

Impact of the Competitive Strategies on the Relevance of Performance Measurement

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Abstract

using the competitive strategies in the manufacturing companies. In addition, they did not explain impact of using the competitive strategies over product-life-cycle on relevance of the performance measures. A survey conducted in the Egyptian manufacturing companies to examine the research hypothesis. The research findings indicated manufacturing companies adopted different competitive strategies and performance measures over product-life-cycle.

Since the end of the 1980s, performance measurement has become an important issue for academics and practitioners. Academics have criticized financial measures of performance such as cost, profit, and ROI. The literature has suggested that managers should design performance measurement systems that are relevant to the company's strategy (Porter, 1980; Slater and Narver, 1993; Mosakowski, 1993; Kaplan & Norton, 1996; Ndubisi and Koo (2006). However, the prior studies did not attempt to explore determinants of

1. Introduction

different strategies driving from different functions of a company also become a barrier to implement a corporate strategy as most companies have great difficulty in communicating and coordinating across these functions. Because communicating business strategy and aligning individual goals with corporate goals are critical in many companies, Kaplan and Norton (2001) suggested that a BSC approach can provide a mean for communication and alignment of corporate strategies by linking measures to each level of company.

1.1 Research objective

The main objective of this research is to examine an impact of the competitive strategies on the performance measurement in the Egyptian manufacturing companies.

1.2 Organization of the research

Section 2 provides the theoretical framework of the study. Section 3 explains the research hypothesis and the methodology adopted and presents the research findings. Section 4 discusses the conclusions drawn from

Prior research suggested that performance measures should be linked to a strategy (Govindarajan and Gupta, 1985; Abernethy and Guthrie, 1994; Ittner et al., 2003). The strategy-performance relationship becomes complex when one considers various performance measures that can be used. The extent to which it exists in the evaluation of performance could raise key questions from research on the competitive strategy-performance relationship (Parnell et al., 2006). Nanni et al. (1992) suggested that companies should enhance the competence of performance measurement. The degree of competence would rely on the relevance between the design of the performance measurement system and the strategy of the company. Kaplan and Norton (2001) suggested that the performance of a company would improve with the use of a balanced scorecard (BSC). They suggested that there are several reasons why companies often fail to translate strategy into action have to do with the performance measurement system. Firstly, companies fail to collect the right information to monitor progress towards their strategic goals. Secondly,

internal achievement rather than on external opportunities.

A third limitation occurs when the single performance measure focuses on short-term operating results and ignores the long-term effects (Kaplan & Atkinson, 1995).

2.2 Performance measurement of responsibility centers

For responsibility accounting, the traditional management control system required to establish responsibility centers using financial performance measures to measure and monitor the performance of organizational units. The management control system used one or a mix of the four types of responsibility centers: (1) Cost Center- the manager is accountable for costs only. (2) Revenue Center- the manager is accountable for revenues only. (3) Profit Center- the manager is accountable for revenues and costs. and (4) Investment Center- the manager is accountable for investments, revenues and costs. There are difficulties arise when organizational units have to interact with each other. A performance measure affects the profitability of the organizational units, so the managers have a keen interest in how this measure is determined. The rationale

this research and offers implications for future research.

2. Theoretical Framework

2.1 A single performance measure dilemma

The measure of performance of business units is important in the manufacturing companies. Ideally, the local performance measure should be consistent with overall corporate goals, but it is just about impossible in complex and uncertain environments for any single performance measure to achieve perfect goal congruence between a organizational unit and the overall corporation. That is why companies are using a balanced set of measures to communicate company-level strategy to local divisions and departments. When only a single measure of performance is used, the measure tends to become an end in itself, more important than the economic performance that it attempts to represent. People within the system change their behavior as a function of the measure chosen to summarize the economic performance of their organizational unit. A second limitation arises because most measures of performance are based on

difficult to capture in a performance measurement system. Financial performance measures are not enough to evaluate the performance of the business units but they should be supplemented with measures along customer (e.g., on-time delivery, defects of received items), internal business process (e.g., innovation, quality, cycle time), and learning and growth (e.g., employee and systems capabilities) dimensions. These dimensions are determined in a competitive strategy selected by the organizational units (Kaplan & Atkinson, 1995)..

2.3 Strategic business units (SBUs)

It should be better for the purpose of this study to consider a performance unit as a strategic business unit (SBU) instead of a responsibility center. In general, we can define a corporate strategy as the direction and scope of an organization over the long-term: which achieves advantage for the company through its configuration of resources within a changing environment, to meet the needs of markets and to fulfill stakeholder expectations (Chaharbaghi, 2007; Gerry & Kevan, 1997). A competitive or business unit strategy is about how to compete successfully in a particular

for performance measures is that the managers, when making decisions, need only focus on how their decisions will affect their organizational unit performance without evaluating their impact on companywide performance.

In a well-designed performance measurement system, optimizing subunit performance leads to optimizing the performance of the organization as a whole. In particular, it should promote goal congruence. As in contemporary management control systems, a performance measurement system should: (1) help senior managers evaluate the profit centers as separate entities. (2) coordinate the actions taken by the managers and the organizational activities. To be effective, management control systems should be closely aligned to the organization's strategies and goals to promote the goal congruence. Goal congruence exists when individuals and groups work toward achieving the organization's goals (Horngren, Dater, & Foster, 2004).

Many problematic non-financial aspects are associated with transactions among organizational units. The quality of a product or service and the timeliness are important dimensions, but the financial impact of varying quality or delivery times will be

synonymous with SBUs. A company that markets a product is likely to have a number of SBUs because it may sell the product to different market segments, some of which may have different characteristics from each other. Therefore, they need to be conceived as separate SBUs for strategic purposes, even though within the organizational structure they may be part of the same division (Kathuria, 2007; Gerry & Kevan, 1997).

2.4 Achieving a competitive advantage over product life cycle

Traditional performance measurement systems have not provided useful information about at which stage the company should use a specific competitive strategy and performance measures over the product life cycle. The life cycle is conventionally divided into four phases: introduction, growth, maturity, and decline.

market. The concerns are therefore about how advantage over competitors can be achieved? what new opportunities can be identified or created in markets? which products or services should be developed in which markets? and the extent to which these meet customer needs in such a way as to achieve the objectives of the company-perhaps long-term profitability, market growth or measures of efficiency. So, whereas corporate strategy involves decisions about the organization as a whole, strategic decisions here need to be related to a strategic business unit (SBU). An SBU is a unit within the overall company for which there is an external market for goods or services distinct from another SBU. Confusion can often arise here because an SBU may not be defined in terms of an organizational structure. For example, divisions of a large company are not

uncertainty. They compete aggressively on innovation, quality and customer service. This type of companies called prospectors (Miles and Snow 1978).

Added-value or differentiation strategy is relevant in the introductory phase. Porter's (1980, 1985) suggested that a company maximizes its performance by generating a competitive advantage. A differentiation strategy seeks to be unique in terms of dimensions widely valued by customers and to be different from competitors. Uniqueness or improvements in products can be achieved by investing in high technology and demonstrating better than the competition how the product or service meets customer needs. The aim is to achieve higher market share than competitors by offering better products or services at same price. Key success factors in the differentiation strategy are innovation, high quality, and customer satisfaction.

(Dess and Davis, 1984)

Once the *growth* stage is reached, the key challenge is scaling up. As the market expands, the company needs to adapt its product design and its manufacturing capability to large-scale production. To utilize increased manufacturing capability, access to

The different stages of the product life cycle are associated with different business strategies. The changes in business strategy over the product life cycle arise from the fact that the changes in competition and customer requirements have important consequences for key success factors:

During the *introductory* phase, product innovation is the primary basis for success. The essential condition for being able to compete is to possess the technology necessary to produce the product. As the industry begins its evolution and technological competition intensifies, other requirements for success emerge. In moving from the first generation of products to subsequent generation, investment requirements tend to grow, and financial resources become increasingly important. Companies need to support their innovation by a broad array of vertically integrated capabilities to develop and produce new products to meet customers' needs, their investment in large amounts of financial resources related to research and development. Companies are likely to encounter a high level of environmental

concerns with cost advantages through organizationally specific competences driving down cost throughout the value chain (Hill, 1988; White, 1986; Wright, 1987; Gerry & Kevan, 1997).

The transformation from maturity in the *decline* phase raises the potential for destructive price competition. Whether or not a company has a competitive advantage tends to be secondary to the importance of maintaining a stable industry environment. Hence, company strategies tend to focus upon encouraging the orderly exit of industry capacity and the building of a strong position in relation to residual market demand (Grant, 1995).

Each strategy is unique, so each one requires different types of performance measures and targets. For example, Olson and Slater (2002) argued for the adoption of multi-measure approach in measuring performance, but challenged the idea that all measures are equally important.

2.5 Performance measurement of business units

The competitive strategies might be affecting the choice of performance

distribution becomes critical. Design and quality improves and reliability of key importance. Added-value or differentiation strategy is still relevant in the growth phase.

With the *maturity* phase, competitive advantage is increasingly a quest for cost efficiency. Products are more standardized and companies tend toward less and less product differentiation. Emergence overcapacity, deskilling of production, long-term runs and price competition increases. The key success factors thus tend to be those cost drivers that are most important within that particular industry. Priced-based-strategy is relevant in this stage. A company has two routes or choices in this stage, first, it entails reducing price and perceived added value and focusing on a sensitive market segment (a focus strategy). Second, it entails reduced price, while trying to maintain the quality of the product. A strategy of low price might be successful by making a company a cost leader to generate a competitive advantage. Porter's (1985) defined a cost leadership strategy as the low-cost producer in its industry...a low-cost producer must find and exploit all sources of cost advantage. So, it

financial measures in performance measurement systems (Kaplan, 1984). Indeed, some companies are using multiple performance measures, as opposed to a single performance measure that might have been used in the past decades. New approaches such as the balanced scorecard (BSC) suggest that companies should use more non-financial measures than traditional performance measurement systems. Kaplan and Norton (1992 and 1996) developed BSC that comprises comprehensive financial and non-financial measures. Non-financial measures include at least three other perspectives: customer perspective, internal business process perspective, and learning and growth perspective. The focus of BSC is on the vision and the strategy of a company. The BSC translates an company's vision and strategy into a comprehensive set of performance measures that provides the framework for a strategic performance measurement system (Chen, et al. 2006; Goll, et al. 2007). Using BSC as a strategic performance measurement system would overcome the shortage in traditional performance measurement systems with regard to their inability to link a corporate strategy with strategic and operational decision. However, the extent to which

measurement systems. Traditionally, management accountants in most companies have relied on the use of financial measures to evaluate the performance of departments. Financial measures provide objective indicators of a firm's performance. They emphasize the objectivity associated with comparing the performance level of various business units along standardized lines. Financial measures such as return on assets (ROA), return on investment (ROI), and return on sales (ROS) have been examined in prior studies (for example, Palepu, 1985). The new financial measure, economic value-added (EVA), also has been examined by other studies (for example, Bacidore et al., 1997). However, the EVA measure was not familiar because it is too complicated for managers to understand and to use (Ittner and Larcker, 1998a). Although, financial measures often do not result in the corporate valuation of performance, they still accepted approach in some strategy-performance studies (Geringer et al., 1989). Since the end of the 1980s, academics and professionals indicated that manufacturing companies still rely mainly on financial indicators to measure the performance. They recommended the importance of non-

Further, non-financial measures are indicators of intangible assets that may be better predictors of future financial performance than accounting performance measures, and thus should be disclosed (Ittner and Larcker, 1998b).

companies use multiple measures to actually link their performance measures more closely to strategic priorities is still largely unknown (Falshaw, et al. 2006). Viewing performance through non-financial perspectives can provide insight into organizational performance that cannot be seen through financial measures.

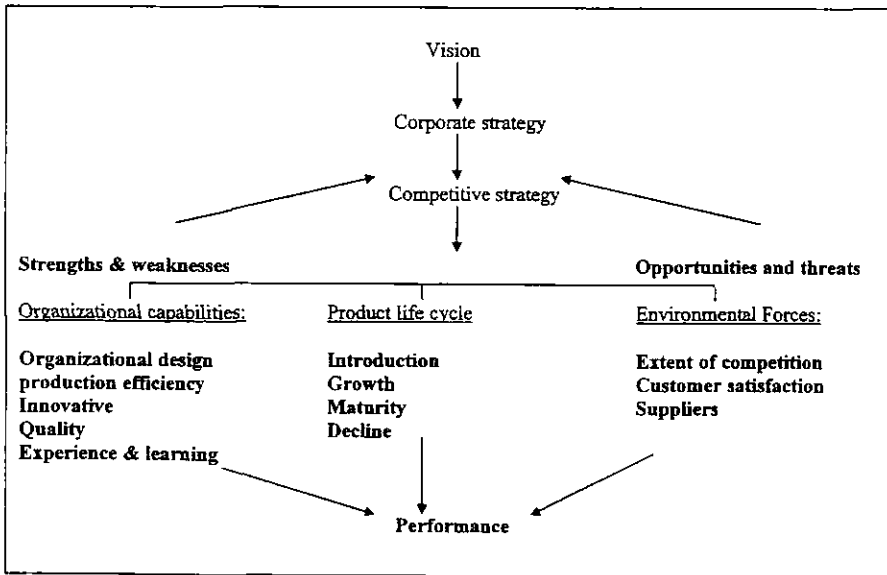


Figure (1) the relationship between Organizational capabilities, Environmental Forces product-life-cycle, a competitive strategy and performance

to costs of adding features that make its products distinctive. Management accountants also help formulate a strategy by helping managers answer the following questions such as:

- Who are our most important customers, and how do we deliver value to them? How sensitive are their purchases to price, quality, and service?
- What substitute products exist in the marketplace, and how do they differ from our product in terms of price and quality?
- What is our most critical resource? Is it technology, production or marketing? What demands will be made on this critical resource by the new strategic initiatives?

Creating value for customers is also an important part of planning and implementing a strategy. Management accountants also help managers by tracking the costs incurred in each value-chain category. Their goal is to reduce costs in each category and to improve efficiency. In addition, management accountants help managers track performance on the

3. The role of management accountant in implementing a strategy

The key to a company's success lies in creating value for customers while distinguishing itself from competitors. Identifying how a company will get this done is what strategy is all about. However, a chosen strategy is only as good as its implementation. The management accountant provides input that aids in developing and implementing strategy. To understand the management accountant's role, we should first understand these tasks in more detail. A strategy specifies how an organization matches its own resources and capabilities with the opportunities and threats in the marketplace to accomplish its objectives. In other words, a strategy describes how an organization will compete and the opportunities its managers should seek and pursue. Deciding between strategies is a critical part of what managers do. Management accountants work closely with managers in formulating strategy by providing information about the sources of competitive advantage—for example the cost, productivity, or efficiency advantage of their company relative to competitors or the premium prices a company can charge relative

process- to reduce costs, improve quality, and growth.

(Horngren, Dater, & Foster, 2006).

4. Developing hypothesis and research methodology

Nowadays, the Egyptian manufacturing companies operate in a highly competitive environment. Liberation in most industries has provided competitive strength, particularly in the manufacturing industry sector. Because of this sector applies new competitive strategies, vertically integration, and recent trends of measuring manufacturing performance, the manufacturing industry is viewed as a particularly relevant area of this study. Further, the use of performance measures is expected to be more diverse and extensive in manufacturing industries over product-life-cycle.

Companies were randomly selected from the directory of Egyptian industry employing more than 1000 people. Companies chosen are from various industries and are located throughout different locations. Of the 85 questionnaires submitted to the financial managers in the sample, only 60 responses were returned and usable, resulting in a usable response rate of

chosen key success factors vis-à-vis the performance of competitors on the same factors. The goal is for a company to continuously improve its critical operations -such as reengineering a manufacturing

4.1 Research hypothesis

The theoretical framework explained that concept of performance measurement competence suggests that companies use types of measures that fit with their strategy, their organizational capabilities and the environmental forces that they face. This should influence the design of the performance measurement system in a company.

Therefore, I may hypothesize that:

H1. It is expected that there are different factors to determine the relevant competitive strategies that manufacturing companies tend to use.

H2. It is expected that different competitive strategies require different performance measures over product-life-cycle.

4.2 Research methodology

4.2.1 Sample selection

letter explaining the objectives of the study. A telephone follow-up and a field visit conducted three months later to enhance the response rate and to provide considerable assurance that the managers had completed the questionnaires themselves. Companies sampled were involved in the manufacture of electrical and electronics, textile and clothing, machinery and equipment, paper and packaging products, furniture and wood, pharmaceutical, appliances, communications, Automotive, rubber as well as information technology as shown in table (1).

70.6 percent. This response rate is statistically reasonable to examine the research hypothesis. It did not expect that companies with less than this number of employees would have clearly defined responsibility centers to which managers would be appointed. Each manager was contacted by telephone and requested to take part in the study. Managers are seemed to be the most appropriate personnel involving with strategy making and overall policies of the companies such as financial controlling and preparing performance reports. Each manager was interviewed and submitted the questionnaire together with a cover

Table (1) provides statistics of the responding companies in the survey (N = 60).

Company	Frequency	Percent
Electrical and electronics	9	15.00
Textile and clothing	9	15.00
Machinery and equipment	8	13.34
Paper and packaging products	7	11.67
Furniture and wood	6	10.00
Pharmaceutical	6	10.00
Appliances	5	08.33
Communications	3	05.00
Automotive products	3	05.00
Rubber and plastic products	2	03.33
Information technology products	2	03.33
Total	60	100

A strategy measurement approach assessed the degree to which the company emphasizes a given strategy by computing the factor analysis across

4.2.2 Measures

Strategy measurement

category. It appears that they gained first mover advantages through adoption of product innovations.

A product differentiation was measured by the Flynn et al., instrument, using a five-item seven-point Likert scale anchored by (1) to no extent and (7), to a great extent. Respondents were asked to indicate, in comparison to their industrial competition, the degree of emphasis placed on concentrate on innovation of new products, flexibility to change volume, continuous improvement in current products, providing high quality, and customer satisfaction. A factor analysis, as shown in Table (2), revealed that all items loaded on a single factor with an eigenvalue of 1.965, explaining 39.5% of the variance in the underlying variable. The Cronbach alpha of 0.735 suggests that its internal consistency is satisfactory.

the items, each forcing loadings on a single factor. The strategy with the highest score of factors was assigned to each company.

As explained in the theoretical framework, a business strategy is concerning how a strategic business unit achieves a competitive advantage over its competitors. A company can gain a competitive advantage through product differentiation, cost leadership, or a combination of both product and cost differentiation.

The first factor emphasizes *product uniqueness*, a characteristic usually associated with product innovation. Indeed, some companies can be characterized by the manufacture of higher value added products and an emphasis on the production and sale of more technology-intensive products. Given the influence of rapid technological change, increased global competition of products and markets, emergence of new manufacturing environment, many manufacturers are beginning to offer products that are differentiated, unique, and innovative. Many of these manufacturers appear to be from the electronics and electrical goods sectors. Results reveal that only 15 Egyptian manufacturers are in this

Table (2) Factor analysis of product differentiation

Item	Factor loading	Eigenvalue	Percent of variance
Concentrate on innovation of new products	0.649		
Flexibility to change volume	0.853		
Continuous improvement in current products	0.533		
Providing high quality	0.491		
Customer satisfaction	0.549	1.965	39.5

privatization program still in the first years.

The second factor was measured by an instrument, using a four-item seven-point Likert scale anchored by (1) to no extent and (7), to a great extent. Respondents were asked to indicate the extent to which they considered the low-price leadership in terms of production efficiency, managerial & organizational efficiency, economies of scale, and process re-engineering. A factor analysis, as shown in Table (3), revealed that all four items loaded on a single factor with an eigenvalue of 1.839, explaining 45.1% of the variance in the underlying variable. The Cronbach alpha for the three-item measure is 0.787.

The second factor emphasizes *low prices with maintain same quality* in compare to competitors. A characteristic usually associated with production efficiency that relies on cheap labor and materials. Egyptian companies in this category emphasize low cost relative to competitors and maintain stable and narrow products. As such, they still rely on low technology due to limited financial resources, and are able to offer lowest possible price for their products as their competitive advantage. Outsourcing production and operations is perhaps one of the reasons that manufactures could maintain cost competitiveness. The results show that the number of companies in this category is greater than in the previous one, possibly due to the Egyptian

Table (3) Factor analysis of low-price with quality maintained

Item	Factor loading	Eigenvalue	Percent of variance
Production efficiency	0.161		
Managerial & organizational efficiency	0.519		
Economies of scale	0.910		
Process re-engineering	0.839	1.839	45.1

Standardization, Economies of scale, Poor quality and Customer loyalty. Descriptive statistics for the measure are shown in Table (4) illustrates that all items load on a single factor, having an eigenvalue of 3.589, and explaining 71.2% of the variance in the underlying variable. The Cronbach alpha of 0.915 indicates that its internal consistency is high.

Strategy and performance

Analysis of variance (ANOVA) tests were also applied to determine if preferences for performance measures were associated with strategy categories and product life cycle phases. The sample comprises three categories of companies according to the strategies adopted by each company. The extent to which

The third factor is *low price with low quality* as defined by Grant (1995). This factor comprises several characteristics – standardization, production efficiency, and economies of scale. Some countries –for example, Chinese companies- adopt this strategy by providing low price with low quality products to the developing countries. In some respects, however, this strategy represents what scholars have called the “a focus strategy”. It means a company focuses on a specific market area. However, the results show that the number of companies in this category is lower than in the first and second categories.

The third factor was measured using the five-item, seven point, Likert-scaled, fully-anchored instrument. Respondents were asked to rate their focus strategy on a scale anchored by (1) very low and (7) very high, in terms of its Capacity utilization,

Table (4) Factor analysis of low-price with low quality strategy

Item	Factor loading	Eigenvalue	Percent of variance
Capacity utilization	0.863		
Standardization	0.799		
Economies of scale	0.815		
Poor quality	0.901		
Customer loyalty	0.827	3.589	71.2

irrelevant” to “7=Strongly relevant”. Analysis of variance (ANOVA) tests applied to determine if performance measures were associated with strategy categories over product-life-cycle phases (see Table 5 and Table 6). The results reveal variance between groups in using performance measures. It may be due to in the first category that emphasized product differentiation strategy, companies used more non-financial performance measures in the product introductory and growth phases. However, in the second and third categories that placed greater emphasis low-price with maintained quality and low-quality strategies, companies placed greater emphasis on financial measures in the phase of product maturity. The results of ANOVA tests appear significant differences found among companies in choosing their performance measures.

companies used multiple performance measures assessed using a 27-item scale comprising three dimensions over product life cycle: *Introductory*, *Growth*, and *Maturity*. The respondents asked to indicate the extent of their company's use of each measure across the three dimensions using a seven-point Likert-type scale ranging from 1 (not at all) to 7 (to a great extent). This multiple measures approach incorporates all aspects of financial and non-financial measures in the assessment of performance as identified by Kaplan and Norton (1992). A reliability check on the performance indicators produced a Cronbach's alpha value of 0.89. Each respondent was required to indicate relevant or irrelevant – important or not important with each statement concerning their company by using Likert scale ranging from “1=Strongly

Table (5) Analysis of Variance (ANOVA) between companies in using financial and non-financial performance measures in *introductory and growth phases* of product-life-cycle.

Measures		Mean	Std dev.	Std err.	F	Sig
Operating income	Between groups	5.72	1.119	0.157	0.613	0.526
	Within groups	7.71	11.101	1.767		
	Total	6.56	8.335	0.789		
Sales growth	Between groups	6.05	0.946	0.155	0.778	0.453
	Within groups	5.94	0.815	0.113		
	Total	5.92	0.891	0.091		
Sales revenue	Between groups	6.11	9.29	0.129	1.539	0.221
	Within groups	5.79	0.939	0.131		
	Total	5.91	0.915	0.089		
Cash flow	Between groups	5.79	1.101	0.151	1.121	0.357
	Within groups	9.11	14.618	2.607		
	Total	7.19	12.135	1.111		
ROI	Between groups	7.69	1.157	0.165	3.849	0.025
	Within groups	5.09	1.176	0.160		
	Total	5.41	1.183	0.109		
Market share	Between groups	6.19	13.180	1.788	1.233	0.291
	Within groups	5.99	0.991	0.140		
	Total	5.15	8.645	0.776		
Economic value added	Between groups	5.06	1.635	0.215	0.881	0.455
	Within groups	6.17	13.278	1.981		
	Total	6.32	12.067	1.121		
No. of complaints	Between groups	7.73	13.329	2.555	1.710	0.134
	Within groups	5.91	1.111	0.231		
	Total	7.12	13.009	1.015		
Customer response time	Between groups	7.77	10.214	1.986	0.901	0.319
	Within groups	5.90	1.166	0.163		
	Total	6.11	9.431	0.771		
Customer loyalty	Between groups	5.65	1.144	0.157	3.881	0.029
	Within groups	5.30	1.299	0.189		
	Total	5.11	1.201	0.139		
On-time delivery	Between groups	8.01	11.411	1.771	0.913	0.313
	Within groups	5.69	1.135	0.163		
	Total	6.17	9.112	0.723		
Returns due to poor quality	Between groups	5.51	1.776	0.292	0.513	0.537
	Within groups	4.75	1.876	0.275		
	Total	4.89	1.721	0.169		
Defect rate in the process	Between groups	7.51	12.169	1.789	0.541	0.698
	Within groups	6.66	13.670	2.513		
	Total	6.74	13.542	1.236		
Manufacturing cost	Between groups	6.89	1.329	0.189	0.671	0.413
	Within groups	6.13	1.111	0.156		
	Total	6.07	1.099	0.149		
Manufacturing lead time	Between groups	7.69	12.321	1.986	0.129	0.786
	Within groups	6.99	12.267	1.897		
	Total	7.01	11.076	1.112		
Material effic. Variance	Between groups	6.78	12.354	1.770	0.298	0.704
	Within groups	5.60	12.614	1.987		
	Total	5.95	11.027	1.007		
Labor effic. Variance	Between groups	6.63	12.234	1.981	0.257	0.710
	Within groups	5.32	12.172	1.783		
	Total	5.86	11.012	1.105		
Set-up time	Between groups	6.79	12.491	1.798	0.314	0.702
	Within groups	6.31	9.111	1.794		
	Total	6.01	12.271	1.321		

and customer satisfaction characteristics has created the value-added advantage for these companies as compared to two other types of companies. Hence, companies in the first category are able to produce and sell highly innovative products that meet the customer demands in terms of quality and price. These companies were more likely than companies in the other categories to select the non-financial performance measures. On the other hand, companies in the category prefer to use ROI measure because they are more likely to involve in research and development activities that require a lot of investment. However, companies in this category were more likely than the other categories to select non-financial performance such as customer satisfaction and customer loyalty measures. The greatest use of these measures is consistent with the characteristics of the companies in this category where they seem to be more customer-focused compared to companies in the other categories.

For example, significant differences found in only two of the measures, sales growth and return on investment (ROI). Only performance improvement in sales growth and ROI were significantly different among the three groups of companies. Because sales growth and ROI represent financial measures, these results suggest that companies rely more on financial measures in evaluating business performance as compared to non-financial measures. Companies in the first strategy (product differentiation) category, reported the greatest performance improvements, followed by companies in the third (low price with quality maintained) and the second (low price with low quality) categories.

It is possible that companies in the first category are able to combine innovation and efficiency into their organizational operations in a way that meets customer requirements and ultimately leads to the greatest performance improvement. The combination of innovation, efficiency

Table (6) Analysis of Variance (ANOVA) between companies in using financial and non-financial performance measures in *maturity phase* of product-life-cycle.

Measures		Mean	Std dev.	Std err.	F	Sig
Measures		Mean	Std dev.	Std err.	F	Sig
Operating income	Between groups	7.12	1.934	0.135	0.621	0.517
	Within groups	6.99	9.121	1.605		
	Total	7.06	9.133	0.681		
Sales growth	Between groups	6.77	0.806	0.159	0.718	0.503
	Within groups	6.69	0.821	0.123		
	Total	6.13	0.801	0.134		
Sales revenue	Between groups	6.55	1.59	0.137	1.519	0.232
	Within groups	5.99	0.889	0.157		
	Total	6.31	0.810	0.179		
Cash flow	Between groups	6.09	1.178	0.172	1.138	0.459
	Within groups	7.31	13.521	1.997		
	Total	7.10	13.561	1.780		
ROI	Between groups	3.78	1.168	0.260	2.771	0.167
	Within groups	3.69	1.170	0.219		
	Total	3.49	1.177	0.169		
Market share	Between groups	5.30	11.109	1.623	1.365	0.372
	Within groups	5.79	1.651	0.198		
	Total	5.11	11.591	0.679		
Economic value added	Between groups	6.11	1.526	0.189	0.975	0.267
	Within groups	6.85	12.257	1.197		
	Total	6.22	12.123	1.098		
No. of complaints	Between groups	6.73	13.521	1.595	1.654	0.187
	Within groups	6.91	1.453	0.435		
	Total	6.10	13.109	1.234		
Customer response time	Between groups	5.17	12.432	1.023	1.321	0.159
	Within groups	5.78	1.766	0.187		
	Total	5.98	11.876	0.972		
Customer loyalty	Between groups	5.15	1.100	0.532	2.564	0.139
	Within groups	5.29	11.111	0.176		
	Total	5.01	9.551	0.140		
On-time delivery	Between groups	6.12	11.131	1.099	0.715	0.441
	Within groups	5.55	1.995	0.254		
	Total	5.89	9.578	0.323		
Returns due to poor quality	Between groups	5.77	1.998	0.196	0.624	0.342
	Within groups	6.43	1.876	0.275		
	Total	6.34	1.991	0.177		
Defect rate in the process	Between groups	5.11	11.169	1.564	0.685	0.511
	Within groups	5.78	12.002	1.988		
	Total	5.74	10.765	1.543		
Manufacturing cost	Between groups	4.99	1.986	0.190	0.764	0.219
	Within groups	5.65	1.654	0.176		
	Total	5.29	1.191	0.153		
Manufacturing lead time	Between groups	6.29	13.006	1.768	0.239	0.532
	Within groups	5.89	12.231	1.098		
	Total	6.16	13.002	1.658		
Material effic. Variance	Between groups	6.55	12.098	1.432	0.217	0.504
	Within groups	6.43	12.712	1.765		
	Total	6.15	12.534	1.357		
Labor effic. Variance	Between groups	6.91	13.387	1.768	0.277	0.689
	Within groups	6.67	13.256	1.699		
	Total	6.83	13.342	1.678		
Set-up time	Between groups	5.66	12.765	1.957	0.298	0.511
	Within groups	6.50	12.543	1.876		
	Total	6.33	12.659	1.432		

generate higher revenues than reduction costs. Hence, one might expect that companies in this category would report greater performance improvement in sales growth and ROI than did those in the third category.

Companies in the third category also seem to be less successful than those companies in the second category; they might lack operational and marketing capabilities.

companies that influence the application of performance measures. These results suggest that some Egyptian companies find product differentiation important in responding to specific customer requirements as well as in seeking competitive advantage, and facilitated by improved performance evaluation system. Further, the findings reveal that many Egyptian manufacturing companies are actually pursuing low price strategies, possibly due to the stable and less uncertain environment. In this respect, the study provides some useful insights into the role of performance measures as information to be used by managers to support the achievement of their companies' strategic objectives. The non-financial measures are important

As companies in the second category are more market area-focused, results show that they are more successful in this respect compared to other two categories of companies, suggesting that a low price with quality maintained strategy was perceived by these companies to be more important. Quality maintained as compare to their competitors are often perceived to offer more advantages than other factors because this strategy may

5. Conclusions

The findings of the study suggest that product differentiation, low-price with maintained quality leadership, and low-price with low-quality leadership play a positive role in affecting the extent to which financial and non-financial performance measures are used in Egyptian manufacturing companies. Hence, the findings are consistent with the theoretical expectations of the study. What is of particular concentration to this study and the generalization of its findings is that three specific dimensions have been determined in the random sampling of Egyptian manufacturing

product maturity. The results of ANOVA tests appear significant differences found among companies in choosing their performance measures. The results of ANOVA tests appear significant differences found among companies in choosing performance measures over product life cycle.

This study suggests that Egyptian companies should focus their attention to the use of multiple performance measures over product life cycle in assessing firm's performance.

for Egyptian manufacturing companies particularly true for those companies that consider innovation. In other words, In the first category that emphasized product differentiation strategy, companies used more non-financial performance measures in the product introductory and growth phases. However, in the second and third categories that placed greater emphasis low-price with maintained quality and low-quality strategies, companies placed greater emphasis on financial measures in the phase of

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الأستاذ الفاضل

بعد التحية....

شهدت مصر في الفترة الأخيرة تغيرات اقتصادية هامة أنت إلي تغيير استراتيجيات العديد من الشركات الصناعية المصرية لمواجهة المنافسة المتزايدة مما تطلب دراسة أثر هذه الاستراتيجيات علي ملائمة قياس الأداء . ويهدف هذا البحث إلي دراسة محددات اختيار الإستراتيجية التنافسية للشركة و مدى ملائمة مقاييس الأداء المستخدمة لتلك الإستراتيجية. و قد وقع الاختيار عليكم ضمن عينة من الشركات الصناعية المصرية للقيام بالدراسة الميدانية. ويسرني أن ألفت عنايتكم إلي أن قائمة الاستقصاء هذه أعدت بغية الحصول علي البيانات المتعلقة بالجانب الميداني للبحث بعنوان:

" أثر الاستراتيجيات التنافسية علي ملائمة قياس الأداء "

و تجدر الإشارة إلي أن قائمة الاستقصاء قد اشتملت علي أسئلة اختيار متعدد عن موضوع البحث أعلاه و يرجي وضع علامة (√) أمام الإجابة التي تراها مناسبة و أكثر دقة. كل سؤال بالقائمة يحتوي علي مقياس رقمي متدرج حسب درجة الأهمية أو الكفاية أو الملائمة. الرقم (1) هو أدنى درجة علي القياس في الاختيار و يعني أن العبارة المذكورة في السؤال غير كافية أو غير هامة أو غير ملائمة علي الإطلاق. أما الرقم (7) فهو اعلي درجة علي القياس في الاختيار و يعني أن العبارة المذكورة في السؤال كافية تماما أو هامة جدا أو ملائمة بدرجة كبيرة، و ما بين الرقم (1) و الرقم (7) درجات متفاوتة من الاختيار.

كما ألفت عنايتكم إلي أنه ما من شك في أن توخي الدقة في الإجابة سيكون له بالغ الأثر في انجاز البحث و الوصول إلي نتائج أكثر فائدة، كون الإجابات سوف تستخدم للأغراض العلمية فقط.

و يسرني أن اشكر حسن تعاونكم مقدما و الوقت الذي تقضونه في ملئ هذه القائمة آملا في تلقي ردكم في أقرب وقت

ممكن. و تفضلوا بقبول فائق التقدير و الاحترام

الباحث/ د.علي جابر صالح

أولاً- بيانات شخصية وعامة:

الاسم (اختياري):.....

المؤهلات العلمية:

بكالوريوس () ماجستير () أخرى () من فضلك حدد.....

الوظيفة:

محاسب () مدير حسابات () مدير مالي ()

عدد سنوات الخبرة العملية:

5 سنوات () 10 سنوات () أكثر من 10 سنوات ()

نوع الصناعة التي تعمل فيها شركتك:

هندسية () تحويلية () أخرى () من فضلك حدد.....

عدد العمال في شركتك:

100 عامل () 1000 عامل () أكثر من 1000 عامل () من فضلك حدد

ثانيا- أسئلة عن الإستراتيجية التنافسية للشركة

حدد نوع الإستراتيجية التنافسية التي تتبعها شركتك حاليا:

- () الإستراتيجية الأولى: تقديم المنتج بجوده اعلي و بسعر أعلي (تمايز المنتج)
- () الإستراتيجية الثانية: تقديم المنتج بجوده اعلي و بنفس السعر (تمايز المنتج)
- () الإستراتيجية الثالثة: تقديم المنتج بنفس الجودة و بسعر أقل (تمايز السعر)
- () الإستراتيجية الرابعة: تقديم المنتج بجوده أقل و بسعر أقل (تمايز السعر)

حدد مدى ملاءمة الإستراتيجية التنافسية التي تتبعها شركتك حاليا للصلاء:

(7)	(6)	(5)	(4)	(3)	(2)	(1)	الإستراتيجية
ملائمة إلى حد ما	ملائمة	ملائمة جدا	لا أعرف	غير ملائمة إلى حد ما	غير ملائمة	غير ملائمة على الإطلاق	الإستراتيجية الأولى
							الإستراتيجية الثانية
							الإستراتيجية الثالثة
							الإستراتيجية الرابعة

حدد مدى أهمية العوامل التالية في اختيار الإستراتيجية التنافسية التي تتبعها شركتك حالياً:

العوامل	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	غير مهمة على الإطلاق	غير مهمة	غير مهمة إلى حد ما	لا أعرف	مهمة جداً	مهمة	مهمة إلى حد ما
الابتكار							
مرونة المنتج							
مرونة التصنيع							
التحسين المستمر							
تقديم جودة أعلى							
رضا العميل							
كفاءة الإنتاج							
الكفاءة الإدارية و التنظيمية							
اقتصاديات الحجم							
تطوير التصنيع							
تعظيم الاستفادة من الطاقة الإنتاجية							
نمطية الإنتاج							
رداءة الجودة							
ولاء و رضا العميل							

حدد درجة مناسبة كل إستراتيجية تنافسية مع كل مرحلة خلال دورة حياة المنتج في شركتك:

العوامل	(1) غير مناسبة على الإطلاق	(2) غير مناسبة	(3) غير مناسبة إلى حد ما	(4) لا أعرف	(5) مناسبة جدا	(6) مناسبة	(7) مناسبة إلى حد ما
خلال مرحلة تقديم منتج جديد							
الإستراتيجية الأولى							
الإستراتيجية الثانية							
الإستراتيجية الثالثة							
الإستراتيجية الرابعة							
خلال مرحلة النمو							
الإستراتيجية الأولى							
الإستراتيجية الثانية							
الإستراتيجية الثالثة							
الإستراتيجية الرابعة							
خلال مرحلة النضج							
الإستراتيجية الأولى							
الإستراتيجية الثانية							
الإستراتيجية الثالثة							
الإستراتيجية الرابعة							
خلال مرحلة الاضمحلال							
الإستراتيجية الأولى							
الإستراتيجية الثانية							
الإستراتيجية الثالثة							
الإستراتيجية الرابعة							

ثالثاً- أسئلة عن مقاييس الأداء المستخدمة في الشركة

حدد نوع مقاييس الأداء المستخدمة حالياً في شركتك

مقاييس الأداء	(1) غير مستخدمة على الإطلاق	(2) غير مستخدمة	(3) غير مستخدمة إلى حد ما	(4) لا أعرف	(5) مستخدمة جداً	(6) مستخدمة	(7) مستخدمة إلى حد ما
الدخل التشغيلي							
نمو المبيعات							
إيراد المبيعات							
التدفقات النقدية							
العائد على الاستثمار							
حصة الشركة من السوق							
القيمة الاقتصادية المضافة							
عدد شكاوي العملاء							
وقت الاستجابة للعميل							
ولاء العميل							
وقت توصيل المنتج للعميل							
مرتجمات بسبب رداءة الجودة							
نسبة العيوب في التصنيع							
تكلفة الصنع							
الوقت القيادي للتصنيع							
انحراف كفاءة المواد							
انحراف كفاءة العمل							
وقت الإعداد							

رابعاً- أسئلة عن ملامحة مقاييس الأداء المستخدمة حالياً مع الإستراتيجية التنافسية للشركة خلال كل مرحلة من مراحل

دورة حياة المنتج:

1- مرحلة تقديم منتج جديد و مرحلة النمو: الإستراتيجية الأولى أو الإستراتيجية الثانية (تمايز المنتج)

مقياس الأداء	(1) غير ملامحة على الإطلاق	(2) غير ملامحة	(3) غير ملامحة في حد ما	(4) لا أعرف	(5) لاملمحة جداً	(6) لاملمحة	(7) لاملمحة إلى حد ما
الدخل التشغيلي							
نمو المبيعات							
يراد المبيعات							
التنقلات النقدية							
العائد على الاستثمار							
حصة الشركة من السوق							
القيمة الاقتصادية المضافة							
عدد شكاوي العملاء							
وقت الاستجابة للعميل							
ولاء و رضا العميل							
وقت توصيل المنتج للعميل							
مرتجعات بسبب رداءة الجودة							
نسبة العيوب في التصنيع							
تكلفة الصنع							
الوقت القيادي للتصنيع							
انحرافا كفاءة المواد							
انحرافا كفاءة العمل							
وقت الإعداد							

2- مرحلة النضج: الإستراتيجية الأولى أو الإستراتيجية الثانية (تمايز المنتج)

مقاييس الأداء	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	غير ملائمة طوي الإطلاق	غير ملائمة	غير ملائمة إلى حد ما	لا أعرف	ملائمة جدا	ملائمة	ملائمة إلى حد ما
الدخل التشغيلي							
نمو المبيعات							
إيراد المبيعات							
التدفقات النقدية							
العائد على الاستثمار							
حصة الشركة من السوق							
القيمة الاقتصادية المضافة							
عدد شكاوي العملاء							
وقت الاستجابة للعميل							
ولاء و رضا العميل							
وقت توصيل المنتج للعميل							
مرتجعات بسبب رداة الجودة							
نسبة العيوب في التصنيع							
تكلفة الصنع							
الوقت القيادي للتصنيع							
انحراف كفاءة المواد							
انحراف كفاءة العمل							
وقت الإعداد							

3- - مرحلة تقييم منتج جديد و مرحلة النمو: الإستراتيجية الثالثة أو الإستراتيجية الرابعة (تمايز السعر)

مقاييس الأداء	(1) غير ملائمة على الإطلاق	(2) غير ملائمة	(3) غير ملائمة إلى حد ما	(4) لا أعرف	(5) ملائمة جدا	(6) ملائمة	(7) ملائمة إلى حد ما
الدخل التشغيلي							
نمو المبيعات							
إيراد المبيعات							
التنقلات التنقيدية							
العائد عن الاستثمار							
حصة الشركة من السوق							
القيمة الاقتصادية المضافة							
عدد شكاوي العملاء							
وقت الاستجابة للعميل							
ولاء و رضا العميل							
وقت توصيل المنتج للعميل							
مرتجعات بسبب رداءة الجودة							
نسبة العيوب في التصنيع							
تكلفة الصنع							
الوقت القيادي للتصنيع							
تخريف كفاءة المواد							
تخريف كفاءة العمل							
وقت الإعداد							

4- مرحلة التوضيح: الإستراتيجية الثالثة أو الإستراتيجية الرابعة (تمايز السعر)

مقياس الأداء	(1) غير ملتحمة على الإطلاق	(2) غير ملتحمة	(3) غير ملتحمة إلى حد ما	(4) لا أعرف	(5) ملتحمة جدا	(6) ملتحمة	(7) ملتحمة إلى حد ما
الدخل التشغيلي							
نمو المبيعات							
إيراد المبيعات							
التدفقات النقدية							
العائد على الاستثمار							
حصة الشركة من السوق							
القيمة الاقتصادية المضافة							
عدد شركائي العملاء							
وقت الاستجابة للعميل							
ولاء ورضا العميل							
وقت توصيل المنتج للعميل							
مرتجعات بسبب رداءة الجودة							
نسبة العيوب في التصنيع							
تكلفة المنتج							
الوقت القيادي للتصنيع							
انحراف كفاءة المواد							
انحراف كفاءة العمل							
وقت الإعداد							