

Sudan University
Of Science and Technology
Quality center

MSc in Quality Management and Excellence

**Using the Balance Scoring Card (BSC) to Improve
Strategic Performance**

(In Manufacturing Companies in Sudan)

**استخدام بطاقة الاداء المتوازن لتحسين الاداء الاستراتيجي
(بالشركات الصناعية في السودان)**

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Dedication

For the soul of

My father,

My mother,

My wife who supports encourages me.

Acknowledgment

My great thanks for Sudan University of Science and Technology who arrange and deliver this valuable course, deep great thanks for Sudan Quality Center staff for their patience and help and for that kind of support that make us complete and gain the fruits of the modules **of this course**.

My great thanks to my supervisor Professor **MR. ALI Abdullah AL hakim** whom I hope may Allah make him happy, wealthy, and long life for the good of our people in Sudan and for those who really concern about great expectations and a unique developed position for Sudan in the future through the use and practices of quality systems.

My special thanks also for my colleagues who shared their experiences and knowledge during the discussions of this course, Also my best regards for those who help in answering my questionnaire with high response to (SMT, Giad Group) and I would like to say thanks to my friend Mr. Muhammad Yusuf who encourages me all time to make my research in a way that can be used to develop further investigation in the field of strategy development and improvement to heal the gap of strategy formulation and execution in Sudan manufacturing organizations which assumed as a major factor in fulfilling their vision, mission, and core objectives.

I hope this study can be used for further researches to enhance strategic performance in different business units in Sudan.

MudathirAwadElkarim Mubarak

Abstract

This research aims to explain the relationship between

Using the Balanced scorecard (BSC) and the Improvement of Strategic Performance in Sudanese manufacturing companies

As a result of receiving the submission documents of the companies who participate in the Quality and Excellence Award in (SMT and GiadCompanies Group).

The researcher noticed the weakness of the records of strategic performance of the participating companies in the last three rounds of the Award.

Twenty manufacturing companies were selected then the most senior and influential person in terms of their effect on strategic performance were selected, namely, the chief executive officer, quality advisor, and strategic management advisor. A questionnaire was designed and distributed to 46 respondents representing 76.6% of a total of 60 persons.

The result revealed that there is a considerable relationship between using the BSC and the improvement of strategic performance in the selected companies. Also, the result showed a positive impact of using the BSC on each step of strategic performance from strategic planning to improvement.

These findings revealed that those companies that use the BSC have the opportunity to improve their strategic performance in future more than those who did not use it.

The research recommends companies to use the BSC as an effective tool to improve their strategic performance. The research also recommends conducting further performance researches about how to improve the strategic performance.

المستخلص

يهدف هذا البحثالي التعرف علي ما اذا كانت هنالك علاقة ذات دلالة اعتبارية بين استخدام بطاقة الاداء المتوازن وتحسن الاداء الاستراتيجي للمؤسسات الصناعيةفي السودان.

وقد اظهرت مراجعات الباحث للتقارير التعقيبية للشركات المشاركة في جائزة مجموعة جياذ للجودة والتميزضعف جانب الاداء الاستراتيجي لبعض الشركات في الجولات الثلاث الاخيرة .

تم اختيار عدد عشرين شركة من الشركات الصناعيةعشوائيا ومن ثم تم استهداف اكثر ثلاث وظائفادارية تأثيرا علي الاداء الاستراتيجيها ممثلة في المدير التنفيذي ، ممثل الادارة للجودة ومدير مكتب الاستراتيجية .ثم تم تصميمو توزيع عدد ٤٦ استمارة استبانة راي تمثل ٧٦.٧% من حجم العينة البالغ ٦٠ شخص، تم استلامها كلها واستبعاد اربعة منها لعدم كفايتها لاغراض هذا البحث ، جاء تصميم الاستبيان ليغطي جميع مراحل وخطوات الاداء الاستراتيجي من مرحلة التخطيط وانتهاء بمرحلة التحسين.

اظهرت نتائج الدراسة وجود علاقة ذات اثر اعتباري بين استخدام بطاقة الاداء المتوازن وتحسن الاداء الاستراتيجي للشركات موضع الدراسة ، كذلك وجود اثر ايجابي واضح لاستخدام بطاقة الاداء المتوازن علي كل خطوة من خطوات الاداء الاستراتيجي بهذه الشركات من مرحلة التخطيط الي التحسين . هذه النتيجة تؤكد علي ان الشركات التي تبادر الي استخدام بطاقة الاداء المتوازن لديها الفرصة الي تحسين الاداء الاستراتيجي بها مستقبلا بدرجة اكبر من الشركات الاخري.

وقد اوصت الدراسة الشركات الصناعية علي استخدام بطاقة الاداء المتوازن والاستفادة منها كواحدة من اهم الاليات المستخدمة في تحسين الاداء الاستراتيجي ، واخيرا يمكن استخدام هذا البحث للمزيد من الدراسات المستقبلية في كيفية تحسين الاداء الاستراتيجي للمؤسسات باعتباره العنصر الرئيسي والعمود الفقري لنمو وازدهارالاداء المؤسسي للمؤسسات الصناعية بالسودان.

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Chapter one

Introduction & literature Review

1- Introduction

1.1background

Many of Sudanese companies are trying to implement the TQM principles during the last ten years Quality is seen as a solution for the development and improvement of their organizational performance, but there are many obstacles on the way of implementing such models of quality management and excellence paradigm (ISO standards and the EFQM).

Many of our organizations during the last ten years were eager to develop quality management systems and techniques but there was a recognized variation between the systems that were developed and the implementation of those systems and those organizations were suffering to achieve their planned objectives and the core factor was the lack of developing, implementing and executing their strategy.

1.2Research problem

One of the major problems encountered and observed from the result of the companies that participate in Giad Group Excellence Award in the last three rounds was the low scoring in criteria two of the enablers concerning strategy and strategic performance.

In this research we are trying to explain whether or not using the BSC as strategic tool could improve and enhance the strategic performance of these companies discussing the possible problems in strategic analysis, formulation and implementation

1.3 Importance of the topic

This research considered as a very important one because too many researches all around the business units globally deal with the BSC as a:-

- Strategic management tool
- Measurement tool
- Communication tool

The benefits of using BSC as a strategic management tool are vital to the success and a sustainable performance. Because the BSC translates and communicates the mission and the goals into operational objectives and all individuals of the organization can understand their impact on the total strategy execution.

But still this was not totally understood by CEO's of our organizations. Also using the BSC was very limited in the field of strategic management for most of them and the strategic performance attitude was very low during the implementation of quality and excellence models. Also there are few studies concerning the BSC in Sudan discussing its use as a strategic management tool and the potential outputs.

1.4 Research hypothesis:-

H0:- There is a significant relationship between strategic performance improvement and the use of the BSC

1.5 Research objective

To evaluate the impact of using the BSC on the improvement of strategic performance in manufacturing companies in Sudan.

1.6 Research method

A. study design

This study consists of three chapters:

Chapter one is on introduction and literature review

Chapter two presents data and analysis, and

Chapter three about discussion conclusion and recommendation

B. method

Based on the literature on the subject under study and the research objective, scope and the adapted research design, survey questionnaire was carried out to the targeted sample of the society. SPSS was used to test the impact of using the BSC to improve the strategic performance in manufacturing companies in Sudan.

Both qualitative and quantitative statistical methods are used to analyze the primary data.

The primary data was collected through a questionnaire, whereas secondary data were collected from formal articles, submission documents and company records.

The unit of analyzing of this study was CEO, strategic management advisor, and quality management representative.

Study area: SMT (Sudan Master Technology, Giad Industrial complex)

Sampling:- a sample size of 46 was randomly selected and distributed with a response rate of 76.6%

Inclusion Criteria:-

Samples selected according to the job position

- Chief executive officers
 - Strategic officers
 - Management representatives
- Consideration is given to experience (not less than 2 years in position), BSC knowledge (not less than awareness)

1.7 Ethical consideration:

Data gathered from the questionnaires are kept confidential and used only for the purpose of this research, all questionnaires are treated fairly, honestly without allowing personal biases to interfere

Data analysis

The data gathered from the questionnaire were analyzed using the SPSS.

Secondary data

Secondary data were collected from books, published researches and the internet submission documents and companies records.

In previous studies such like

1- ***AbhijitSinha:-***

Balanced Scorecard: A strategic management Tool

He approved that the balanced Scorecard(BSC) is a very important strategic management Tool

2. ***Ajaya Shankar Gupta A , and Dr. V.***

Fit Between Balanced Scorecard and European Foundation for Quality Management Award

Approved that the balanced scorecard (BSC) is one of the Best Tool for achieving Business Excellence and to reach the Award Level”

3. ***Dennis Campbell Srikant M. Datar Susan L. Kulp V.G. Narayanan***

Testing Strategy with Multiple Performance Measures Evidence from a Balanced Scorecard

The balanced scorecard (BSC) contains information for detecting strategic problems and provides incremental learning relative to the firm's strategy

As we see the first study approved that the BSC is a very important strategic tool, the second study approved that the BSC is a best tool for achieving business excellence and to reach the Award, (strategy is vital in achieving excellence). The third study approved that the BSC helps obtaining information to detect strategic problems and provides incremental learning relative to the firm's strategy.

2. Literature review

2.1 The Balanced Scorecard (BSC)

The Balanced scorecard is a strategic management tool developed by Kaplan and Norton (1992) to complement traditional financial measures of business unit performance. Kaplan and Norton (1996b) noted that the business unit measures primarily concentrate only on lagging measures that are financial indicators of performance and lack using the leading indicators which are non-financial measures. The BSC approach is an integrated set of leading and lagging performance measures designed to capture the organization's strategy (Lipe&Salterio, 2000). So the BSC is "A carefully selected set of measures derived from an organization's strategy. The measures selected for the scorecard represent a tool for leaders to use in communicating to employees and external stakeholders the outcomes and performance drivers by which the organization will achieve its mission and strategic objectives." In 1992, Robert S. Kaplan and David P. Norton introduced the balanced scorecard, as a set of measures that allow for a holistic, integrated view of business performance.

The scorecard was originally created to supplement "traditional financial measures with criteria that measured performance from three additional perspectives—those of customers, internal business processes, and learning and growth" (Kaplan and Norton1996). By 1996, user companies had further developed it as a strategic management system linking long-term strategy to short-term targets. The development of the balanced scorecard method occurred because many business organizations realized that focus on a one-dimensional measure of performance (such as return on investment or increased profit) was inadequate.

The Kaplan and Norton balanced scorecard looks at a company from four perspectives (Alice C. Stewart and Julie Carpenter-Hubin Winter 2000–2001):

- Financial: How do we look to shareholders?
- Internal business processes: What must we excel at?
- Innovation and learning: Can we continue to improve and create value?
- Customer: How do customers see us?

Many if not most organizations complete strategic planning on a regular basis. (Alice C. Stewartand Julie Carpenter-Hubin Winter 2000–2001) However, studies suggest that fewer than 10% are successful inimplementing the strategies created (Sister Bonnie MacLellan, csj Dec 10, 2007). In 1999, Fortune magazine noted the majority of CEOs fail their responsibility to their organizations by

assuming that defining strategy was a sufficient predictor of corporate success(Kiechel, Walter.(1982)).

“In the majority of cases – we estimate 70% - the real problem isn’t [bad strategy but] . . . badexecution.” (Charan, R., and G. Colvin.(1999).”Niven notes the following barriers to strategy execution. (Niven, Paul R. (2006).

1. Vision barrier – only 5% of the workforce understand the strategy
2. People barrier – only 25% of managers have incentives linked to strategy
3. Management barrier – 85% of executive teams spend less than one hour per month discussing strategy.
4. Resource barrier – 60% of organizations don’t link budgets to strategy.

BALANCED SCORECARD COMPONENTS

Balanced Scorecard – The Diagrammatic Representation

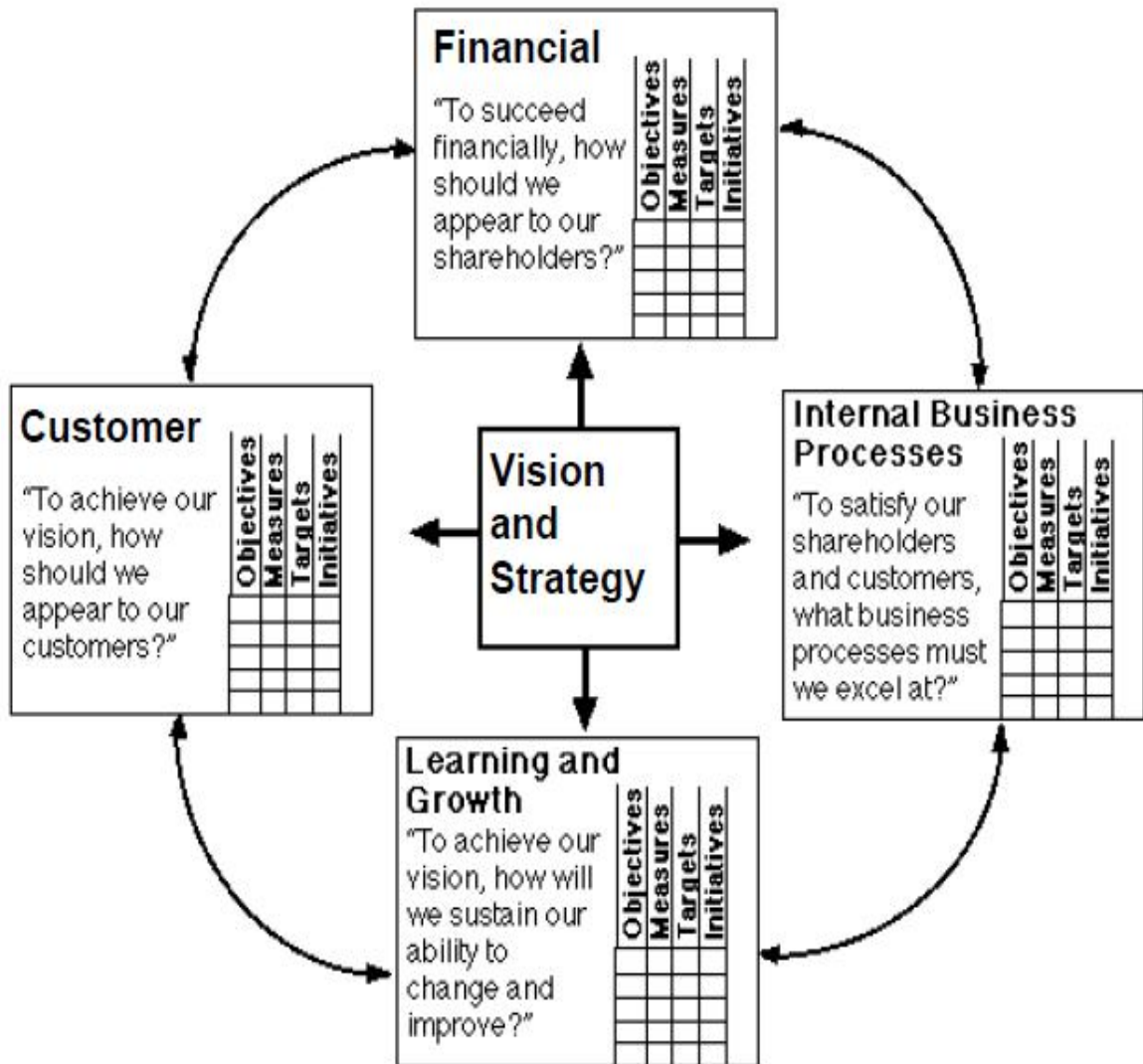


Figure (1) Balanced Scorecard Model

Source: www.balancedscorecard.org. Balanced Scorecard institute, USA

2.2 The foundational principles of the balanced scorecard include the following according to (Kaplan and Norton 1990).

1. Translate the strategy to operational terms
2. Align the organization to the strategy
3. Make strategy everyone's everyday job
4. Make strategy a continual process
5. Mobilize change through executive leadership

Companies are expanding the use of the balanced scorecard approach and employing it as the foundation of an integrated and interactive strategic management system as noted by Kaplan and Norton (2007). According to these researchers firms are using BSC tool for other strategic reason such as to (Kaplan & Norton, 2007):-

- Clarify and update strategy;
 - Communicate strategies throughout the company;
 - Align unit and individual goals with the strategy;
 - Link strategic objectives to long-term targets and annual budgets;
 - Identify and align strategic initiatives; and
 - Conduct periodic performance reviews to learn about and improve strategy.
- (Krishnan, A. & Ravindran, R 76-87)

2.3 Organizational performance

'When you can measure what you are speaking about and express it in numbers, you know something about it'. Kelvin 'you cannot manage what you cannot measure'.

These are two often-quoted statements that demonstrate why measurement is important. Yet it is surprising that organization's find the area of measurement so difficult to manage.

In the cycle of never-ending improvement, performance measurement plays an important role in:

- Identifying and tracking progress against organizational goals.
- Identifying opportunities for improvement.
- Comparing performance against both internal and external standards.

Reviewing the performance of an organization is also an important step when formulating the direction of the strategic activities. It is important to know where

the strengths and weaknesses of the organization lie, and as part of the 'Plan – Do – Check – Act' cycle, measurement plays a key role in quality and productivity improvement activities.

Also performance measurement used to:-

- Ensure customer requirements have been met
- Be able to set sensible objectives and comply with them
- Provide standards for establishing comparisons
- Provide visibility and a “scoreboard” for people to monitor their own performance level.
- Highlight quality problems and determine areas for priority attention.
- Provide feedback for driving the improvement

2.4 Performance measurement

A performance measure is a numeric description of an agency's work and the results of that work. Performance measures are based on data, and tell a story about whether an agency or activity is achieving its objectives and if progress is being made toward attaining policy or organizational goals.

In technical terms, a performance measure is a quantifiable expression of the amount, cost, or result of activities that indicate how much, how well, and at what level, products or services are provided to customers during a given time period.

(Performance Measure Guide Budget Division August 2009)

The performance measurement models evolved from a cybernetic view whereby performance measurement was based mainly on financial measures and considered a component of the planning and control cycle to a holistic view based on multiple nonfinancial measures where performance measurement acts as an independent process integrated in a broader set of activities. Performance measurement is traditionally viewed as an element of the planning and control cycle that captures performance data, enables control feedback, influences work behavior (Flamholtz, Das and Tsui 1985) and monitors strategy implementation (Simons 1990). It is mainly underpinned by a financial perspective (Johnson and Kaplan 1987). In a holistic view, performance measurement plays a key role in the development of strategic plans and evaluating the achievement of organizational objectives (Ittner and Larcker 1998a) as well as acting as a signaling and learning device (Simons 1990).

2.5 Organizational strategic performance:-

Strategic management is the set of decisions and actions used to formulate and implement strategies that will provide a competitively superior fit between the organization and its environment so as to achieve organizational goals. (John E. Prescott 1986)

While Strategy is a plan of action that prescribes resource allocation and other activities for dealing with the environment and helping the organization attain its goals.

Strategy necessarily changes over time to fit environmental conditions, but to remain competitive, companies develop strategies that focus on core competencies, develop synergy, and create value for customers. (Michael E. Porter 1996)

According to Strategic Futures Consulting (<http://www.strategicfutures.com>), the strategic planning and management process consists of the following components:-

- 1- Planning Function
- 2- Establishing the Strategic Foundation
- 3- Strategic Analysis:-
- 4- Strategic Plan Development
- 5- Strategic Plan Implementation
- 6- Strategy Measurement, Monitoring and improvement

A questionnaire was designed to cover strategy from planning to improvement delivered to the targeted sample, so as to test the hypothesis of this research.

Chapter Two

Data Analysis

Chapter Two

Data Analysis

2.1 Data collection

A questionnaire was designed and developed to collect the primary data from six main questions (stages) covering strategic functions and activities from planning to improvement, each main question (stage) consists of three questions that describe the most important functions and activities in that (stage).

The main questions of the questionnaire are about the six main stages of strategy:-

- 1- Planning Function
- 2- Establishing the Strategic Foundation
- 3- Strategic Analysis:-
- 4- Strategic Plan Development
- 5- Strategic Plan Implementation
- 6- Strategy Measurement, Monitoring and improvement

Each stage was covered with sub questions; the total questions of the questionnaire are 23 sub questions that cover each stage of the strategy from planning function to improvement.

To examine the validity of the questionnaire items Alpha cronbach was used (table No.1) it's clear that the value of Alpha shows a high degree of consistency.

Table NO (1) Alpha Cronbach Results

Statement	Alpha cronbach
Total	0.85

Source: the researcher survey – questionnaire results.

Descriptivestatistics is used to summarize the main features of the sample and its distribution. The mean is used to reflect the average value of the respondent answers.

A likert-type scale is used ranging from (1) for strongly disagree to (5) strongly agree.

Statistical package for social sciences (SPSS) is used to analyze the data.

2.2 Personal information

Respondents Jobs:-

Table No. (2) Respondents Jobs.

The Answer	Number	Percentage %
Chief Executive officer	13	31
Quality management Representative	20	47.6
Strategic officer	9	21.4
Total	42	100

Figure (2)

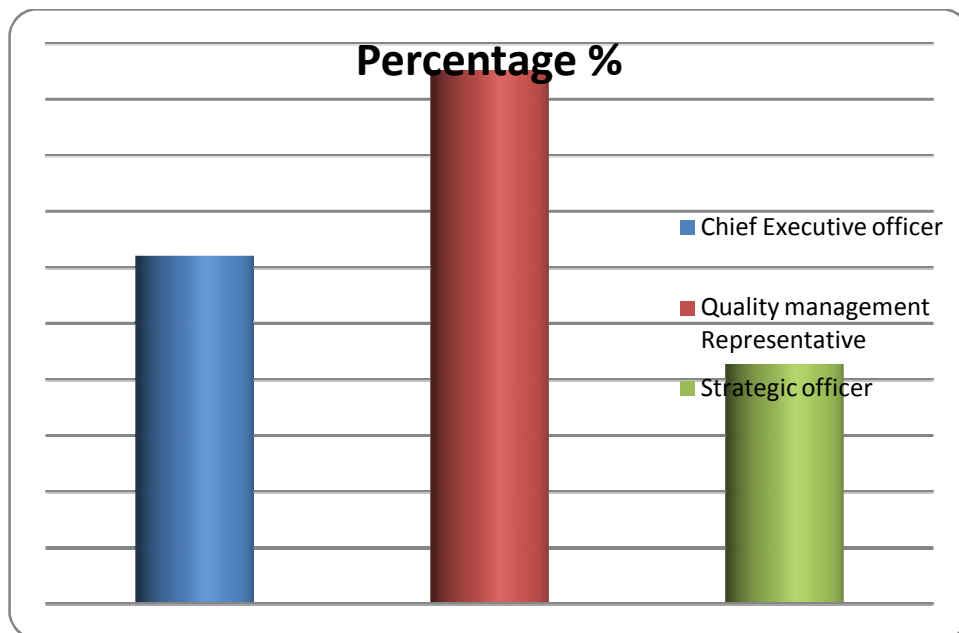


Table (2) and Figure (2) shows that (47.6) % of the respondents were Quality management Representatives, (31) % Chief Executive officers and 21.4% were strategic department officers.

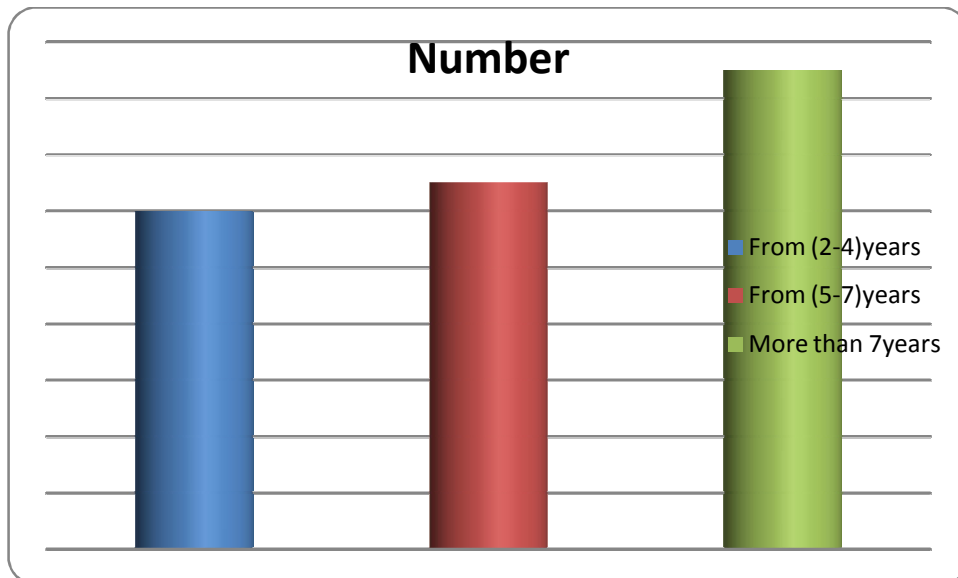
Respondents experience period:-

Table No.(3) Respondents according to their experience period in position:-

The Answer	Number	Percentage %
From (2-4)years	12	28.6
From (5-7)years	13	31
More than 7years	17	40.5
Total	42	100

Source: the researcher survey – questionnaire results

Figure (3)



Table(3) and figure (3) reveals that 28.6% of the respondents have an experience period in position from (2-4), while 31% of them between (5-7) years and 40.1% have more than 7 years in position.

Respondents BSC Knowledge:-

Table No.(4) Respondents BSC knowledge:-

The Answer	Number	Percentage %
Awareness	9	21.4
Good	21	50
Very good	12	29.6
Total	42	100

Source: the researcher survey – questionnaire results

Figure (4)

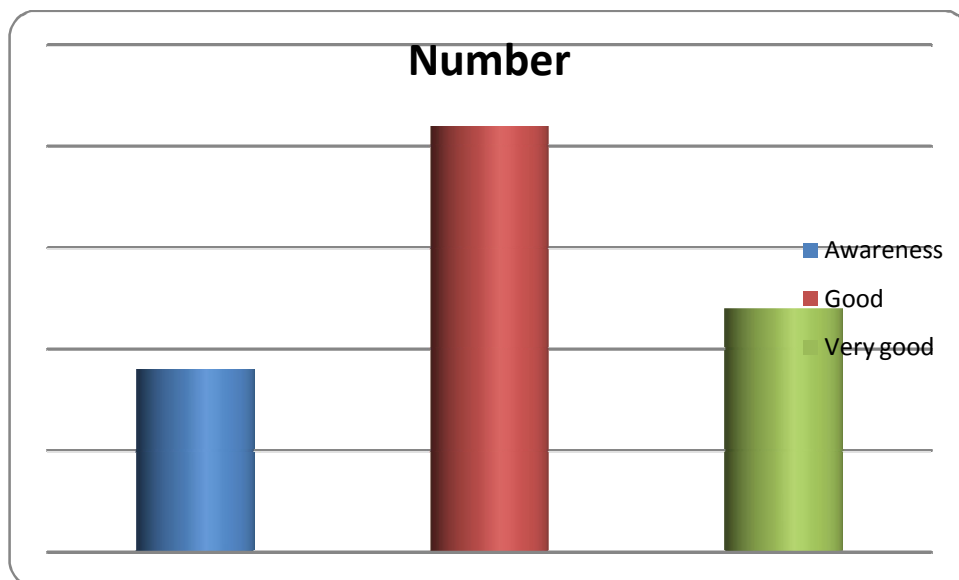


Table (4) and figure (4) shows that (50)% of the respondents have (Goodknowledge) about the BSC, while (29.6%) have a(Very goodknowledge)and only (21.4%) have (Awareness) about the BSC.

2.3 The presentation of respondents answers:-

The questionnaire consists of six main stages about strategy from planning to improvement:-

- 1- Planning Function
- 2- Establishing the Strategic Foundation
- 3- Strategic Analysis:-
- 4- Strategic Plan Development
- 5- Strategic Plan Implementation
- 6- Strategy Measurement, Monitoring and improvement

And the respondents were questioned about these main items through sub questions relative to each item under consideration, the total of the sub questions were 20 covering the strategic performance from planning to improvement.

Here and bellow we are going to represent the respondents answers about each item and its sub questions **(from question 1 to 20)**.

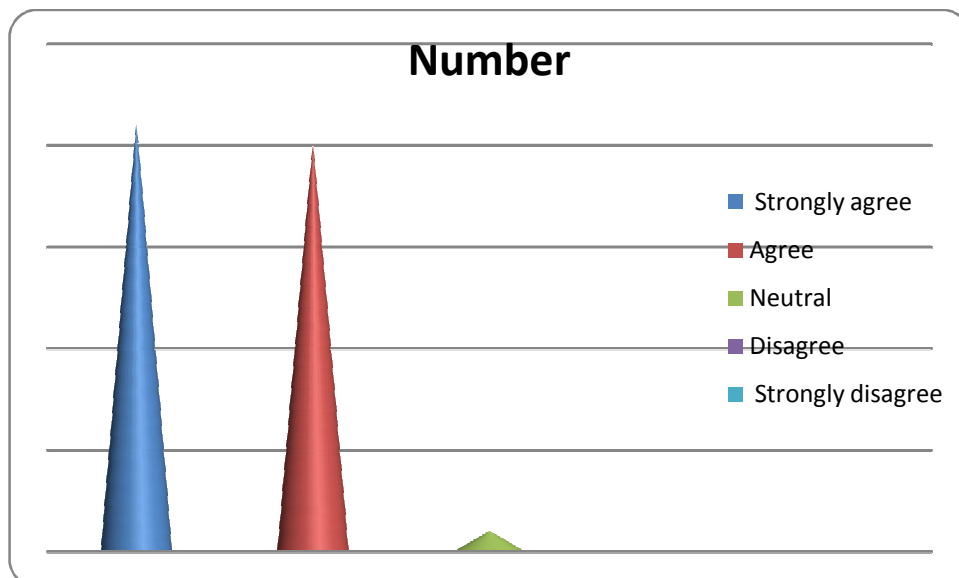
1. The BSC helps in planning stage:-

Table No.(5)The role of the BSC in planning stage:

The Answer	Number	Percentage %
Strongly agree	21	50
Agree	20	47.6
Neutral	1	2.4
Disagree	0	0
Strongly disagree	0	0
Total	42	100

Source: the researcher survey – questionnaire results

Figure (5)



From table (5) and figure (5) we can reveal that (97.6%) of the respondents were agree that (**The BSC helps in planning stage**), while (0%) disagree and only (2.4%) were not sure.

2. The BSC helps in setting procedures for strategic planning process:

Table No.(6)The role of BSC in setting procedures for strategic planning process:

The Answer	Number	Percentage %
Strongly agree	15	35.7
Agree	21	50
Neutral	6	14.3
Disagree	0	0
Strongly disagree	0	0
Total	42	100

Source: the researcher survey – questionnaire results

Figure (6)

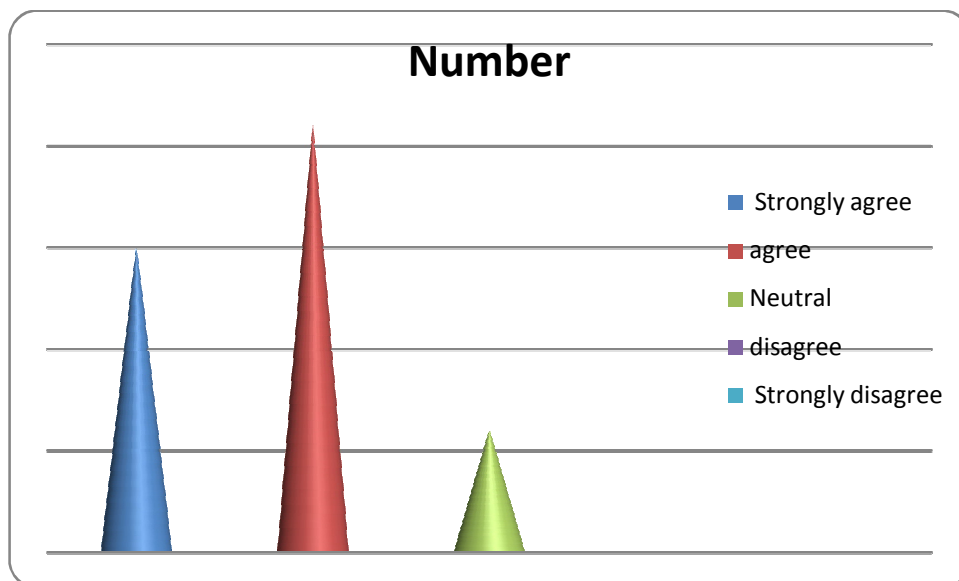


Table (6) and figure (6) shows that(85.7%)of the respondents agree that(**The BSC help in setting a procedure for strategic planning process**), while (0%) disagree and only (14.3%) werenot sure.

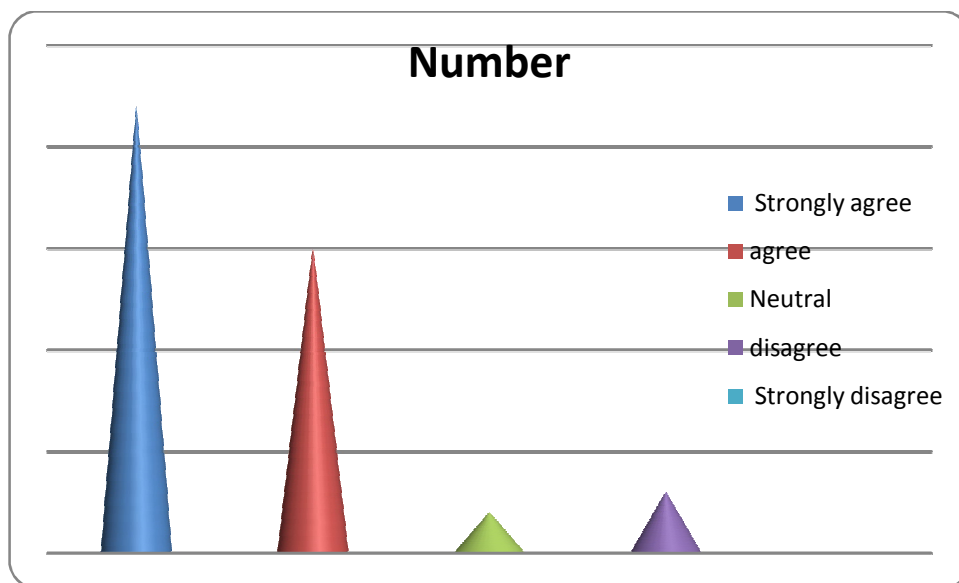
3. Managers BSC knowledge affects significantly in strategic planning:-

Table No.(7):Managers BSC knowledge affect significantly in strategic planning

The Answer	Number	Percentage %
Strongly agree	22	52.4
Agree	15	35.7
Neutral	2	4.8
Disagree	3	7.1
Strongly disagree	0	0
Total	42	100

Source: the researcher survey – questionnaire results

Figure (7)



From the table (7) and figure (7) we can reveal that(88.1%)of the respondents were agree that(**the managers BSC knowledge affect significantly in strategic planning**), while (7.1%) disagree and only (4.8%) werenot sure.

4.Establishing strategic foundation:-

Table No.(8) BSC help in establishing the strategic foundation:-

The Answer	Number	Percentage %
Strongly agree	22	52.4
Agree	14	33.3
Neutral	3	7.1
Disagree	3	7.1
Strongly disagree	0	0
Total	42	100

Source: the researcher survey – questionnaire results

Figure (8)

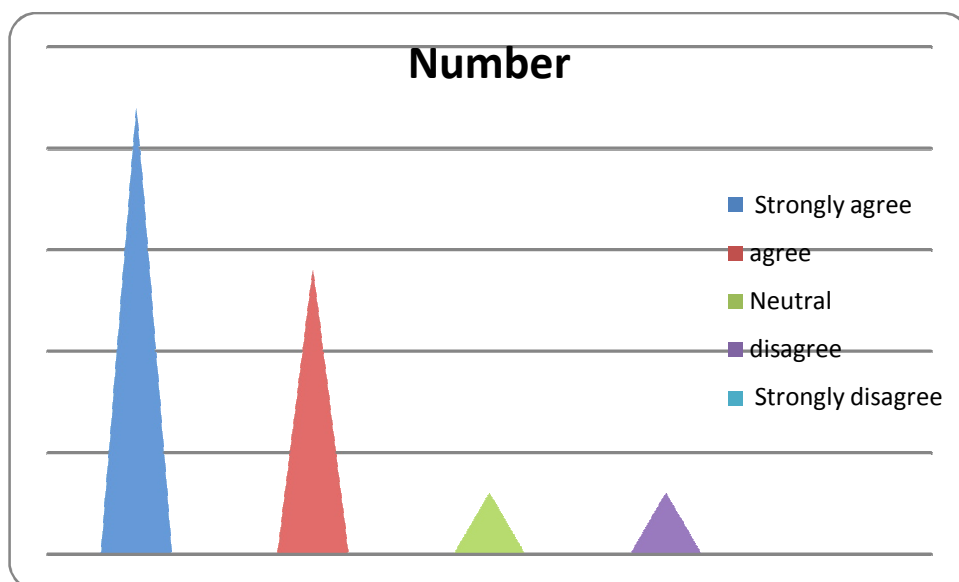


Table (8) and figure (8) shows that(85.7%)of the respondents agree that the BSC help in establishing the strategic foundation, while (7.1%)disagree and only (7.1%) were not sure.

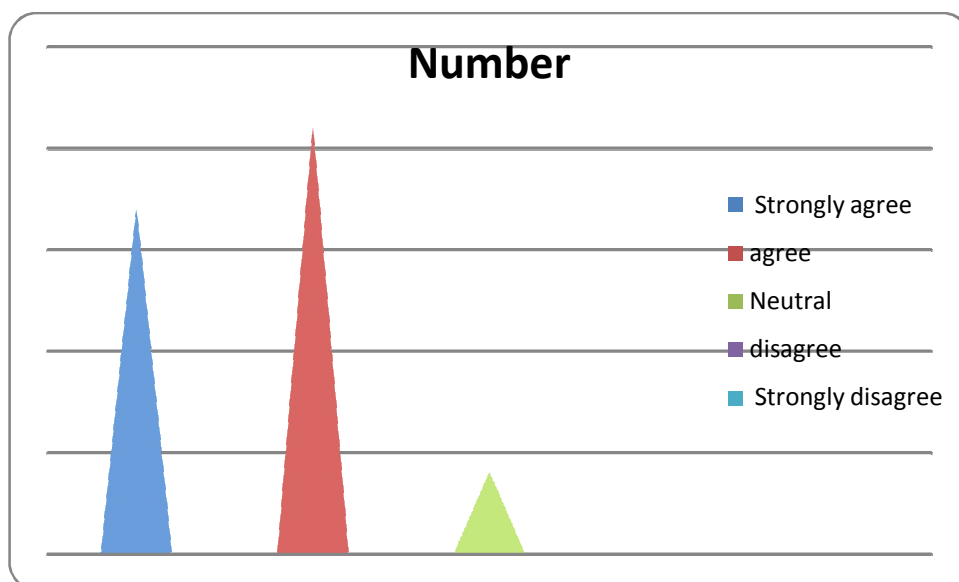
5. The BSC help in long and short goal setting:-

Table No.(9)The BSC help in long and short term setting:-

The Answer	Number	Percentage %
Strongly agree	17	40.5
Agree	21	50
Neutral	4	9.5
Disagree	0	0
Strongly disagree	0	0
Total	42	100

Source: the researcher survey – questionnaire results

Figure (9)



From the table (9) and figure (9) it is obvious that the majority of the sample size (90.5%)of the respondent were agree that **(the BSC help in long and short goal setting)**, while (0%) disagree and only (9.5%) were not sure.

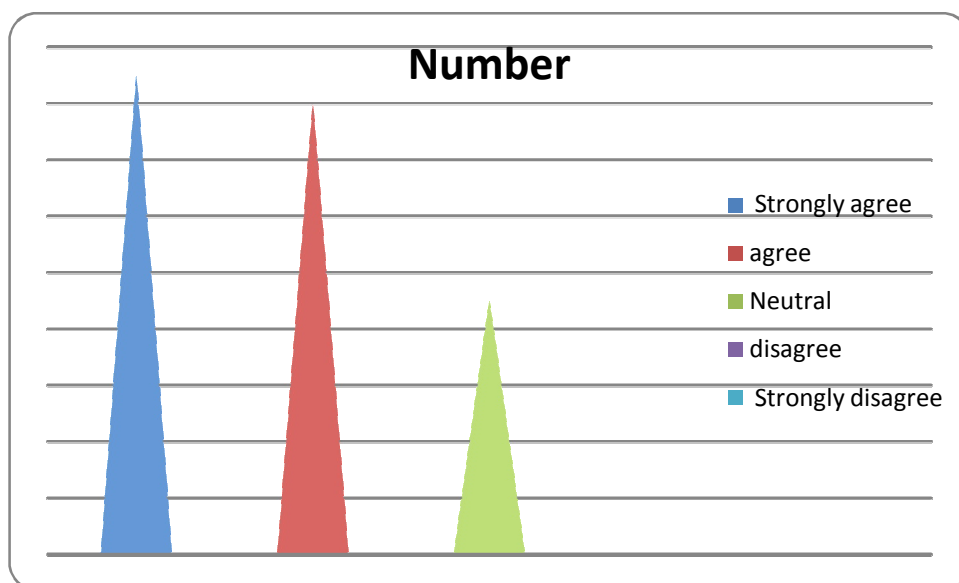
6. The BSC help organizations systematically measure actual performance vs. goals:-

Table No.(10)The BSC help in measuring actual performance against goals:

The Answer	Number	Percentage %
Strongly agree	17	40.5
Agree	16	38.1
Neutral	9	21.4
Disagree	0	0
Strongly disagree	0	0
Total	42	100

Source: the researcher survey – questionnaire results

Figure (10)



From the table (10) and figure (10) (78.6%)of the respondents were agree that(**the BSC help organizations systematically measure actual performance vs. goals**), while (0%) disagree and only (21.4%) were not sure.

7. BSC helps in defining the type of information needed for strategic analysis:-

Table No.(11)The BSC help in defining the type of information needed for strategic analysis:-

The Answer	Number	Percentage %
Strongly agree	12	28.6
Agree	20	47.6
Neutral	9	21.4
Disagree	1	2.4
Strongly disagree	0	0
Total	42	100

Source: the researcher survey – questionnaire results

Figure (11)

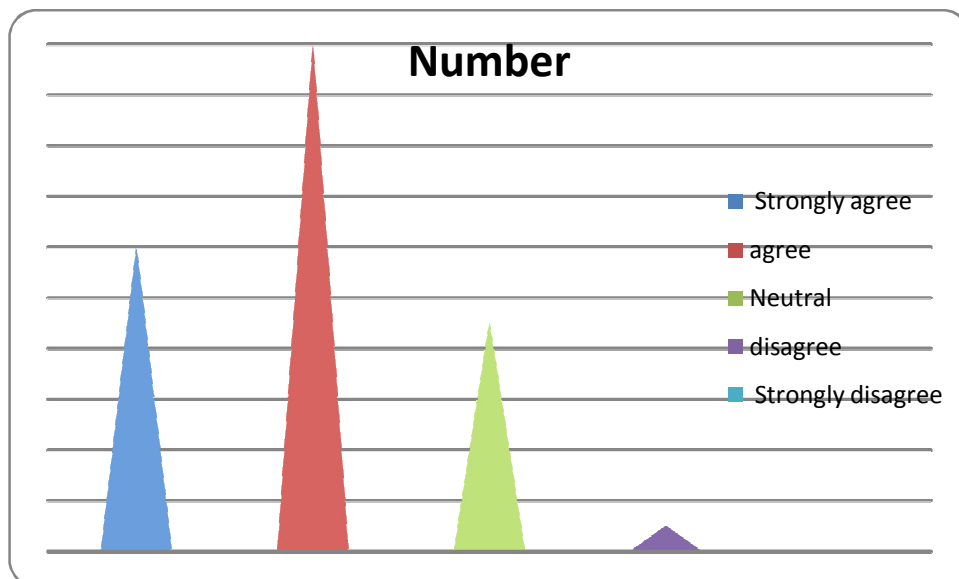


Table (11) and figure (11) shows that (%76.2)of the respondents were agree that(**BSC help in defining the type of information needed for strategic analysis**), while (2.4%) disagree and only (21.4%) were not sure.

8. BSC helps in strategic analysis process:-

Table No.(12)The BSC helps in strategic analysis process:-

The Answer	Number	Percentage %
Strongly agree	14	33.3
Agree	17	40.5
Neutral	10	23.8
Disagree	1	2.4
Strongly disagree	0	0
Total	42	100

Source: the researcher survey – questionnaire results

Figure (12)

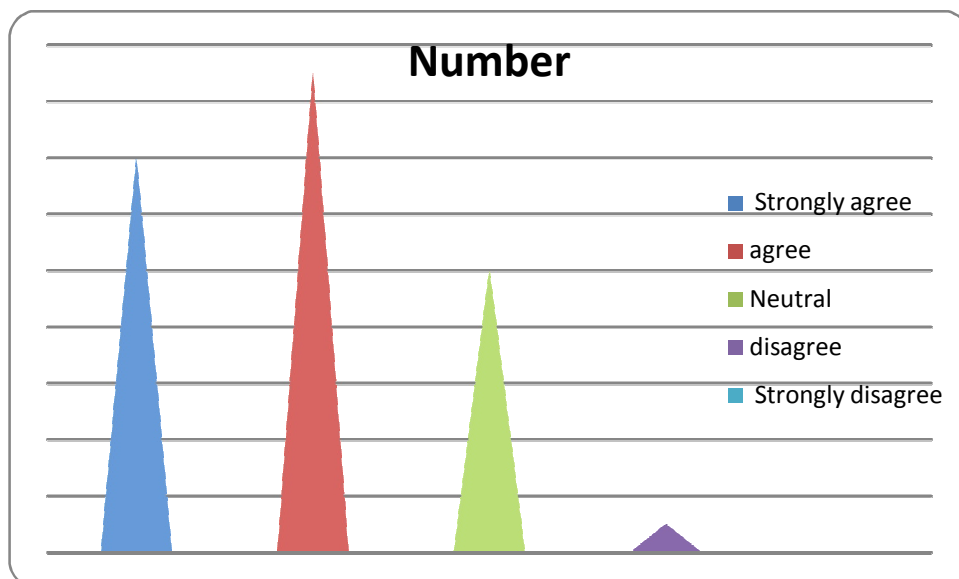


Table (12) and figure (12) shows that(73.8%)of the respondents were agree that(**BSC helps in strategic analysis process**), while (2.4%)disagree and only (23.8%) were not sure.

9. BSC helps in evaluating strategic analysis process:-

Table No.(13) BSC helps in evaluating strategic analysis process.

The Answer	Number	Percentage %
Strongly agree	12	28.6
Agree	17	40.5
Neutral	10	23.8
Disagree	3	7.1
Strongly disagree	0	0
Total	42	100

Source: the researcher survey – questionnaire results

Figure (13)

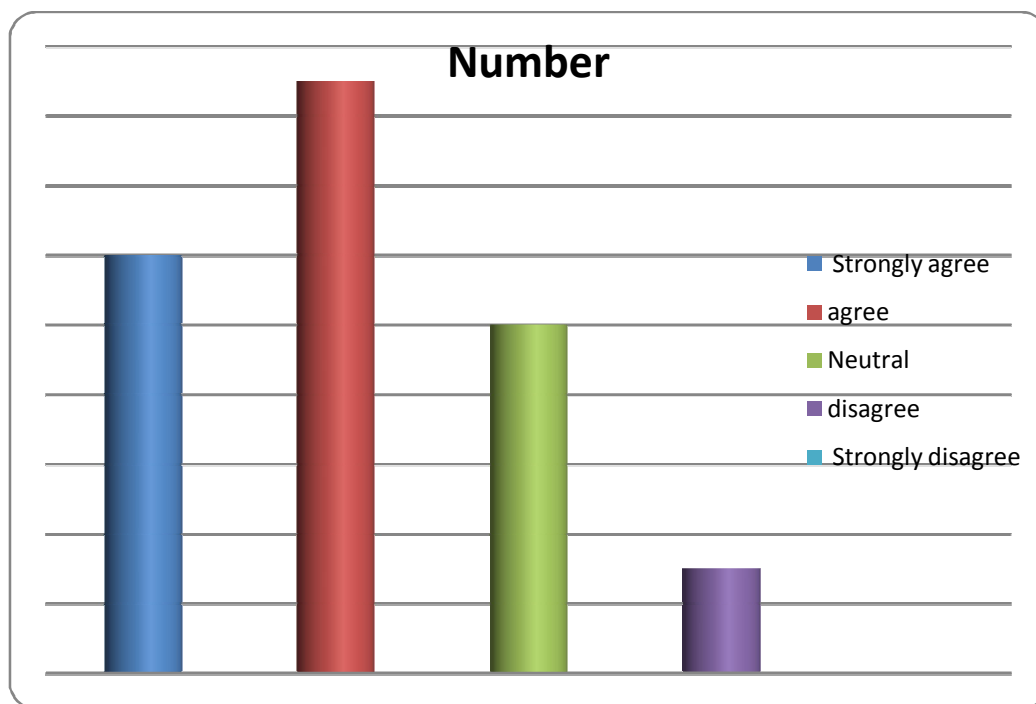


Table (13) and figure (13) shows that (69.1%)of the respondents were agree that(**BSC helps in evaluating strategic analysis process**) while (7.1%) disagree and only (23.8%) were not sure.

10.BSC helps organizations in figuring the most relevant strategic alternatives

Table No.(14) BSC helps organizations in figuring the most relevant strategic alternatives:-

The Answer	Number	Percentage %
Strongly agree	9	21.4
Agree	16	38.1
Neutral	14	33.3
Disagree	3	7.1
Strongly disagree	0	0
Total	42	100

Source: the researcher survey – questionnaire results

Figure (14)

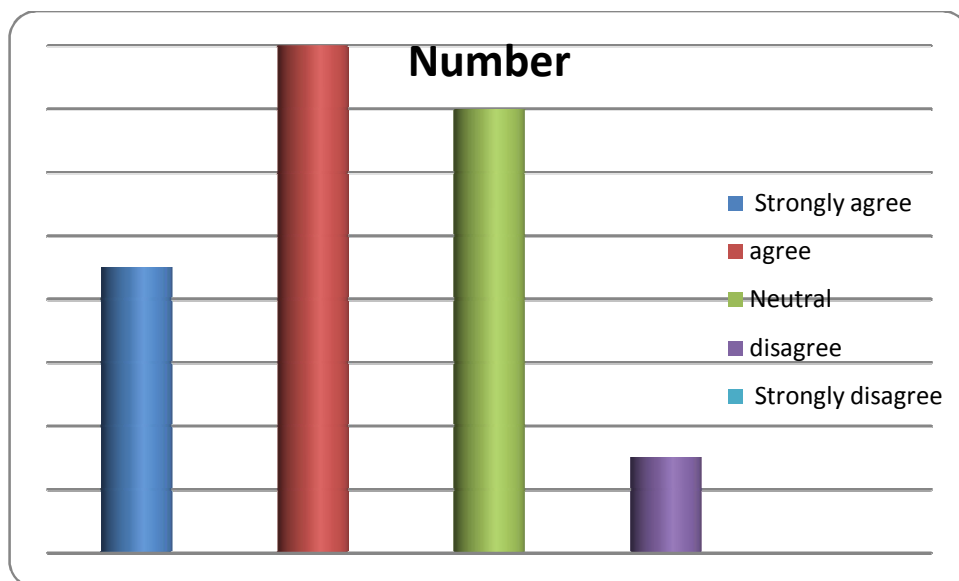


Table (14) and figure (14) shows that(59.5%)of the respondents were agree that(**BSC helps the organizations in figuring the most relevant strategic alternatives**), while (7.1%) disagree and only (33.3%) were not sure.

11. The BSC helps the organizations to determine the most appropriate strategic alternative:-

Table No.(15)The BSC helps the organizations to determine the most appropriate strategic alternative

The Answer	Number	Percentage %
Strongly agree	9	21.4
Agree	20	47.6
Neutral	12	28.6
Disagree	1	2.4
Strongly disagree	0	0
Total	42	100

Source: the researcher survey – questionnaire results

Figure (15)

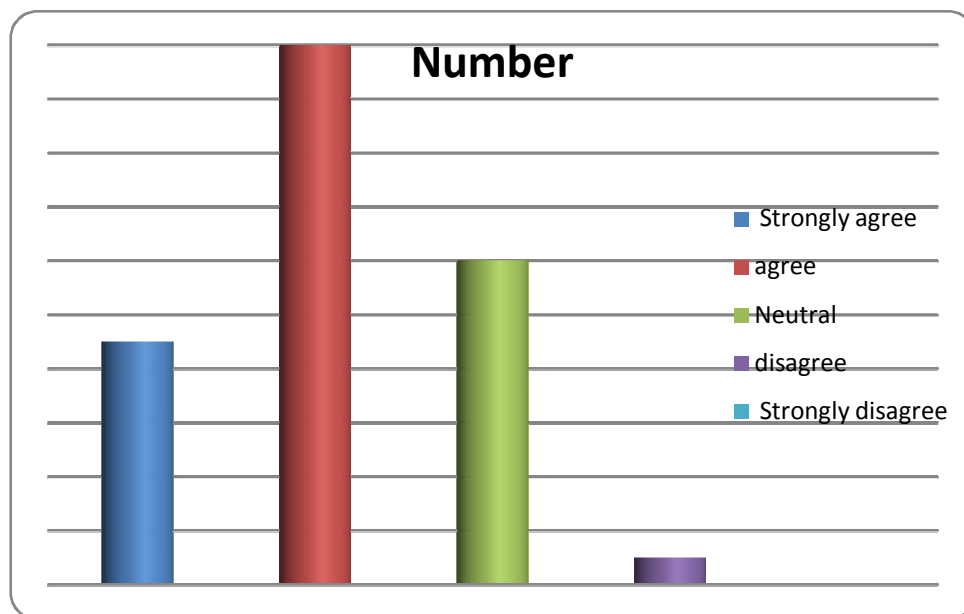


Table (15) and figure (15) shows that(69%)of the respondents were agree that(**the BSC helps the organizations to determine the most appropriate strategic alternative**), while (2.4%) disagree and only (28.6%) were not sure.

12. The BSC helps in organizational strategic plan development

Table No.(16)The BSC helps in organizational strategic plan development

The Answer	Number	Percentage %
Strongly agree	18	42.9
Agree	21	50
Neutral	1	2.4
Disagree	2	4.8
Strongly disagree	0	0
Total	42	100

Source: the researcher survey – questionnaire results

Figure (16)

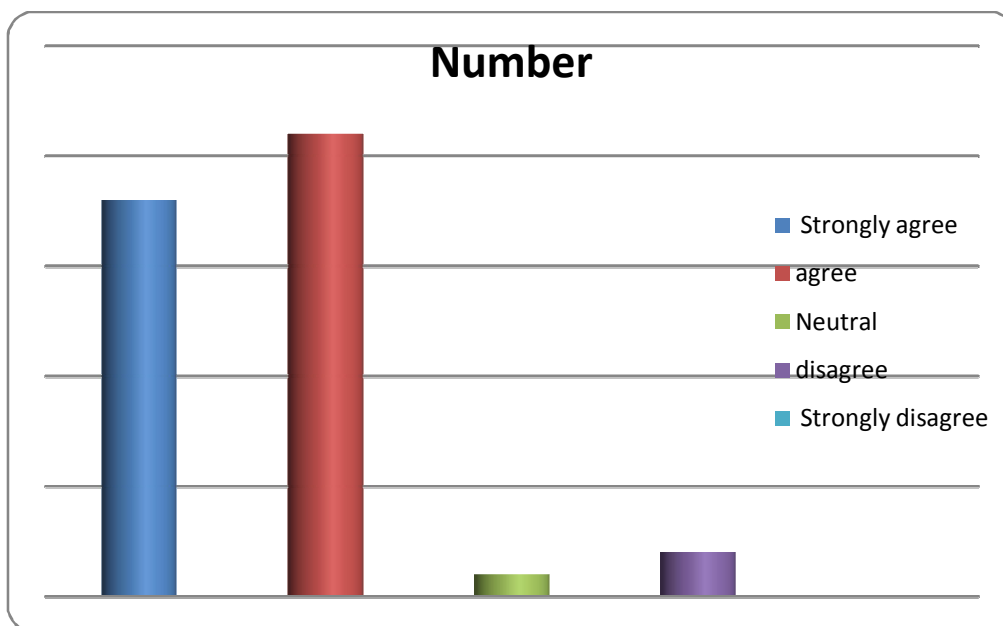


Table (16) and figure (16) shows that (92.9%)of the respondents agree that **(the BSC helps in organizational strategic plan development)**, while (4.8%) disagree and only (2.4%) were not sure.

13. Strategic plan implementation

Table No.(17)The BSC helps in translating strategy into objectives:-

The Answer	Number	Percentage %
Strongly agree	30	71.4
Agree	9	21.4
Neutral	1	2.4
Disagree	2	4.8
Strongly disagree	0	0
Total	42	100

Source: the researcher survey – questionnaire results

Figure (17)

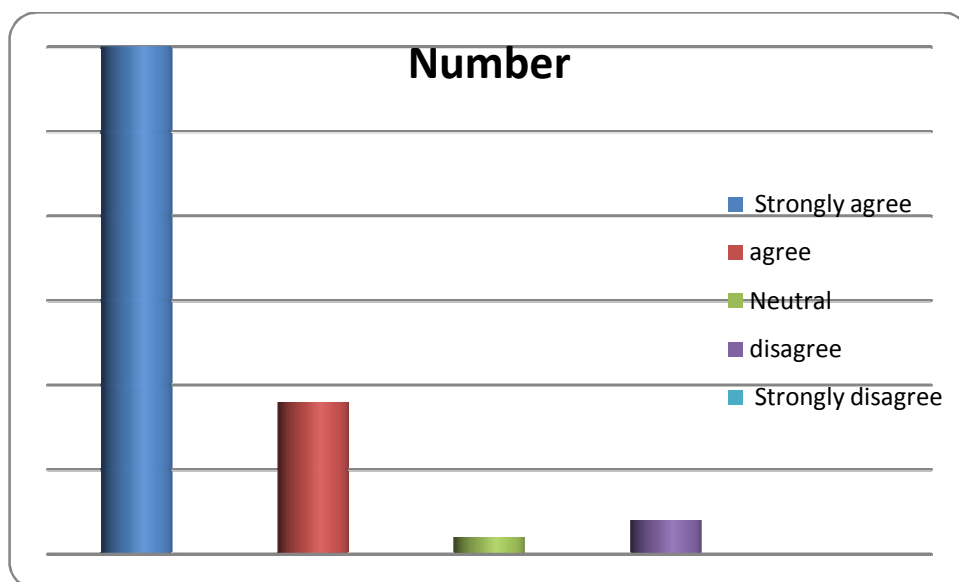


Table (17) and figure (17) shows that(92.8%)of the respondents agree that(**the BSC help in translating strategy into objectives**), while (4.8%)disagree and only (2.4%) were not sure.

14. The BSC help in creating strategic performance measures.

Table No.(18)The BSC helps in creating strategic performance measures

The Answer	Number	Percentage %
Strongly agree	19	45.2
Agree	19	45.2
Neutral	4	9.5
Disagree	0	0
Strongly disagree	0	0
Total	42	100

Source: the researcher survey – questionnaire results

Figure (18)

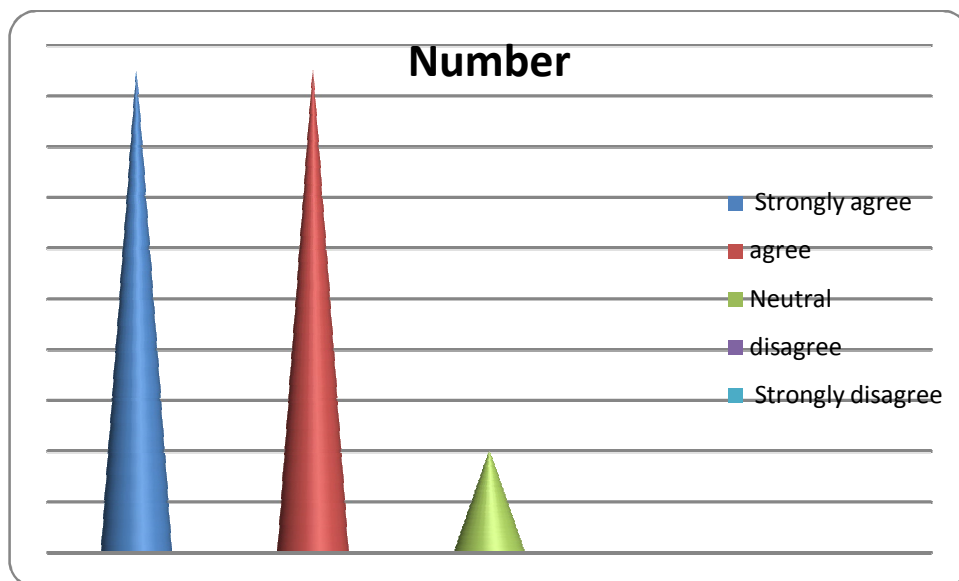


Table (18) and figure (18) shows that(90.4%)of the respondents were agree that(**the BSC helps in creating strategic performance measures**), while (0%) disagree and only (9.5%) were not sure.

15.The BSC helps incommunicating strategy to all organizational levels

Table No.(19)The BSC helps in communicating strategy to all organizational levels

The Answer	Number	Percentage %
Strongly agree	15	35.7
Agree	19	45.2
Neutral	8	19
Disagree	0	0
Strongly disagree	0	0
Total	42	100

Source: the researcher survey – questionnaire results

Figure (19)

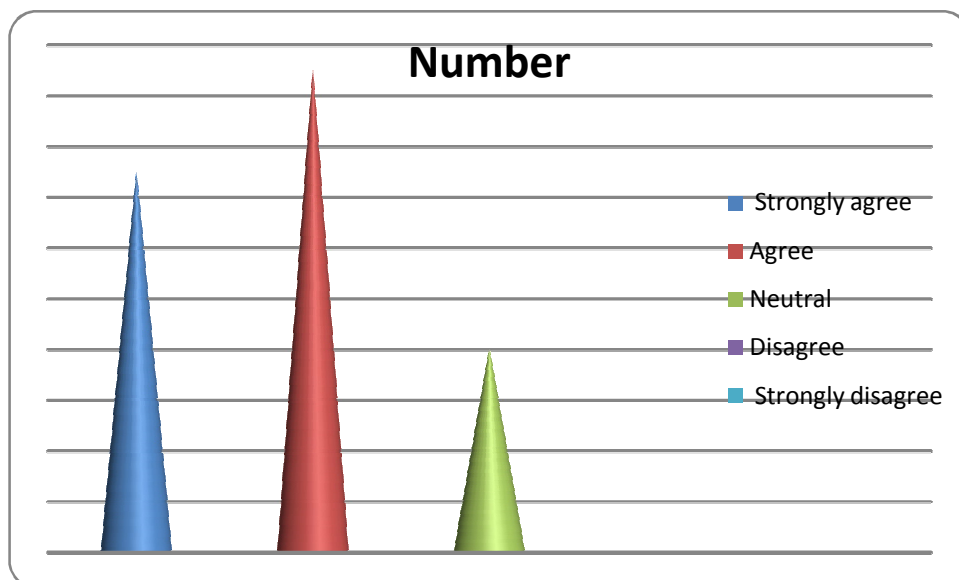


Table (19) and figure (19) shows that(80.9%)of the respondents were agree that(**the BSC helps incommunicating strategy to all organizational levels**), while (0%) disagree and only (19%) were not sure.

16.The BSC helps in aligning individuals objectives to the organizational vision and mission:-

Table No.(20)The BSC helps in aligning individuals objectives to the organizational vision and mission

The Answer	Number	Percentage %
Strongly agree	12	28.6
Agree	18	42.9
Neutral	10	23.8
Disagree	2	4.8
Strongly disagree	0	0
Total	42	100

Source: the researcher survey – questionnaire results

Figure (20)

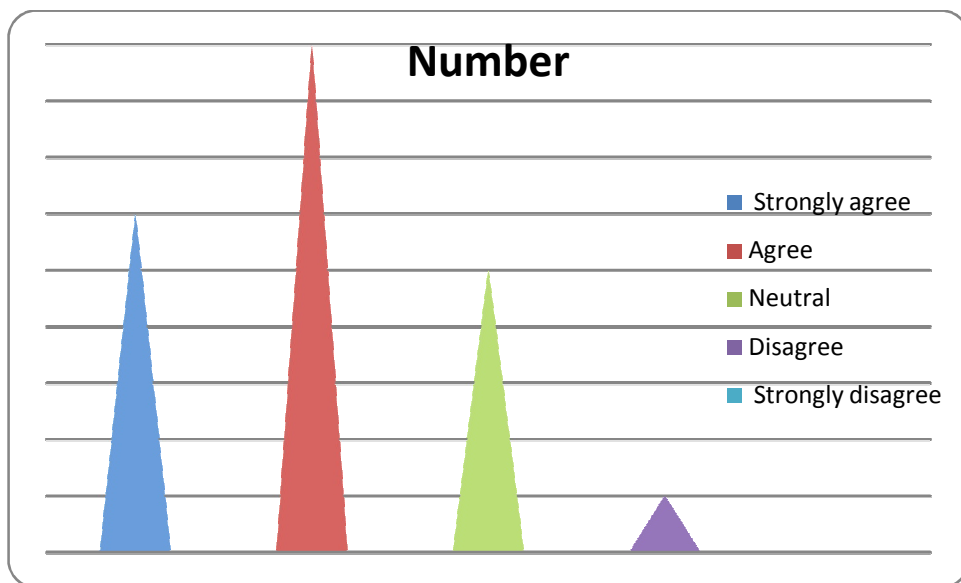


Table (20) and figure (20) shows that(71.5%)of the respondents were agree that(**the BSC helps in aligning individuals objectives to the organizational vision and mission**), while (4.8%) disagree and only (23.8%) were not sure.

17.The BSC helps in strategic performance measurement and monitoring:-

Table No.(21)The BSC helps in strategic performance measurement and monitoring

The Answer	Number	Percentage %
Strongly agree	18	42.2
Agree	21	50
Neutral	2	4.8
Disagree	1	2.4
Strongly disagree	0	0
Total	42	100

Source: the researcher survey – questionnaire results

Figure (21)

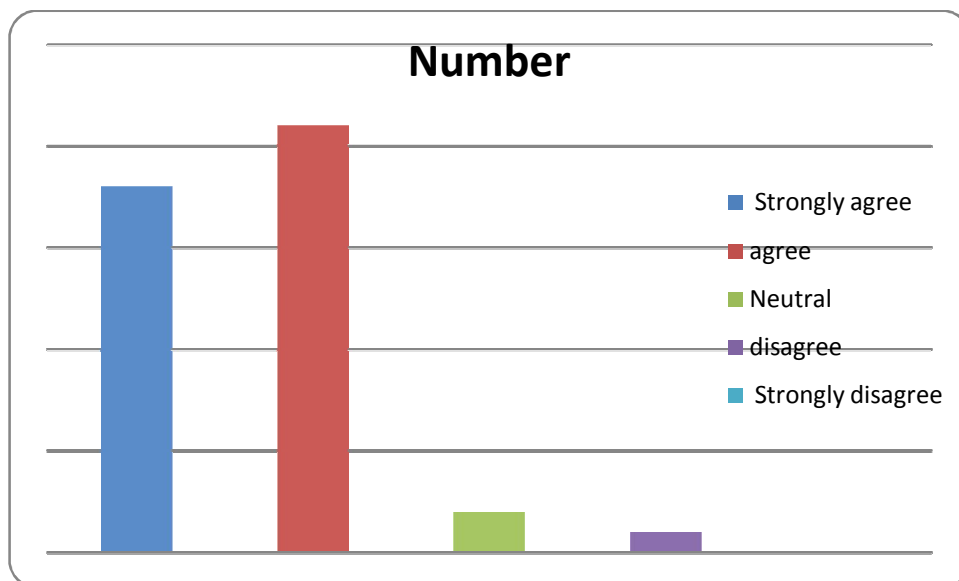


Table (21) and figure (21) shows that (92.2%)of the respondents were agree that(**the BSC helps in strategic performance measurement and monitoring**), while (2.4%) disagree and only (4.8%) were not sure.

18. The BSC helps in strategic performance management.

Table No(22)The BSC helps in strategic performance management:-

The Answer	Number	Percentage %
Strongly agree	14	33.3
Agree	22	52.4
Neutral	6	14.3
Disagree	0	0
Strongly disagree	0	0
Total	42	100

Source: the researcher survey – questionnaire results

Figure (22)

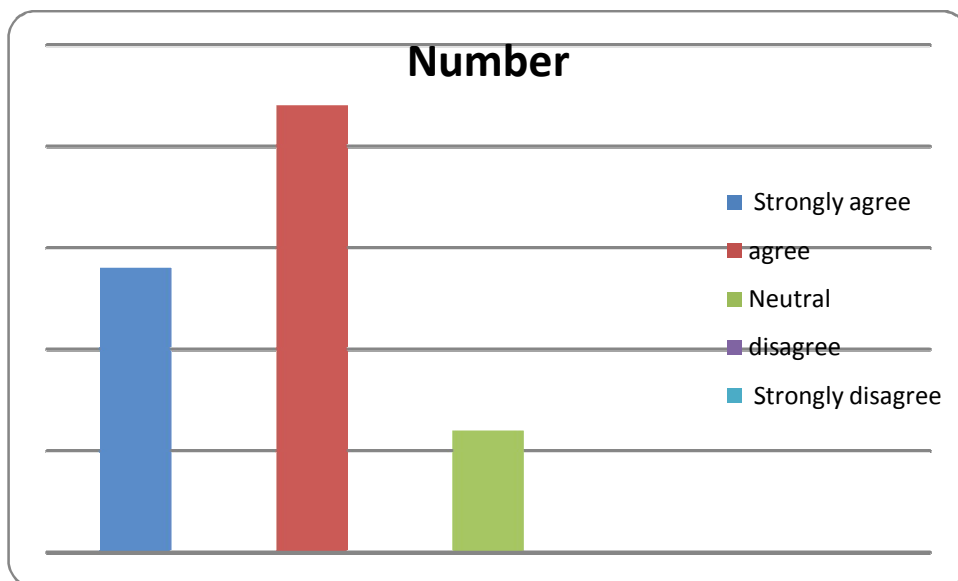


Table (22) and figure (22) shows that (85.7%) of the respondent were agree that **(the BSC helps in strategic performance management)**, while (0%) disagree and only (14.3%) were not sure.

19.The BSC helps in strategic performance improvement

Table No.(23)The BSC helps in strategic performance improvement:

The Answer	Number	Percentage %
Strongly agree	15	35.7
Agree	19	45.2
Neutral	8	19
Disagree	0	0
Strongly disagree	0	0
Total	42	100

Source: the researcher survey – questionnaire results

Figure (23)

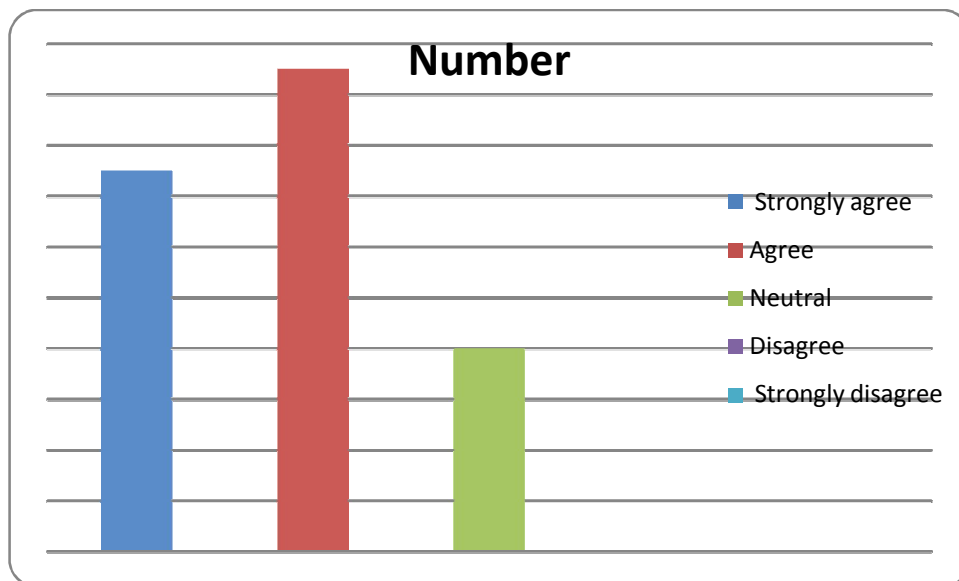


Table (23) and figure (23) shows that(80.9%)of the respondents were agree that(**the BSC helps in strategic performance improvement**), while (0%) disagree and only (19%) were not sure.

20.The BSC help in strategic performance learning

Table No.(24) The BSC helps in strategic performance learning

The Answer	Number	Percentage %
Strongly agree	12	28.6
Agree	18	42.9
Neutral	10	23.8
Disagree	2	4.8
Strongly disagree	0	0
Total	42	100

Source: the researcher survey – questionnaire results

Figure (24)

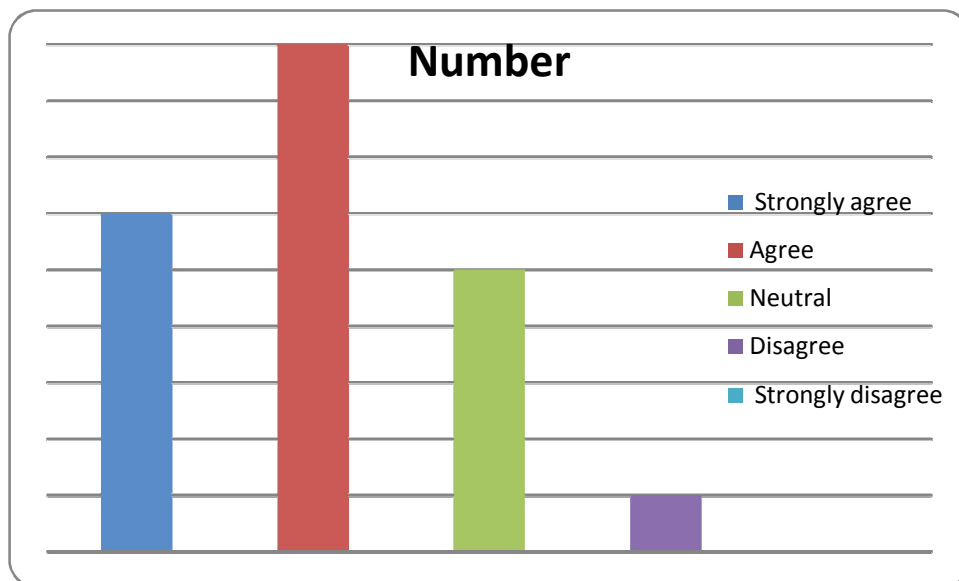


Table (24) and figure (24) shows that (71.5%)of the respondents were agree that(**the BSC helps in strategic performance learning**), while (4.8%) disagree and only (23.8%) were not sure.

4. Descriptive Data analysis:-

Here we are going to analyze the descriptive data from the statistical analysis for each item of the six items of the questionnaire in order to test the main hypothesis if there is:-

A significant impact relationship between strategic performance and the use of the BSC

To test the hypothesis we use the mean value for the six items of the questionnaire's and its sub questions in order to see who are agree, neutral and disagree with each question statement in each stage of the six stages of strategic performance from strategic planning to improvement, the mean value will give statistical evidence about the number of the sample who are agreeing, neutral and disagree.

And a chi-square test was carried out to examine where or not there are a significant differences between those who agree and disagree.

Table (25) the mean values for strategic planning function stage

Statement	mean	SD	interpretation	Rank
1-the BSC help in planning stag	4.47	0.551	Strongly agree	1
2-the BSC help in defining asset of procedures for strategic planning process	4.21	0.682	Strongly agree	3
3-the managers BSC knowledge affect significantly in strategic planning	4.33	0.874	Strongly agree	2

Source; own calculation based on data obtained from questionnaire

Secondly to test the statistical evidence of the differences between the numbers of those who agree, neutral and disagree for the above result. Chi-square test was used and the results are shown in table (26) bellow.

Table (26) the values of chi-square test

Statement	Chi-square	Sig
1-the BSC help in planning stag	18.14	0.000
2-the BSC help in defining asset of procedures for strategic planning process	8.14	0.017
3-the managers BSC knowledge affect significantly in strategic planning	26.76	0.000

Source; own calculation based on data obtained from questionnaire

Table (25) Shows that:-

The mean values of the respondent's answers were from (4.21 to 4.47) And this was more than 3 in a likert- scale that means all the respondents were strongly agree in their answers concerning this stage.

Table (26) Shows that:-

In this table we can see that the values of the chi- squire test (sig.) were between (0.00 and .017) and this was less than (0.05).

This indicates that there is a statistical evidence of significance differences between the answers for all the items tested in this stage.

Table (27) the mean values for establishing Strategic Foundation stage

Statement	mean	SD	interpretation	rank
1-the BSC need a clear mission statement	4.31	0.896	Strongly agree	2
2-the BSC help in long and short goal setting	4.32	0.643	Strongly agree	1
3-the BSC help the organization systematically measure actual performance vs. goals	4.19	0.772	Agree	3

Source; own calculation based on data obtained from questionnaire

Secondly to test the statistical evidence of the differences between the numbers of those who agree, neutral and disagree for the above result. Chi-square test was used and the results are shown in table (28) below.

Table (28) the values of the chi-square test

Statement	Chi-square	Sig
1-the BSC need a clear mission statement	24.4	0.000
2-the BSC help in long and short goal setting	11.28	0.000
3-the BSC help the organization systematically measure actual performance vs. goals	12.23	0.000

Source; own calculation based on data obtained from questionnaire

Table (27) Shows that:-

The mean values of the respondent's answers were from (4.19 to 4.32) And this was more than 3 in a likert- scale that means the majority of the respondents were strongly agree in their answers with the sub questions concerning this stage.

Table (28) Shows that:-

In this table we can see that the values of the chi- square test (sig.) was (0.00) and this was less than (0.05).

This indicates that there is a statistical evidence of significance differences between the respondents answering for all the items tested in this stage.

Table (29) the mean values for Strategic Analysis stage

Statement	mean	SD	Interpretation	rank
1-BSC help in defining the type of information needed for strategic analysis	4.02	0.780	Agree	2
2-BSC help strategic analysis process	4.05	0.824	Agree	1
3-BSC help in evaluating strategic analysis process	3.90	0.905	Agree	3

Secondly to test the statistical evidence of the differences between the numbers of those who agree, neutral and disagree for the above result. Chi-square test was used and the results are shown in table (30) bellow.

Table (30) the values of the chi-square test Chi-square

Statement	Chi-square	Sig
1-BSC help in defining the type of information needed for strategic analysis	17.61	0.001
2-BSC help strategic analysis process	13.81	0.003
3-BSC help in evaluating strategic analysis process	9.61	0.022

Source; own calculation based on data obtained from questionnaire

Table (29) Shows that:-

The mean values of the respondent's answers were from 3.9 to 4.05 And this was more than 3 in a likert- scale that means the majority of the respondents were strongly agree and agree in their answers concerning this stage.

Table (30) Shows that:-

In this table we can see that the values of chi- square test (sig.) were between (0.00 and .017) and this was less than (0.05).

This indicates that there is a statistical evidence of significance differences between the respondents who answers the items tested in this stage.

Table (31) the mean values for Strategic Plan Development stage

Statement	mean	SD	Interpretation	rank
1-BSC help the organization in figuring the most relevant strategic alternatives	3.73	0.885	agree	3
2-the BSC help the organization to determine the most appropriate strategic alternative	3.88	0.771	agree	2
3-the BSC help in organizational strategic plan development	4.31	0.748	Strongly agree	1

Source; own calculation based on data obtained from questionnaire

Secondly to test the statistical evidence of the differences between the numbers of those who agree, neutral and disagree for the above result. Chi-square test was used and the results are shown in table (32) bellow.

Table (32) the values of the chi-square test

Statement	Chi-square	Sig
1-BSC help the organization in figuring the most relevant strategic alternatives	9.61	0.022
2-the BSC help the organization to determine the most appropriate strategic alternative	17.61	0.001
3-the BSC help in organizational strategic plan development	31.33	0.013

Source; own calculation based on data obtained from questionnaire

Table (31) Shows that:-

The mean values of the respondent's answers were from (3.73 to 4.31) And this was more than 3 in a likert- scale that means all the respondents were strongly agree in their answers concerning this stage.

Table (32) Shows that:-

In this table we can see that the values of the chi- square test (sig.) were between (**0.001** and **0.022**) and this was less than (0.05).

This indicates that there is a statistical evidence of significance differences between the answers for all the items tested in this stage.

Table (33) the mean values of Strategic Plan Implementation stage

Statement	mean	SD	interpretation	rank
1- the BSC help in translating strategy into objectives	4.59	0.766	Strongly agree	1
2-the BSC help in creating strategic performance measures	5.36	0.655	Strongly agree	2
3-the BSC help incommunicating strategy to all organizational levels	4.26	0.734	Strongly agree	4
4-the BSC help in aligning individuals objectives to the organizational vision and mission	4.27	0.766	Strongly agree	3

Source; own calculation based on data obtained from questionnaire

Secondly to test the statistical evidence of the differences between the numbers of those who agree, neutral and disagree for the above result. Chi-square test was used and the results are shown in table (34) bellow.

Table (34) the values of the chi-square test

Statement	Chi-square	Sig
1- the BSC help in translating strategy into objectives	51.9	0.000
2-the BSC help in creating strategic performance measures	10.71	0.005
3-the BSC help in communicating strategy to all organizational levels	25.23	0.000
4-the BSC help in aligning individuals objectives to the organizational vision and mission	22.19	0.000

Source; own calculation based on data obtained from questionnaire

Table (33) Shows that:-

The mean values of the respondent's answers were from 4.21 to 4.47 And this was more than 3 in a likert- scale that means all the respondents were strongly agree in their answers concerning this stage.

Table (34) Shows that:-

In this table we can see that the values of the chi- square test (sig.) were between (0.00 and .017) and this was less than (0.05).

This indicates that there is a statistical evidence of significance differences between the answers for all the items tested in this stage.

Table (35) the mean values of Strategy Measurement, Monitoring and improvement stage

Statement	mean	SD	Interpretation	rank
1-the BSC help in strategic performance measurement and monitoring	4.33	0.686	Strongly agree	1
2-the BSC help in strategic performance management	4.19	0.670	agree	2
3-the BSC help in strategic performance improvement	4.17	0.729	agree	3
4-the BSC help in strategic performance learning	3.95	0.854	agree	4

Source; own calculation based on data obtained from questionnaire

Secondly to test the statistical evidence of the differences between the numbers of those who agree, neutral and disagree for the above result. Chi-square test was used and the results are shown in table (36) bellow.

Table (36) the values of the chi-square test

Statement	Chi-square	Sig
1-the BSC help in strategic performance measurement and monitoring	31.33	0.000
2-the BSC help in strategic performance management	9.14	0.000
3-the BSC help in strategic performance improvement	11.9	0.013
4-the BSC help in strategic performance learning	12.47	0.000

Source; own calculation based on data obtained from questionnaire

Table (35) Shows that:-

The mean values of the respondent's answers were from 4.21 to 4.47 And this was more than 3 in a likert- scale that means all the respondents were strongly agree in their answers concerning this stage.

Table (36) Shows that:-

In this table we can see that the values of the chi- square test (sig.) were between (0.00 and .017) and this was less than (0.05).

This indicates that there is a statistical evidence of significance differences between the answers for all the items tested in this stage.

Chapter three

Discussion Conclusion and Recommendation

Chapter three

Discussion Conclusion and Recommendation

3.1 Discussion

In this chapter we will discuss and interpret the field study according to the tables performed for the statistical analysis data, also in this chapter the main hypothesis of the study:-

There is a significant relationship between strategic performance improvement and the use of the BSC

Will be tested according to the results of the statistical analysis of the data, also the researcher performed interpretation for any stage of the six main stages of strategy which designed to cover the strategic performance and activities from planning to improvement separately in the questionnaire.

From the results of data analysis for the respondents who answered the questionnaire for each stage we can reveal that:-

1- Stage one (strategic planning function)

Table (25) Shows that:-

The mean values of the respondent's answers were from (4.21 to 4.47)

And this was more than 3 in a likert- scale that means the majority of the respondents were strongly agree in their answers concerning this stage.

Table (26):-

In this table we can see that the values of chi- square test (sig.) were between (0.00 and .017) and this was less than (0.05).

This indicates that there is a statistical evidence of significance differences between the answers for all the items tested in this stage.

So we can conclude that using the BSC has a significant impact in strategic planning function according to the sample of the respondent's answers.

2- Stage two (Establishing the Strategic Foundation)

Table (27) Shows that:-

The mean values of the respondent's answers were from (4.19 to 4.32)

And this was more than 3 in a likert- scale that means the majority of the respondents were strongly agree in their answers with the sub questions concerning this stage.

Table (28) Shows that:-

In this table we can see that the values of chi- square test (sig.) were (0.00) and this was less than (0.05).

This indicates that there is a statistical evidence of significance differences between the respondents' answers for all items tested in this stage.

So we can prove that using the BSC has a significant impact in Establishing the Strategic Foundation according to the sample of the respondent's answers.

3-Stage three (Strategic Analysis)

Table (29) Shows that:-

The mean values of the respondent's answers were from (3.9 to 4.05)

And this was more than 3 in a likert- scale that means the majority of the respondents were strongly agree and agree in their answers concerning this stage.

Table (30) Shows that:-

In this table we can see that the values of chi- square test (sig.) were between (0.00 and .017) and this was less than (0.05).

This indicates that there is a statistical evidence of significance differences between the respondents who answers the items tested in this stage.

So we can prove that using the BSC has a significant impact in strategic analysis stage according to the sample of the respondent's answers.

4- Stage four (Strategic Plan Development)

Table (31) Shows that:-

The mean values of the respondent's answers were from (3.73 to 4.31)

And this was more than 3 in a likert- scale that means all the respondents were strongly agree in their answers concerning this stage.

Table (32) Shows that:-

In this table we can see that the values of the chi- square test (sig.) were between (0.001 and 0.022) and this was less than (0.05).

This indicates that there is a statistical evidence of significance differences between the answers for all the items tested in this stage.

We can prove that using the BSC has a significant impact in strategic plan development) according to the sample of the respondent's answers.

5- Stage five (Strategic Plan Implementation)

Table (33) Shows that:-

The mean values of the respondents' answers were from (4.21 to 4.47)

And this was more than 3 in a likert- scale that means the majority of the respondents were strongly agree in their answers concerning this stage.

Table (34) Shows that:-

In this table we can see that the values of chi- squire test (sig.) were between (0.00 and .017) and this was less than (0.05).

This indicates that there is a statistical evidence of significance differences between the answers for all the items tested in this stage.

We can prove that using the BSC has a significant impact in strategic plan implementation) according to the sample of the respondent's answers.

6-Stage six (Strategy Measurement, Monitoring and improvement)

Table (35) Shows that:-

The mean values of the respondent's answers were from 4.21 to 4.47

And this was more than 3 in a likert- scale that means all the respondents were strongly agree in their answers concerning this stage.

Table (36) Shows that:-

In this table we can see that the values of the chi- squire test (sig.) were between (0.00 and .017) and this was less than (0.05).

This indicates that there is a statistical evidence of significance differences between the answers for all the items tested in this stage.

We can prove that using the BSC has a significant impact on **Strategy Measurement, Monitoring and improvement)** according to the sample of the respondent's answers.

We can see that using the BSC has a significant impact on each stage of the six stages of strategic performance, according to the statistical analysis (mean values and chi-squire significant test) for the sample of the respondents who answered the questionnaire, andfrom this result we can prove that using the BSC will definitely have a significant impact on all stages of strategy from planning to improvement so we can accept and prove the hypothesis of this research there is a relationship between using the BSC and the improvement of strategic performance in Sudanese manufacturing companies.

3.2 Conclusion

From this study and the results of the data analysis we can clearly prove that there is a significant impact from using the Balanced Scorecard BSC to improve strategic performance in manufacturing companies in Sudan.

This was clearly approved and gained from the statistical analysis of the answers of the targeted sample, and we also prove that from this study the impact of using the balanced score card (BSC) is even positive and vital when tested separately for each stage of strategy from planning to improvement.

3.3 Recommendations:

Based on the findings the study recommends the following:

- 1- A great concern must be given for using the BSC in all aspects of strategy from planning to improvement.
- 2- Leaders must have a good knowledge about the BSC functionality and attributes
- 3- A special concern should be given in using the BSC in translating the vision and mission into objectives
- 4- The BSC may not tell what measures can be adopted in the organization but it can effectively be used as a measurement tool

This study focused on using the BSC as strategic tool, further studies can be done to evaluate the use of the BSC as a:-

- 1- Management tool.
- 2- Measurement tool.

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Appendixes

Appendix A

Sudan University of science and Technology
Post Graduate College
Quality Centre

Questionnaire

Dear Sir

We have the pleasure to contact you,

Please answer the attached questionnaire

The data in this questionnaire will be used in the partial research as a requirement of MSc in the total quality management titled (Using the BSC to Improve Strategic Performance (In manufacturing companies in Sudan)).

From your point of view please check the most appropriate option in the specified field.

Your kind consideration will be highly appreciated

The data will be confidential and used only for scientific research.

Thanks in advance and best regards

Personal Information

1. Position

1	Chief Executive Officer	
2	Quality Management Representative	
3	Strategic Officer	

2. Experience in position

1	From (2- 4) years	
2	From (5-7) years	
3	More than 7 years	

3. BSC knowledge

1	Awareness	
2	Good	
3	Very good	

Appendix B

Stage (1) Planning Function:-

No	Questions	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
1	The BSC help in planning stage					
2	The BSC help in defining a set of procedures for strategic planning process					
3	The managers BSC knowledge affect significantly in strategic planning.					

Stage (2) Establishing the Strategic Foundation:-

No	Questions	Strongly agree	Agree	Neutral	dis agree	Strongly Disagree
4	The BSC need a clear mission statement					
5	The BSC help in long and short goal setting					
6	The BSC help the organization systematically measure actual performance vs. goals					

Stage (3) Strategic Analysis:-

No	Questions	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
7	BSC help in defining the type of information needed for strategic analysis					
8	BSC help in strategic analysis process					
9	BSC help in evaluating strategic analysis process.					

Stage (4) STRATEGIC PLAN DEVELOPMENT:-

No	Questions	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
10	BSC help the organization in figuring the most relevant strategic alternatives					
11	The BSC help the organization to determine the most appropriate strategic alternative					
12	The BSC help in organizational strategic plan development					

Stage (5) Strategic Plan Implementation

No	Questions	Strongly agree	Agree	Neutral	dis agree	Strongly Disagree
13	The BSC help in translating strategy into objectives					
14	The BSC help in creating strategic performance measures					
15	The BSC help in communicating strategy to all organizational levels					
16	The BSC help in aligning individuals objectives to the organizational vision and mission					

Stage (6) Strategy Measurement, Monitoring and improvement:-

No	Questions	Strongly agree	Agree	Neutral	dis agree	Strongly Disagree
17	The BSC help in strategic performance measurement and monitoring					
18	The BSC help in strategic performance management					
19	The BSC help in strategic performance improvement					
20	The BSC help in strategic performance learning					

