Development of a Strategy for Higher Education: Reflecting the Balanced Scorecards on SWOT Analysis with Strategy Development Process

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ABSTRACT

In strategic management field, balanced scorecards (BSC) and SWOT analysis have been asserted for private, public, nonprofit institutions as well as, local governments and authority. As interest in strategy development process has grown, the streams of study emerge that address issues related to this subject: one stream that focuses on how develops the BSC in Higher education institutions, and a second stream that investigates how SWOT analysis in strategy development process. In recent literature, although the conjoining SWOT analysis with the BSC has received little attention, no studies have focused on reflecting the BSC on SWOT analysis with strategy development process for higher education context specifically. Therefore, the present study has addressed the latter issue in great depth. This study is probably the first attempt to reflect the implementation of the balanced scorecard on SWOT analysis with strategy development process. This can be done through prior literature review and on our fieldwork, to conceptualize reflecting the BSC on SWOT analysis with strategy development process. Present study tested this conceptualization framework at the Egyptian public university level. This study uses interviews with experts, advisors, and members in MOHE in Egypt and some Arab countries as well as survey and secondary data. Data were gathered 78 with response rate 91.76 % from a sample of strategic planning teams at 6 Egyptian public universities using self-administered questionnaires. Results of Correlation, Group Analytical Hierarchy Process (GAHP), Hierarchical regression analysis and Hierarchical moderated regression analysis revealed model of reflecting the BSC on SWOT analysis and its predictive validity in influencing strategy development process. This study offers two principal contributions. First, guideline for rethinking to the strategy development process. Second, developing an uncommon concept and model of reflecting the BSC on SWOT analysis within strategy development process. This has strong implications for the strategic planning literature, which has attempted with little success to find a positive relationship between strategic analysis and subsequent organizational outcomes.

Keywords— Balanced Scorecards, SWOT Analysis, Strategy Development Process, Higher Education Strategy, Egyptian Public Universities.

1. INTRODUCTION

In the past decades, the higher education sector worked in a relatively stable environment. Nowadays, the environment has become increasingly uncertain and unpredictable. The Egyptian Higher Education context is forced to adapt operations, plans, strategies etc. to changes and uncertainties in their legal and business environment. The development of a strategy requires much probing, discussion, and examination of the views of the leaders who are responsible for the plan's preparation. However, more often than not, the development of the strategy is less complicated than its implementation. Therefore, a strategy must be flexible and practical. Then, the effective strategy development process determines long-term success of any institute. Early research into strategic analysis by SWOT focused on describing how they operated and what activities were undertaken for developing plans have been carried out (Hsu and Sakai, 2009). In this sense, strategy performance measurement studies by BSC focused on describing how it is designed as a strategic management tool by using a combination of financial and nonfinancial targets and measures (Sinha 2006; Kasperskaya, 2006; Yi Wu a et. al, 2010; Othman, 2008; and Tuan, 2010). These ideas pushed private, public, nonprofit institutions, local governments and authority to adoption both tools as special tools in recent years (Valečková, 2009).

The idea of present study came after the confirmation of previous studies on the importance of using SWOT as a strategic analysis tool that is the first step of strategy development process. The use of the BSC as a tool to carry out the assessment of strategic performance that is the last step of strategy development process; as well as confirm the recent studies on the

importance of link between SWOT analysis and the BSC during strategic planning. These results make the researcher feels the need to insert the results of the BSC in SWOT matrix as a reflecting feedback within strategy development process.

The reflecting of the BSC in SWOT matrix is designed to be based on Schön's reflective management concept (1983) that stresses on the institutional inquires and reflection-in-action process. This reflection supports leaders to repeat reflection on performance problem settings, interpret and inquire into the strategic performance problems, and acquire feedback information for further development in second the phase of the strategy. The essence of the proposed reflective process is familiar to system dynamists. However, the objective of the proposed conceptual model is not just the facilitation of organizational learning but also the deepening of strategy formulation process. Following the reflective the BSC on SWOT within strategy development process, leaders can draw the road map for achieving their expectation with the system dynamics for institutional inquiries. Despite this fact, much less attention has been devoted to understanding the building SWOT analysis in the BSC (Lee and Ko, 2000), and no studies have focused on reflecting the BSC on SWOT analysis with strategy development process for higher education in particular; so that exceptional ongoing results can be achieved.

The researcher had worked with the strategic planning team at a public university in building up this reflecting and conducting simulation experiments; then, launched into detailed explanations and reflection on actions. However, after reviewing many strategies in most Egyptian public universities, strategy development process is done in isolation. In most

Egyptian public universities, some leaders are not involved and misunderstood how to develop a strategy. Specifically, it is argued that the problems of the effective of strategy development process for public universities are due to absence of the reflecting the BSC on SWOT analysis. In such instances, there is no reflecting strategy performance on strategic analysis with key steps of strategy development process. The result is that strategies are either not implemented or the implementation is not align with original objectives that ensure continuous improvement of the strategy.

The present study attempts to answer the following research question: to what extent can reflecting the BSC on SWOT analysis within strategy development process at Egyptian public universities for getting a higher level of the enhancement of the developing strategy?. The researcher believes that, there is a need for a suitable system to facilitate such insert the results of the strategic performance evaluation in a strategic analysis as reflecting feedback during a strategy development process. It is expected that, this reflecting will help develop a balanced strategy for higher education.

The study objectives are to make a contribution to the existing literature on the strategic management through investigating in public higher education context (i) the nature and the extent of use of the BSC and SWOT analysis with a strategy development process; (ii) whether the BSC and SWOT adopters perceive that both their scorecard results must reflect in SWOT analysis as feedback manner; and the BSC can explain the variance in a strategy development process than SWOT does; and (iii) whether the BSC and SWOT adopters perceive that the BSC and SWOT analysis complement one another for getting a higher level of the enhancement of the

strategy development process beyond the main effects that create individually. The present study uses survey research method to gather data from Egyptian public universities to examine the study question.

This paper is organized as follows, section 2, outlines a brief presentation of the field of BSC, SWOT, strategy development process approaches and applications that are to be organized from a higher education context, as well as literature gap. Conceptual framework is presented in section 3, including an outline of reflecting the BSC on SWOT analysis with strategy development process, which depends largely, on logical links. In sections 4 and 5, the researcher developed hypotheses and measurements. In section 6 research methodology, including method, sampling and data collection is presented. Implications and discussion are presented in section 7, followed by a summary and conclusions are displayed in section 8.

2. LITERATURE REVIEW

This section mainly discusses some related theoretical foundation, BSC as performance measurement tool; SWOT analysis as strategic analysis tool; and the key steps of strategy development process. Besides, the conceptual framework for reflecting the BSC on SWOT analysis with strategy development process is introduced.

2. 1 Theoretical Foundation and Application of the BSC

Over a decade after Robert Kaplan and David Norton introduced the BSC as a framework to provide a structure for various measures of organizational performance in the early 1990s. Kaplan and Norton (2001) started to use the BSC as performance measurement systems, this step forward by moving away from a checklist for managers, to performance measurement and

strategic management system. Since then, BSC has attracted considerable interest among researchers and practitioners. The 60 percent of Fortune 1000 companies either are implementing the BSC or are attempting to do it (Gautreau and Kleiner, 2001). According to Kaplan, Norton, (2005), many organizations have achieved dramatic performance improvements by making the BSC within their strategy management system; although the BSC is not without problems, 70 percent of BSC initiatives failed (Atkinson, 2006). Therefore, modern BSC designs have a number of features that clearly differentiate them from earlier examples.

Recently, researches concerned with the effectiveness of the BSC (Speckbacher, et. al., 2003; and Perera, et. al., 2007). According to Karathanos and Karathanos, (2005), it is evident that the BSC has been widely adopted in the business sector but the education sector has not embraced the BSC concept widely as indicated by the dearth of published research on this topic. José María Gómez-Gras et.al, (2005) presented guidelines to develop a BSC through methodological guide for implementing a BSC in university. Karathanos and Karathanos (2005) describe how the Baldrige Education Criteria for Performance Excellence has adapted the BSC and discussed significant differences as well as similarities between the BSC for business and education. Umashankar and Dutta (2007) presented the BSC as useful model to managing tertiary institutions of higher education in India. Nayeri et al, (2008) used BSC for analyzing the position of the best Iranian Business Schools and used the results in developing strategic plans. Wua et al, (2010) developed the BSC in universities by utilizing multiple criteria decision making. Generally, the researcher could say that whether an organization within a business sector or

an educational sector and is profit or public, Kaplan and Norton's BSC provides a practical model for planners to define strategic themes and objectives, to implement strategy for all of them. The observations stressed on, the BSC has evolved to be a strategic management tool that involves a wide range for strategy development process. It used to translate an organization's mission and strategy into a comprehensive set of performance measures that provide the framework for a strategic performance management system and a strategic development system. Despite all these observations, the projection of a centrally conjunction of BSC with SWOT analysis can become problematic in the higher education sector.

2.2 Theoretical Foundation and Application of SWOT Analysis

SWOT analysis is not a new idea in the business practice. This model originated from the Harvard Business School, and has dominated strategic plans since the 1950s (Lerner, 1999). Many managers commonly misperceive SWOT as synonymous with strategic developing. In fact, SWOT analysis is only one of many tools that can be used in an organization's strategic planning process for environmental scanning. SWOT analysis aims to identify the strengths and weaknesses of an organization; and the opportunities and threats in the environment. Having identified these factors, strategies are developed which may build on the strengths, eliminate the weaknesses, exploit the opportunities or counter the threats. SWOT analysis can be used for both internal and external environment scanning (Kheng and Munro, 1999; Lerner, 1999). A number of writers like Hanson& Henry (1992) recognized that strategic planning and its tools are as applicable in the context of education as in any other business. Since 1999, higher education institutions are eligible to apply for

the Malcolm Baldrige National Quality Award (MBNQA) with the newly introduced education criteria 1999 for performance excellence, the second criteria is strategic planning, which included strategy development process. Dyson (2004) produced an application to strategy formulation and its incorporation into the strategic development process at the University of Warwick. Bryson, et al., (2010) reviewed strategic planning and management research at levels of government and nonprofit organizations. The fruits of further concentrated research can be improved public strategic management practice, including enhanced organizational capacity for addressing current and future challenges and improvements in long-term performance. Thus, SWOT analysis is often presented as a method of rapidly moving towards an agreed strategy. It can certainly be an aid to generating new strategic initiatives, but a strategic development process also requires considerable analysis and testing of new initiatives before adoption.

2.3 Theoretical foundation and Application of strategy development process

Most of the definitions of a strategy seem to locate strategy as something that helps determine an institution's relationship with its environment. In this context, several meta-theoretical approaches emerge, like classification of the strategies, description of the types of strategies, and how strategies are developed. There are ranges of views of the strategy development process within organizations. Some see the process as being purely creative, with little or no scope for analysis at any stage (hunch-and-hope); others see it as being over-formalized, static and focusing on producing a strategic plan rather than on actions. Strategy development process consists of a series of elements, which need to be working effectively for the process to ensure the

successful development of the institution strategy. The strategy development process has produced in-depth, detailed, and cumbersome documents that are rarely flexible in a changing environment. The strategic management literature provided us few models on the strategy development process, which are similar in most ways.

According to survey Mc Kinsey (2006), reported that fully 79% out of 796 companies believed that strategic planning significantly affects strategy development process. Kaplan, et al. (2008) underlined from their experience, most successful companies follow the systematic strategy development process, and proposed four steps for developing the strategy by the following four questions: what business are we in and why? (Mission, vision, and values); where are we going? (Strategic goals); what are the key issues that our strategy must address? (Strategic analysis); and how can we best compete (Strategy formulation). Despite the importance of the approach's Kaplan et al. (2008), the researcher think that the key stages of strategy development process as the following (See, figure 1):
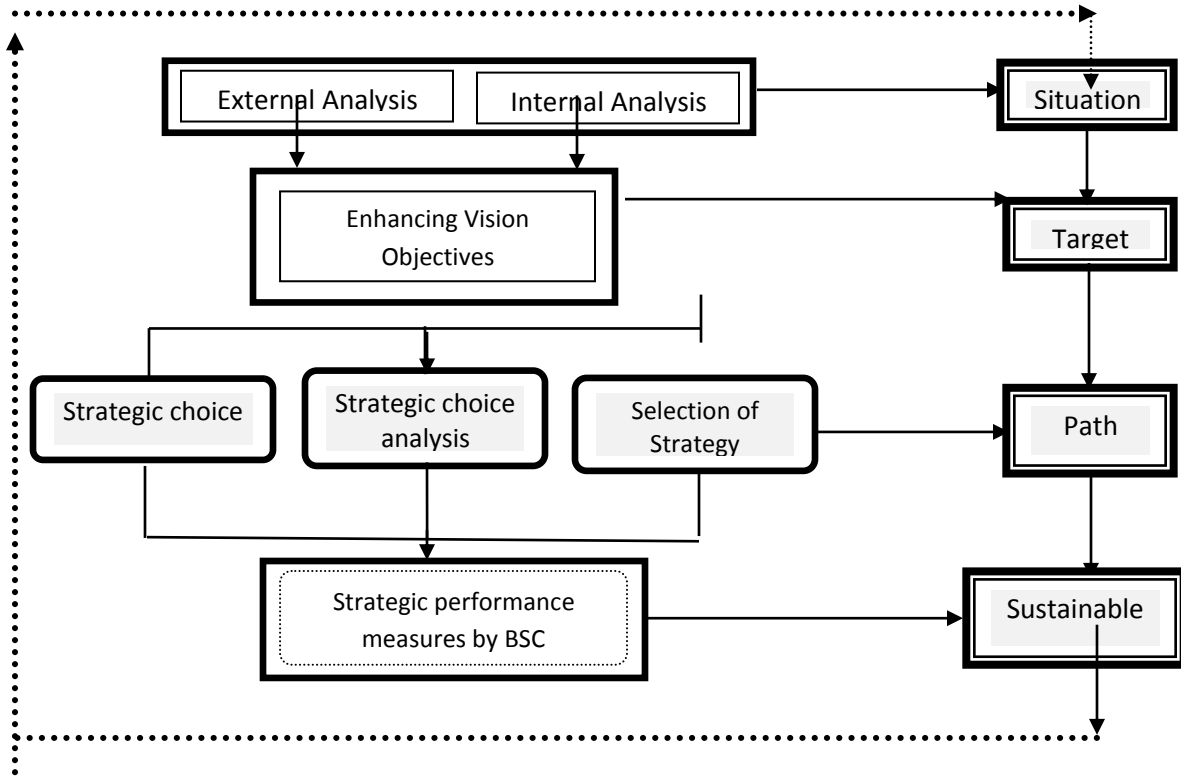
Figure 1. Strategy development process

Situation - Evaluation of previous, that means re-examine the national guiding principles and evaluate the current situation and how it came about. That identifying the strengths, weaknesses, opportunities and threats (SWOT) that drive strategy development process (Strategic analysis)

Target – Enhancement of vision, values, and defines goals and/or objectives to fit that era. That confirms priority areas for a national response and adjustment vision, values, then set objectives in priority areas (Vision, values, goals and objectives).

Path - This part of strategy development process is analytical in nature. It involves the development, analysis, and selection of strategies. Alternative strategies are formulated based on prioritization development of tasks and strategies for the national response (Strategic choice and Strategy formulation).

Sustainable - This part is operational in nature. It is a kind of feedback system that helps in taking corrective action to deal with problems in the developing strategy. Based on the variance of actual and planned results, current strategies are either modified or discarded. Working around the strategic development cycle to test and revise the organization's direction and actionable items with specific measures of strategy's success (Maximum performance).

2.4 Literature Gap

It is clear that most of the previous studies have focused on the use of the BSC in profit manufacturing and service-oriented businesses; While some studies like Andersen and Lawrie (2002), and Szarycz (2004) analyzed how the BSC can be adapted for effective public sector usage; Less attention focused on the use of BSC in governmental bodies. Thus, it appears that the problems in the BSC are due to the absence of a link between strategy planning processes and the BSC implementing aspects as well as in the limitations of the method itself. In addition, there has not been any systematic empirical investigation to understand the extent of such varying forms of BSC applications in practice (Yu et al., 2008).

On the other hand, SWOT analysis can be criticized as a result of the absence of balanced aspects that must be used as a basis for identifying strengths, weaknesses, opportunities and threats; and non-utilization of feedback of the BSC results during done the strategic analysis. While there is lake of implementation literature of strategy development process in governmental institutions. Finally, no attention focused on reflecting the BSC on SWOT analysis with strategy development process for higher education context specifically (See Figure 2).
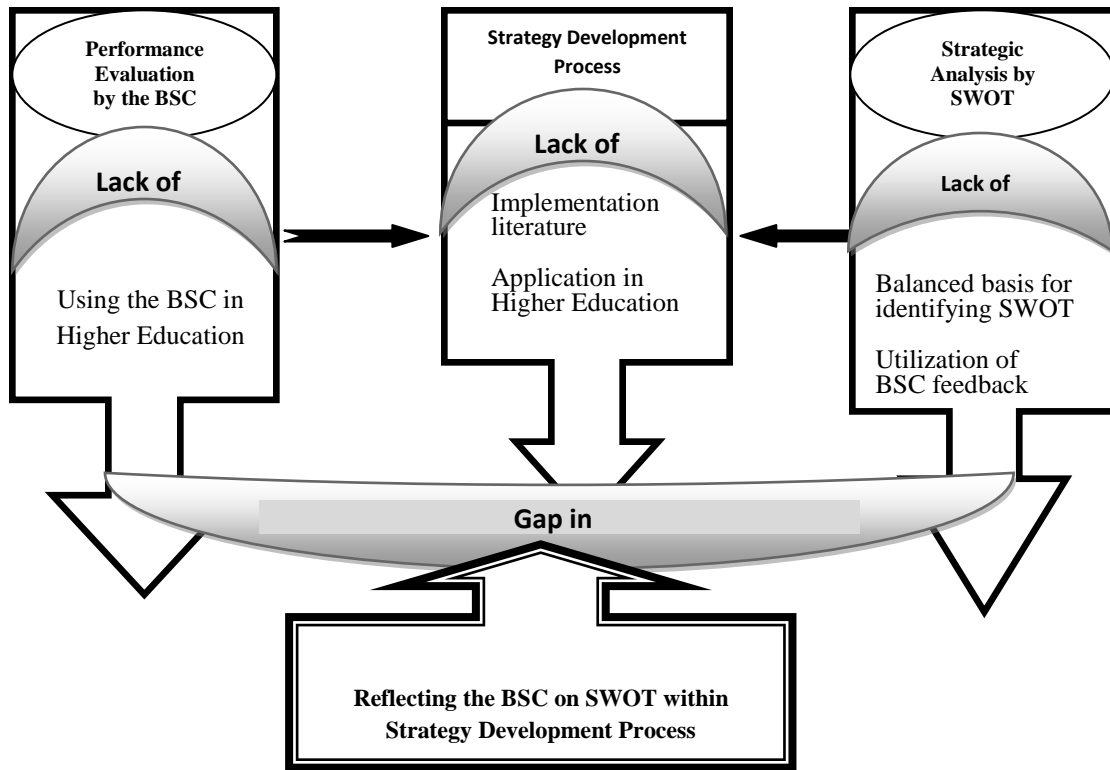
Figure 2. Literature gap in development of a strategy for higher education

3. CONCEPTUAL FRAMEWORK

Theoretically, reflecting the BSC on SWOT analysis with strategy development process depends largely, on logical links. The reflecting helps to categorize the strengths, weaknesses, opportunities and threats according to the four perspectives of the balanced performance (stakeholders, internal processes, learning and growth, and financial); and entering the results of the four BSC perspectives into the same perspectives of the SWOT matrix as reflecting feedback for higher education strategy development in circular form .
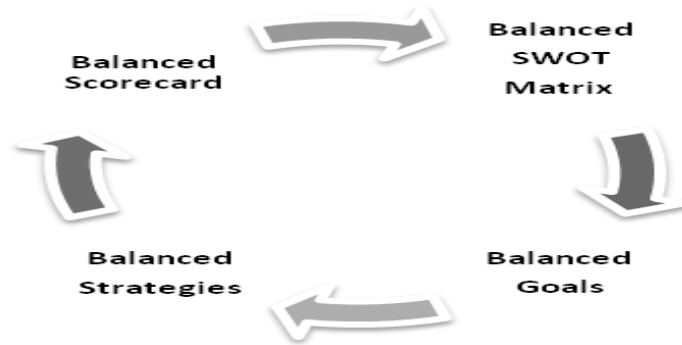
Figure 3. Reflecting the BSC on SWOT analysis.

There are four phases of framework of reflecting the BSC on SWOT with strategy development process as shown in figure 3.

▪ **Phase 1: Reflecting the BSC on SWOT with Situation Stage**

According to Lee and Ko, (2000) conjoining SWOT analysis and the BSC makes a systematic and holistic strategic management system. The researcher thinks that by reflecting the BSC on SWOT with strategy development process, the four balance perspectives of BSC will serve SWOT analysis to categorization the strengths, weaknesses, opportunities and threats factors, which can create a balanced SWOT matrix. It can balance its strengths against its weaknesses, and optimize its opportunities against its threats; and define the balanced performance *Situation* in strategy development process as shown in figure 4.

Figure 4. Reflecting the BSC on SWOT with Situation Stage

▪ **Phase 2: Reflecting the BSC on SWOT with Target Stage**

According to Kaplan and Norton, (1996), the first step of the actual implementation of the BSC is to clarify the vision. The researcher thinks that from a balanced SWOT matrix (which creating it by reflecting the BSC on SWOT), we can review and reassess the vision; and can define the balanced goals that can achieve the balanced *Target* performance in strategy development process as shown in figure 5.
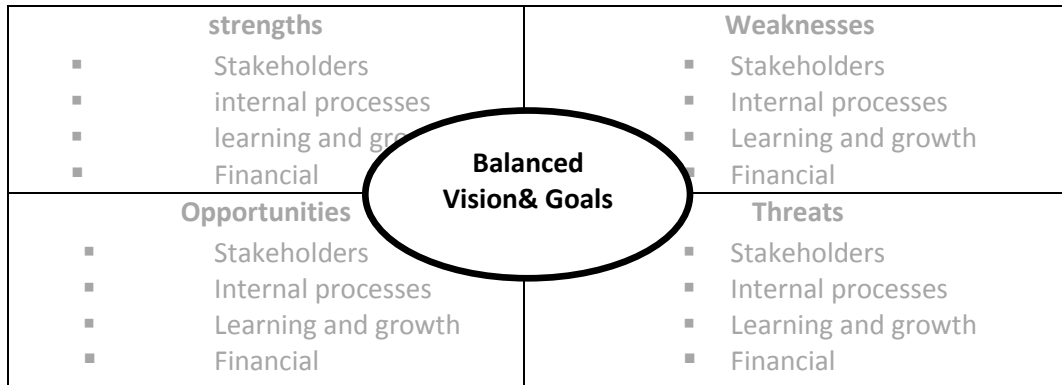
strengths		Weaknesses	
▪ Stakeholders		▪ Stakeholders	
▪ internal processes		▪ Internal processes	
▪ learning and gro	**Balanced Vision& Goals**	▪ Learning and growth	
▪ Financial		▪ Financial	
Opportunities		**Threats**	
▪ Stakeholders		▪ Stakeholders	
▪ Internal processes		▪ Internal processes	
▪ Learning and growth		▪ Learning and growth	
▪ Financial		▪ Financial	

Figure 5. Reflecting the BSC on SWOT with Target Stage

▪ **Phase 3: Reflecting the BSC on SWOT with Path Stage**

According to Valečková (2009), it is not enough to choose only strategic objectives but also the way regarding which will be reached strategic operations, so it must be used the BSC as a balanced system of the indicators for the clearing, transferring vision and goals into the formulation of the strategy; and selection of the development strategy. The researcher thinks that the balanced vision/ goals (which defining from the balanced SWOT matrix that creating by reflecting the BSC on SWOT) will help in selection of the balanced strategies. This can define the *Path* of the balanced performance in strategy development process as shown in figure 6.
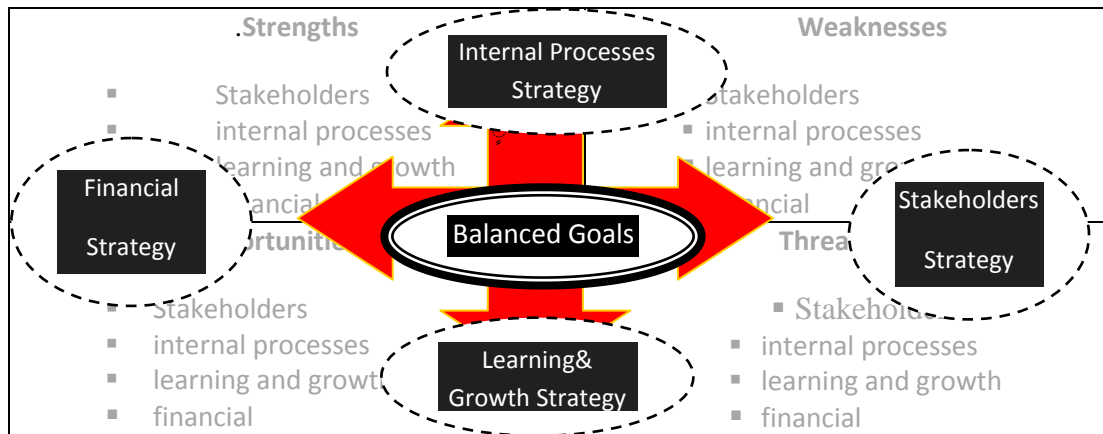
Figure 6. Reflecting the BSC on SWOT with Path Stage

▪ **Phase 4: Reflecting the BSC on SWOT with Sustainable Stage**

Employing the results of the four perspectives of the BSC into the SWOT analysis as feedback from strategic performance measurement can determine real orientation to the future and help in facilitating the development of mission and vision statements, articulating core values and goals, as well as development of strategies. The researcher thinks that the result of balanced performance measurement of strategies (which is identified from matching of specific four balanced combinations stakeholders, internal processes, learning and growth, and financial strategy with the balanced SWOT matrix and balanced goals) can assist in taking corrective action in the strategy development process that may lead to *Sustainable* its balanced performance as shown in figure 7.
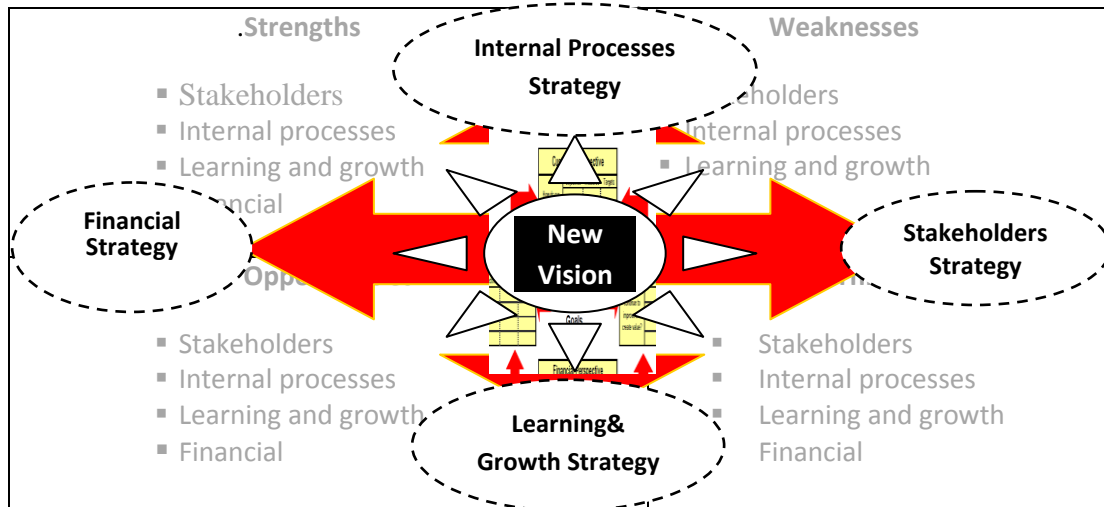
Figure 7. Reflecting the BSC on SWOT with Sustainable Stage

These guidelines, the BSC and SWOT analysis, can be reflecting with strategy development process and used to develop a framework of research as shown in Figure 8.

4. HYPOTHESES DEVELOPMENT

Based on the above reasoning, it can be argued that; reflecting the BSC on SWOT with the key stages of strategy development process contributes to better strategic planning, control and decision-making as well as for the developed strategy. The benefits resulting from the reflection of the BSC on SWOT analysis within the strategy development process are likely to be greater than when only one of them is present. The reflecting relationship between the BSC and SWOT analysis and the strategy development process are shown in figure 9.
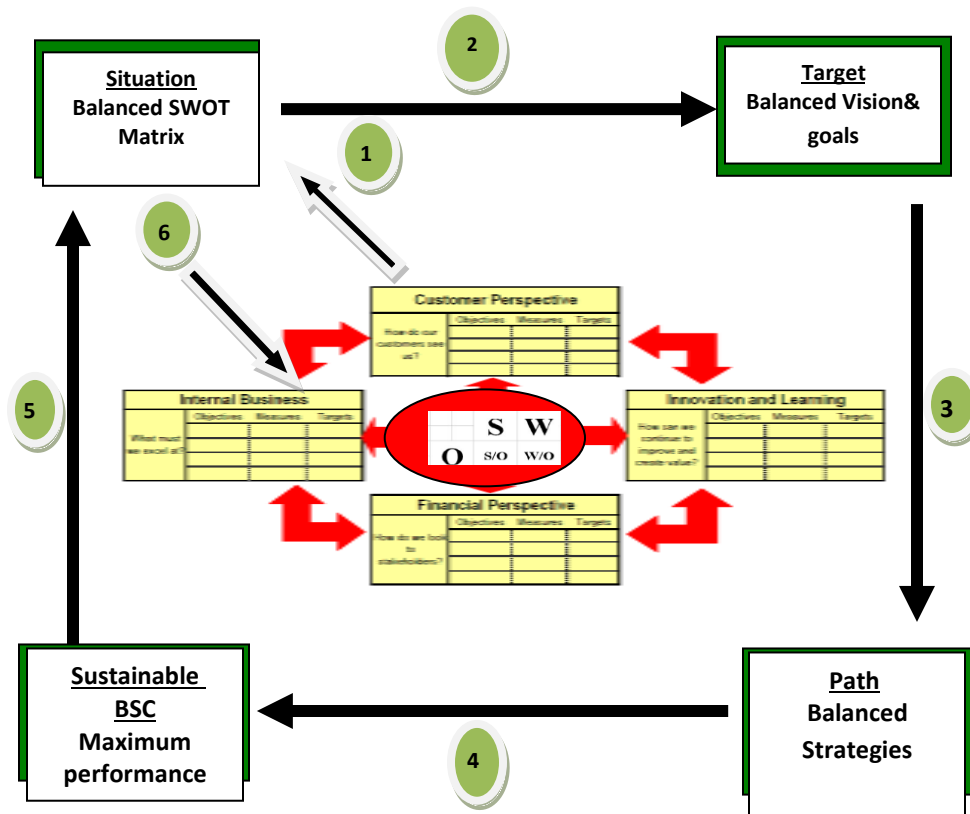
Figure 8. Reflecting the BSC and SWOT analysis within strategy development process.

Based on this argument the following hypotheses are proposed:

Hypothesis 1: In the Egyptian public higher education context, there is a positive relationship between the implementation of the BSC and strategy development process.

Hypothesis 2: In the Egyptian public higher education context, there is a positive relationship between the implementation of SWOT analysis and strategy development process.

Hypothesis 3: In the Egyptian public higher education context, the implementation of the BSC explains more of the significant variance in strategy development process than the implementation of SWOT does.

Hypothesis 4: In the Egyptian public higher education context, the BSC and SWOT complement one another to further enhance strategy development process beyond the main effects that create individually.
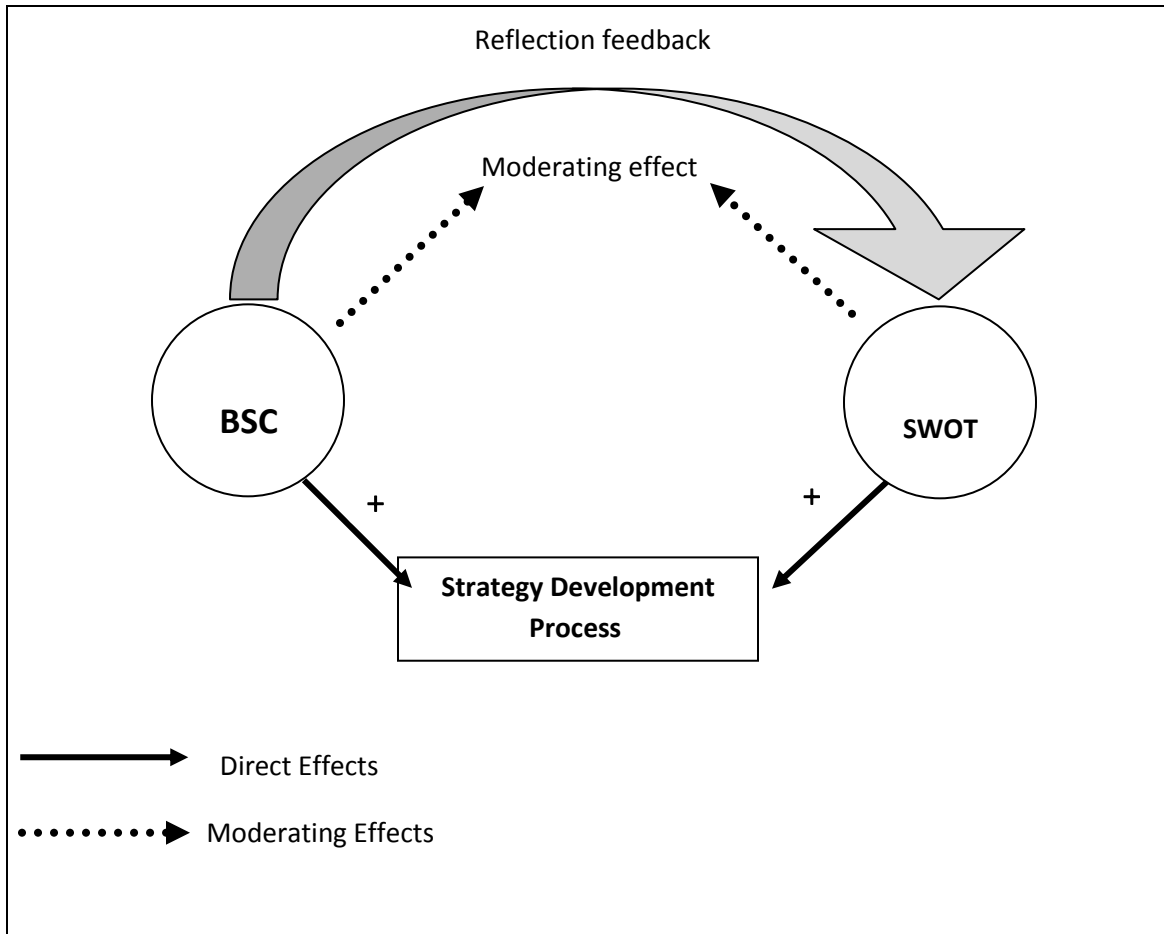

Figure 9. Research Conceptual Model

5. MEASUREMENTS DEVELOPMENT

Two steps were taken to develop and validate the measurement instrument; development of the measures from the literature and initial pretest with professional experts. The questionnaire that was used for data collection contained scales to measure the various constructs of the study model. The

principal constructs of the present study were developed based on existing measures where possible or on similar scales (See, Appendix A).

5.1   The BSC Measurement

Measures for four BSC constructs: financial perspective, stakeholders perspective, internal processes perspective, and learning and growth perspective were based on research done by Kaplan and Norton (1992) and Leopoldi (2004). The items in the BSC construct were developed by Group Analytical hierarchy Process (GAHP) to represent the two major components of the causal links, (the causal links within each perspective and across perspectives).The causal links were measured by the sum of the scores of the eight items used to measure the perceived of the BSC (See, Appendix B). The sum of the scores of these eight items generated the value for the BSC. Factor analysis undertaken to test the construct validity suggests that the instrument used to measure causal links, and load into one factor with all individual loadings.

5.2   The Strategy Development Process Measurement

Measures for the key stages of strategy development process constructs: situation, target, path, and sustainable were based on research by Kaplan and Norton (2005), and Dyson (2004).

5.3   SWOT Measurement

Organization for Economic Co-Operation and Development (OECD) and World Bank (WB) experts uses its wealth of information on a broad range to take the lead to introduce the Higher Education Sector Analysis (HESA) in most Arab countries, as a milestone in the desired strategy development process. In Egypt, this analysis examined the status of Egyptian higher

education institutions through identifying strengths and weaknesses with opportunities and threats according to nine constructs. Measures for the nine constructs of SWOT were access, equity, internal efficiency, external efficiency, governance, quality, research and innovation, internationalization, and costs and financing (Ministry of Higher Education MOHE, 2010).

6. RESEARCH METHODOLOGY

6.1 Method

The purpose of this study was to develop a model that will be in position to help Egyptian public higher education institutions to improve the strategy development process. This model will try to achieve the ideal implementation of reflecting the BSC on SWOT analysis with strategy development process, in order to identify the appropriate method that is necessary to the developed strategy. In essence, this model will provide planners with accuracy for better strategic planning, control, decision-making as well as better development, and more opportunities that are flexible. The current study necessitates an exhaustive knowledge of the difficulties and insufficiency of the present developed strategy, and strategy development process in the higher education context usual background. The present study takes into account numerous sources of data. This selection is generated because of the necessity to investigate the strategy development process and usage of the BSC and SWOT analysis of the higher education context and from their secure viewpoints. In addition, it is the only advance, via which additional data are attainable, which although it is so significant, the researcher did not come across it in any printed research. For the aims of the current study, the use of Excel was able to help overtake the

complexities by categorizing, coding and computing, aiding in the translation of weight. More specific, the use of SPSS can be considered vital in the development, clarification and analysis of the required data.

6.2 Sampling and Data Collection

The growth of higher education in Egypt began in earnest in 1957. Until then, there had been five public universities in Egypt. By the beginning of 1960s, the government had adopted a policy of higher education expansion and started opening university branches across the country. These were transformed into independent universities in 1970. In 1995, the expansion process was resumed when three branches of Assiut University, Sohag, Qena and Aswan, were separated from the main university to form the South Valley University. In 2006, there was a further split when Sohag became an autonomous university. The process of university branching is clearly horizontal in direction, making university education accessible to more students in different parts of the country in order to meet the increasing demand for higher education; now, all the Egyptian public universities is 17 universities, most universities (11) are located in the Cairo, Alexandria and Delta regions, while there are only six in the upper Egypt regions (Ministry of Higher Education, 2010).

Because of the community of study is non-homogeneous; the researcher used the stratified sample to ensure having a representative sample for the study and improve the sampling efficiency by increasing the accuracy at a faster rate than the cost increase; in stratified sample the population is divided into subgroups or strata and a sample is taken from each; stratified sampling is worthwhile when one or both of following are true: The population standard deviation differs by strata, and the interview

cost differs by strata; the classic problem of stratified sampling size was solved in 1935 by Jerzy Neyman; his solution is represented by the following formula (Aaker et. Al, 2011):

$$n_i = \frac{\pi_i \, \sigma_i / \sqrt{c_i}}{\Sigma \left(\pi_i \, \sigma_i / \sqrt{c_i} \right)} \, n$$

where

n = total sample size

π_i = proportion of population in stratum i

σ_i = population standard deviation in stratum i

C_i = cost of one interview in stratum i

Σ_i = sum over all strata

$n\,i$ = sample size for stratum i

According to Creswell (2003), interviews are considered to be the most valuable and extensively applied qualitative method of gathering primary information and offering a significant basis of subject-matter, which the informant has the opportunity to 'talk them through in their own time'. So, interviews were selected as a way to build a strong base of information needed to build a study model and help in development of the measurements of study.

A pretest of the questionnaire was performed using interviews from key advisor, director, and 3 members to the MOHE from Egypt (in Strategic Planning Unit; Higher Education Enhancement Project; Program of

Continuous Improvement and Qualification for Accreditation in HEI's; and Higher Education Enhancement Project).; and 15 experts in MOHEs from most Arab countries (Kuwait - Saudi Arabia - Oman - Tunisia - Syria - Jordan - Morocco - Libya - Sudan - Palestine - Bahrain) ware carried out during the researcher's participation in a regional meeting of experts to developing of higher education strategy for Arab Countries, 27-30 September 2010.

A pretest of the questionnaire was to assess its logical consistencies, ease of understanding, sequence of items and its relevance. The comments collected from these experts led to several minor modifications of the wording and item sequence. All interviews conducted followed a specific set of questions derived from questionnaire and an interview guide but remained open-ended and assumed a conversational manner. The reason for this was to keep the interview flexible and open for discussions creating an opportunity for important information not thought of, to become known. As mentioned by Easterby-Smith et.al. (1991), during an interview, an 'open process of discovery' leads to new insights of the subject.

Taking into consideration their experience as executives in addition to their academic background, six academics were chosen to run a pilot test. The questionnaires managed to provide 'reliable responses', strengthening the precision of the outcomes largely. Considering the difficulties and the nature of the data, a personal delivery and pick-up system was used to collect the questionnaires. The data has been processed and relevant information has been extracted to fit the study questions.

Questionnaire are used for primary data gathering, 85 questioners have collected the data from executive teams for strategic planning at 6

Egyptian public universities to help in provide a solid foundation for building relevant, contextual, public universities- owned strategy development process.

Secondary data were also critical in the process of the creation of the BSC, SWOT analysis and strategy development process. The secondary data provides a set of any available information, such as archives, reports and any other documentation related to the strategic management that are very useful in the accomplishment of the current study. As already has been mentioned a qualitative method has been explored (conducted).

The empirical findings have then been analyzed. The analysis of the data has been focusing on the analysis of the interviews, questionnaires and secondary data. In this way, the results referred to the under reflecting the BSC on SWOT within strategy development process, to be more comprehensive. This questionnaire consisted of seven questions to measure essential results for the Egyptian public university. As a completely 85 questionnaires were completed, 7 questionnaires were not used, so analysis was conducted on 78 questionnaires with response rate 91.76 %. Reliability and validity were confirmed with the Cronbach's Alpha and Factor analysis.

7. IMPLICATIONS AND DISCUSSION

The analytical process was divided and carried out in three steps; the first step involved reliability and validity analysis for questionnaires, then the second step involved the analysis of the measurement model, while the third step tested the structural relationships among constructs.

7.1 Validity and Reliability Analysis

Reliability and validity tests are necessary for questionnaires to make their results applicable. In this study, the test of the measurement model included the estimation of internal consistency and the convergent and discriminate validity. Table 1 shows that most reliability measures were well above the recommended level of 0.7, thus indicating adequate internal consistency. Table 2 shows that most convergent validation is demonstrated when items load highly (loading > 0.7) on their associated factors, Table 3, lists factor variances distribution.

Table1. Cronbach's Alpha Scores

VARIABLES	NUMBER OF FACTOR	RELATED QUESTIONS	CRONBACH'S ALPHA
	Questionnaire	Questions 1-7	0.7151
Strategy Development Process	Factor 1	Questions 1-2	0.7301
BSC	Factor 2	Questions 3-4	0.7480
SWOT analysis	Factor 3	Questions 5-6	0.8342
Reflecting the BSC and SWOT	Factor 4	Questions 7	0.8656

As shown in Table 1, the questionnaire's overall alpha score is 0.7151, so the researcher can say that the questionnaire is a reliable. Validity determines if the questionnaire capable of measuring the factors. Factor analysis is one of the validity defining methods between various methods for defining the questionnaire is validity.

Table 2, shows the question factor loading on the factors that the questionnaire aims to measure, in this study the Varimax rotation method for factors rotation.

Table2. Factor Analysis Results

QUESTIONS	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4
Q1	**0.750**	0.217	0.073	0.073
Q2	**0.781**	0.157	0.050	0.050
Q3	0.132	**0.850**	0.128	0.128
Q4	0.035	**0.755**	0.160	0.160
Q5	0.112	0.235	**0.903**	0.203
Q6	0.109	0.135	**0.858**	0.152
Q7	0.035	0.112	0.128	**0.943**

It is clear that, most of the measures have significant loadings that load much higher than the suggested threshold. Therefore, the researcher can say the factor loading on the questions confirm the validity of the questionnaire. In table 3, the variance of each factor and the aggregate variance of all factors that is (65.60) are exhibited. The questionnaire is more suitable with the increase in magnitude of this variance.

Table 3. Factors Variance Distribution

	FACTORS	VARIANCE	AGGREGATE
1	Factor1	14.95	14.95
2	Factor2	14.42	29.37
3	Factor3	14.23	43.61
4	Factor4	11.98	65.60

After the assessment of reliability and validity, the overall fit of the research model was tested using LISREL 8.50. Using sample covariance matrices, the overall fit and the explanatory power of the research model

were examined, together with the relative strengths of the individual causal path. Four common model-fit measures were used to assess the model's overall goodness-of-fit. Table 5 summarizes the overall fit indices of the study model. It seems certain; therefore, that study model provided a good fit to the data.

Table 5. Summarizes the overall fit indices of the research model

MODEL FIT INDICES	RESULTS	RECOMMENDED VALUE
Chi-square statistic x2/df	1.44	< 4.0
Goodness of fit index (GFI)	0.97	> 0.8
Adjusted goodness of fit index (AGFI)	0.88	> 0.9
Normed fit index (NFI)	0.78	> 0.8
Non-normed fit index (NNFI)	0.90	> 0.9
Comparative fit index (CFI)	0.92	> 0.8
Root mean square error of approximation (RMSEA)	0.039	< 0.08

7.1 Reflective measurement model

Practical guidelines exist to assist researchers on the development and evaluation of reflective and formative constructs (Jarvis et al. 2003; MacKenzie et al. 2005). The researcher sees that, it is important to define constructs and measures first, prior to the discussion of the relationships between the two. Constructs can describe the unobservable (i.e. attitudes) and are "verbal surrogates" for the phenomena named by the construct. These are also known as latent variables; Measures are defined as "an observed score gathered through self-report, interview, observation, or some other means" (Edwards et al. 2000). Measures are quantifiable, for example, an empirical score gathered from a survey instrument; Measures, also called

indicators or scale items, can be distinguished as either ones that are influenced by (reflect) or influence (form) latent variables (Bollen et al. 1991). According to Chin (1998), indicators that are influenced by latent variables are called 'effects' indicators; the measurement models that validate these indicators and their latent variables are known as reflective models. A reflective measurement model is well known as Perceived of Adoption; Perceived of Adoption is defined as "the degree to which a person believes that using a particular system would be free of effort" (Davis et al. 1989). Therefore, all the measures represent the underlying construct in a reflective model and are expected to be correlated.

Due to the high correlations between the indicators, they are also interchangeable and dropping an indicator should not alter the conceptual meaning of the construct (Jarvis et al. 2003). The second type of measurement model is called formative. These are often called 'causal' indicators and the construct is often termed as a combination variable (Maccallum et al. 1993) or composite variable (MacKenzie et al. 2005). For example, four perspectives (measures) cause SWOT (stakeholder, internal process, innovation and learning, and financial perspective).

For example, an increase in financial perspective would increase strength, opportunity, decrease weakness, and threats even if there were no increases in stakeholder, internal process, and innovation and learning. Therefore, one would not require a simultaneous increase in all of the indicators (Bollen et al. 1991). Table 6 lists the correlation matrix and shows the correlations among the BSC and SWOT constructs and the square root of AVE on the diagonal. Diagonal elements (in bold) are the square of average variance extracted (AVE). These values should be larger than off-diagonal elements for adequate discriminate validity.

Table 6. Correlation matrix, with correlations among constructs

Construct	EVA	FP	SP	IBP	ILP	AA	EA	IEA	EEA	GMA	QA	RIA	IA	CFA
FP	**0.665**	**0.955**												
SP	**0.846**	0.803	**0.972**											
IBP	**0.727**	0.772	0.779	**0.982**										
ILP	**0.753**	0.760	0.850	0.879	**0.972**									
AA	**0.652**	0.714	**0.891**	0.550	0.779	**0.966**								
EA	**0.585**	0.714	**0.850**	0.451	0.650	0.859	**0.966**							
IEA	**0.675**	0.655	0.752	**0.970**	0.651	0.544	0.559	**0.956**						
EEA	**0.823**	0.603	**0.879**	0.852	0.690	0.510	0.444	0.503	**0.975**					
GMA	**0.626**	0.562	**0.850**	0.879	0.652	0.436	0.410	0.452	0.603	**0.895**				
QA	**0.742**	0.560	0.551	**0.870**	0.779	0.329	0.326	0.460	0.620	0.603	**0.894**			
RIA	**0.671**	0.514	0.540	0.741	**0.850**	0.214	0.312	0.314	0.460	0.552	0.504	**0.885**		
IA	**0.594**	0.414	0.452	0.690	**0.851**	0.210	0.215	0.315	0.414	0.460	0.482	0.504	**0.875**	
CFA	**0.674**	**0.843**	0.279	0.552	0.590	0.201	0.210	0.255	0.314	0.214	0.260	0.482	0.504	**0.855**

Strategy Development Process= SDP; Financial Perspective= FP; Stakeholder Perspective= SP; Internal Business Perspective =IBP; Innovation and Learning Perspective = ILP; Strength, Weakness, Opportunity and Threat Analysis =SWOT; Access Aspect (AA); Equity Aspect (EA); Internal Efficiency Aspect (IEA); External Efficiency Aspect (EEA); Governance and Management Aspect (GMA); Quality Aspect (QA); Research& Innovation Aspect (RIA); Internationalization Aspect (IA); and Costs and Financing Aspect (CFA).

Table 6 reveals that, all correlations are highly significant ($p < .01$). Therefore, all measures that represent the underlying construct in a reflective model are correlated. Due to the high correlations between the indicators, they are also interchangeable and dropping an indicator should not alter the conceptual meaning of the construct (Jarvis et al. 2003). The results indicated that there is significant relationship between financial perspective and costs and financing Aspect. There is also significant relationship among stakeholder perspective, access, equity, governance, and external efficiency aspect.

On the other hand, the results made clear that there is significant relationship among internal business perspective, internal efficiency, and quality aspect. To add, here is significant relationship among innovation and learning perspective, innovation, and internationalization aspect; frequently, these results made claim that the organizational outcomes is positively associated with the subsequent strategic planning in second phase of strategy. A likely explanation of this finding is that the influence of reflecting the BSC on SWOT be moderated effect. Hence, more analysis is

needed in our model in order to explain the nature of the relationship between the variables of study.

7.3 Data Analysis

Four models have been examined; hypotheses were tested primarily through multiple regression analyses. Table 7 reports regression results for the four models, Model 1: BSC adoption; Model 2: SWOT analysis adoption; Model 3: both the BSC adoption and SWOT analysis adoption (base model); and Model 4: base model and the reflection term BSC on SWOT analysis (full model). This approach allowed the relative effects to be compared on the explained variance of the strategy development process of reflecting the BSC on SWOT analysis.

Table 7. Models of regression analyses

	Model 1 BSC	Model 2 SWOT	Model 3 base model	Model 4 full model
BSC	0.47 * *		0.45 * *	0.32* *
SWOT		0.38 *	0.29*	0.21* *
Reflecting BSC on SWOT				0.34*
R^2	0.23 * *	0.21	0.25 * *	0.27 * *
Adjusted R^2	0.26 * *	0.21	0.27 * *	0.28 * *
From model 2 to model 3			0.21 * *	
From model 3 to model 4				0.22* *

Note: *p is 0.05; **p is 0.01; n= 78

In Table 7, Model 1 supported H1 that there is a positive relationship between the BSC and strategy development process ($\beta = 0.47$, $p < 0.01$); and explains 0.23 of the variance in the strategy development process ($p < 0.01$).

Model 2 showed that SWOT analysis is a significant *predictor of the strategy development process (β = 0.38, p < 0.01). However, the whole model is significant and R^2 is high in value (R^2= 0.21, n.s.). Therefore, the researcher can trust the significant relationship that, there is a positive relationship between SWOT analysis and the strategy development process. Thus, H2 was supported. In order to test H3, the hierarchical regression model was used. In this model, SWOT analysis was entered into the equation as a first step (Model 2) before entering the BSC in the second step (Model 3). The change in R^2 between Models 2 and 3 was significant (ΔR^2 = 0.21, p <0.01). This supported H3, which the BSC better explains a significant variance in strategy development process than does SWOT. Model 3 explains 0.25 of the variance in the strategy development process (p < 0.01). In order to test H4, hierarchical moderated regression analysis is used to examine the effect of interaction between two variables on the relationship between these two variables and a dependent variable (Andersen, 2000). This analysis was used by two steps; first, entering the main effects of the BSC and SWOT analysis into the equation as the base model (model 3); second, entering the reflecting of the BSC on SWOT analysis into the equation (model 4). Then, the change in R^2 between the base model (main effects) and the full model (main and reflection effects) was examined. The change in R^2 between Models 3 and 4 was significant (ΔR^2 = 0.22, p <0.01). This supported H4 that reflecting the BSC on SWOT better explains a significant variance in the strategy development process than does SWOT analysis and the BSC. Model 4 explains 0.27 of the variance in the strategy development process (p < 0.01).

8. CONCLUSION

In light of the discussions and research on the importance of some tools and techniques used in strategic management which put the BSC (Nayeri et al. 2008; Wua et al. 2010) and SWOT analysis (Hanson and Henry, 1992) on the top of priorities area during the strategic development process (Dyson, 2004; Mc Kinsey, 2006) in higher education context at many countries. Therefore, the topic of present study is considered a very important fundamental issue in management research. Ketokivi and Castaner had strong implications for the strategic planning literature, which has been attempted with little success to find a positive relationship between strategic planning and subsequent organizational outcomes (Ketokivi and Castaner, 2004). This study argues that Egyptian public university may use some strategic planning tools as the BSC and SWOT analysis individually, during strategy development process. This calls for rethinking of these fundamental tools for strategy development issue. The present study aimed to consider the "development of a strategy for higher education" by adding the reflecting the BSC on SWOT analysis within strategy development process. By proposing the conceptual model and hypotheses, the following theoretical contributions are expected.

The foremost result of the current study is that the reflective the BSC perspectives on SWOT measurement has value. This has strong implications for the strategic planning literature, which has attempted with little success to find a positive relationship between strategic planning and subsequent organizational outcomes. The present study considered the variable of strategy development process, as well as the four stages including situation, target, path, and sustainable stages as dependent variable, and explained the strategy development process based on reflecting the BSC on SWOT analysis. These

issues are critical since previous researches focused mainly on the BSC and SWOT analysis individually with little consideration to conjoining between them, no attention to reflecting the BSC on SWOT analysis with strategy development process. This study examined four models the BSC adoption; SWOT analysis adoption; both the BSC adoption and SWOT analysis adoption; and the reflection term the BSC on SWOT analysis. The relative effects have been compared on the explained variance of the strategy development process.

The results of present study supported the four study hypotheses. The results indicated that there was significant relationship between the BSC, SWOT and strategy development process. The explanation for this result is that the relating SWOT analysis with the first stage (situation), and the BSC is related with the final stage (sustainable) of strategy development process. Hence, one needs to incorporate reflecting the BSC on SWOT in study model in order to explain the nature of strategy development process. This means that, reflecting the BSC on SWOT helps to categorize the strengths, weaknesses, opportunities and threats according to the four perspectives of the balanced performance (stakeholders, internal processes, learning and growth, and financial); and entering the results of the four the BSC perspectives into the same perspectives of the SWOT matrix as reflecting feedback for strategy development process can aid in improving the developed strategy for higher education.

9. PRACTICAL IMPLICATIONS

This study is probably the first attempt to reflecting the implementation of the balanced scorecard and SWOT analysis with strategy development process. The preceding research findings raise two conclusions, which have significant

implications for practitioners. First, the study could present an important guideline or a reference for thinking to SWOT analysis, reflecting the BSC on SWOT analysis, and the issue of reflective strategy development process for higher education. Higher education institutions, which may use these tools, can enhance strategy development process.

Thus, it seems warranted to recommend the use of reflecting the BSC on SWOT is considered the important model in success of strategic planning at universities. Second, universities may use some strategic tools as the BSC and SWOT analysis individually, they are in need for strategic planning to become more formalized and familiar to system dynamists depending on deepening of strategy formulation process not just the facilitation of institutional learning. Following the reflective the BSC on SWOT with strategy development process, leaders in universities can draw the road map for achieving their expectation with the system dynamics for institutional inquiries.

10. FUTURE RESEARCH

Although this study aimed to build the methodological and theoretical rigor adopted for examining to what reflecting the BSC on SWOT Analysis with strategy development process, but the BSC and SWOT analysis are functions of prior, not present time. In the light of this finding, there are several possible extensions of this study. First, we need to develop a more focused argument about the BSC, with a clear causal logic, then use longitudinal data to prove that causal relationships exist for time lag effects. The next stage of this research entails the analysis of each stages of the strategy development process and its impact on different measures to develop measures that reflect the causal logic of BSC.

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Biography

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(Appendix A): Results of factor analysis

COMPONENT	INITIAL VARIABLES	MEAN	S.D.	LOADING
BSC				
Financial Perspective (FP) Composite reliability = 0.95				
FP1	Accurate funding data	5.39	1.02	0.89
FP2	Financial Database	5.32	1.01	0.95
FP3	New resources of income	5.52	0.92	0.86
FP4	Usage Cost/Benefit	5.81	1.05	0.88
Stakeholder Perspective (SP) Composite reliability = 0.89				
SP1	Stack holder Focus	5.06	0.98	0.86
SP2	Stack holder Orientation	4.95	0.96	0.87
SP3	Stack holder Satisfaction	5.34	1.03	0.81
Internal Business Perspective (IBP) Composite reliability = 0.88				
IBP1	Businesses Run	5.78	0.94	0.86
IBP2	Internal Processes System	5.35	0.92	0.83
IBP3	Support Processes	5.14	0.95	0.87
Innovation and Learning Perspective (ILP) Composite reliability = 0.85				
ILP1	Culture attitudes	5.21	0.99	0.97

ILP2	Knowledge institutions	5.27	1.07	0.89
ILP3	Continuous learning mode	5.43	1.01	0.86
ILP4	Utilization of technology	5.33	1.01	0.81
SWOT				
Access Aspect (AA)				
Composite reliability = 0.89				
AA1				
	Increasing participation	5.38	1.07	0.69
AA2				
	Flow from secondary education	5.14	1.12	0.74
Equity Aspect (EA)				
Composite reliability = 0.89				
EA1	Disadvantaged groups	5.15	1.17	0.91
EA2	Disadvantaged areas	5.41	1.04	0.82
Internal Efficiency Aspect (IEA) Composite reliability = 0.89				
	Promotion rate for students	5.31	0.95	0.65
IEA1	Repetition rate for students	5.72	0.98	0.71
IEA2	Drop out rate for students	5.75	0.93	0.73
IEA3				
External Efficiency Aspect (EEA) Composite reliability = 0.89				
EEA1	Country's social development	5.65	1.08	0.74
EEA2	Country's economic development	5.31	1.02	0.81

Governance and Management Aspect (GMA)				
Composite reliability = 0.89				
GMA1	Partners Governmental bodies	5.52	1.06	0.72
GMA2	Major functions of management	5.44	1.05	0.79
Quality Aspect (QA)				
Composite reliability = 0.89				
QA1	Drastic change in quality system	6.21	1.32	0.83
QA2	New Quality Assurance System	5.90	1.41	0.84
QA3	Results of annual report	6.01	1.31	0.80
Research& Innovation Aspect (RIA) Composite reliability = 0.89				
RIA1	Reforms of national R&D system	6.11	1.21	0.76
Internationalization Aspect (IA)				
Composite reliability = 0.89				
IA1	Improve internationalization	5.81	1.32	0.83
IA2	Meeting international standards	6.22	1.41	0.82
Costs and Financing Aspect (CFA)				
Composite reliability = 0.89				
CFA1	Revenue diversification strategies	6.41	1.41	0.79
CFA2	Cost-sharing options.	5.82	1.34	0.81

Strategy Development Process				
Situation Stage (SS) Composite reliability = 0.95				
SS1	Evaluation of previous	5.99	1.42	0.79
SS2	Re-examine national guiding	5.12	1.44	0.81
SS3	Evaluate current situation	6.32	1.37	0.79
SS4	Identifying the SWOT	5.70	1.33	0.81
SS5	Strategic analysis	5.96	1.41	0.79
Target Stage (TS)				
Composite reliability = 0.95				
TS1	Priority for a national response	5.78	1.32	0.87
TS2	Enhancement of vision & mission	5.17	1.34	0.90
TS3	Set objectives & goals in priority	6.12	1.27	0.84
Path Stage (PS)				
Composite reliability = 0.95				
PS1	Strategic choice	5.61	1.43	0.79
PS2	Selection of strategy	5.84	1.31	0.82
PS3	Formulated based on prioritization	6.30	1.23	0.91
PS4	Development of action plan based on the national response.	6.54	1.31	0.84
Maintenance Stage(MS)				
Composite reliability = 0.95				
MS1	Feedback for corrective action	6.70	1.23	0.71
MS2	Variance actual and planned	5.82	1.32	0.75
MS3	Strategies modified or discarded	5.90	1.41	0.78
MS4	Strategic development cycle	6.31	1.31	0.77
MS5	Test the Ministry's direction	5.90	1.44	0.79
MS6	Target to maximum performance	6.46	1.42	0.81

(Appendix B) The scores of the eight items used to measure the perceived of the BSC)

ITEMS	LOADING
• Our Performance Measurement System identifies and measures the drivers of performance within each strategic area.	.721
• Our Performance Measurement System recognizes that performance in the Learning and Growth area affects the performance in the Internal Business Process area.	.681
• Our Performance Measurement System recognizes that performance in the Internal Business Process area affects the performance in the Stakeholder area.	.783
• Our Performance Measurement System recognizes that performance in the Stakeholder area affects the performance in the Financial area.	.777
• Our Performance Measurement System recognizes that the performance within each strategic area (Learning and Growth, Internal Business Process and Stakeholder) drives the public university's financial performance.	.811
▪ In our Performance Measurement System, performance measures within each strategic area are linked in a cause-and-effect manner.	.839
• In our Performance Measurement System, the measures between strategic areas are linked in a cause-and-effect manner.	.876
• Our Performance Measurement System has causal links of measures within each strategic area as well as between strategic areas.	.782

تطوير إستراتيجية للتعليم العالي : انعكاس بطاقات الأداء المتوازن في التحليل البيئي الرباعي خلال عمليات تطوير الإستراتيجية

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ملخص البحث

في مجال الإدارة الإستراتيجية، تم تطبيق كلا من مدخلي بطاقات الأداء المتوازن والتحليل البيئي الرباعي (تحليل عناصر القوة والضعف والفرص والتهديدات) لدي كافة أنواع المؤسسات سواء كانت مؤسسات خاصة، عامة، غير هادفة للربح، بالإضافة إلي المؤسسات الحكومية. ومع تنامي اهتمام كافة مؤسسات التعليم العالي في العالم بعمليات تطوير الإستراتيجية، ظهرت تيارات متعددة لدراسة ومعالجة مختلف القضايا المتعلقة بهذا الموضوع. حيث ركز التيار الأول علي دراسة كيفية تطوير بطاقات الأداء المتوازن في مؤسسات التعليم العالي، في حين ركز التيار الثاني علي دراسة كيفية تطبيق التحليل البيئي الرباعي في عملية تطوير الإستراتيجية. ومن خلال مراجعة المؤلفات والدراسات في هذا الاتجاه، تبين قلة الدراسات التي تناولت ارتباط هذين المدخلين معا، وعدم وجود آية دراسة تركز علي دراسة تأثير انعكاس نتائج بطاقات الأداء المتوازن علي التحليل البيئي الرباعي عند القيام بعملية تطوير إستراتيجية فعالة لمؤسسات التعليم العالي على وجه التحديد. تهدف الدراسة الحالية إلي معالجة القضية الأخيرة بعمق كبير. حيث أمكن تحقيق ذلك من خلال مجال عمل وخبرة الباحثة في هذا المجال، بالإضافة إلي مراجعة الأطر النظرية السابقة لوضع إطار مفاهيمي لانعكاس كلا المدخلين في عملية تطوير الإستراتيجية. اختبرت الدراسة الحالية هذا الإطار علي مستوي الجامعات الحكومية في مصر، وقد تم استخدام أسلوبي المقابلات لمجموعة من الخبراء والمستشارين والمخططين بوزارة التعليم العالي في مصر وبعض الدول العربية بالإضافة إلي أسلوب المسح لعينة طبقية مقدارها ٧٨ مفردة من القائمين علي تنفيذ عمليات التخطيط الاستراتيجي بستة من الجامعات الحكومية المصرية ، فضلا عن تجميع البيانات الثانوية من التقارير والإصدارات..الخ. دعمت النتائج نموذج الدراسة والذي يوضح قوة انعكاس بطاقات الأداء المتوازن في التحليل البيئي الرباعي في التنبؤ بصلاحية وتحسين عملية تطوير الإستراتيجية. تعتبر الدراسة الحالية من أوائل المحاولات لربط بطاقات الأداء المتوازن بالتحليل البيئي الرباعي في شكل علاقة منعكسة. تقدم هذه الدراسة مساهمتين، الأولي تقديم إطار إرشادي في مجال الإدارة الاستراتيجية المنعكسة والتي تعالت الأصوات مؤخراً علي أهمية وضرورة إجراء المزيد من البحوث والدراسات الادارية المؤسسة لهذا المفهوم الحيوي والمعاصر. والثانية تقديم المفهوم والنموذج غير الشائعين لانعكاس بطاقات الأداء المتوازن في التحليل البيئي الرباعي خلال عمليات تطوير إستراتيجية لمؤسسات التعليم العالي الحكومية.

الكلمات الأساسية: بطاقة الأداء المتوازن- التحليل البيئي الرباعي- عملية تطوير الإستراتيجية- إستراتيجية التعليم العالي .