started to disapprove the way of use the financial measures to assess firm's performance. In addition, organization started to criticize the traditional aspect that utilized to evaluate the actual performance of organization during this time. They have argued that, these measures are deemed to be too back-word looking measures, too aggregated, do not help managers to investigate the root causes of performance problems and therefore take and initiate necessary corrective actions, [2]. As well as, managers required more up-to-date, forward-looking information and mostly non-financial performance measures in order to make better decisions. In addition, many researchers have discussed that according to competitiveness, the function's organization must be evaluated, therefore, the traditional way that measure the organization performance according to its financial position only is not acceptable and must be taken in a

broad sight. Therefore, organization should have different perspectives in addition to single aspect “Financial dimension” in measuring their performance.

II. LITERATURE REVIEW

Accounting and financial performance measurement system was a key topic for many researchers since 1960s. the main financial measures, that previous researchers have tackled and developed to manage organization`s accounting system in their studies were, volume profit, budgeting and costing analysis and variance. this traditional way that used during that time is focused only on monitoring organization`s cost. In today`s business environment, and according to the effect of globalization that has increased and made the business environment more complex, therefore, this previous way of performance measurement system is considered to be a traditional way that is not effective in the conditions of today`s organization`s environment surrounding, [6]. Moreover, the main area that previous researchers have focused on is the studying of the success and failure of the non -financial measures to assess organization performance. Such as client and customer satisfaction, quality and product, and services that provided to clients or customer. Accordingly, several performance measurement models and techniques have been developed, which study both financial and non- financial measures such as the Balanced Scorecard, Baldrige Performance Excellence Program and Business Excellence Models [7],[8],[9],[10]. These models rely more on non-financial measures including customer focus, corporate social responsibility, leadership, strategic planning, workforce focus and process management. As well as less emphasis is placed on ratio analysis and other financial measures. By applying these models, previous researchers have highlighted and shift away from the shortcoming of the previous traditional system and enable the organization measure all aspect of business.

In addition, other researchers have started to implement another aspect of performance measures including quality considerations, [11]. They have considered quality management as natural components of evaluation, analysis and control of performance measurement, [12]. Moreover, referring to [13], they have supported the use of integrated or multidimensional performance measurement system among researchers and practitioners. Thus, in the beginning of 21st century, researchers have changed the way of measuring performance based on the answer of different organization`s objectives. They have mentioned that, it is the major aspect for changing of the understanding and function of performance measurement. For instance [14] has discussed his observation with some examples of answering simple questions that organization need to reach business-critical information , e.g. “How are we performing?”, “What is our cash flow”, “What do our customers think of us?”. Moreover, he has discussed that performance is not considered as an isolated procedure; consequently, he described the performance as a multidimensional phenomenon. Therefore, this phenomenon must be depended on participation further perspectives to form a complete evaluation of the actual performance.

On the other hand and referring to the above mentioned, from decades, the majority of construction industries have safeguarded its performance from the single perspective that is financial measures only. Therefore, any other predictors that influence their financial position are neglected, [15]. Then, the performance measurement has started to merge to a new concept of actual performance measurement. Moreover, since the beginning of 1969s, performance measurement has become a major and important problem for researchers. For instance, Dr. Martin Barnes first initiated this concept with the introduction of one of the project management`s leading principles. He has invented the “project`s iron triangle” of cost, time and quality performance. It was also called the classic Time/Cost/Quality triangle in addition to other project management techniques over the years, [16]. Subsequently, integrated or multidimensional performance measurements perspectives were taken widely amongst researchers and organization. In addition, numerous models were built up according to the development of new performance measurement concept. The characteristics of these models were based on organization performance and project-based performance in a broader direction. in spite of the major evolution in performance measurement over the years as well as the massive development in models that involving several dimensions or aspects to measure the actual performance, however, the construction industry has been specified as one of the most ineffective and inefficient industries, [17],[18],[19],[20].

Therefore, this guide researchers to develop and initiate frameworks with involving non-financial dimension that measure the organization activities against multiple perspectives. For example, in 1998 and towards to the reports that were published by Latham and Egan, (The Construction Best Practice Program (CBPP)) framework was first pushing and arise in the UK in 1998 by “the single organization charged with driving the change agenda in construction”. Moreover, the (CBPP KPI`s) model and framework has initiated the first list of 10 Key Performance Indicators (KPIs) based on project

as well as firm level in order to measure the actual performance in the construction industry [19]. Moreover, [13] has published paper in “measuring business performance”, he argued that corporate can get superiority of measurement, if they apply an effective performance measurement system (PMS). He has concluded the effective PMS benefit as, the ability to analyze and quantify the past action therefore it enables managers making the right decision and take the right actions. Moreover, he has defined effective PMS benefit as “quantifies in specific the efficiency and effectiveness of past actions through acquisition, collation, sorting, analysis, interpretation and dissemination of appropriate data. Therefore, for the full benefit of measurement function, the ‘process’ should be based on a procedure for designing an effective performance measurement system. This procedure structured at four stages. The first stage is (design) stage of the measurement system; it is including selection and definition of measures. While second stage contains (planning and building practices). Thirdly, the (process of implementation and operation) this stage apply the selected measures and practices at the previous stage and go through enhancing the decision-making. The final stage is the (refresh) that enhance the system and review relationship to sustain the system.

However, depending on the development of UK`s frameworks used for measuring the performance, the list of KPI`s that were initiated and commonly applying in the UK`s construction industry at project based level concluded as: client satisfaction (product/ service), cost and time predictability (project, design, construction), defects, construction cost, construction time. In addition, according to firm level the frameworks consisted of profitability, productivity, safety KPI`s. However, after many years of applying these KPI`s to measure the actual performance of construction industries in UK, many researchers have criticised KPIs, [18].

In addition, many researchers argue that according to project management system that managing a project by planning, organizing and managing all the different project required aspects, KPI`s could only considered as an actual performance measurement tool inside the whole management system. also, [3] have mentioned that KPI`s can be measure the action and managerial decisions after their happened, so they could be classified as lagging measures and indicators. In a broader means, there is no opportunity for managers to change or enhance their decisions as these indicators are not forward looking to predict future improvements.

III. PROBLEM STATEMENT

A. Area of concern

Regarding the increasing in the competitive environment, the subject of performance measurement has arisen and gained spreading amongst previous researchers. performance measurement system allows the management of a firm to track and assess the firm`s performance as well as, its project and processes. For construction companies, in order to make better decisions, managers require more forward- looking information and mostly non- financial performance measures. Consequently, various performance measurement models and techniques have been developed, relied more on “financial and non- financial measures” among countries for instance: France, UAE, Saudi Arabia, Hong Kong, US and Malaysia. In addition, Previous researchers reveal that the answer of different organization`s objectives is the major aspect for changing of the understanding and function of performance measurement. Therefore, performance is not examined as an isolated procedure. Then, the performance measurement has started to merge to a new concept of actual performance measurement. This concept first initiated with the “project`s iron triangle” of cost, time and quality performance. Accordingly, numerous models were built up according to the development of new performance measurement concept. The characteristics of these models were based on both organization and project performance in a wide direction. Previous researchers have accepted that, it is necessary to participate various perspectives in order to complete the structure and framework of the actual performance measurement. The main feature of these models and frameworks is, applying a set of KPI`s measures to quantify the actual performance. after many years of applying KPI`s for measuring the actual performance, many researchers argued that according to project management system that managing a project by planning, organizing and managing all the different project required aspects, KPI`s could only considered as an actual performance measurement tool inside the whole management system. Also, [3] have mentioned that KPI`s measure the action and managerial decisions after their happened, so they could be classified as lagging measures and indicators. Therefore, they have suggested that the main objectives of the use of performance measurement is, as a tool for continuous improvement not solely describe the results or the outcomes of managerial actions. Therefore, for the full benefit of measurement function, the ‘results’ should be compared with internal benchmarking based on company`s vision and goals in order to design an effective performance measurement. As mentioned in the literature, from decades, the financial performance has been the major and only perspective that used for assessment of construction companies.

Nevertheless, today there is a need to participate a new approach relating to the competitive environment. According to [4], he has examined the practice of performance measurement of construction industry in Egypt. His study included Egyptian small, medium and large companies' performance measurement. In addition, from the results he has observed that, as a method of actual performance assessment in these selected companies, in-house developed performance management system (by using KPI'S) is the main controlling function of construction companies performance in Egypt. Moreover, [5] have published paper in subject "Modelling the Link between Management Practices and Financial Performance of construction firms". they have structured a model containing all internal factors at strategic management level of Construction Company related to owner and internal management practices to study their effect on performance of organization. Moreover, they observed a significant relationship between management practices and financial performance. according to previous researcher, they have concluded that Strategic Organizational culture is affecting project performance as well as project's managers behaviour. Accordingly, based on the literature as the researchers have investigated, organizational practices or strategic management internal factors is influencing the outcomes and outputs of the projects. Therefore, they have proven that the culture of construction organization is supposed to be the project management culture that considers projects as the main tool to achieve their visions.

B. Model development

According to the brief discussion above, our area of concern in this research is about the performance measurement system in construction companies in Egypt. The Model by [5] and proposed framework by [4] are our starting point. Our objective is to put a foundation for stablishing (an effective performance measurement system PMS) measures for construction companies in Egypt, by distinguishing the most internal variables affecting the companies survival at medium and small scale in Egypt. Our Conceptual Model includes four internal dimensions of construction companies' practices. Which are, the independent variables of our model (Management Practices MP, Managerial characteristics MC, company characteristics CC and construction management practices CM) and financial ratio which is the dependent variable of our model (Return on equity ROE). In our model, 26 explanatory factors are selecting from the literature at level of firm (management practices, company characteristics and owner manager characteristics) and at level of project (construction management practices).

Maes model has been focused more on the proactive of strategic management on the survival of construction companies. According to previous researchers, they have concluded that Strategic Organizational culture is affecting project performance as well as project's managers behaviour. Accordingly, they have proven that the culture of construction organization is supposed to be the project management culture that considers projects as the main tool to achieve their visions. In our model, we put a strong emphasis on the role of project management culture to achieve companies' goals and success. Therefore, at the dimension of construction management practices in our conceptual framework, we select the most factors affecting projects outcomes triangle cost, time and quality form the literature to determine the impact on company`s sustain.

IV. RESEARCH OBJECTIVES

The purpose of embarking on this research is to achieve the Following objectives:

- 1- Distinguish the most internal management factors affecting the project`s performance.
- 2- Investigate the most significant internal variables affecting the performance of construction firms in Egypt.

V. RESEARCH METHOD

This research has been carried out following a quantitative approach . The main objective of this research is to identify the financial and non-financial practices (predictors) that have the possibility to cause the failure of construction companies. On the other hands examine whether there is a relationships between these various variables of the SMEs in Egypt. the flow of research starting from the data collection rely on literature review, formal standardised questionnaire is designed including measures used for various variables (questions), model estimation, research limitation and finally the method using to test and quantify hypotheses in addition analyses the data statistically. The research instrument is adopted targeting SMEs in construction industry in Egypt. The research questionnaire were distributed to 150 companies in Cairo Region. Our conceptual framework, to predict financial performance of construction companies using the predictors MP, MC, CC and CM. The Linear multiple regression analysis enable us to examine our conceptual framework of the model. Our research question is: are MP, MC, CC and CM predictive of company`s Financial Performance. To answer the above

research question, the following data collected based on previous studies and literature, which are: Performance (y) = Financial performance of Corporate “ROE”, Predictor (x1) = Management Practices, Predictor (x2) = Managerial Characteristics, Predictor (x3) = Company Characteristics and Predictor (x4) = Construction Management. Fig. 1 shows the dimensions of our conceptual framework use in our study. In addition, we have examined the model to investigate the relationship between MP & MC on the put come of the projects.

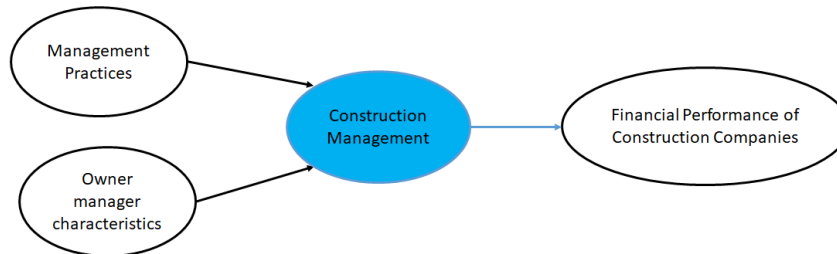


Fig. 1: The Effect of “MP” and “OMC” on project’s Performance of construction companies

VI. DATA ANALYSIS

This section seeks to provide an analysis of the data collected from developed questionnaire of medium and small construction companies in Egypt. Which are the independent variables (Management Practices MP, Managerial characteristics MC, company characteristics CC and construction management CM) and financial ratio calculations between the years 2015 to 2020; which is the dependent variable (Return on equity ROE). The aim is to obtain the objectives of this research which it to differentiate internal factors of construction companies that control their performance towards survival in Egypt. In addition, identify the correlation and relationships between management practices MP, managerial characteristics MC, on Construction management CM.

A. Determine How Well the Model Meet the Assumptions of the Analysis

In this segment, an explanation of observation tests that should be set to perform a multiple regression analysis, are illustrated. These assumptions are necessary for the accurate results and to reduce the negative effect on the regression equation that used to predict the DV based on IVs.

1. Examine Descriptive Statistics

The output of analysis represented in the table (1). The table shows the values for Skewness and the standard error of the skewness, moreover, the value of Kurtosis and standard error of the Kurtosis. These values represent that no significant outliers in our data are existing. The value of skeweness and Kurtosis conducted for "ROE" are 0.248 and -0.787 respectively. These values are very small, which reveal that the variable most probable does not include outliers’ values, See Table 1 shows various descriptive statistics of the continuous dependent variable “ROE”.

Table 1: Values of Descriptive Statistics of the Continuous Dependent Variable “ROE”

Examine Descriptive Statistics	Values
Skewness of ROE	0.248
Std. Error of Skewness of ROE	0.350
Kurtosis of ROE	-0.787
Std. Error of Kurtosis of of ROE	0.688

2. Check Normality Assumption

According to the table (1), results of the examining linear distribution of the dependent variable “ROE” represent. In our results, the z-score of Skewness and Kurtosis for “ROE” equal 0.708 and -1.14 respectively. Which means that both values fall between -1.96 and +1.96 therefore, the distribution of ROE is normal and thus accepts the normality assumption. The second step in this assumption is using the Kolmogorov–Smirnov Test to check linear distribution for dependent variables ROE. Table 2 represents our normality test of values of Kolmogorov–Smirnov Z-test statistic (Z = 0.118), and the significance (P= 0.122 > α = 0.05) Based on the results from SPSS, the p-value exceeds the level of risk associated with the null hypothesis (α = 0.05). Therefore, we do not reject the null hypothesis. In other words, the sample distribution is sufficiently normal.

Table 2: Tests of Normality Kolmogorov-Smirnov of the Continuous Dependent Variable “ROE”

Check Normality	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
ROE	.118	46	.122	.953	46	.062

Table 3: The Correlation Coefficient “Pearson’s r” between Independents Variables IVs.

Pearson’s correlation coefficient				
	Mang_practs	Mang_charac	Comp_charac	Con_mang
Mang_practs	1			
Mang_charac	0.614**	1		
Comp_charac	-0.214	-0.095	1	
Con_mang	0.696**	0.396**	0.014	1

3. Check Autocorrelation Assumption

We have tested autocorrelation for our regression model by calculating the value of Durbin-Watson factor to check that there is no autocorrelation. The optimum value of Durbin-Watson factor falls within (1-3). Therefore, our regression Durbin-Watson factor is (1.738) which indicates that there is no autocorrelation for the regression model.

B. Applying of Multiple Linear Regression Analysis

The type of statistics test “multiple linear regression” use to examine the relationship between more than two independents variables IVs, and one dependent variable DV. The first step Model check includes more instructions that examine regression model (i.e., outliers and influential cases and multicollinearity among the continuous independent variables). In our research, we use the checking for multicollinearity. In conclusion, when the predictors’ variables “IVs” in the model correlate with one or more IVs then, a multicollinearity occurs. On other explanation, when one of the independent variable can be predicted by other IV. The first step of examining the multicollinearity is calculating the correlation between variables. A linear relationship between two variables called Collinearity. Where multicollinearity is a situation where two or more predictors are highly linearly related. The problem of multicollinearity makes a significant variable to be insignificant because it increases the standard error of the variable. Generally, when the correlation coefficient “r” between two variables or predictors is higher than (0.7, $r > 0.7$), then the condition of multicollinearity occur. Table (3) represent the correlation “r” between our independents variables. It appears that all correlation coefficient are less than 0.7, therefore, our model meet the model check for collinearity. The second step of examining the multicollinearity is calculating the Variance Inflation Factor (VIF) and Tolerance statistics. From the results, Table 4 shows that the value of “VIF” fall between (1.012, and 2.636), which indicates that the values is higher than the minimum accepted value of VIF = three. Moreover, the values of VIF supported by the values of Tolerances statistics. From table (4), it shows that the values of “Tolerances” are fall between (0.379, and 0.988), which are higher than the minimum accepted value of Tolerance = (0.1).

Table (4): The Value of “VIF” and Tolerance Statistics of Independent Variables for Multicollinearity Check

Collinearity Statistics		
Variables	VIF	Tolerances
Management Practices (MP)	2.636	0.379
Managerial characteristics (MC)	1.624	0.616
Company characteristics (CC)	1.012	0.988
Construction management (CM)	1.951	0.513

C. Pearson’s correlation coefficient between ROE and MP, MC, CC and CM:

In table 5, from the multiple linear regression analysis, the results shows that there is a significant relationship between Management Practices MP with Return on Equity ROE ($r = 0.527, P= 0.000 < \alpha = 0.01$ level of significant). In addition, there is a significant relationship between construction management CM with Return on Equity ROE ($r = 0.278, P= 0.006 < \alpha = 0.05$ level of significant). Therefore, our results investigate that there is a significant impact of management practices MP and construction management CM on financial performance. However, that there is no significant impact of managerial characteristics MC ($r = 0.214, P=0.154$) and company characteristics CC ($r = -0.220, P=0.141$) on financial performance “ROE”.

Table 5: Correlation Coefficients of the Relationship on Financial Performance “ROE”, (* $p < 0.05$, ** $p < 0.01$, * $p < 0.001$).**

Dimension	Pearson’s Correlation Coefficient
Management Practices	.527**
Owner Manager Characteristics	.214
Company Characteristics	-.220
Construction Management Practices	.278*

VII. DISCUSSION OF FINDINGS

Multiple linear regression analysis enables us to explore the statistical relationship between the variables used in our conceptual model as independent variables “management practices, owner manager characteristics, company characteristics and construction management practices”, (MP, OMC, CC, and CMP) and dependent variable return on equity (ROE). Statistical Package for the Social Sciences SPSS package (20) used to develop the conceptual regression model; we utilized the rules of thumb recommendations by using Enter Technique method. As mentioned above in our results, as a whole, the predictive models` dimensions “management practices, owner manager characteristics, company characteristics and construction management practices” explain 49.4% of the variance of our dependent variable return on equity “ROE”. It is important to mention that, in our predictive model, comparing the R-Square of our model with previous studies is difficult according to several reasons, including that, our conceptual framework is different in variables comparing with others. In addition, the appropriate statistics tests and techniques used will make the comparison not suitable. Referring to our multiple linear regression analysis and table (5), it shows that Management Practices and Construction Management practices are predictive variables of company`s Financial Performance, however, owner manager characteristics OMC, and company characteristics CC are not predictive variables of our model. Therefore, from these findings, our we can state that Management Practices MP and construction management practices CMP, are predictive variables of company`s Financial Performance. However, the part of managerial characteristics MC and company characteristics CC are not predictive variables of company`s Financial Performance model.

Referring to our multiple linear regression analysis and table (5), the Pearson’s correlation coefficients results reveal that there is a significant relationship between construction management practices CM with Financial performance of construction company “Return on Equity ROE”, ($r = 0.278, P= 0.006 < \alpha = 0.01$ level of significant). With these findings, we can state that there is a significant impact of management practices MP and construction management practices CM on financial performance of construction companies. However, there is no significant impact of managerial characteristics MC and company characteristics CC on financial performance “ROE”. According to [21], they have mentioned that the criteria of project`s performance evaluation is selected according to the difference of value, size and complexity of every project. In this context, previous researches have conducted many frameworks containing several indicators to evaluate the projects performance and outcomes. Based on [22], they have mentioned that actual project performance or outcomes can be evaluated using several indicators, for instance, time, cost, quality, customer satisfaction and business satisfaction. In our study we have concerned about the main criteria that describe the outcomes performance of projects, which are, time, cost and quality, [23].

Moreover, our finding is agreeing with [24], as they have indicated that actual project`s performance should be measured by short term objectives (project efficiency: meeting cost, time, and specifications) and long term (project effectiveness: customer satisfaction and quality of product) objectives. Therefore, our finding is acceptable as there is a relationships between construction management practices (lead to actual project`s outcomes by meeting cost, time, and specifications)

and the profitability of the firm (long-term objectives), [25]. Accordingly, our results of the significant impact of construction management practices CM on performance of construction companies is agreeing with [4], who has examined the relationship between proposed “performance measurement system PMS” measures in construction companies in Egypt. These measures including factors at level of project and firm. He has investigated that overall PMS in Egyptian construction companies in his study showed that “success project delivery” has the greatest impact and influence on customer satisfaction, hence, a company’s profit. He has in addition concluded that company’s profit as key performance measure realized as the best performance indicator in the small and medium Egyptian construction industry.

In addition, as our finding shows a significant relationship between construction management practices and financial performance of construction companies. Therefore, our items associated in the dimension of construction management practices in our model “quality, time, cost” showed the nearest perspective of company’s survival at level of projects. This finding supported by [4], who mentioned that in the small and medium companies SMEs, the understanding of success of the company is closely related to the significant elements of his proposed PMS, which are divided into two groups, first the “time delivery of project and product quality”. Then the lower importance but also high significant which are “profitability and customer satisfaction”. Our dimension of “construction management practices CM” Consists of several internal factors that significantly affect the performance of project on construction companies according to extensive previous studies reviews and the status of construction industry in Egypt.

Table (5) shows the Pearson’s correlation coefficient of owner manager characteristics and financial performance ROE, with ($r = 0.214$, $p = 0.154 > 0.05$). Referring to our finding, we have found that owner manager characteristics is not capable to predict financial performance ROE. It is compatible with previous research by [5] who has found that owner manager characteristics does not affect directly the performance of construction companies. Nevertheless, our finding is contradiction with previous research by [26], they have found that education of owner manager affects the performance of construction companies directly; therefore it is a significant predictor of business success. In addition, [27] found that education of owner manager affects positively the profitability of company. this is also inconsistency with our finding. Moreover, he has found that Experience of owner manager affects the performance negatively.

VIII. CONCLUSION AND RECOMMENDATIONS

This study distinguished the internal variables affecting the financial performance of construction companies in Egypt. A conceptual framework was formulated to investigate the most variables predict the financial performance of construction firms. Our study focused on survival, therefore, we have concerned about the profitability of the companies. We have selected our variables according to extensive reviews of literature and the status of construction field in Egypt. Our variables include Management practices (MP), Managerial characteristics (MC), Company characteristics (CC) and Construction Management Practices CM. We have selected financial and non -financial internal factors to be associated. These variables together (independent variables, MP, MC, CC&CM) with a single factor financial dependent variable “ROE”, were used to develop a conceptual framework model that focusing in financial performance single measure related to profitability, then, survival.

The statistical technique SPSS Package (20) has allowed us to investigate the direct total effect of these internal dimensions on the performance of construction companies. The presented results and findings indicate that Management Practice MP and Construction Management Practices CM are Predictive variables of financial performance of construction companies in Egypt. Management Practice MP has the stronger effect on performance of companies. However, both dimensions of Managerial characteristics (MC), Company characteristics (CC) are not able to predict the performance of construction companies. In our model, the dependent variable is represented by one key financial performance measure, which is “Return on Equity”. This measure represents the profitability of the company. Furthermore, the study focuses on the performance of construction companies in Egypt by deriving a number of a specific construction practices. Therefore, the finding are not compatible with other sectors of industry. In addition, in this study, some not responded questions need further research. For instance, we have found that owner manager characteristics does not affect the financial performance ROE.

Moreover, our findings reveals that performance of construction companies was affected by actual practices like management practices MP and Construction management practices CM, but the characteristics of company and owner managers not affect the performance. Therefore, in the dimension of owner manager characteristics MC, the items that addressed to describe this variable are related all to the features and background of managers. That means the properties that belonging to the actual practices of owner manager have not included. Subsequently, in the further researches, actual

behavior or practical practices of owner managers, not background and features of managers, might make differences on the result and significance of finding.

In our research, we have focused more on the most internal management practices, at the level of firm, and construction management practices at level of project, that can support the actual performance of construction companies for survival after extensive reviews of literature and according to the status of construction sector field. As we observed the strong relationship between variables, that not hypothesized. In the future researches, we suggest that use of other statistical techniques that dealing with mediators to examine the direct and indirect effects would improve and enhance the finding.

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