

# A Novel framework for Strategic Alliance of Knowledge Management Systems

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**Abstract**—Knowledge is the primary strategic resource of many organizations. Knowledge management system (KMS) is a process of knowledge extraction, storage, transformation, analysis, distribution and deployment. Strategic alliance plays an increasing role to a global scale in technology business competition. Organizations are able to use alliances to respond to new technology and deliver new products more efficiently. The relationship between knowledge management and strategic alliance is identified. Knowledge transfer and selecting suitable partner are critical factors in the success of strategic alliance of an organization. In this paper, a novel framework is proposed for KMS strategic alliance. By applying this framework, strategic alliance will be highly achievable in corporate companies.

**Index Terms**—Knowledge management system, Strategic alliance, Knowledge transfer, knowledge extraction, framework.

## I. INTRODUCTION

Knowledge is the primary strategic resource of many organizations. Every organization should use knowledge management system (KMS) to facilities extraction, storage, integration, retrieve, transformation, visualization, analysis, distribution, deployment of knowledge. KMS also provides knowledge discovery from database or data warehouse to develop a mechanism of knowledge distribution in the information network [1].

Strategic alliance plays an important role to globally uplift to a company in a technology business competition. Companies of corporate sector are working hard than ever to develop new products and new markets due to rapid and changing requirements of customers. Therefore, organizations are using strategic alliances for achieving their business goals in an environment of strong competition and technological change. Organizations are able to use alliances to respond to new technology and deliver new products more efficiently.

Alliance managers must decide when and how to select a partner. Top managers can control knowledge at each stage of the alliance process. Knowledge management principles and techniques have critical impact on the success of the alliance. There are several truths about knowledge management in alliance [2]:

- alliance can extensively increase organization financial returns if top management is able to manage knowledge correctly;
- alliance provides an opportunity to observe, learn and internalize the know-how of their partners.

This article is written to establish a relation between knowledge management and the knowledge management strategic alliance (KMSSA). A framework is proposed for KMS strategic alliance. Strategic alliance will be achievable by applying the proposed framework.

The reminder of this paper is organized as follow: the related work is described in section (II), the problem statement and the proposed solution are described in section (III), and Validation of the Proposed Solution is described in section (IV).

## II. RELATED WORK

Decision supports system for strategic situation has limitation at the intelligence phase like consuming more time due to irrelevant knowledge [3]. The solution of this problem is to filter knowledge and optimize relevant data. Strategic alliance for e-business enterprise is presented [4]. It can be achieved by considering four key issues: persistent customer-oriented viewpoints, choosing the suitable cooperators, keep an enterprise independent and strengthen learning abilities of teams [4].

Studies are illustrated in [5] [6] to address the business strategy requirements of organizations by involving top management. The existing enterprise information resource management model is inefficient [7]. It is important to follow the integrity, history, security and sharing principles to build a model to achieve comprehensive information technology and knowledge innovation [7]. Another business model is presented for new technology-based firms for the main areas of strategic decision-making (locus, modus, focus) [8].

Integration measures are defined for supply chain management in retail business such as optimizing from the supply chain design aspects, use of information technology, use modern logistics thinking and establish strategic alliance [9]. Strategic plan management depends on knowledge and financing [10]. The objective is to show the effect of information system on strategic planning in higher education. There is a close relationship

between knowledge management and knowledge management system [11]. A framework is proposed that has 5 phases: strategic awareness, situational analysis, strategy conception, strategy formulation, and strategy implementation planning.

One of the organizational resources that guarantee the sustainability of competitiveness is knowledge [12]. Organization managers must have the ability to manage knowledge process. There are four popular processes of knowledge management that are creation, storage, transfer and application. A case study is presented for a global energy company using knowledge management system. The case study shows an approach to share and control knowledge within the company to achieve success [13].

Strategic alliance is a joint between different business organizations for a set of a period of time. The strategic alliance shares resources, capabilities and core competences. Knowledge management creates and transfers knowledge through alliance enterprises. Inter-firm knowledge transfer has two processes that are communication and cognitive processes [14]. Successful technological innovation alliance depends on knowledge sharing and new knowledge creation [15].

III. PROBLEM STATEMENT AND THE PROPOSED SOLUTION

Following is the research question derived based on the literature review [7] [8] [9].

“What is role of knowledge management (KM) in strategic alliance?”

Three sub questions are raised by dividing the research question.

- What is the relation between knowledge management and strategic alliance?
- What is the main factor for successful strategic alliance?
- What are knowledge management system strategic alliance (KMSSA) phases?

We propose a new phase ‘strategy implementation planning’ into the existing knowledge management framework as shown in fig. 3. The main purpose of this phase is to implement KMS project. The main activities of this phase are defining operations, evaluating budget need and identifying timing and alliance enterprise restrictions.

IV. VALIDATION OF THE PROPOSED SOLUTION

Validation of the proposed solution is conducted using an electronic survey. An electronic survey is conducted

using Twitter, Facebook and email. Questions are divided into four goals. These goals are identifying knowledge management and identifying alliance, determining alliance success factors and importance of knowledge management system in business planning. Identifying of knowledge management system strategic planning (KMSSA) framework and its phases.

Q1: what is the effect of the knowledge on the business success?

Table 1 shows that 82.5% (where 40% very high and 42.5% high) of respondents are supportive to question 1. 5% of the respondents are disagreed. 12.5% of the respondents are neutral. The results show that this question has a high effect on the business success. Fig. 1 shows the results of Table 1 graphically.

Table 1. Result for Question 1

Likert Scale	Frequency	Percent
1	0	0 %
2	2	5 %
3	5	12.5 %
4	17	42.5 %
5	16	40 %
Total Respondent	40	100%

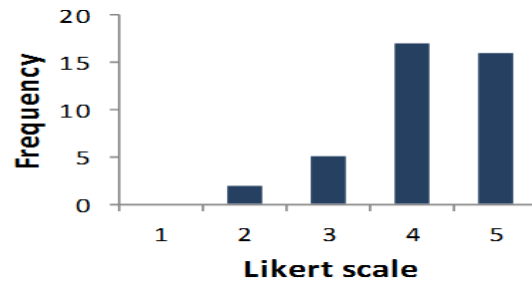


Fig. 1. Graphical Representation of Question 1

Q2: Are you aware of the strategic alliance?

Table 2 shows that 72.5% of the respondents were supportive to question 2. 25% of the people are agreed to very low and low and 35% of the respondents are neutral. Fig. 2 displays the results of Table 2 graphically.

Table 2. Result for Question 2

Likert Scale	Frequency	Percent
1	5	12.5 %
2	5	12.5 %
3	14	35 %
4	13	32.5 %
5	3	7.5 %
Total Respondent	40	100%

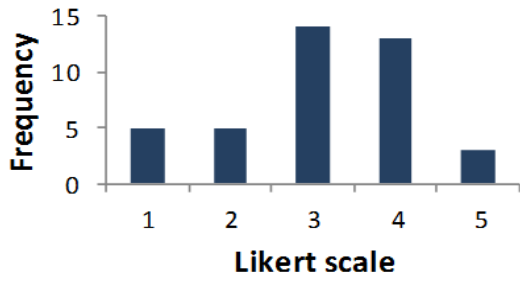


Fig. 2. Graphical Representation of Question 2

Q3: What is the effect of the knowledge on the alliance success?

Table 3 shows that 80 % of respondents are in favour of question 3. The percentage of the people who have a neutral opinion neither agree nor disagree is 20%. Fig. 4 displays the results of Table 3 graphically.

Q4: Does alliance provide an improvement in corporation between business enterprises?

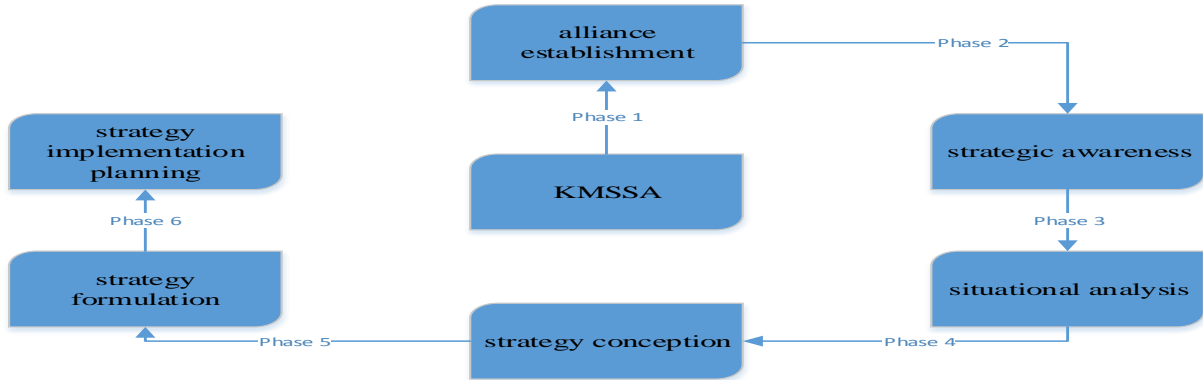


Fig. 3. KMSSA framework phases

Table 3. Result for Question 3

Likert Scale	Frequency	Percent
1	0	0 %
2	0	0 %
3	8	20 %
4	25	62.5 %
5	7	17.5 %
Total Respondent	40	100%

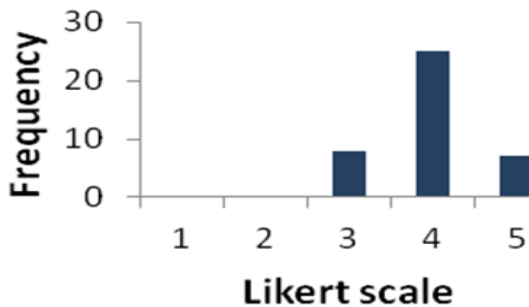


Fig. 4. Graphical Representation of Question 3

Table 4 shows that 77.5% of respondents are supportive to question 4 whereas 2.5% of respondents are disagreed. The percentage of the people who have a neutral opinion neither agree nor disagree is 20%. Fig. 5 shows the results of Table 4 graphically.

Table 4. Result for Question 4

Likert Scale	Frequency	Percent
1	1	2.5 %
2	0	0 %
3	8	20 %
4	24	60 %
5	7	17.5 %
Total Respondent	40	100%

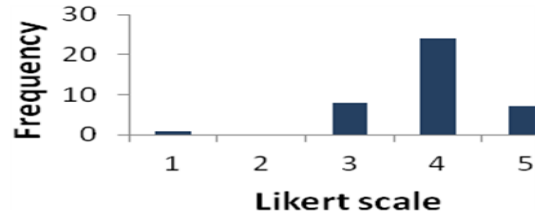


Fig. 5. Graphical Representation of Question 4

Q5: Does knowledge management have important effect on strategic alliance?

Table 5 shows that 77.5% of respondents are supportive to question 5 whereas 2.5% of the people are disagreed. The percentage of the people who have a neutral opinion neither agree nor disagree is 20%. Fig. 6 presents the results of Table 5 graphically.

Table 5. Result for Question 5

Likert Scale	Frequency	Percent
1	0	0 %
2	1	2.5 %
3	8	20 %
4	20	50 %
5	11	27.5 %
Total Respondent	40	100%

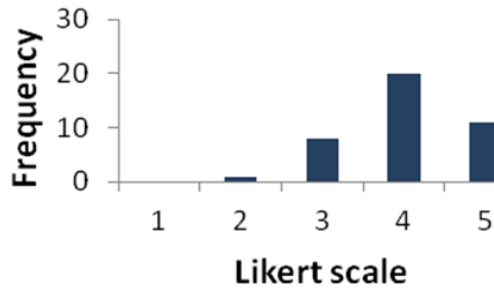


Fig. 6. Graphical Representation of Question 5

Q6: Do you think that the alliance has improved?

Table 6 shows that 55% of respondents are supportive to question 6 whereas 40% of the people are disagreed. The percentage of the people who have a neutral opinion neither agree nor disagree is 5%. Fig. 7 shows the results of Table 6 graphically.

Table 6. Result for Question 6

Likert Scale	Frequency	Percent
1	0	0 %
2	2	5 %
3	16	40 %
4	12	30 %
5	10	25 %
Total Respondent	40	100%

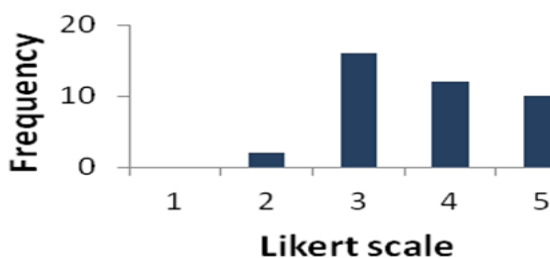


Fig. 7. Graphical Representation of Question 6

Q7: what is the effect of "knowledge transfer" between alliance partners?

Table 7 shows that 75% of respondents are supportive to question 7 whereas 5 % of the people are disagreed. The percentage of the people who have a neutral opinion

neither agree nor disagree is 20 %. Fig. 8 displays the results of Table 7 graphically.

Table 7. Result for Question 7

Likert Scale	Frequency	Percent
1	0	0 %
2	2	5 %
3	8	20 %
4	24	60 %
5	6	15 %
Total Respondent	40	100%

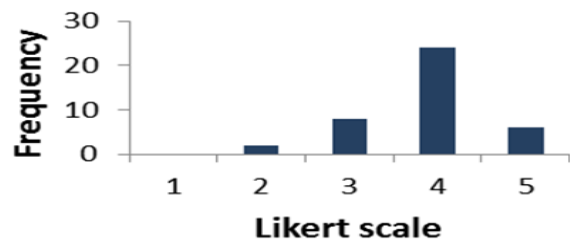


Fig. 8. Graphical Representation of Question 7

Q8: What is the effect of "knowledge transfer" in improving the strategic alliance?

Table 8 shows that 72.5% of respondents are supportive to question 8 whereas 5% of the people are disagreed. The percentage of the people who have a neutral opinion neither agree nor disagree is 22.5 %. Fig. 9 presents the results of Table 8 graphically.

Table 8. Result for Question 8

Likert Scale	Frequency	Percent
1	1	2.5 %
2	1	2.5 %
3	9	22.5 %
4	20	50 %
5	9	22.5%
Total Respondent	40	100%

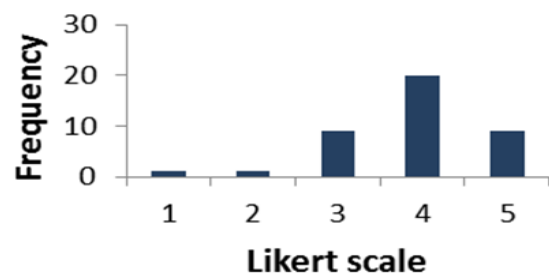


Fig. 9. Graphical Representation of Question 8

Q9: what is the effect of selection of the good partner in improving strategic alliance?

Table 9 shows that 67.5% of respondents were supportive to question 9 whereas 2.5% of the people are

disagreed. The percentage of the people who have a neutral opinion neither agree nor disagree is 30 %. Fig. 10 presents the results of Table 9 graphically.

Q10: what is the effect of alliance in business performance of the facilities?

Table 10 shows that 75% of respondents are supportive to question 10 whereas 5% of the people are disagreed. The percentage of the people who have a neutral opinion neither agree nor disagree is 20 %. Fig. 11 shows the results of Table 10 graphically.

Table 9. Result for Question 9

Likert Scale	Frequency	Percent
1	0	0 %
2	1	2.5 %
3	12	30 %
4	15	37.5 %
5	12	30 %
Total Respondent	40	100%

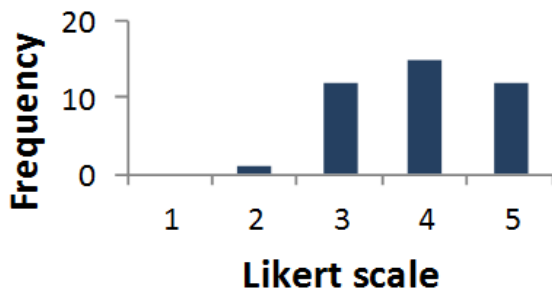


Fig. 10. Graphical Representation of Question 9

Table 10. Result for Question 10

Likert Scale	Frequency	Percent
1	0	0 %
2	2	5 %
3	8	20 %
4	21	52.5 %
5	9	22.5 %
Total Respondent	40	100%

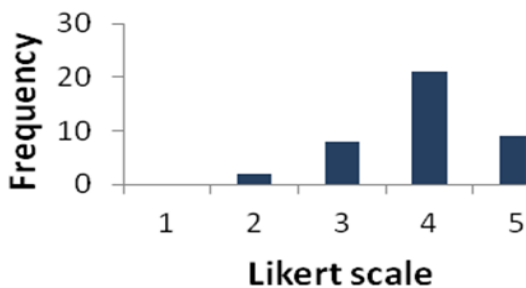


Fig. 11. Graphical Representation of Question 10

Q11: What is the effect Knowledge management system in business quality improvement?

Table 11 shows that 80% of respondents are supportive to question 11 whereas 2.5% of the people are disagreed. The percentage of the people who have a neutral opinion neither agree nor disagree is 17.5 %. Fig. 12 presents the results of Table 11 graphically.

Q12: Do you prefer a system to assist you planning the business strategy?

Table 12 shows that 82.5% of respondents are supportive to question 12 whereas 5% of the people are disagreed. The percentage of the people who have a neutral opinion neither agree nor disagree is 12.5 %. Fig. 13 displays the results of Table 12 graphically.

Table 11. Result for Question 11

Likert Scale	Frequency	Percent
1	1	2.5 %
2	0	0 %
3	7	17.5 %
4	22	55 %
5	10	25 %
Total Respondent	40	100%

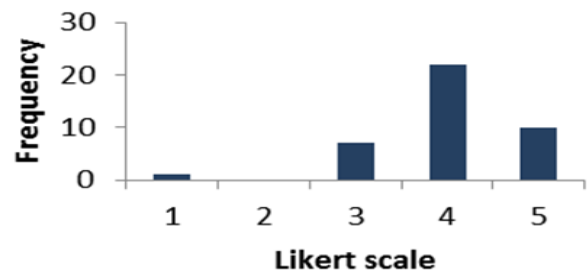


Fig. 12. Graphical Representation of Question 11

Table 12. Result for Question 12

Likert Scale	Frequency	Percent
1	0	0 %
2	2	5 %
3	5	12.5 %
4	23	57.5 %
5	10	25 %
Total Respondent	40	100%

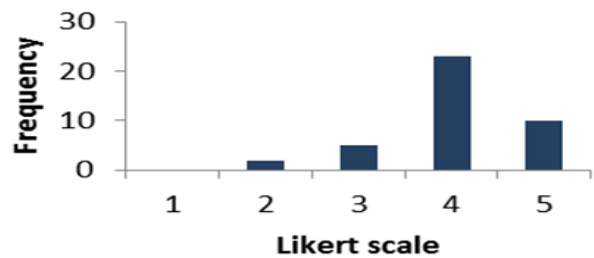


Fig. 13. Graphical Representation of Question 12

Q13: What is the effect of enterprise resources in knowledge management?

Table 13 shows that 70% of respondents are supportive to question 13 whereas 5% of the people are disagreed. The percentage of the people who have a neutral opinion neither agree nor disagree is 25 %. Fig. 14 shows the results of Table 13 graphically.

Table 13. Result for Question 13

Likert Scale	Frequency	Percent
1	1	2.5 %
2	1	2.5 %
3	10	25 %
4	23	57.5 %
5	5	12.5 %
Total Respondent	40	100%

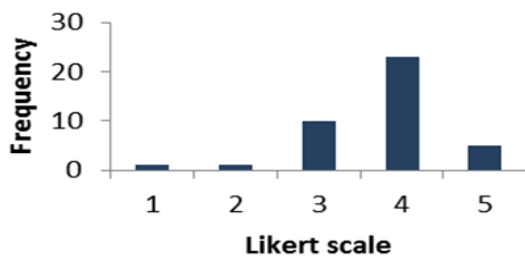


Fig. 14. Graphical Representation of Question 13

Q14: Have you use knowledge management system strategic planning in your business?

Table 14 shows that 42.5 % of respondents are in favour of question 14 whereas 22.5% of the people are disagreed. The percentage of the people who have a neutral opinion neither agree nor disagree is 35 %. Fig. 15 presents the results of Table 14 graphically.

Table 14. Result for Question 14

Likert Scale	Frequency	Percent
1	4	10 %
2	5	12.5 %
3	14	35 %
4	8	20 %
5	9	22.5 %
Total Respondent	40	100%

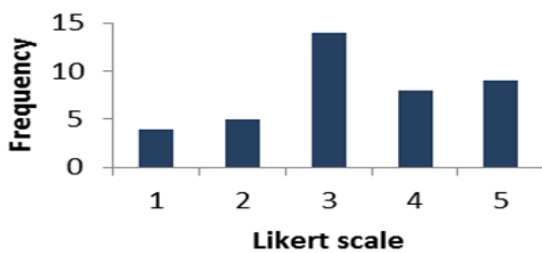


Fig. 15. Graphical Representation of Question 14

Q15: What is the effect of 'alliance establishment' phase in improving the efficiency of knowledge

management system strategic alliance framework?

Table 15 shows that 67.5% of the respondents are supportive to question 15 whereas 2.5% of the people are disagreed. The percentage of the people who have a neutral opinion neither agree nor disagree is 30%. Fig. 16 displays the results of Table 15 graphically.

Table 15. Result for Question 15

Likert Scale	Frequency	Percent
1	1	2.5 %
2	0	0 %
3	12	30 %
4	18	45 %
5	9	22.5 %
Total Respondent	40	100%

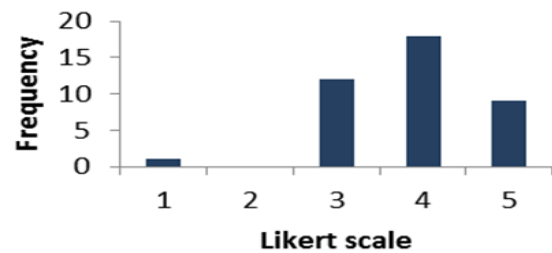


Fig. 16. Graphical Representation of Question 15

Q16: Does the 'strategic awareness' makes it clear for the top management to understand the objects and aligning knowledge management system?

Table 16 shows that 70% of the respondents are supportive to question 16 whereas 7.5% of the people are disagreed. The percentage of the people who have a neutral opinion neither agree nor disagree is 22.5%. Fig. 17 displays the results of Table 16 graphically.

Table 16. Result for Question 16

Likert Scale	Frequency	Percent
1	1	2.5 %
2	2	5 %
3	9	22.5 %
4	22	55 %
5	6	15 %
Total Respondent	40	100%

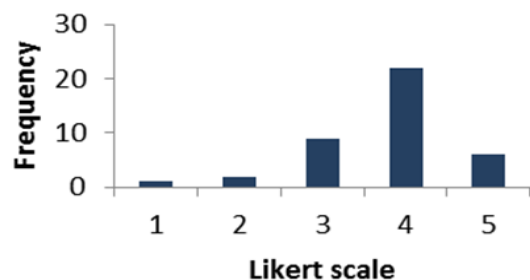


Fig. 17. Graphical Representation of Question 16



Q17: Has the ‘situational analyses’ succeeded to address the fail and success points of the KMS situation?

Table 17 shows that 65% of the respondents are supportive to question 17 whereas 2.5% of the people are disagreed. The percentage of the people who have a neutral opinion neither agree nor disagree is 32.5 %. Fig. 18 presents the results of Table 17 graphically.

Table 17. Result for Question 17

Likert Scale	Frequency	Percent
1	0	0 %
2	1	2.5 %
3	13	32.5 %
4	21	52.5 %
5	5	12.5 %
Total Respondent	40	100%

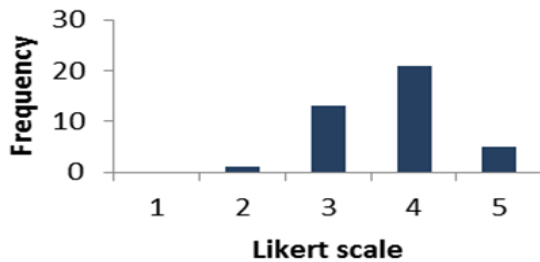


Fig. 18. Graphical Representation of Question 17

Q18: Does strategy formulation succeed to determine the KMS operations, responsibilities and technical architecture?

Table 18 shows that 75% of the respondents are supportive to question 17 whereas 2.5% of the people are disagreed. The percentage of the people who have a neutral opinion neither agree nor disagree is 22.5 %. Fig. 19 displays the results of Table 18 graphically.

Table 18. Result for Question 18

Likert Scale	Frequency	Percent
1	0	0 %
2	1	2.5 %
3	9	22.5 %
4	19	47.5 %
5	11	27.5 %
Total Respondent	40	100%

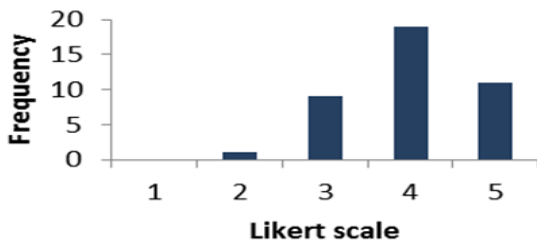


Fig. 19. Graphical Representation of Question 18

V. CONCLUSION AND FUTURE WORK

There are several features of this research. First, it demonstrates the close relationship between knowledge management and strategic alliance. According to our study, knowledge transfer and selection partner are critical factors in the success of strategic alliance. The proposed KMSSA includes six phases namely alliance establishment, strategic awareness, situational analysis, strategy conception, strategy formulation and strategy implementation planning. An effective implementation of the proposed framework will increase the chances of alliance success. The result of successful alliance will lead to better corporate performance, reduce cost of solving recurring problems, enhance product quality and increase maturity level. Future research aims to clarify the role of alliance knowledge mangers in implementing KMSSA.

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