

# **SUCCESS FACTORS IN KNOWLEDGE SHARING BEHAVIOUR AMONG STUDENT BLOGGERS**

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**2013**

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**CHAPTER 1, CHAPTER 2, CHAPTER 3, CHAPTER 4 and CHAPTER 6** was mainly adopted from PhD thesis : Sulaiman,N.I.S.,(2010). *The Critical Success Factors for Knowledge Sharing Behaviour among Malaysian Undergraduate Students*. Unpublished PhD, The University of Salford, Manchester, United Kingdom.

**CHAPTER 2** also was mainly adopted from monograph entitled '*Knowledge Sharing Behaviour*, **Nor Intan Saniah Sulaiman,2012,UUM Press**.

## **ACKNOWLEDGEMENTS**

In the name of Allah, Most Gracious, Most Merciful. All praise and thanks are due to Allah, and peace and blessings be upon His Messenger.

We wish to express our deepest gratitude to Dean of Student Development and Alumni for approval of this grant and support for this research. We also like to extend our appreciation to our top management in school for encouragement in doing this research.

Our sincere thanks also go to all who participated in this research, specifically to Siti Khadijah Md Ali as good assistant researcher and all the selected respondents in three colleges in UUM. We are also grateful to Student Affairs Department for funding this research.

Finally, we owe our special thanks and deepest gratitude to our lovely family distinguishably who always encourage us in our job scope. Not forget to our kids, big thanks for their love and understanding and indirectly always encourage us in our career.

Nor Intan Saniah Sulaiman  
Mazlan Mohd Sappri

February 2013

## CHAPTER 1: OVERVIEW OF RESEARCH

### 1.1 Introduction to the Research

The aim of this research is to identify which factors may enable to Malaysian undergraduate students in sharing their knowledge successfully. Each university has their own method of delivering knowledge to their undergraduates, but occasionally there is still a need to meet the requirements of students and this has not been achieved. The research question is: what is the criterion enforce knowledge sharing behaviour successful among Malaysian undergraduate students in Universiti Utara Malaysia. From the research question, it lead to form the aim of this research in identify the success factors for effective knowledge sharing behaviour among selected Malaysian undergraduate students in Universiti Utara Malaysia. This research is initiated with an introduction to knowledge. The importance of knowledge to humans and also its connection with this research is the focus to begin with.

### 1.2 Knowledge

In the new global economy, knowledge has become a central issue of primary resource for individuals (Drucker, 1992).

*'Knowledge is a fluid mix of framed experience, values, contextual information and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routine, processes, practices and norms'*

(Davenport and Prusak, 1998, in Gamble and Blackwell, 2001; Zheng, 2005; Abdul Aziz and Lee, 2007; Ke and Wei, 2007)

The definition of knowledge above shows that Davenport and Prusak (1998) found that knowledge is recognised and has become the most significant outline of capital needed. Furthermore, Karl Wiig's definition below also shows us the significance of knowledge in our lives as human beings too.

*'Knowledge consists of truths and beliefs, perspectives and concepts, judgments and expectations, methodologies and know-how. Knowledge is accumulated, organized and*

*integrated and held over longer periods to be available to be applied to handle specific situations and problems. Information consists of facts and data that are organized to describe a particular situation or problem. Knowledge also subsequently applied to internet for the available information about the particular situation and to decide how to handle it'.....*

(Wiig, in Brooking, 1996)

Knowledge can be arranged into a hierarchy according to Bender and Fish (2000). As Figure 1.1 shows, they classified it into four categories: data, information, knowledge and expertise. Commonly the hierarchy starts with the data, which refers to raw numbers and facts (Liyanage et al., 2009). It becomes information when the data becomes understandable and has meaning. Information then becomes processed data. Knowledge is also the application and productive use of information (Roberts, 2000). Knowledge is gained via a transformation through personal application, values and beliefs. This raises a good point which is that knowledge mainly comes from an individual's brain originally (Liyanage et al., 2009). It is different to expertise, because expertise is about specialised deep knowledge and understanding a specific area in more depth than most people (Bender and Fish, 2000; Liyanage et al., 2009). Some researchers put expertise down as wisdom (Figure 1.2) in a historical context (Liebowitz, 1999; Krajnovic, 2007).

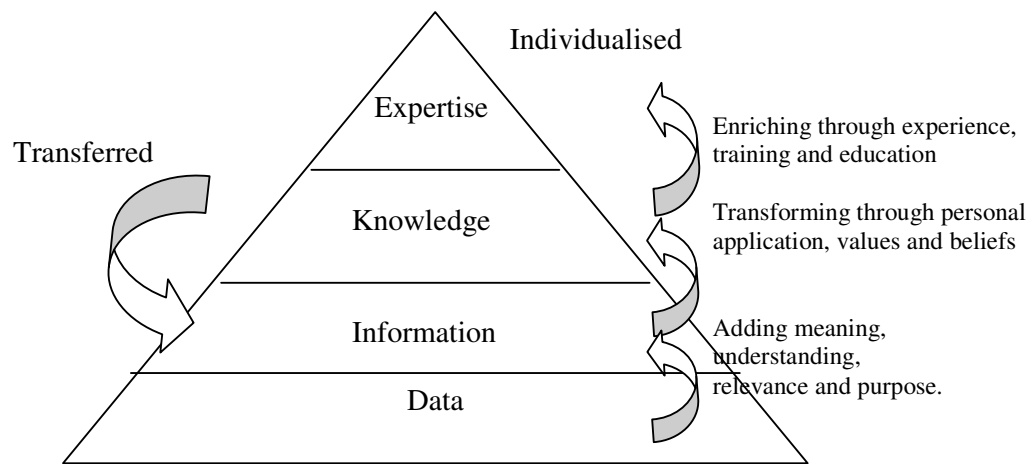


Figure 1.1: Knowledge hierarchy (Bender and Fish, 2000)

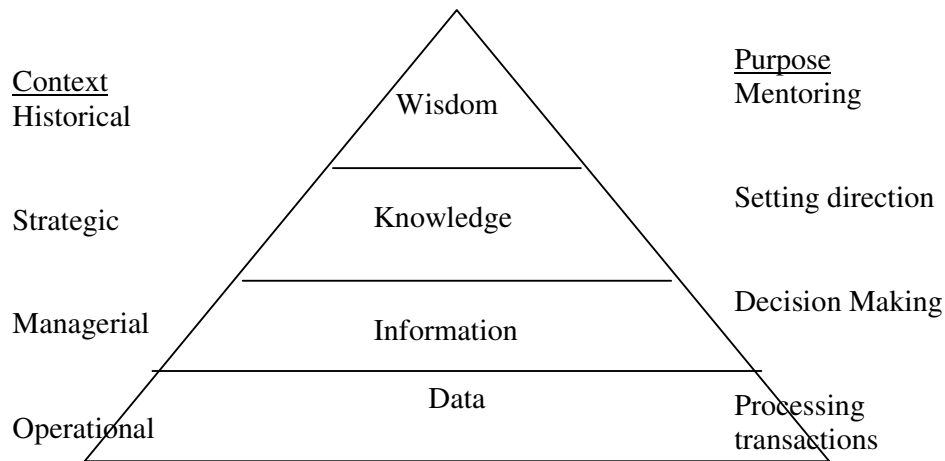


Figure 1.2: The hierarchy of knowledge (Liebowitz, 1999)

Storey and Barnett (2000) point out that various studies have highlighted a shift of focus from technical factors to human factors. At its early stage, knowledge management (KM) was largely in the domain of information technology (IT). According to a report by Storey and Barnett (2000), about 70 percent of articles on knowledge management in 1998 appeared in information technology or information systems (IS) publications. These articles focus on how to create the best technology to help companies manage their core knowledge. This turned out to be an ineffective approach to knowledge management. The failure was mostly due to an overemphasis on information technology and a lack of attention to human factors such as motivation, attention, creativity and organisational culture (Martensson, 2000; Malhotra, 2002; Storey and Barnett, 2000). To address this lack of attention to human factors, there emerged another approach to knowledge management that focused on social and cultural factors (Davenport et al., 1998). Politis (2003) claimed that the new creation model of knowledge management is more about people; therefore it looks at actions and has little to do with technology.

Politis' statement is made stronger by the statement by Gurteen (1999) on his website (<http://www.gurteen.com>), where he tries to correlate knowledge management and knowledge sharing with looking at knowledge management as the business for philosophy. It involves principles on process, organisation structures and technology. These principles may help people to apply knowledge to achieve their business' purpose. Furthermore, he tries to change the old paradigm about knowledge being power to the idea that sharing knowledge is power. This shows that knowledge sharing can empower people to fulfil a job effectively, maintain career development and achieve personal recognition targets.

However, the field of knowledge management and intellectual capital (IC) was predicted to explode in the year 2010. This statement is proven by a study into the meta-analysis of this field which discovered that the literature consists of more than 100,000 publications (Serenko and Bontis, 2004). This study will therefore look deeply into the concept of human capital (HC) of knowledge management and knowledge sharing (KS). Human capital is one of the primary components under intellectual capital. Graduates are one of the important sources of human capital for every country. Furthermore, the government of Malaysia stays aware of the importance of human capital to the country. In Malaysia's science and technology policy for the 21<sup>st</sup> century, it is stated that Malaysia should change to become a knowledge-based country that is driven by human capital, and, quality wise, human capital should become the main factor for its independence and wealth (Official Portal, Ministry of Science, Technology and Innovation, 2009). Moreover, to ensure Malaysia achieves its targeted aspirations, extensive endeavours must be implemented, to build up human capital. Indirectly, it may increase the nation's competitiveness, efficiency and capability for modernisation (Office of the Prime Minister of Malaysia, 2010).

### **1.3 Problem Statement**

This research is concerned with how Malaysian undergraduate students assess and share the information so that it becomes knowledge to enhance their student lives. The outcome statement is based on Yuen and Majid's (2007) research. This study (Yuen and Majid, 2007) found knowledge sharing implementation in learning styles among Singaporean undergraduates. Besides that, this study (Yuen and Majid, 2007) applied quantitative approach and is concerned more related with general knowledge sharing in academic, rather than knowledge sharing behaviour in student development. Meanwhile, for this research, the researcher tries to identify the criterion in knowledge sharing behaviour among undergraduate's bloggers in their soft skills development. However, there are obstacles in knowledge sharing behaviour that can occur either at an organisation level, group level or individual level (Jain et al., 2007). Culture is one of the main obstacles which is cited repeatedly in the literature on knowledge management (Ikhsan and Rowland, 2004a; Riege, 2005; Ramirez, 2007; Jain et al., 2007; Rosen et al., 2007). In addition, other obstacles in knowledge sharing include lack of communication and social networking skills (Riege, 2005), lack of time (Rosen et al., 2007) and lack of trust (Cross and Baird, in Yuen and Majid, 2007; Riege, 2005). Furthermore, many situations occur where individuals will not share their personal knowledge on certain topics. This situation can be attributed to various factors

including physical, technological, psychological, personality and cultural issues (Riege, 2005 and Yuan et al., in Yuen and Majid, 2007).

An additional factor is lack of motivation or rewards (Davenport, 1997, Soo et al., in Ramirez, 2007; Smith and McKeen, in Yuen and Majid, 2007), as people are reluctant to share without incentives. Another main obstacle in knowledge sharing is the 'power of knowledge mentality' (Davenport, 1997; Chaudry, 2005; McClure and Faraj, in Yuen and Majid, 2007; Ramirez, 2007). People normally do not like to share their best ideas because it reduces their credibility in the organisation and their ability to move ahead (Greengard, in Ramirez, 2007; Bender and Fish, 2000; Martensson, 2000 and Miller, in Ramirez, 2007). Based on the findings of this study (Yuen and Majid, 2007) it may be assumed that our undergraduates should realise the importance of skills in communication and social networking (Riege, 2005). With this assumption, barriers such as lack of communication skills and social networking can be reduced.

Besides the barriers in knowledge sharing behaviour, nowadays the Ministry of Higher Education of Malaysia does not have any specific policy or rules to ensure that all the Malaysian undergraduate students share their knowledge to survive their lives in the campus. At this moment knowledge sharing behaviour scenarios are determined by Malaysian undergraduate students themselves or supported by the university facilities. In other means, There are no mechanism or no study proof on how we can identify which criterion undergraduates tends to share their experiences, information even the knowledge they gain with their friends, family or their community itself

#### **1.4 Research Aim and Objectives**

The aim of this research is to identify the criterion for effective knowledge sharing behaviour among students' bloggers in Universiti Utara Malaysia. From the previous studies (Yuen and Majid, 2007; Sulaiman, 2009, Sulaiman, 2010) that are quite similar to this research, it would seem that no research has been done yet to identify the criterion for effective knowledge sharing behaviour among students' bloggers in Universiti Utara Malaysia. In addition, the



researcher aims to look at this subject from the student development perspective, specifically for their preparation in getting a good job after they graduate.

The four objectives are:

1- Identifying the criterion of knowledge shared among students' bloggers in Universiti Utara Malaysia who are members registered in appropriated bloggers communities.

To achieve this objective, the researcher did a preliminary study through interviews to appropriate committee members to learn what types of knowledge are shared among the students.

2- Exploring the process of knowledge sharing behaviour among students' bloggers in Universiti Utara Malaysia by using content analysis (CA).

To achieve this objective, the researcher carried out the main data collection to identify the factors which can determine the success of knowledge sharing behaviour among them.

3- Creating a way of evaluating the effectiveness of knowledge sharing behaviour.

To achieve this objective, the researcher validated the multi-criteria decision making to ensure the findings in the main data collection were accurate and supported by the validation results.

4- Developing a model presenting how the knowledge sharing behavior process among students' bloggers in Universiti Utara Malaysia.

To achieve this objective, which is also the main aim of this research; the researcher identified the tested model and adapted it to this research context to present a model of critical success factors of knowledge sharing behaviour among students' bloggers in Universiti Utara Malaysia.

## **1.5 Research Rationale and Scope**

Recently, many knowledge management studies were done in diverse sectors in Malaysia. These sectors include public services (Salleh and Ahmad, 2005; Ikhsan and Rowland, 2004a; Ikhsan and Rowland, 2004b), small and medium enterprises (Wong, in Ramachandran et al., 2007), information technology and Multimedia Super Corridor (MSC) organisations (Chong a; Chong b; Chong and Lin; Chong et al, in Ramachandran et al., 2007), in telecommunication (Chong et al., in Ramachandran et al., 2007), oil and gas (Abdul Aziz and Lee, 2007) and also

finance and banking (Ali and Ahmad, 2006). Studies on knowledge management in the education sector exist but are limited. However, there has been little discussion about knowledge management in education, with only two studies found by the researcher. The first research focuses on knowledge sharing implementation among academic staff in Klang Valley (Jain et al., 2007), and the second is about organisational culture and knowledge management processes of an institution of higher learning (Sharimllah et al., 2007). However, far too little attention has paid to knowledge sharing implementation among university students. This current work is applied to Singapore and only focuses on knowledge sharing patterns in student learning styles (Yuen and Majid, 2007).

This study will be restricted to Malaysian undergraduate students who have good communication skills as well as basic information technology skills. Eppler (2007) suggested that knowledge communication has become an interactive message, which can be either verbal or non-verbal. Furthermore, communication skills have become one of the most important elements needed. Recently, communication tools which are affected by technology have also become extremely important. Due to the rapid changes in trends for a competitive society now is increasingly exists (Burke, 2007), such as, the new concept of the digital culture, this is still a new scenario to Malaysian undergraduate students.

In addition, for the validation purpose, the technique that has been used was Multi-Criteria Decision Making (MCDM) and chosen based on consistency and practicality when it's applied to problem domains. Focus is given to determine the relative importance of the criteria involved, and based on the calculated weight. The proposed techniques to apply Multi-Criteria Decision Making method are discussed in **Chapter 3**.

### **1.6 Contribution to the Body of Knowledge**

This research is based on findings from previous research studies (Jain et al., 2007; Yuen and Majid, 2007; Ramirez, 2007; Al-Alawi et al., 2007 and Zheng, 2005) on the relationship between knowledge management, knowledge sharing and technology Web 2.0. The main contributions from this research are the integrated adapted theories. More specifically, the contributions of this research are as follows:

1. A new model based on four established theories
2. The construction of a new model based on four established theories on the critical success factors of knowledge sharing behaviour among Malaysian undergraduate students.

3. The new definition of knowledge sharing behaviour and technology Web 2.0 based on this research context

At the end of this study, the new findings may assist the Malaysian government with gaining new policies and producing successful students. A successful student here means having a knowledge sharing lifestyle during their student life on campus. The four extended new findings are:

1. Establishing the types of knowledge shared among Malaysian undergraduates.
2. Identification of the mediums of how knowledge is shared among Malaysian students.
3. Effectiveness of knowledge sharing behaviour using the appropriate theory.
4. Creation of a new model for knowledge sharing behaviour for Malaysian undergraduate students.

The research work starts in **Chapter 2**, where the literature review regarding knowledge sharing behaviour and critical success factors are explored and the gaps in the findings are outlined. This is followed by identification of the theoretical framework for this research in **Chapter 3** where the data collection purpose is revealed. How this research was done was elaborated in Chapter 4. Meanwhile the findings are discussed and presented in **Chapter 5**. Then, discussion and conclusion was in **Chapter 6**. Summary in summary for this research also was described in **Chapter 6**.

## **1.7 Organisation of Research Report**

This research report is structured into six chapters. The report presents the progress of the research in a planned and logical manner. **Chapter 1** introduces the research area of concern. This chapter begins with an analysis of the research background, encompassing the knowledge sharing barriers and the needs of human capital for the nation in terms of knowledge management. Then, this chapter proceeds with the problem statement. The chapter then describes in detail the research questions and research objectives. The scope of the research involving its context is clarified. The chapter also describes the significance of the research, based on its contributions to theory, practice and methodology. Lastly, the chapter gives an overview of the thesis structure.

**Chapter 2** discusses the literature related to knowledge sharing, critical success factors, and the potential success factors for this research and Malaysian undergraduate students. The

discussion begins with the knowledge sharing perspectives that elaborate the conception of knowledge sharing and its issues. To place the discussion within the critical success factors and knowledge sharing behaviour, the existing critical success factors and their relationship with knowledge sharing is further explained. The potential success factor for this research is also discussed. The explanation of Malaysian undergraduate students and the importance of Malaysian undergraduate students to the nation of Malaysia also are highlighted in this chapter. The suitability of the concept chosen in this research is clarified and justified. The chapter then presents the conceptual framework used for this research. Finally, the outcomes of the literature discussion conclude the chapter.

**Chapter 3** discusses the applied theories and theoretical framework for this research. It includes the applied theories that are related and relevant with the research scope. The five applied theories are from the various disciplines which are Receiver Based Theory (RBT), Social Cognitive Theory (SCogT), Theory of Planned Behaviour (TPB), Social Capital Theory (SCapT) and Social Exchange Theory (SET). Then the theoretical framework is presented for categorisation identification and analysis themes.

**Chapter 4** describes the methodology used in the research. The chapter begins by discussing the research paradigm of the study. Then the chapter describes the research procedures, which consist of the sampling used and the methods of data collection. They include discussions on survey and interviews.

**Chapter 5** discusses the data analysis for research findings. This chapter begins with research methodology which was applied for this research. In this research, Malaysian undergraduate students were referred to students in Universiti Utara Malaysia. It includes an explanation of applied theories justification, findings classification and idea mapping. Then the justifications for critical success factors are described, based on the findings. A summary of the findings discussion concludes the chapter.

**Chapter 6** concludes the research and identifies the research contributions. The chapter draws conclusions by describing the research outcomes in relation to the achievements of the research objectives. The chapter then examines the research contributions to theory, practice and methodology. Lastly, the chapter discusses recommendations for future research.

## **CHAPTER 2: KNOWLEDGE SHARING BEHAVIOUR INTO THE CONTEXT OF THE LITERATURE REVIEW**

### **2.1 Introduction**

In this chapter, the development of the knowledge sharing behaviour effectiveness model will be discussed. This chapter reviews the literature concerning the roles of knowledge management and knowledge sharing, and the relationship of critical success factors in knowledge management and knowledge sharing. The researcher goes on to apply the literature from existing critical success factors to this research context. Then, the potential of the critical success factors from the perspectives of this research is discussed in the next section. These potential success factors are looked at from three perspectives: community, personal and technology Web 2.0 within the knowledge sharing concept. This is followed by a discussion about Malaysian undergraduate students for this research context. A summary of the current state of higher education in Malaysia is discussed, and a description of a focus group of Malaysian undergraduates is also provided.

### **2.2 Knowledge and Knowledge Management**

Knowledge is an important element in human life (Davenport and Prusak, 1998). The definition of knowledge must be clarified before discussing knowledge sharing terms because it determine the way a study focuses on knowledge management (Biejerse, 1999).

The definition by Davenport and Prusak has been quoted by many academicians and practitioners (Gamble and Blackwell, 2001; Abdul Aziz and Lee, 2007; Ke and Wei, 2007; Zheng, 2005; Gammelgaard and Ritter (in Al-Alawi et al., 2007); Kim and Lee, 2006). Meanwhile many experts in management also have their own definition of knowledge, for example Wiig(1993) claimed that knowledge is about truths and beliefs, perspectives and concepts, judgments and expectations, methodologies and know-how. However, Nonaka and Takeuchi (in Kubo et al., 2001) define knowledge as clear job-related information and the skills and experience required to carry out tasks. Furthermore, Gammelgaard and Ritter (in Al-Alawi et al., 2007) concluded that knowledge is a combination of life experiences which

can evaluate and contribute new ideas. Based on this, Al-Alawi et al., (2007) suggest that knowledge is not limited to paper or databases, it also exists in people's minds and is expressed by their behaviours. In other words, knowledge is also defined as justified belief which can enhance an entity's ability for action improvement (Alavi and Leidner, 1999; Huber and Nonaka (in Ke and Wei, 2007).

Knowledge is different from information in the sense that it is restricted to context, is more subjective and is connected to behaviour (Shaari, 2009).

*“Information becomes knowledge when it is interpreted by individuals and given a context in the beliefs and commitments of individuals”* (Nonaka et al., 2000).

In addition, Biejerse (1999) confirms that knowledge is more than information; it cannot simply be said, and it is seen more as a capability. In other words, the researcher agrees with the definition of knowledge as a justified belief which can enhance an entity's ability to act and improve (Ke and Wei, 2007). Knowledge consists mainly of explicit knowledge and tacit knowledge. Explicit knowledge can be described as documented knowledge while tacit knowledge can be known as non-documented knowledge (Ali and Ahmad, 2006; Brooking, 1996; Jain et al., 2007; Selamat and Choudrie, 2007; Zheng, 2005; Song, 2002; Kim and Lee, 2006; Brent and Vittal, 2007). This definition is the suitable definition in this research context.

This kind of knowledge is embedded personally in an individual experience and depends on other factors such as personal belief, perspective and value system (Shaari, 2009). Gourlay (2002) discovered that tacit knowledge has their identical term and defines it as practical know-how. It is informal rather than formal among professional groups including managers. Meanwhile, implicit knowledge shares slight similarities with tacit knowledge. This implicit knowledge is knowledge that is hidden in the operating procedures, methods or corporate culture of the company. Since they are hidden, they are difficult for the novice or beginner to identify and learn (Brooking, 1996). In other words, it can also be concluded as experience of the owner of knowledge.

On the other hand, Yang (in Zheng, 2005) has identified emancipatory knowledge as the third dimension and it means the sentimental component of knowledge that determines one's view

about how the world should be and is the product of seeking freedom from natural and social restraints.

This type of knowledge has led to the epistemology of knowledge, where Nonaka and Takeuchi (1995) explained the basic gaps between Western and Japanese philosophy of 'knowledge inquiry'. The purpose of understanding the epistemology is that it may influence managerial practices. It may, in terms of managerial thought, lead to either knowledge or innovation. In the Western philosophical tradition, it is influenced by the 'Cartesian split'. It happens within the subject as the knower and the object as the known, mind and body, or mind and matter.

However, in Japanese philosophy, knowledge is based on the strong traits of intellectual tradition. It includes: (1) individual of humanity and nature; (2) individual of body and mind; and (3) individual of self and other. In order to make important elements in the notion of knowledge in Japanese tradition, the concept of integration was introduced. The human relationship characteristics are collective and organic in relation to the aforementioned notion. Furthermore, according to Nonaka and Takeuchi (1995), the greatest importance is within the individual. Those are the key elements for social interaction within knowledge conversion. This is supported by the idea that knowledge is dependent on the context itself due to the dynamic, relational and human action basis. So, this means that the situation and the people involved are important rather than truths or facts themselves.

This situation reflects the Malaysian scenario, according to Mohayidin et al., (2007), where the realisation that knowledge is an intellectual asset is important. Their study reports that the Malaysian Ministry of Higher Education identified knowledge management as one of the requisites to ensure that Malaysia becomes a quality hub of higher education that is able to compete with other developing countries. This study of efficient and effective knowledge management is reported by Marwick (2001). His study found that knowledge management typically requires suitable grouping of managerial, community, and administrative efforts with suitable technology. Furthermore, in the field of business information technology, various definitions of knowledge management are found (Brooking, 1996; Rowley, 1999; Liebowitz, 2000; Alavi and Leidner, 1999; Zheng, 2005; Hult, 2003; Scott and Law, 2006; Hawamdeh, 2007). In other meanings, knowledge management can also be considered as the process of transforming information and intellectual assets into enduring values (Alias, 2008). This is because it can connect people with the knowledge that they need to take action, when

they need it (Alias, 2008). Furthermore, knowledge management can also be one discipline that allows the transformation of ideas and information into business values (Alias, 2008). Generally, the researcher concludes that knowledge management can be described as a process, approach or method based on how to manage knowledge in organisations. Thus, knowledge sharing is one of the important knowledge activities in the knowledge management process. This will help to explain, in the next section, knowledge sharing in the context of knowledge management to adapt with these research issues.

### **2.2.1 Knowledge Sharing (KS) in the Knowledge Management (KM) context**

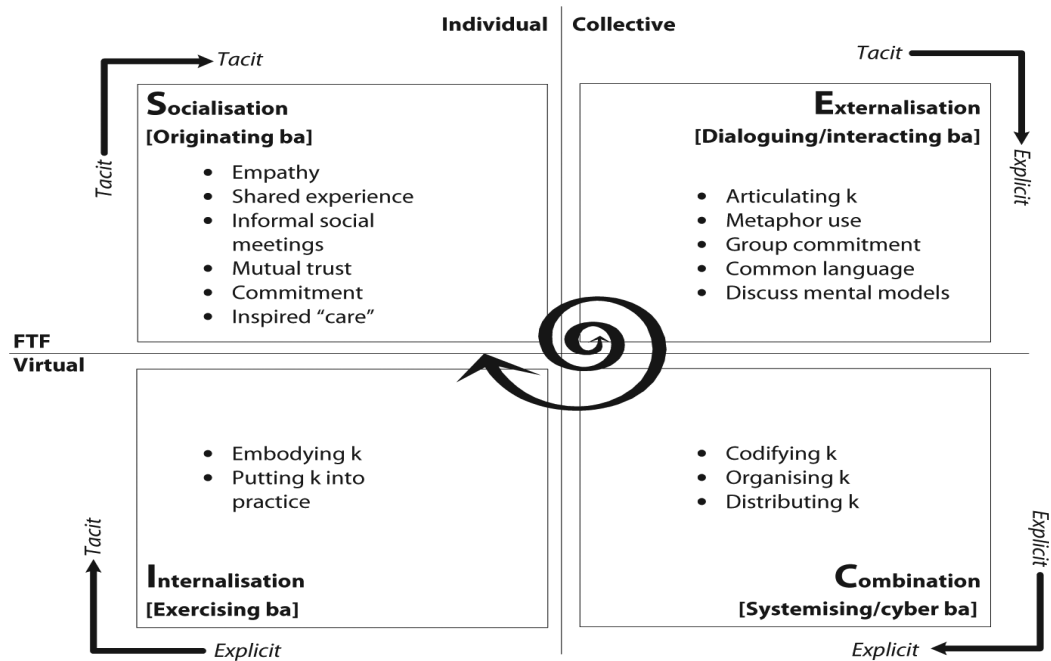
Thomas et al. (in Shaari, 2009) have their own perspective about human and social factors; which these factors are the most important elements of knowledge management. It is not knowledge management without both of these things: human and social factors. Two objectives for achieving the knowledge management process are getting the right knowledge to people and those people engaging with it and learning it. Thus, it must go through the process of socialisation and involve social interactions to achieve knowledge sharing behaviour (Smith, 2005; Connelly and Kelloway, 2003; Yang, 2004; Sun, 2003).

This social interaction consists of individual interactions and participation. It happens when both of these important elements are involved, making the knowledge sharing effective. Furthermore, the individual interactions, which involve the usage of knowledge and the value of the knowledge, can be applied to interaction itself (Ferne et al., 2003). Indirectly, the tacit knowledge resides in relationships (Gourlay, 2001). Through this relationship, the method of communicating is important. This led Probst et al. (2000) to claim that communication is an essential element to ensure the knowledge sharing process is involved actively. Furthermore, based on Socialisation, Externalisation, Combination and Internalisation (SECI) by the Nonaka model, a discussion on knowledge sharing with adoption of the term knowledge conversion (Nonaka et al., 2000) has been done. For Nonaka et al. (2000), the term knowledge conversion provides the same meaning of knowledge sharing that is used in this research context. This means knowledge conversion involves converting something or someone from one thing to another (Cambridge Advanced Learner's Dictionary, 2009). It brings the same meaning to knowledge sharing which is the disclosure of existing knowledge to others to create new knowledge (Boyd et al., 2007).

This is how the Socialisation, Externalisation, Combination and Internalisation model works: it is a 'spiral' process, where interaction happens repeatedly. This is because the individual



may interact with other individuals, a group or the organisation itself (Nonaka and Takeuchi, 1995). In the first mode, knowledge conversion happens when new tacit knowledge is presented from existing tacit knowledge. The sharing experience can happen when the individuals spend time together in the same environment. Some individuals will see this term as knowledge transfer. In addition, it can also happen through an apprenticeship or mentoring programme. However, if the situation occurs with informal interaction and outside of the workplace, it should return to the knowledge sharing context.



**Sources:** Adapted from Nonaka and Takeuchi (1995); Nonaka *et al.* (2000)

Figure 2.1: Tacit-Explicit in Socialisation, Externalisation, Combination and Internalisation (adopted from Nonaka and Takeuchi, 1995; Nonaka *et al.*, 2000)

This knowledge sharing is more appropriate for informal interaction. It requires mutual trust before interaction has been formed. This is supported by Biejerse (1990), for whom active communication comes from actively exchanging ideas. In this process it is named as Socialisation in the Socialisation, Externalisation, Combination and Internalisation model. This process can be seen in Figure 2.1. In Externalisation terms the Socialisation, Externalisation, Combination and Internalisation model considers how tacit knowledge is shared or converted into explicit knowledge. They have multiple ways of translating knowledge, including within concepts, manuals, analogies or metaphors, through books or any other documents. Meanwhile the Combination is about the process of transformation from explicit knowledge to complex or systematic methods. In this stage, the collection or

dissemination is executed systematically and it requires technological support to ensure that the process will be done quickly. Lastly, Internalisation involves how explicit knowledge is shared to the organisation. Then it refers to tacit knowledge within the individual. The internalisation will happen either by learning through practice or through hands-on process or lectures. The lectures could be from an expert or practitioner, an expertise manager or a technician (Biejerse, 1999).

All in all, the four stages in the Socialisation, Externalisation, Combination and Internalisation model can also be as 'interactive spiral's complementary. The model has created between tacit and explicit, in terms of knowledge management in discussion on the concept of knowledge. Based on the organisation's perspectives, the knowledge sharing process is continuously developed and expanded. The same goes for individuals. The reason is that the role of individuals will also contribute to the organisation.

From the Socialisation, Externalisation, Combination and Internalisation model, Nonaka et al. (2000) also introduced the concept of 'Ba', which refers to a 'space' or platform. It can be an office space, virtual space or specific time. This means it can be classified as physical or non-physical 'space' and it is important for creating knowledge sharing. This allows understanding of interaction. Demands on interaction based on this concept would be amongst individuals or between individuals in their environment. It would be impossible for interaction to happen if the individual is interacting alone. The 'space' concept also has a similar notion of community of practice, where groups are bound together informally and at the same time they have a common interest in sharing knowledge (Bock and Kim,2002; Illeris, 2003). Furthermore, the active 'Ba' is very important in supporting active participation, especially in the community of practice (Nonaka et al., 2000). This explanation of the 'Ba' concept is based on Figure 2.1, where it consists of originating, dialoguing, systemising and exercising.

Nonaka et al. (2000) claimed that 'originating' occurs when individual and 'face-to-face' activity happens at the same time. For the individual, it involves trust and commitment of time to share experiences and feelings through socialisation. When face-to-face meetings happen, it allows tacit knowledge to occur. Meanwhile, 'dialoguing' refers to collective and face-to-face activity, both of which lead to externalisation. 'Dialoguing' involves the individual as the mental model to share and convert knowledge to common terms before the articulation is done. Indirectly, self-reflection will happen within the specified knowledge and

also within the capabilities of dialoguing the knowledge. ‘Systemising’ includes collective and virtual interactions in context for combination. It involves the sharing of existing explicit knowledge within the organisation as a collaborative environment. Lastly ‘exercising’ occurs through the individual within the virtual interactions in the context of internalisation. It involves synthesis for important and reflective action.

From the explanation of the ‘Ba’ concept, it is shown that the various ‘Ba’ lead the organisation to create, manage or utilise the knowledge itself. In other words it can foster knowledge creation in terms of support to active knowledge sharing. The terms tacit and explicit have been discussed precisely in **2.2 Knowledge and Knowledge Management**, which revealed the interrelation to ensure the balance of attention in knowledge sharing. In addition, it can also facilitate the diffusion of knowledge within the sharing of tacit knowledge. In knowledge diffusion, explicit knowledge may be converted. This accessible knowledge for an organisation will help ensure that better results are achieved (Haldine-Herrgard, 2000). In conclusion, it proves that socialisation is central to knowledge sharing. The individual shares the tacit knowledge process and this can be identified as a product of socialisation, or in other words the socialisation happens through the sharing of tacit knowledge.

### **2.2.2 Existing Research in terms of Knowledge Sharing Behaviour (KSB)**

Various university resources including electronic databases were used to search for knowledge sharing papers. This searching activity was also achieved by social networking or social interaction with the other researchers when attending the conferences. Besides ‘knowledge sharing’, other significant terms such as knowledge transfer (KT), “knowledge diffusion” and “leveraging of knowledge”, were used in the keyword search. For example, the knowledge transfer term emphasises the movement of knowledge within an organisation and the dependability on the human or individual characteristics involved with regards to the definition of knowledge sharing (Szulanski, 1996).

Knowledge sharing is the act of making knowledge available to others within an organisation (Ipe, 2003). In the knowledge sharing researches, which have almost all been done in the past ten years, there are huge areas involved and they use the knowledge sharing concept within the knowledge management approach. In Table 2.1, the diversity of areas that have been applied to the concept of knowledge sharing is classified. The elaboration on the reliable areas

with this research context is also discussed. Table 2.2 shows areas in which knowledge sharing research was carried out but which do not have relevance with this research at all. The purpose of Table 2.2 is to view the multidisciplinary areas explored by academicians using the knowledge sharing or knowledge-transfer concepts. After presenting Table 2.1, the next section discusses the knowledge sharing definition in the context of knowledge management research.

Table 2.1: Classification of relevance to knowledge sharing behaviour study within this research context

Relevance to this research context		
Areas	Contributions to this research	Authors / Research gaps with this research context
1-Communities	Community issue as focus group	Kubo et al. (2001) Sharrat and Usoro (2003) Scott and Laws (2006) Plessis (2008) Kamau and Harorimana (2008) Hsu et al. (2007) Wang et al. (2008) Zhaoli and Jiong (2009) = no studies from these authors focus on student communities
2-Human Behaviour	The main theme for this research = knowledge sharing behaviour (KSB)	Cabrera and Cabrera (2005) Handzic and Lagumdzij (2006) Tedmori et al. (2007) Christensen (2007) Shah Alam et al. (2009) = no studies from these authors focus on knowledge sharing behaviour involving students
3-Barriers	Mainly discussed in <b>1.3 Problem Statement</b>	Bures (2003) Riege (2005) Rosen et al. (2007) Eppler (2007) Wang and Cassidy (2008b) Fileri and Alguezaui (2009) = no studies from these authors focus on knowledge sharing behaviour barriers involving students
4-Staff or student development	As the aim of this research (student development)	Georgiodou et al. (2006) Jain et al. (2007) Yuen and Majid (2007) Sulaiman and Burke (2009) = no studies from these authors focus on knowledge sharing behaviour involving student development
5-Culture	As one of the barriers in <b>1.3 Problem statement</b>	Chaudry (2005) Walczak (2005) Siakas and Georgiadou (2006) Klingenberg and Rothberg (2007)

		<p>Adjaj (2009)  Wiewora et al. (2009)  Liang et al. (2009)  Sackmann and Friesl (2007)  Wang and Cassidy (2008b)  Al-Alawi et al. (2007)  Gaal et al. (2009)  Ghobadi and Daneshgar (2009)  Mustafa and Abubakar (2009)  = no studies from these authors focus on knowledge sharing behaviour culture involving student community members</p>
6-Information Technology	As one of the identified Critical success factors(CSFs) in <b>2.4 Potential Critical Success Factors(CSFs) perspectives</b>	<p>Song (2002)  Khandelwal and Gottschalk (2003)  Kim and Lee (2006)  Quientero (2007)  Mustafa and Abubakar (2009)  = no studies from these authors focus on success factors involving information technology within knowledge sharing behaviour (KSB) issues</p>
7-Critical success factors	As the aim in this research <b>2.3.2 Critical Success Factors(CSFs) in Knowledge Sharing (KS)</b>	<p>Tseng and Chen (2006)  Handzic and Lagumdzija (2006)  Lok et al. (2007)  Al- Alawi et al. (2007)  Kharabsheh (2007)  Scarso et al. (2007)  Majewski and Usoro (2008)  = no studies from these authors focus on critical success factors within knowledge sharing behaviour involving student development aims</p>
8-Higher education issues	As the type of focus group	<p>Jain et al. (2007)  Yuen and Majid (2007)  Buckley and Giannakopoulos (2009)  Mustafa and Abubakar (2009)  = no studies from these authors involve working on the selected location studies that have the same characteristics in terms of nationality</p>
9-Web 2.0 (Wikis, weblogs, social networks)	As one of the identified Critical success factors (CSFs) in <b>2.4 Potential Critical Success Factors(CSFs) perspectives</b>	<p>Ramirez (2007)  Miao and Yli-Laoma (2007)  Smith (2008)  Garcia-Perez and Ayres (2009)  Neto and Correria (2009)  Ignacio et al. (2009)  Shu et al. (2009)  Paroutis and Al Saleh (2009)  Zholi and Jiong (2009)  Yu et al (2010)  = no studies from these authors focus on success factors of Web 2.0 within knowledge sharing behaviour issues involving student development aims.</p>

### **2.2.3 Definition of Knowledge Sharing (KS) towards Knowledge Sharing Behaviour (KSB)**

There is an increasing amount of literature on the definition of knowledge sharing, including work by the following researchers: Davenport and Prusak (in Zheng, 2005); Argote and Ingram, (in Perrin et al., 2007); Storey (in MacNeil, 2003); Sharratt and Usoro, Willem, Shapira et al., Bircham-Connolly et al. (in Jain et al., 2007); Kalling and Styhre (in Johnsson and Elg, 2006); Yang, 2007; Sackmann and Friesl, 2007; Davenport, Ipe, Calantone et al. (in Law and Ngai, 2008) and Christensen, 2007.

Davenport and Prusak (in Perrin et al., 2007) claimed that knowledge transfer consists of two things which are transmission and absorption; otherwise, the knowledge will not be transferred. Knowledge sharing is also important for determining the success of organisations (Davenport and Prusak, 1998) due to the contribution of knowledge consumption (Ikhsan and Rowland (in Al-Alawi et al., 2007)). This leads to the aim of this research, which is to carry out an investigation of critical success factors. According to Jain et al. (2007), there is a lack of solid theory on knowledge sharing. Moreover, Davenport and Prusak (1998) argued that knowledge transfer is only involved within two actions: first, when knowledge is transmitted to a potential recipient, and second when it is absorbed by a person or a group. Otherwise, knowledge transfer has not occurred (Perrin et al., 2007). Moreover, knowledge sharing is also a critical success factors for knowledge management (Davenport and Prusak, 1998) because it has an important role in knowledge dissemination (Ikhsan and Rowland, 2004, in Al-Alawi et al., 2007). However, knowledge sharing only allows employees to share their opinions and experiences quickly for effective project completions (Geraint, in Ramirez, 2007), which means that employees gain the experiences from others in finding solutions to problems (Ramirez, 2007). Without the sharing experience, knowledge sharing behaviour would not exist.

Meanwhile, Roberts (2000) states that knowledge transfer will only happen if knowledge is diffused from the individual to others. It can disseminate through the 'process of socialisation, education and learning'. This statement is supported by Davenport and Prusak (1998), who also mention the limitations of the definitions of knowledge sharing or knowledge transfer, as they do not specify whether the knowledge is transferred from one individual to another or from individuals to groups (Zheng, 2005). If the knowledge transfer scenario in organisations is about the process, either the group, department or vision is

influenced by the experiences of another (Argote and Ingram in Perrin et al., 2007). Knowledge sharing is also applicable in situations where people are willing to share a common purpose and share their experiences purposely to exchange ideas and information (Storey, in MacNeil 2003). This means knowledge sharing can be known as a process of exchange where resources are given by one part and received by another (Sharratt and Usoro, 2003; Jain et al., 2007). In other words, the condition to meet the rules of knowledge sharing is that the exchange of knowledge must be at least within a reciprocal process, allowing reshaping and sense-making of the new context knowledge (Willem, in Jain et al., 2007). Knowledge sharing is only accepted if the continuity of knowledge is being shared (Shapira, et al, in Jain et al., 2007). From the process perspective, knowledge sharing can be known as the process of delivering knowledge from a source unit to a recipient unit (Bircham-Connoly et al. in Jain et al., 2007). Without source and recipient, knowledge sharing will not happen.

In another sense, knowledge sharing involves capability of dissemination, transferring, diffusion, sharing and distribution within and between organisations, communities or departments (Kalling and Styhre, in Johnsson and Elg, 2006). In addition, knowledge sharing has described as the act of disseminating one's acquired knowledge with other members within one's organisation (Ryu et al., 2003). However, these definitions are applicable in an organisational context. This knowledge sharing can be defined as individual competencies developed through the sharing and learning process (Yang, 2007). As for knowledge transfer, this involves a person or a recipient group being influenced by the relative quality of the transferred knowledge (Sackmann and Friesl, 2007). If this does not happen, it is not considered to be knowledge transfer based on the aforementioned definition.

In addition, Christensen (2007) does not give an accurate definition of knowledge sharing in this research context. He gives a definition from another perspective where knowledge sharing is more about identifying existing and accessible knowledge. Its purpose is to transfer knowledge, in solving specific tasks better, faster and cheaper. However, according to van den Hooff and de Ridder (2004), knowledge sharing is more complex. For them, the process involves two main processes: knowledge donating (communicating to others what one knows) and knowledge collecting (consulting with others in order to learn what they know). However, some authors (Goh, 2002 in Al Sadhan, 2007; Chua, 2003) claim that knowledge sharing has

similar meanings to knowledge transfer, and that knowledge sharing also involves a knowledge source and a knowledge recipient.

Furthermore, on Wikipedia (2008), knowledge sharing only refers to one activity through which knowledge is exchanged among people, friends, or members of a family, a community or an organisation. Another perception of knowledge sharing is that it is more of a voluntary dissemination activity, which requires skills and experience in the organisation (Davenport, 1997; Ipe, 2003). If the individuals lack skills and experience, it is hard for KS to become a culture. However, Chuck and Eric (2008) have claimed that knowledge sharing is only known as the beliefs of routines in knowledge and experience dissemination among the units of organisations (Calantone et al., 2002). This statement is totally different from the previous concept of knowledge sharing. This knowledge sharing occurs when an individual is willing to assist in the development of new competencies (Yang, 2007). If nobody is willing to share the knowledge, knowledge sharing will not occur. This is the reason given by Yang (2007) to define knowledge sharing as the transfer process where individual competencies are developed through sharing and learning. Furthermore, knowledge sharing is defined as the continuity process in exploiting existing and accessible knowledge (Christensen, 2007). These statements are more in line with the general concept and are applicable to this research context.

Another suitable and relevant definition of knowledge sharing, as mentioned in 2.2.1, is knowledge sharing in the knowledge management context, as presented by Boyd et al. (2007). Knowledge sharing should be defined as: ‘disclosure of existing to others - thus creating ‘new knowledge’’. It happens voluntarily through a reciprocal situation and via social interaction. Anyway, knowledge transfer tends to apply existing knowledge from one context to another, and it can happen voluntarily or involuntarily, non-reciprocally and via training or social interaction. Meanwhile knowledge exchange means imparting of knowledge for something in return, and it happens involuntarily through reciprocal situations and also via contract. This definition was the suitable definition in this research context.

The above definitions imply that knowledge sharing is related to an action which refers to people’s behaviour or actions in sharing or not sharing knowledge, donating and collecting knowledge. This may relate to knowledge sharing as a psychological process that requires a series of initiatives to help employees identify the knowledge they possess and then to motivate, enable and encourage them to share that knowledge with others (Ipe, 2003).



In other research by Mustafa and Abu Bakar (2009), the researchers do not agree with the given knowledge sharing definition. The definition is more related to exchanges of knowledge, experience and skills. It is not totally accurate with the practical definition. The reason for this argument is that even though knowledge sharing is social interaction, it does not mean that an exchange process is compulsory. It is adequate if the person gives information to another person to help them. From another organisational perspective, the definition of knowledge sharing is also applicable within the set of understanding in giving the relevant information within the organisation (Hogel et al., in Mustafa and Abu Bakar, 2009).

To look at it another way, there are three types of knowledge sharing based on Huysmann and Wit (2002), which are knowledge acquisition, knowledge reuse and knowledge creation. All three stem from organisational, individual and community knowledge, and these may lead to the potential for critical success factors in this research context, from organisational (technology), individual and community perspectives.

Based on the detailed discussions on knowledge sharing, some important themes or points could be highlighted as follows. Firstly, interaction or integration is the important element in knowledge inquiry that serves as the underlying foundation in knowledge management / knowledge sharing. In seeking knowledge, people are bound to the situation and to their factor of involvement. This means knowledge management requires other forms of practice besides the technical aspect. The applicable platform (*Ba*) provided by an organisation in the knowledge sharing process can facilitate the conversion of both tacit and explicit knowledge. This knowledge sharing relates to peoples' behaviour, and this behaviour must be assisted and it leads to the knowledge sharing behaviour term for this research context. Meanwhile, learning is the backbone of knowledge sharing. Informal learning is fundamental in the knowledge sharing process, especially when sharing tacit knowledge among the Community of Practice. Therefore, a collaborative climate that supports active socialisation is crucial. Now that the notions of knowledge, knowledge management and knowledge sharing have been discussed from various perspectives and for this research context, the next section looks ahead for the definition of critical success factors to knowledge management and knowledge sharing behaviour. All in all, the definition of knowledge sharing behaviour for this research context is related to how students share their knowledge during their campus life including

acquiring, learning, disseminating and sharing information and knowledge, and transferring tacit knowledge into explicit knowledge, and vice versa.

### **2.3 Critical Success Factors (CSF)**

As previously mentioned, this concept has been introduced as the variable according to the aim of the research applied to Malaysian undergraduate students. The term critical success factors (CSF) was originally initiated by Daniel (1961 in Mouzoughi, 2009) and extended by Rockart (1979). Critical success factors are defined as "areas in which results, if they are satisfactory, will ensure successful competitive performance for the organisation" (Rockart, 1979). This definition was the most suitable definition in this research context. Saraph et al. (1989) sees critical success factors as practising critical areas to achieve effectiveness for managerial planning and action. Meanwhile, Digman (1990) describes critical success factors by saying that things must go right for the business to do well in those areas. However, Oakland (2000) has viewed critical success factors as compulsory to achieve the mission of the organisation through impacts on examination and categorisation. In addition, they are the minimum key factors required by the organisation to achieve the mission.

In another study, critical success factors are defined in the following statement: "each factor is necessary and each set of factors are sufficient to be successful" (Williams and Ramaprasad, 1996). This means a critical success factor is seen as the identification of a critical factor in an individual since it is highly success correlated (Williams and Ramaprasad, 1996). Furthermore, Kanji and Tambi (1999 in Mouzoughi, 2009) claimed that critical success factors are compulsory to ensure success for a manager and/or organisation, and a few things must go well. This definition is only applicable in organisational performance. On the other hand, the most accepted definition is defined by Boynton and Zmud (1984) where critical success factors are about "those few things that must go well to ensure success". This definition can apply to many elements of organisational performance both in the public or private sector. However, it is not reliable and suitable for the individual performance context.

In addition, a variety of methods are available in the identification of critical success factors. Normally they tend to focus on three levels (Mouzoughi, 2009). The first level deals with the economic socio-political environment, followed by the second which deals with the industry environment. The last one deals with the firm-specific environment (Leidecker and Bruno,

1984). However, this technique only has the potential to identify factors which can lead to the effectiveness of the organisation.

For example, normally the firm focuses on the internal aspects that influence success. Meanwhile, industry level analysis allows evaluation of the organisational strategy through the overall industry's operation order. Then, economic socio-political analysis will look to assess the internal workings of the organisation. The industry, seen as a whole, may be impacted by the larger environment in which it operates. This method seems suitable for organisations in industry, but not for community purposes.

Markus and Robey (1988) have argued about the impactfulness of the phenomenon. This happens since the phenomenon is identified as having a different impact either at the micro level or at the macro focus. Thus, critical success factors can be assumed to be general across all levels of analysis. However, this may lead to incorrect conclusions. Besides that, acceptance that critical success factors are adequate is critical in establishing a causal relationship (Markus and Robey, 1988). Based on that assumption, accurate analysis must be ensured for the relationship study. This means the possible factors identified need to be necessary and adequate.

In addition, there are other methods and techniques for determining critical success factors (Al Sadhan, 2007). For the first case, Leidecker and Bruno (1984) listed the methods for this purpose. The list includes scanning the environment, analysis on industry structure, opinions of experts in the industry, analysis on competitors, analysis on the industry's dominant firm, company-specific assessment and market strategy data's profit impact. This method has limited applicability for organisations in industry.

The reality of critical success factors is that they are based on information that is specifically linked to an organisation's strategic goals. Therefore, decisions can be made using the concept since it is more effective (Cooke-Davies, 2002). In addition, critical success factors are clear key performance representations in an organisation. Therefore the factors normally enable the identification of priorities for allocation of resources easier in decision making for organisations. Despite the criticisms of the concept of critical success factors as discussed above, their effectiveness in aiding decision making, specifically from the perspective of organisational performance, can still be proven. This also shows that the application of the concept of critical success factors is very relevant to the knowledge management field.

These discussions view critical success factors as points or areas that need extensive attention to support the management to achieve their mission, and to achieve quality and high performance. In addition, from the perspective of knowledge management, they can be viewed as those activities that should be addressed to ensure its successful implementation. Besides that, the awareness and clearness of the included factors will help to avoid failures of knowledge management implementation.

This discussion continues with critical success factors in relation to knowledge management and knowledge sharing. From this, in the next section, the discussion will identify potential critical success factors perspectives in this research context.

### **2.3.1 Critical Success Factors (CSFs) in Knowledge Management (KM)**

As discussed previously, the belief that something is true to the application led the concept to the field of knowledge management. However, an analysis of the 'success' of knowledge management must be undertaken first to examine the critical success factors identified in the literature independently. The significance of accepting the necessary conditions for successful knowledge management is the issue many researchers have recognised in the literature on knowledge management (Davenport et al., 1998, Malhotra, 2002, Shan and Scarborough, 1999).

This happens because success is an uncertain subject, and even more so when it applies to a broad concept such as knowledge management. The argument arises because knowledge spans across many levels of analysis. It includes knowledge analysis content from a domain perspective, analysis use and impact on individuals from a decision-making perspective; creation, memory and use of knowledge investigation within a firm from an organisational perspective; and exploration of the exchange and sharing of knowledge from a market perspective between individuals and organisations (Gold et al., 2001, Malhotra, 2002). Although difficulties and challenges will arise in a framework for successful knowledge management development before a knowledge management initiative flourishes, identification and evaluations of the key pre-conditions are critical (Gold et al., 2001). Perez and Hynes (1999) faced challenges in analysing whether knowledge management implementations that focus on the initiative itself can be achieved or not. An argument exists

for the identification of weaknesses and an opportunity for remedial action for continuous analysis of a programme (Perez and Hynes, 1999).

Even though knowledge management is quite a new discipline (Moffett et al., 2003), there has been considerable amount of successful knowledge management researches into the various aspects. Researchers have investigated the need for knowledge management (Davenport and Prusak, 1998; Nonaka and Takeuchi, 1995), the uses of knowledge management (Despres and Daniele, 1999), and the tools necessary for knowledge management (Martensson, 2000) as well as the actual management of knowledge management (Holsapple and Joshi, 2000).

It is important for this research to identify factors that are both necessary and sufficient to establish the relationship between perceptions of success and knowledge management through the breadth of literature on the antecedents to successful knowledge management.

### ***i-Organisational Level***

For the discussion involving academic and practitioner literature regarding critical success factors from the knowledge management perspective, the researcher has discovered seventeen relevant studies. They include Davenport et al., 1998; Liebowitz, 1999; Holsapple and Joshi, 2000; Jarrar and Zairi, 2000; Skyrme and Amidon, 2000; Soliman and Spooner, 2000; Armbrrecht et al., 2001; Ryan and Prybutok, 2001; Goh, 2002; Alazmi and Zairi, 2003; Chourides et al., 2003; Egbu, 2004; Hung et al., 2005; Wong and Aspinwall, 2005; Al Sadhan, 2007. These studies will now be discussed and their possible applicability findings within this research context highlighted.

Davenport et al. (1998) led an exploratory study on thirty one knowledge management projects in twenty four companies, one of the aims being to determine the effectiveness factors. Only eighteen projects were identified to be successful projects and only eight factors were determined to be required for successful knowledge management projects. These factors are: support from senior management; precise communication to achieve knowledge management system goals; connection within economic performance; variety of methods of knowledge sharing; motivational incentives; good knowledge environment; adequate technical and organisational infrastructure; and flexible knowledge structure. The cons from this research, since it is an exploratory study, the identified factors only suitable as hypothesis.. Furthermore, the listed factors are not a holistic approach for organisational performance, for example employee involvement, learning and training. In addition, only one

factor is applicable for adapting to this research context, and that is adequate organisational infrastructure.

Another non-empirical research was done by Liebowitz (1999). He indicated seven key ingredients in order to ensure knowledge management success in organisations. From his research, a few suggestions were made: strategy with support from top management, infrastructure, knowledge ontologies and repositories, systems and tools, incentives to encourage knowledge sharing and a supportive culture. Furthermore, the important lessons learnt from current practices in knowledge management were used to support the research propositions. But the weakness of this work as an organisational performance research is that it does not include overall factors such as employee and measurement issues. Out of the seven factors, only two are suitable within this research context: systems and tools when related with technology Web 2.0.

However, Holsapple and Joshi (2000) tried to identify factors which have influenced the management of knowledge in organisations. They used a Delphi panel consisting of thirty one recognised knowledge management researchers and practitioners. They came out with three major classes of influences: managerial, resource and environmental. Inside the managerial influences, there are four main factors: coordination, control, measurement and top management support. Meanwhile, the resource influences are knowledge, human, material and financial resources, and the environmental influences include competition, markets, time pressure, and governmental and economic climates. This research also identifies the critical factors as leadership and top management. Moreover, resource influences are also important for sufficient financial support, skill level of employees, and identified knowledge sources. Surprisingly, it also identified lack of detailed inclusion of technology and culture as critical factors. In this case, culture is not explicitly presented. It is only included as a sub-concept under the knowledge resource factor. However, Al Sadhan (2007) has identified culture as another important factor for critical success factors in knowledge management. The missing factors which are supposedly included are knowledge maps, communication, training, strategy setting, and reward issues. In addition, these study findings are also not suited to adapting to this research context.

In another study, Jarrar and Zairi (2000) led a global survey in identification of critical success factors for the "effective internal transfer of best practices". This survey involved 227 organisations from 32 countries. From this study, the following critical success factors were

identified: employee involvement, training, employees' project ownership, and open communications. These factors shown are only the internal transfer of best practices; no hard factors or soft factors were identified from this research. However, all the critical success factors identified from this study are inapplicable to this research.

From the human resource management perspective, Soliman and Spooner (2000) have indicated that there are eight critical success factors in knowledge management implementation: knowledge management alignment with business directions; knowledge management benefits identification; appropriate knowledge management programme selection; know-how strategy; implementation; supportive environments creation; enabling technologies usage; knowledge management team and knowledge management leadership creation. On the other hand, this study is only based on lessons learned and experiences from leading firms and the assumptions are not tested empirically. Again, the factors from this study cannot be used for this research context except for one – enabling technologies – if it is regarding technology Web 2.0. However, in this research context, the enabling technologies refer to general technologies such as internet, mobile phones and knowledge-based systems to assist in implementation of the knowledge management programme.

The hard and soft factors have been identified from the other research. Skyrme and Amidon (2000) have proposed seven critical success factors. They include a strong link to the importance of business, a compelling vision and architecture, knowledge leadership, knowledge creation and knowledge sharing culture, continuous learning, a well-developed technology infrastructure and systematic organisational knowledge processes. From this research, the last factor (systematic organisational knowledge processes) from this study can be adapted to the research context.

Another global study was done by Armbrecht et al. (2001). They led a qualitative study on the research and development departments of nineteen leading companies in the United States of America (USA), Canada, Europe, and South Africa. From this research, they recognised the following factors for successful innovation: aiming in strategies; accessing tacit knowledge; providing search tools; promoting creativity; capturing new learning; and building a supportive culture. However, these are concentrated on the knowledge creation process. This global study seems unsuitable to adapt with this research context.

Meanwhile, Alazmi and Zairi (2003) have adapted a triangulation approach combining qualitative and quantitative methods. They focus on studying the critical success factors in knowledge management implementation at organisations in Kuwait and United Kingdom (UK) public sectors. They classified the critical success factors into four main categories: top management commitment, change management, knowledge management processes and technology. This study finding is only applicable to this research context within the technology factor.

More varieties in critical success factors for successful knowledge management were identified by Chourides et al. (2003). They categorised it into five organisational functional areas: strategy, human resource management, information technology, quality and marketing. Their work is built upon an earlier questionnaire survey of the Financial Times Stock Exchange (FTSE) 100 companies. Then a review of the existing literature was done to identify key practices and factors for adopting knowledge management. Critical factors such as time and organisation issues were seen as less suitable, because these issues are compulsory for efficient organisations. The purpose is to improve customer satisfaction. Furthermore, it is suitable for the objectives of knowledge management, but not for the critical success factors of knowledge management (Al Sadhan, 2007). Only information technology factors are suitable for this research context.

From another perspective, Egbu (2004) constructed a quantitative study for forty participating construction companies in the United Kingdom. In order to determine the innovation success factors, he specified seven critical success factors. The critical success factors included successful innovations, such as having a vision and an innovation strategy, an innovation-supporting culture, an innovation champion, the ability to manage organisational knowledge, to build knowledge-enhancing approaches, systems and technology, and integrate the person and the team around the product and service. However, this study only concentrated on the knowledge creation process (or stage) and may not be applicable to other stages. Furthermore, this research is only applicable to this research context with technology factors.

In another country, Hung et al. (2005) carried out a survey study on 98 pharmaceutical companies in Taiwan. In order to assess the critical success factors in adopting knowledge management systems, they specified seven critical success factors: a benchmarking strategy and knowledge structure; organisational culture; employee involvement and training; leadership and the commitment of senior management; a learning environment and resource



control; training and teamwork; and information technology. However, the soft factors in human resource management are not included, such as employee issues and knowledge management measurement. The only factor suited to the research context is information technology which relates to technology Web 2.0 in this research.

Another quantitative approach, which is based on the questionnaire method, was conducted by Wong and Aspinwall (2005). This study focuses on small and medium enterprises (SMEs) of different sectors in United Kingdom. In an aim to identify the critical success factors in knowledge management, they specified the following eleven: management leadership and support; culture; strategy and purpose; resources; processes and activities; training and education; human resource management; motivational aids; information technology; organisational infrastructure; and measurement. However, even though the specified factors in this study are obviously good findings, it is believed that the success of knowledge management is based on more aspects than just these (Al Sadhan, 2007). But, the researcher believes that this is the one of the most reliable and holistic studies in the identification of critical success factors for organisational performance. For this research context, the most applicable factor is the information technology issue.

The last knowledge management study involving critical success factors is by Al Sadhan and Zairi (2006) and Al Sadhan (2007). This study presents a model for the successful implementation of knowledge management projects. The taxonomy dimension of critical success factors in knowledge management implementation identified from this study includes top management competence, championship and evangelisation, culture, organisational infrastructure, human resource management, continuous improvement, the processes of knowledge management itself, content and structure, and finally technical infrastructure. Each dimension has its own factors which are more compatible with the organisational performance issue. However, to apply to this research context, the most suitable dimension is the organisational issue of community members and also the technical issue of information technology infrastructure. In this research context, information technology infrastructure refers to technology Web 2.0.

### ***ii- Individual Levels***

Another survey study led by Ryan and Prybutok (2001) focused on information technology executives in American firms. In this study, specification on the critical success factors in knowledge management technologies is adapted. They classify the critical success factors into

three main groups: organisational factors, environmental factors and technological factors. From these three factors, they concluded that organisational and technological factors are more important than the environmental ones. However, in this study, it is empirical. It is also based more on the technology aspects of knowledge management. These findings can be used for this research context, which are organisational and technological factors.

Another non-empirical study was done by Goh (in Al Sadhan, 2007). He adapted the critical success factors in knowledge transfer. These factors are: technology; organisational culture; leadership practices and behaviours of senior managers; support structures, knowledge recipients and consideration of knowledge types. These are based only on lessons learned and anecdotes. Two of this study's findings, technology and organisational culture, can be adapted to this research context.

All in all, the previous studies discussed here are basically all mostly applicable to organisational performance. Only two studies involved an individual level while no study related to the team level. The next section discusses the previous research into critical success factors in the context of knowledge sharing behaviour and focuses more on individual and team levels, but it also includes the organisational level. This enables the understanding of the researcher to identify their own critical success factor perspectives for this research context.

### **2.3.2 Critical Success Factors (CSFs) in Knowledge Sharing Behaviour (KSB)**

From the discussion in the previous section, there are two studies mentioned that have been undertaken regarding critical success factors in knowledge sharing. The studies completed by Trussler (in Al Sadhan, 2007) and Goh (in Al Sadhan, 2007) successfully identified critical success factors in soft factors. Trussler (8 in Al Sadhan, 2007) identified leadership and senior management commitment; knowledge sharing culture; incentives; training and learning; technical infrastructure; and metrics for contribution and usage. But this does not include employee issues. Furthermore, this study is not empirical and none of these factors can be adapted to this research context.

The research investigated later by Goh (in Al Sadhan, 2007) about critical success factors has more holistic perspectives. It includes technology; organisational culture; leadership practices and behaviours of senior managers; support structures (flat, reward systems, time); knowledge recipients (absorptive and retentive capacity); and consideration of knowledge types. Goh

(2002 in Al Sadhan, 2007) uses terms of knowledge transfer rather than knowledge sharing. However, the terms of knowledge transfer and knowledge sharing can be accepted in the general view of critical success factors in knowledge sharing perspectives. From both of these studies, the most applicable factors that suit this research context are technology and organisational culture.

Tseng and Chen (2006) have reviewed factors that may influence knowledge transfer or knowledge sharing. Past researchers (Davenport and Prusak, 1998; Kostova; Nonaka and Konno; Rulke et al., in Tseng and Cheng, 2006) have indicated these factors: relational channels; partner similarity; organisational knowledge; divergence of interests; knowledge context; relational context; recipients' culture; and also quality of knowledge. From these factors, the last four, which are in knowledge, relational, recipient and activity contexts, were identified by Cummings and Tang (in Tseng and Chen, 2006). Meanwhile recognition has been given through the findings of Franke and Shah (in Tseng and Chen (2006)) where communication, cooperation and encouragement have contributed to tacit knowledge during the project sharing. From the communication itself, Tseng and Cheng have emphasised the communication channel, and the open attribute of cooperation and trust will bring significance to the project sharing. Meanwhile Lyn et al. (in Tseng and Chen, 2006) suggested that the structure of an innovative community must be prepared if it is to have positive effects on the new market. Tseng and Chen (2006) found out that knowledge transfer is a complex knowledge sharing process. It has to integrate communication technology with the social, cultural and organisational challenges. The organisational issue also makes knowledge transfer or knowledge sharing important to ensure competitive advantage and organisational performance (Wakefield, in Tseng and Chen, 2006). It shows the importance of technological, social, cultural and organisational aspects when determining critical success factors in knowledge sharing research. From the four listed aspects, the most suitable for this research context are technological and organisational.

This is supported by Al-Alawi et al. (2007) who identified the critical success factors between organisational culture and knowledge sharing. From the findings of their research they identified the success factors as trust, communication between staff, information systems, reward systems, and organisational structure. All of these factors had positive relationships after the hypothesis was tested in the research. The authors discovered that trust is where the staff shares their feelings and perceptions with peers. Meanwhile communication between staff happens during high-level face-to-face communication. Factors such as information

systems may facilitate the knowledge sharing. This factor may support this research context from a technology perspective. Besides this, the reward system is important where they share experiences with colleagues and receive a reward. Finally, the last mentioned factor is organisational structure which is also important. It is important when the employees actively participate in the decision-making process, which improves the information flow in the team itself and the communities of practice.

Since knowledge sharing is the dependent variable for Al-Alawi et al.'s research, it has a similarity with this research context. This means the adoption is valid and reliable with this research. Besides this, the organisational structure can also be switched to this research context with adaptation to the community perspectives success factor.

Table 2.3 Part of the success factors from dependent and independent perspectives  
(Al-Alawi et al., 2007)

No.	Variable Type	Variable	Indicators of existence
1	Dependent	Knowledge sharing	<ol style="list-style-type: none"> <li>1. Direct assessment of knowledge sharing.</li> <li>2. Knowledge sharing techniques (reliability measure). Davenport and Prusak, 1998; Griffen, Ikhsan and Rowland, in Al-Alawi et al., 2007)</li> <li>3. Teamwork and collaboration required to accomplish tasks (reliability measure). (Goh, 2002; Al-Alawi et al., 2007)</li> <li>4. Willingness to share knowledge freely (reliability measure) (Davenport and Prusak, 1998; Al-Alawi et al., 2007)</li> </ol>
2	Independent	Information systems	<ol style="list-style-type: none"> <li>1. Existence of knowledge sharing technologies. (Connelly and Kelloway, 2003; Al-Alawi et al., 2007)</li> <li>2. Effectiveness (usefulness) of knowledge sharing tools. (Smith and McKeen, in Al-Alawi et al., 2007)</li> <li>3. Comfort while using knowledge sharing technologies. (Smith and McKeen, in Al-Alawi et al., 2007)</li> </ol>
3	Independent	Organisational structure (supporting knowledge sharing)	<ol style="list-style-type: none"> <li>1. Participative decision making. (Griffen and Moorhead, in Al-Alawi et al., 2007)</li> <li>2. Ease of information flow. (Ikhsan and Rowland, in Al-Alawi et al., 2007)</li> <li>3. Cross-functional teams. (Goh, 2002; Al-Alawi et al., 2007)</li> </ol>

Kharabsheh (2007) proposed a model of antecedents of knowledge sharing based on strategic marketing literature.

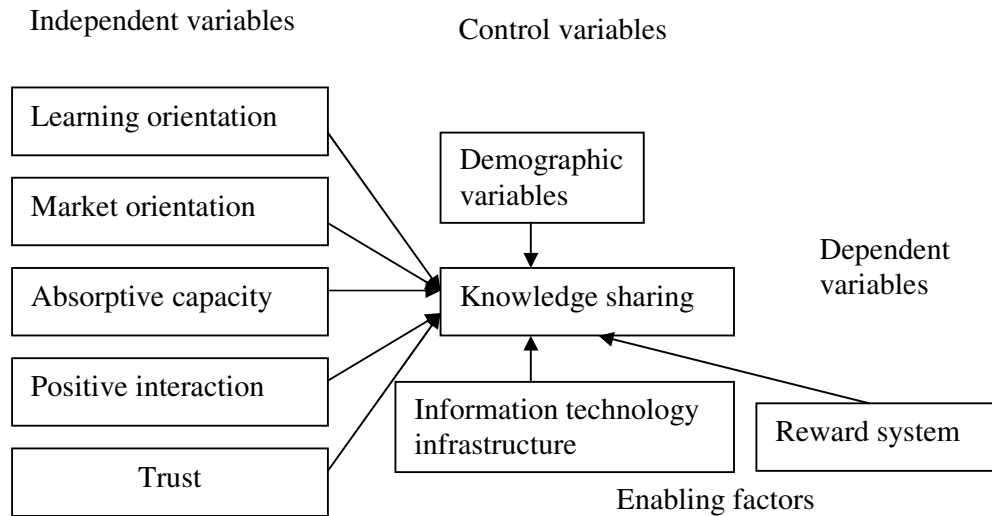


Figure 2.2: Proposed conceptual framework of antecedents in knowledge sharing (Kharabsheh, 2007)

From Figure 2.2, it can be seen that Kharabsheh (2007) has tried to propose the antecedents' model for knowledge sharing in competitive organisations. There are three interrelated links which are learning orientation, market orientation and absorptive capacity. Learning orientation consists of commitment to learning, open-mindedness and shared vision. Meanwhile market orientation is concerned with customer focus, competitive focus and inter-functional focus. Absorptive capacity is resource-based and relates to the ability to recognise value either to assimilate or apply it to commercial ends for the organisation. These three interrelated links are applicable for identification of critical success factors in marketing research. Moreover, Kharabsheh (2007) has argued that successful knowledge sharing is only based on information technology infrastructure, reward systems and also demographic variables. Information technology infrastructure issues still require human aspects to ensure the information technology infrastructure as knowledge sharing tools. Arguments about the reward system are based on quality issues in the knowledge sharing process. As for demographic variables, this issue is not very popular, and in some situations it depends on how the employee chooses to share their knowledge. All in all, positive social interaction is important in encouraging the knowledge sharing activities within the trust capability within the individuals in organisation. It also proves that information technology is one of the critical success factors in knowledge sharing behaviour, specifically in relation to this research context.

In another sense, Handzic and Lagumdzija (2006) have identified the most important success factor in knowledge sharing behaviour. The motivation may influence knowledge sharing in terms of rewards and incentives perspectives. The intrinsic rewards and incentives make individuals in organisations more motivated in terms of knowledge sharing. This study acknowledges that the intrinsic rewards may have a powerful effect rather than extrinsic rewards. All of these factors depend on circumstances and require careful consideration (Handzic and Zhouri, in Handzic and Lagumdzija, 2006). However, this research only focuses on reward motivation as a success factor in knowledge sharing behaviour.

Generally the rewards or incentives can be monetary or non-monetary, formal or informal, long term or short term. Monetary rewards are usually bonuses, compensations and promotions. Non-monetary rewards can be training, a thank you note, electronic mail, extra leave or recognition of expertise. In addition, according to the work of Hauchild et al., (2001) and Handzic and Lagumdzija (2006), non-monetary rewards can also be coveted office space or opportunities to travel or receive more challenging assignments or jobs. Short-term rewards usually attract a lot of public attention while long-term rewards are aimed at knowledge contribution and are a part of evaluation, compensation and structure (Davenport et al., 1998; Handzic and Lagumdzija, 2006). This success factor may be applicable in this research context if the researcher tries to add some value in terms of personal perspectives.

In innovation research, Lok et al. (2007) presented critical success factors in the integrative framework of knowledge sharing, as shown in Figure 2.3.

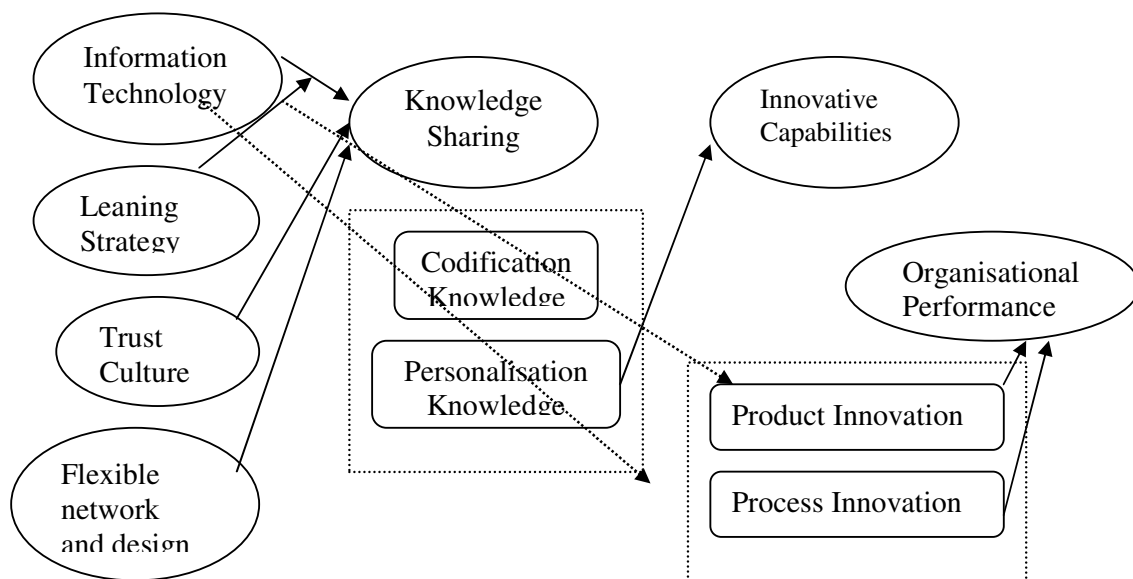


Figure 2.3 Integrative framework of knowledge sharing (adopted from Lok et al., 2007)

From this study, it has been identified that information technology has the greatest impact on knowledge sharing based on the findings that have been achieved. Meanwhile tacit knowledge has the greatest impact on process innovation. The reason that can be assumed from this result is that informal communication through information technology (e.g. email, team forums, chat etc) leads to greater knowledge sharing between the individuals in an organisation. Therefore, process innovation also has the greatest impact on organisational performance since tacit knowledge sharing has the greatest impact on organisational performance. This factor will provide good evidence for the technological perspective in this research context.

In terms of community of practice (CoP), Scarso et al. (2007) have looked at the critical success factors for knowledge sharing purposes based on internal and external elements. Internal elements consist of four main pillars: organisational dimension, cognitive dimension, economic dimension and technology dimension. From these four pillars, the most reliable and suitable for this research comes from the organisational and technological dimensions. The reason for this is that they consist of a number of main components. For the organisational dimension, the most suitable main components in this research are the roles of members and supporting functions, leadership and organisational size. Meanwhile, for the technological dimension it comes from these main components: technological platform; knowledge sharing processes underpinned by technologies; relations with the social/organisational context; and intensity of use.

Besides the internal elements in the organisational performance factors, the organisation also depends on external elements including the organisational context itself and also knowledge strategy. Organisational context consists of corporate culture, the level of information communication technology (ICT), literacy, the amount and kind of available resources and the business environment itself. However, for the knowledge strategy, it is aimed more towards planning the organisation to ensure competitive advantage. For this research context, the listed external elements found in this research by Scarso et al. (2007) are not wholly relevant.

Based on the discussion on knowledge sharing and its critical success factors, the next section presents the three perspectives of potential success factors in this research context: community, personal and technology Web 2.0.

## **2.4 Three Perspectives of Critical Success Factors**

In this section, the potential critical success factors based on the literature and existing research are discussed. The researcher attempts to prove the acceptance of these potential critical success factors in knowledge management/knowledge sharing perspectives. These three potential critical success factors perspectives are based on the research by Shaari (2009), which the author presented the findings based on three perspectives for knowledge sharing practices among academicians in Malaysia: organisational (community), personal and technological (technology Web 2.0). In addition, these three perspectives have also been identified from the previous study based on the discussion in **2.3 Critical Success Factors (CSF)**, **2.3.1 Critical Success Factors (CSF) in Knowledge Management (KM)** and also in **2.3.2 Critical Success Factors (CSF) in Knowledge Sharing (KS)**.

### **2.4.1 Community**

Martin-Niemi and Greatbanks' (2010) study has shown that the sense of community is an essential characteristic of virtual communities (VC). It also becomes a sense of belonging to a community where the members matter to one another for their commitment to be together (Mc Millan and Chavis, 1986). Still, the literature proves that little attention is still given towards readership behaviour and the sense of communication, even though the number of people who read weblogs increases continually (Baumer et al., 2008). Baumer et al. (2008) found that the readers feel part of a community even though they never comment or let themselves be known in the community. Furthermore, the sense of community can also be looked at in connection with the consistent readers who either post or give comments. This idea was initiated by Blanchard and Markus (2004) who describe the readers who are also known as 'lurkers'. This means there can be a well-defined sense of community even without active members. In other words, some members have the tendency to remain anonymous (Augier et al., 2001) to inhibit a context for knowledge creation. This sense of community is more applicable and limited to virtual communities, compared to face-to-face communities.

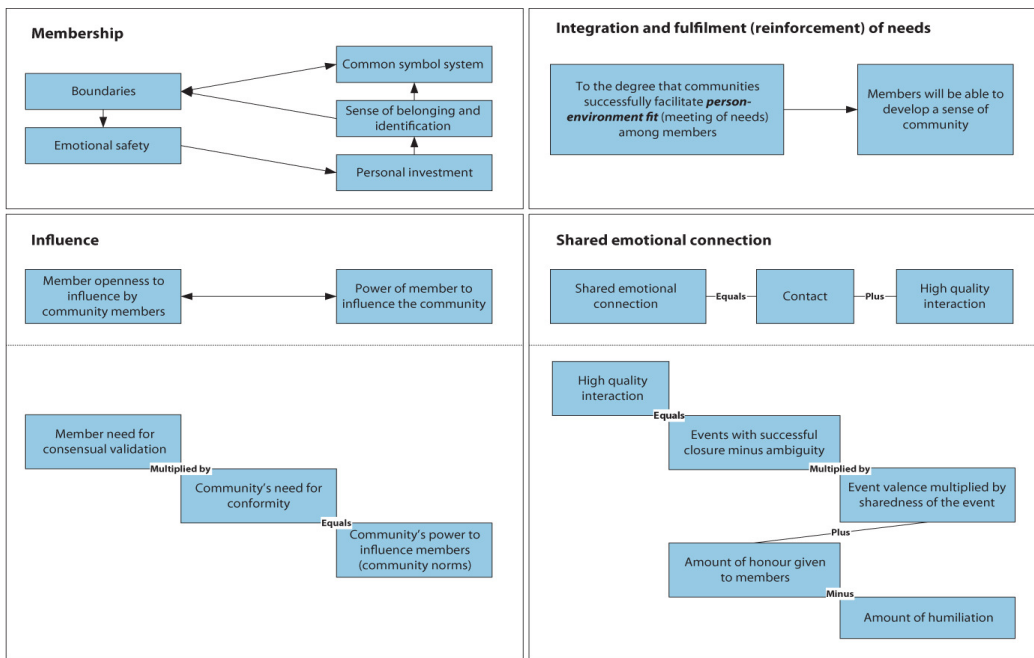
In another sense, virtual communities can be a place for recognition, degrees of intimacy (Martin-Niemi and Greatbanks, 2010) and shared understandings. It was proven by Schutz (1969) that it is possible to distinguish three types of relations, which are 'they relations',



'thou relation' and 'we relations'. From the point of view of the benefits for virtual communities, Martin-Niemi and Greatbanks (2010) discovered that how one refers to others can be an indicator of the nature of a relationship. Furthermore, from the findings of their research they have presented ten enabling conditions. The enabling conditions are related to knowledge conversion and contribute to the knowledge creation cycle. In the context of 'ba', the knowledge may be converted either from individual to collective or from tacit to explicit. They found out that the 'ba' of weblogs may facilitate the 'ba' of socialisation (the originating 'ba') and also the externalisation (conversion of 'ba'), both of which are necessary for the conversion of tacit knowledge.

Conversely, Martin-Niemi and Greatbanks (2010) also acknowledge some of the disadvantages of virtual communities. Agarwal and Liu (2008) cited that at an early stage, the weblogs are easy to find, due to the simplicity of becoming a member of weblogs in communities. However, it is difficult to identify the boundaries of distinction of community for the community traits. In addition a community trait is not identifiable from other social networking communities. Another disadvantage, as indicated in Efimova and Hendrick's (2005) findings, is that virtual communities are subtle (small but important), which makes it difficult for non-members to publish anything because the identification of weblog communities and boundaries are too subjective. This may be the reason why virtual communities are difficult to define. In addition, Preto et al. (2008) concluded that virtual communities are also very fluid. It can be from single dynamic weblogs contribute to other community.

To overcome these disadvantages of virtual communities, based on McMillan and Chavis (1986), the theory of place-based communities is presented. It is based on the virtual communities research and it is also part of the Sense of Community Index which has been adapted by Blanchard (2004) and Chin and Chignell (2007). This framework consists of the following elements of sense of community: membership, influence, integration and fulfilment and also sharing an emotional connection. An individual must have commitment and investment to ensure the sense of community. This is achieved when the individual feels accepted and connected. Later, the willingness to contribute to and make sacrifices for the community will develop. In this way the process will contribute to the sense of belonging, identification and also personal investment. Figure 2.4 shows the elements of the community and the hypothesis of the relationship (McMillan and Chavis, 1986).



Source: Adapted from McMillan and Chavis (1986)

Figure 2.4: The elements of sense in communities and their hypothesis of relationships (adopted from McMillan and Chavis, 1986)

Meanwhile Figure 2.4 shows the conceptual framework of ‘Ba’ of weblogs. This framework is adapted from Martin-Niemi and Greatbanks (2010). The framework is the combination of an adaptation between the SECI model and their weblog’s community themes. These findings may be used as justification for the conclusion of this research’s findings in **Chapter 8**. It also shows two themes from the weblog community, which are ‘enculturation’ and ‘learning’ themes. The parts of the relationship between enculturation in knowledge management, the weblog context and the blog context (Martin-Niemi and Greatbanks, 2010) are listed in Table 2.3. ‘Enculturation’ and ‘learning’ are the findings from Martin-Niemi and Greatbanks (2010) and can contribute to the weblogs research. All of the elements from the themes are influences for knowledge sharing behaviour among the community. This theme contributes to the human aspects, specific to individual factors. However, in learning themes, it is about delivering knowledge through the weblogs.

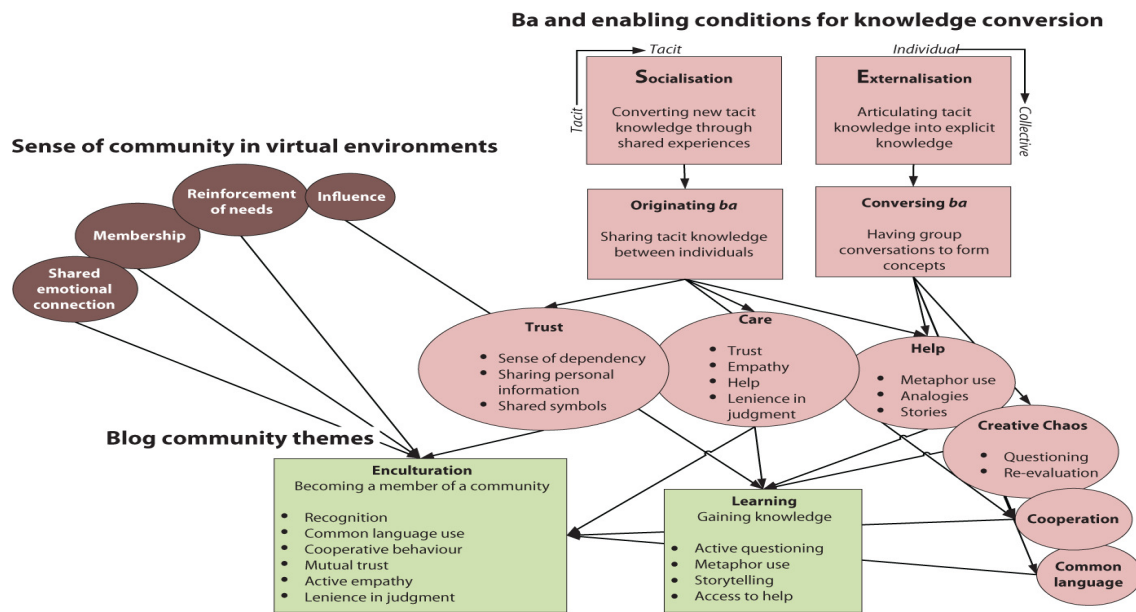


Figure 2.5: Conceptual framework of 'Ba' of blogs (adopted from Martin-Niemi and Greatbanks, 2010)

Table 2.4: Relationship between enculturation in knowledge management: weblog context and blog context (adopted from Martin-Niemi and Greatbanks, 2010)

Enabling condition	Knowledge management and computer-mediated communication derived definition of enculturation	Evidence of 'enculturation' within weblog community
1 Cooperative behaviour	Non-competitive environment Gift-giving economy	Freely sharing information instead of charging for services
2 Mutual trust	Sense of dependency Reliable Reputation	Sharing personal information/ background and reciprocal linking to trusted sites and blogs
3 Active empathy	Ability to air negative feelings	Voicing understanding of differing opinions without penalty
Enabling condition	Knowledge management and computer-mediated communication derived definition of learning	Evidence of learning within weblog community
1 Metaphor use	Personalising information sharing through the use of metaphors and analogies provides context to knowledge exchange	Metaphors Analogies
2 Storytelling	Stories create an environment in which knowledge sharing can occur (Colton et al.,	Stories Structured narratives

	in Martin-Niemi and Greatbanks, 2010) Storytelling facilitates knowledge exchange and the co-creation of knowledge	
3 Access to help	Support system in a community encourages continued membership	Requests/offers of help

#### 2.4.2 Personal

Personal is an adjective and it means relating or belonging to a single or particular person rather than to a group or an organisation (Cambridge Advanced Learner's Dictionary, 2009). According to Bock and Kim (2002), the personal individual is connected with the importance of rewards in knowledge sharing. Based on economic exchange theory, a person will behave after an expected reward is received. This reward will be based on the cost of the behaviour. However, in a study done by Kohn (1993) it has argued that attitude is negatively related to expected rewards. Indirectly this may prevent the formation of a positive attitude towards knowledge sharing.

A study by Kohn (1993) has found six reasons why rewards fail and why they are not one of the success factors in knowledge sharing. The first reason is punitive effect. Punitive is used to describe costs which are high and difficult to pay (Cambridge Advanced Learner's Dictionary, 2009). It is also often used in relation to punishing someone or imposing limitations on their activities. The second reason is that withholding rewards from someone who expected to receive them is indistinguishable from punishing them, which also diminishes the knowledge sharing effort. Thirdly, rewards may break off the relationship between a person in the organisation or department. The fourth reason is that some organisations use an incentive system as a substitute for providing good jobs. The fifth reason is that they make the person less confident, less powerful or less likely to succeed, or weakens their intrinsic motivation. The final reason relates to incentives being offered for negative activity.

Meanwhile, Bock and Kim (2002) have argued that knowledge sharing is very individualistic behaviour. They have suggested looking from the perspective of salient beliefs which affect the attitudes towards knowledge sharing. However, this differs from the work of Fishbein and Ajzen (1980) who proposed that behaviour intention (BI) is determined by social factors to

the attitude towards knowledge sharing. Referring to the perspective of Lu et al.'s (2006) study, they have concluded that there are two individual factors in knowledge sharing. The first factor is greed which reduces the knowledge sharing behaviour. The second factor is self efficacy which leads to increases in the knowledge sharing behaviour.

The first factor, greed, is not a success factor in encouraging knowledge sharing. Greed turns to desire to obtain the best possible outcome for oneself (Koolock, in Lu et al., 2006). From another perspective, greed can be applicable as enjoyment of other people's contribution without cost. This perspective has become a major reason for non-cooperative behaviours (Rapport and Eshed-Levy; Yamagaishi and Sato, in Lu et al., 2006). In the context of knowledge sharing, greed involves the desire to get another person's valuable knowledge without sharing the same feelings as someone else. In social dilemma research, when the level is reduced, it may lead to increased results in cooperative behaviours.

The second factor, self-efficacy, may increase the knowledge sharing behaviour. Self-efficacy is the judgments of one's capability in organising and executing action (Bandura, 1997). In the context of public good, self-efficacy is about the perceptions of one's ability to make useful contributions. In addition, it may enhance the cooperation and reduce free-riding (Chen et al., 1996) as well as promote knowledge sharing (Cabrera and Cabrera, 2005).

### **2.4.3 Technology Web 2.0**

Technology Web 2.0 is identified as the main tool for knowledge sharing behaviour in this research. Web 2.0 concepts have led to the development and evolution of web-based communities, such as social networking sites, video sharing sites, wikis and weblogs (Linhl, 2008; Gross and Leslie, 2008). Eijkman (2008) concludes from these authors (Boyd, O'reilly (a); O'reilly (b) Fredman, Hinchcliffe, and Anderson, in Eijkman 2008) that Web 2.0 is a form of web-based social networking. This definition is suitable for this research context. However, there are also some arguments that Web 2.0 is not purely technology, but tends to be a social movement (Miller, Birdsall, and Abram, 2005, in Linhl, 2008). Previous studies have reported that Web 2.0 is more like a new generation of the web which can enable users to be involved in the process of creating, exchanging and sharing information (O'reilly (b); Miller and Birdsall (in Linhl, 2008)). The term Web 2.0 was introduced by Tim O'reilly in 2004:

*'Web 2.0 is the business revolution in the computer industry'.*

It may be caused by the move to the Internet as a platform. Web 2.0 is a new attempt to understand the rules to achieve success. In addition, based on Wikipedia, Web 2.0 is a term describing changing trends in the use of World Wide Web technology and web design that aims to enhance creativity, information sharing, collaboration and functionality of the web. Web 2.0 concepts have led to the development and evolution of web-based communities and its hosted services, such as social-networking sites, video sharing sites, wikis, blogs, and folksonomies.

From that, O'Reilly (2005) regards Web 2.0 as business embracing the web as a platform and using its strengths, for example global audiences. Meanwhile Eijkman (2008) has drawn on Boyd (2005), O'Reilly (2005), Fredman (2006), Hinchcliffe (2006) and Anderson (2007). Web 2.0 can be explained as: the current generation of web-based social networking applications and services. It is designed around architecture of participation and communal collaboration. However, the researcher tends to agree with the definition from McGee and Begg (2008), where they describe Web 2.0 as:

*A collection of web-based technologies which it can share a user focused approach to design and functionality, and users can actively participate in content and editing through open collaboration between members of communities of practice.*

This definition was also the appropriate definition in this research context. Web 2.0 authoring tools are making it easy for users to collaboratively create, share and recreate knowledge. This can be from multiple sources and can leverage collective intelligence and organise action. Since it enables like-minded individuals anywhere to form rich and decentralised social networks, it means it is better and goes well beyond the information page metaphor Web 1.0. Linhl (2008) has cited from Masackill and Owen (2006 in Linhl (2008)) where they argue that Web 2.0 is a 'second wave' that includes web tools and services such as weblogs, wikis, Ajax, Really Simple Syndication (RSS) and tagging. However, there are some arguments that Web 2.0 is not purely technology, but is aimed more towards being a social movement (Miller, 2005; Birdsall, 2007; Abram, 2005). Previous studies have reported Web 2.0 more as the new generation of the Web which can enable users to become involved in creating, exchanging and sharing information processes (O'Reilly, 2005; Miller, 2005; Birdsall, 2007). Furthermore, several studies have revealed that Web 2.0 consists of a wide range of technologies and services such as wikis, blogs or weblogs, really simple syndication(RSS), Ajax, instant messaging and podcasts (Linhl, 2008; Gross and Leslie, 2008).

Web 2.0 for this research context is the authoring tools that are easy to use for non-IT background for knowledge sharing purposes. It includes tools that can be used to produce weblogs and is also used for web-based social networking applications and services such as Facebook and Myspace.

For this research, the researcher adapts weblogs and Facebook for data collection tools. In other words, the researcher also aims to prove that these two technologies (weblogs and social networking, i.e. Facebook) are well accepted among young generations and are success factors for knowledge sharing behaviour in this research context.

#### **2.4.3.1 Weblogs**

According to the Oxford English Dictionary (2009), there are two meanings of the word blog itself. The first is a noun, describing '*a personal website or web page on which an individual records opinions, links to other sites, etc. on a regular basis*'. Weblogs are also known as online journals or online diaries. However, as a verb, the meaning of weblogs is to '*add new material to or regularly update a blog*', or '*to read or browse weblogs consistently*'. One example of a software tool that can be used in the production of weblogs is Blogger (OECD, in Jomhari, 2010). From another perspective, a weblog is an individual's or a few authors' serial journal-like informal postings, normally written by authors who solicit comments from readers (McGee and Begg, 2008). Johnson et al. (2007) found that weblogs have potential reasons. Weblogs may exceed their readerships by reader's influence and the credibility itself. Weblogs incorporate a good example of technology Web 2.0 and its ability to enable collaboration through online knowledge sharing (Lu et al., 2010). The rise in popularity of weblogs is shown by the fact that in 1999, there were only fifty existing blogs to a few users but this has risen to fifty seven million users in 2006 as a result of all of the United States of America internet users who can access the weblogs (Lenhard and Fox, in Johnson et al., 2007). In addition, in 2007, weblogs and wikis increased drastically, with over thirty million sites available (Sandars and Haythornwaite, 2007). Furthermore, in Taiwan, it was reported that blogging through weblogs was the third most popular behaviour on the Internet, based on a Market Intelligence Center survey in 2008 (Lu et al., 2010).

The weblogs influence their readers and their information and story tips are even monitored by the leading journalists and political officials themselves (Cassidy; Singer, in Johnson et al., 2007). Credibility is also important for the weblogs since it is rapidly accepted and is

challenging online media sites that are the leading source of news. In addition, online social media is not perceived as credible anymore, and it is less likely to gain attention (Johnson and Kaye; in Johnson et al., 2007). However, credibility is not a source, medium or message, but depends on the perception of the receiver (Berlo et al., Schweiger, in Johnson et al., 2007). If the weblogs, as online services, are linked to the right type of visited source (Flanegin and Metzger, in Johnson et al., 2007) then it can be a motivation for the user to access the sources (Johnson and Kaye, in Johnson et al., 2007). However there are only a few studies that claim that credibility is specifically linked to the use of gratifications theory (Greer, Johnson and Kaye, Kim, in Johnson et al., 2007).

Martin-Niemi and Greatbanks (2010) claimed that the weblog is an increasingly popular media. The reason is that they can be used as a means of personal expression as well as a social networking medium. Weblogs have a variety of purposes. They can be an information source, a public forum for debate or a domain of knowledge management. They can be a domain of knowledge management when the location of a community of practice has been identified. In another sense, while some perspectives can be seen as barriers, such as geographic location, weblogs themselves extend beyond communication within a community. This proves that weblogs are an effective social networking medium. Martin-Niemi and Greatbanks (2010) examined the potential that blogs have within the weblogs community in providing the enabling conditions required for tacit knowledge conversion. For this research context, blogger-created content is the key to ensuring the success factor in knowledge sharing behaviour among students (Du and Wagner, 2006). Besides the weblogs, another element in technology Web 2.0 which has become popular now is Facebook, the most well-known social networking site. This issue is explained in the next section.

#### **2.4.3.2 Social Networking: Facebook**

McGee and Begg (2008) define social networking as interaction among members of a website through text, images and video postings. This can represent their personal opinions, personality, and the content they wish to share with their members. Social networking sites can be known under Web 2.0 tools as sites for creation and sharing knowledge. One of the fast-emerging social network sites at the moment is Facebook. It was created in 2004, and by 2007 it was generating 1.6 billion page views each day and is reported to have more than 21 million registered members (Needham and Company, in Ellison et al., 2007). Ellison et al. (2007) claim that this site is strictly integrated into the daily media practices of its users.



Furthermore, normally the addicted user will spend an average of at least 20 minutes a day on the site, while two thirds of the other types of users log in at least once a day (Cassidy; Needham and Company, in Ellison et al., 2007).

Facebook started as a high school version of social networking sites among college students in early September 2005. Then, in 2006, it was introduced to communities in commercial organisations. As a result, in November 2006, a total of 22,000 organisations had Facebook directories (Smith, in Ellison et al., 2007). In addition, in the same year, Facebook was used in over 2,000 colleges in the United States of America. This led to it being ranked as the seventh most popular site on the World Wide Web. Moreover, this rank is based on total page views (Cassidy, in Ellison et al., 2007).

Identification of presentation and privacy concerns was undertaken in academic research with a focus on Facebook (Gross and Acquisti; Stutzman; in Ellison et al., 2007). In addition, it was identified through information on Facebook participants'. This also provided them with a relatively open nature of information and lack of privacy control. However, Gross and Acquisti in Ellison et al. (2007) argue that the users may be putting themselves at risk, whether they are in offline (e.g. stalking) or online mode (e.g., identify theft).

Besides this, other recent Facebook research has examined students' perceptions of instructor presence and self-disclosure (Hewitt and Forte, in Ellison et al., 2007; Mazer et al., 2007), temporal patterns of use (Golder et al., 2007), and the relationship between profile structure and friendship articulation (Lampe et al., in Ellison et al., 2007). Consequently, Ellison et al. (2007) added popular issues that have focused on the negative outcomes of Facebook. Then, they are using stemming from users' misconceptions about the nature of their online audience. From the study done by Ellison et al. (2007), the identification of the intended audience for the profile and the actual audience are aligned. Furthermore, they used Facebook as a research context in order to determine whether offline social capital can be generated by online tools. The findings prove that Facebook, by using college-age respondents, is significantly associated with measures of social capital. The next section will discuss the focus group for this research. Malaysian undergraduate students are explained precisely.

## 2.5 Malaysian Undergraduate Students (MUS)

The focus group for this research is Malaysian undergraduate students which refers to undergraduates students who originate from Malaysia. It can also be a person who is reading their first degree in their home country in Malaysia. Malaysia is one of the developing countries in South East Asia. Nowadays Malaysia is heading to become an industrialised country by the year 2020. The aim is that by the year 2020, Malaysia will be a “developed country in our own mould” (Mohamad, 1997). However, even though Malaysia has rich natural resources, it still is not promising enough to bring Malaysia towards achieving the status of a developed nation. The most important resource to be developed is its people (Shaari, 2009).

*“Nothing is more important than the development of human resources. Our people are our ultimate resource.”* (Mohamad, 1997)

That is the main reason why the Malaysian government is concerned about tertiary education of the population. Undergraduate students are among those individuals who are in tertiary-level education. Malaysia has provided an excellent place for its people to gain further tertiary education. The higher education system is monitored by the higher education ministry. Meanwhile the public universities and private universities play an important role in providing excellent facilities for the undergraduate students in Malaysia.

Ismail et al. (2007 in Shaari, 2009) have stressed that higher education and human capital in Malaysia are the core elements that should be emphasised. Thus, the human capital in Malaysia is linked closely with the major development of economic policies. Thus, according to Yeop Abdullah (1994), it is proven from the empirical studies that a good education and training system will lead to a significant and rapid economic and social development. Furthermore, human capital development through undergraduates is also one of the top priorities in developing the nation. To meet this aim, education, training and skill development are among the most critical factors in producing human capital (Fisher et al., 1994). In addition, the Malaysian Government has outlined in its manifesto its commitment to education and human capital. This aim can be achieved by allocating the highest amount of budget for education and training under Malaysia’s Five-Year Development Plan (Abdullah, 2006). In developing human capital, Malaysia has made a huge investment for higher education purpose.

The Government of Malaysia has developed a Knowledge-Based Economy Master Plan. This plan is designed to establish the right infrastructure to nurture the growth of all forms of intellectual capital (Knowledge-Based Economy Master Plan, 2002). Research and development activities are continuously encouraged and supported. Furthermore, it is designed to utilise the latest technological capabilities to adapt information communication technologies (ICT) (Abdullah et al., 2007).

Malaysia's human capital is being seriously emphasised by the government – in fact it has constituted a national policy. As asserted by McLean and McLean (2001), government legislation plays the most significant contribution in human capital in Malaysia. In this case, it can be said that Malaysia's human capital practices stress more on individual, organisational, nation and community developments. The human capital practice focus in Malaysia is similar to Thailand's human capital (Shaari, 2009).

The growth of public universities from 1960 to the turn of the century has forced Malaysian government's efforts to continuously produce an educated and knowledgeable workforce by using human capital theory as a proxy for manpower planning (Rasli, 2005). Now, Malaysia has twenty universities altogether which include: Universiti Malaya (UM), Universiti Sains Malaysia (USM), National University of Malaysia (UKM), Universiti Putra Malaysia (UPM), Universiti Teknologi Malaysia (UTM), International Islamic University Malaysia (IIUM), Universiti Utara Malaysia (UUM), Universiti Malaysia Sarawak (UNIMAS), Universiti Malaysia Sabah (UMS), Universiti Pendidikan Sultan Idris (UPSI), Universiti Sains Islam Malaysia (USIM), Universiti Teknologi MARA (UiTM), Universiti Malaysia Terengganu (UMT), University Tun Hussien Malaysia (UTHM), University Teknikal Malaysia Melaka (UTeM), Universiti Malaysia Pahang (UMP), Universiti Malaysia Perlis (UniMAP), Universiti Darul Iman Malaysia (UDM), Universiti Malaysia Kelantan (UMK) and Universiti Pertahanan Nasional Malaysia (UPNM) (Official Portal of Ministry of Higher Education of Malaysia, 2010a).

Higher Education also plays an important role in terms of improving the nation and is continuously expanding that role in order to fulfil the requirements (Ahmad, 2004). Moreover, it plays several important roles in society and the economy. Fulton and Ellwood (1989) state that there is little serious consideration of what the role of higher education is. Their book highlighted five main purposes for higher education: skill development, selection, socialisation, scholarship and service. For this research context, the aim in this section is to

explore how far the socialisation skills development is met among Malaysian undergraduate students using technology Web 2.0 facilities.

Others have elaborated on these roles. For example, Ruth (1998 in Ahmad, 2004) amplified the 'scholarship' role noting higher education's special contribution in creating a place for discovery, synthesis, reflection, and evaluation of knowledge. In addition, King (1995 in Ahmad, 2004) identified creation of new knowledge or knowledge value-added, through discovery, and noted that research and development are important to promote education excellence. Furthermore, time by time, the demand for higher education keeps increasing year by year. The number of students with good high school qualifications in Malaysia increases year by year. This is one of the reason why some school leavers who are excellent, have the option to carry out further studies overseas. In Malaysia the reason for this is that the universities there are not adequate enough to meet all the demands of the excellent school leavers year by year. Some of them were offered scholarships. Some of them are self-sponsored by parents. The good economy status in Malaysia also contributes to the capabilities of the government and multi-national companies (MNC) to sponsor those who are able to gain it. This trend started since Malaysia was a non-independent country and still continues today. The indirect reason could be to expose the young generation to a different culture, to capture the technology overseas and to develop survival skills as well as attaining the degree.

## **2.6 Conceptual Framework**

This chapter has explored various works and notions concerned with knowledge, knowledge management and knowledge sharing itself. It started by reviewing the knowledge paradigm between the Western and the Eastern (Japanese). There is a strong belief that knowledge cannot be separated from its context regardless of knowledge seeking, nor knowledge sharing behaviour. This study captures the 'integration' and 'socialisation' concepts which become the important keywords in the knowledge sharing behaviour perspective, including learning process. Table 2.5 provides an overview the concepts reviewed from this perspective. It also gives an overview of the concepts in relation to the knowledge sharing perspective and also to the development of a conceptual framework.

Table 2.5: Overview of concepts in relation to knowledge sharing behaviour perspectives

Concepts reviewed	Implications to this research
Notion of Knowledge	The differences between information and knowledge have led to an understanding of the reasons why managing knowledge is important for competitiveness. The comparison of knowledge epistemology between the Western and the Japanese approaches illustrates how managerial practices could be influenced by the epistemology.
Socio-cultural factor and interaction; Nonaka's Socialisation, Externalisation, Combination and Internalisation and <i>Ba</i> model	Social interaction is vital in the knowledge sharing behaviour process as knowledge itself is not an independent entity but is dependable on its context. The Socialisation, Externalisation, Combination and Internalisation model implies that continuous interaction may take place continuously in its spiral process and space for interaction must be supported. Tacit and explicit knowledge is not separated but rather viewed as balanced.

Table 2.6: Overview of concepts in relation to development of Conceptual Framework

Concepts reviewed	Implications to this research
Knowledge-sharing behaviour	Knowledge-sharing behaviour is an act that is related to motivational factors because it is not spontaneous but rather needs to be nurtured or facilitated. Peoples' willingness to share is related to their self-efficacy and vice versa.
Critical success factors	It was revealed that the soft and hard factors contribute to the critical success factors either in knowledge management or in KS specifically. The best practices research was also identified from the discussion in the subchapter.
Potential critical success factors	Potential critical success factors were recognised based on standards identified in the literature and have been considered for the success factors for this research
Malaysian undergraduate students	This variable is an important issue for this research. This is because it is the focus of the study. The surveys are based on the Malaysian undergraduate students, and the findings are from the individual Malaysian undergraduate students from the selected community. The discussion on Malaysian undergraduate students reveals the importance of Malaysian undergraduate students to the focused country – Malaysia.

Lastly, the conceptual framework for this research has presented the overview of this research and has made it clearer and more understandable. The next section provides closure for this chapter.

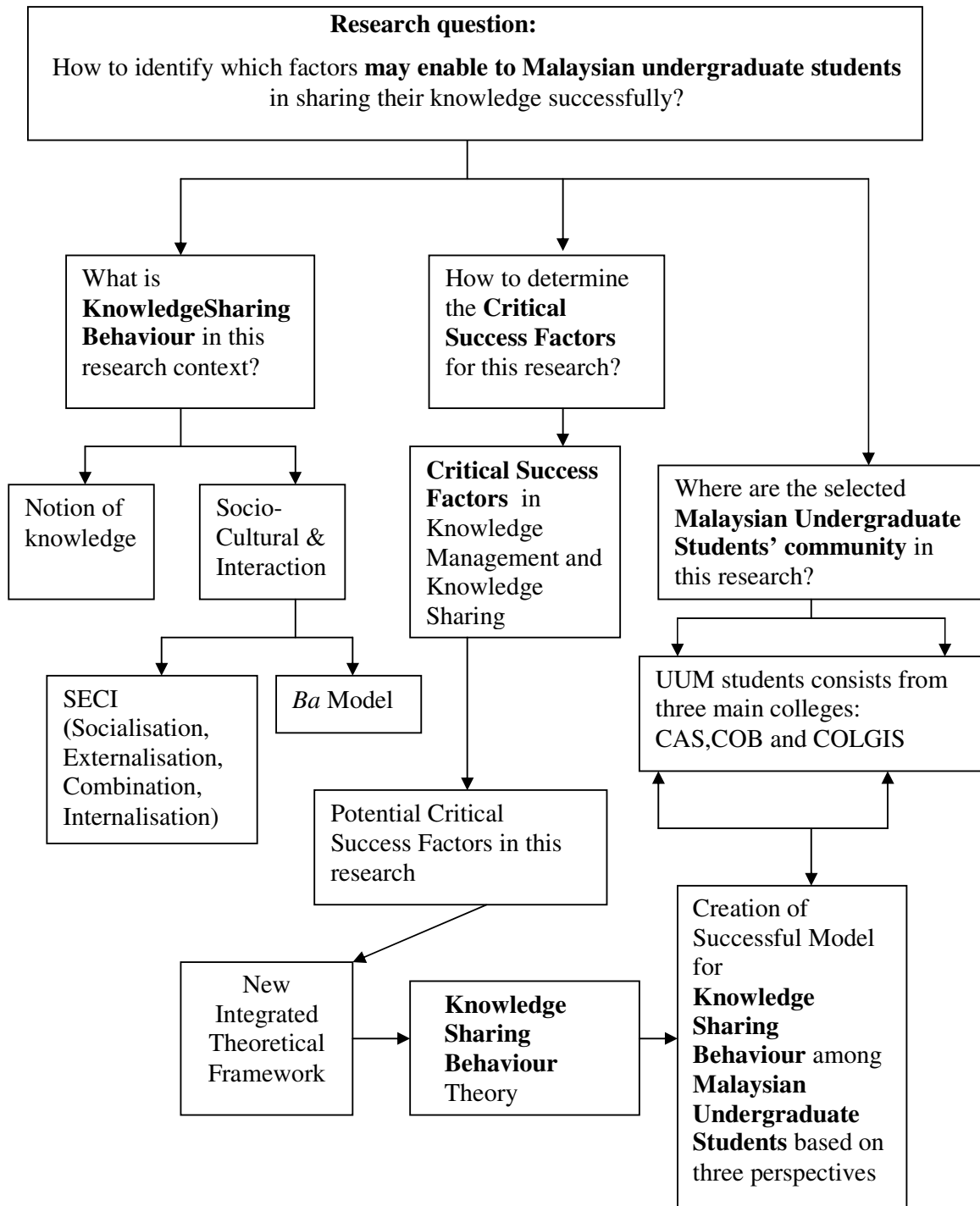


Figure 2.6: Conceptual Framework

## 2.7 Summary

This chapter has highlighted all the issues in this study. It starts with a discussion on the importance of knowledge, its definition and also the types of knowledge available. It also discusses scenario knowledge management in Malaysia due to this research context that was applied to Malaysian undergraduate students. This is followed by a discussion on knowledge sharing, social interaction towards Socialisation, Externalisation, Combination and Internalisation and also the Ba Model. These two concepts are identified in this chapter in relation to knowledge-sharing behaviour perspectives (Table 2.5). Meanwhile the existing researches on knowledge sharing are revealed in Table 2.1 and Table 2.2 and gap identification is also shown in Table 2.1. Then, the definition of knowledge sharing most related to this research is identified in section 2.2.3. After that, the critical success factors issue is also discussed. It starts generally, and then in the knowledge management context it researches success stories. It is classified on both organisational and individual levels. After that, it focuses on knowledge sharing behaviour and discusses the study findings from the most relevant researches on critical success factors. In section 2.3, the researcher identifies three perspectives for critical success factors in this research. Furthermore, based on the discussion of the potential of critical success factors, information technology and people are the most important factors in determining the success of an organisation. From the technological (technology Web 2.0) perspective, previous studies on weblogs and Facebook also show the potential of these applications as success factors for this research context. Malaysian undergraduate students issue act as the main variable in this research context and their importance to Malaysia. Finally, in order to investigate the critical success factors perspective to contribute to knowledge sharing, this study employs the four main concepts in the conceptual framework as in Table 2.6. In **Chapter 3**, the theoretical framework is discussed. The theoretical discussion in detail is proposed in **Chapter 3** where it will be used for the analysis stage in **Chapter 4**.

## CHAPTER 3: THEORETICAL FRAMEWORKS

### 3.1 Introduction

In this chapter, the content is concerned with developing the theoretical frameworks according to this research context. Having presented the conceptual framework in **Chapter 2**, the next step is to explain how this research was carried out from a theoretical point of view. An overview of the applied theories in the research will be discussed in this chapter. The researcher has maximised at least four theories and the others are only supportive applied theories.

The main theories and support theories are discussed precisely to emphasise the importance of the theories within the data findings. The four theories that are potentially to be extended in this research are Theory Planned Behaviour (TPB), Social Cognitive Theory (SCogT), Social Capital Theory (SCapT) and Social Exchange Theory (SET). These theories are most favourable in knowledge sharing behaviour research (Liang et al., 2008), are applied in various types of disciplines, and mainly originate from sociology, political science, economics, phenomenology, and psychology. The other theories that may have the potential to support the data findings are Narrative Theory (NT) and Media Richness Theory (MRT). However, Receiver Based Theory (RBT) and Hermeneutic Theory (HT) are used as justification in the initial analysis stage of this research. In the last section, an explanation justifying the integrative theoretical framework was carried out.

This consists of three types of frameworks. The first framework is about how the classification of the types of theories link to the data findings categorisation. This classification will lead to an integration process in the data analysis for **Chapter 4**. The second framework is about how categorisation is developed based on Dooyeweerd's Theory of Modal Aspects (DMTA) (Basden, 1997). This research has adapted four modal aspects from fifteen modal aspects from Dooyeweerd's Theory. The third framework has integrated adapted theories for this research context. The justification of the process of the theoretical framework is manipulated and will be explained in this last section.



### **3.2 Overview of Applied Theories in the Research**

For this research, the findings are proven by a variety of theories. Some of the theories are widely used in information systems research (Chiu et al., 2006; Hsu et al., 2007); some are used in knowledge sharing research (Chiu et al., 2006; Hsu et al., 2007) like the Receiver Based Theory and Social Exchange Theory (Hsu et al., 2007), and Social Cognitive Theory (Chiu et al., 2006; Hsu et al., 2007). As for virtual community research, theories like Theory Planned Behaviour, Social Capital Theory and Social Cognitive Theory have been the favourite theories to utilise. Theory Planned Behaviour and Social Cognitive Theory (Chiu et al., 2006; Hsu et al., 2007) have also been explored in health research (Fila and Smith, 2006; Baranowski et al., 2003). Human capital research field or social science research field have been mainly dominated by the adoption from Social Capital Theory (Hashim and Tan, 2009). Two theories that can be used in support of this mode of analysis are either Narrative Theory or Hermeneutic Theory. For these theories, the decision to apply or not will be based on the research question and research objective. In this section, all the potential theories will be introduced precisely with the existing research which has used these theories. The applied theories in this research combine to form one of the main contributors in determining the critical success factors in knowledge sharing among the Malaysian undergraduate students. Furthermore, this research is mainly based on the qualitative approach, which is why the applied theories have also been used as a medium to analyse the data findings for the main fieldwork. The meaning of applied theories includes the elements and variables of the theories that are used for data analysis. Fila and Smith (2006) used the elements within the theories for the questionnaire construct.

The next section explains the stated theories and the previous researches that have been done using these theories. It starts with Receiver Based Theory, and is then followed by Hermeneutic Theory, Theory Planned Behaviour, Social Cognitive Theory, Social Capital Theory, Social Exchange Theory, and lastly, Media Richness Theory.

#### **3.2.1 Receiver Based Theory (RBT)**

Initially, the knowledge sharing process itself will be proven by Receiver Based Theory. This theory is suitable for knowledge sharing, as it demonstrates the process of sharing communication. This theory is aimed at examining the feedback from receivers for different levels and being able to influence perceptions, attitudes and behaviours. When applied to this

research context, this model assumes that there is a person who possesses knowledge and that person is called a sharer. The model has six steps. The first steps through to the fifth step are outlined by Hendricks in Lichtenstein and Hunter (2006). The first step is about the awareness value of knowledge for others. This is followed by the second step of the model which brings knowledge. The third step is transfer of knowledge. In the fourth step, the receiver acquires knowledge and this is followed by the fifth step which is application of knowledge. Finally, the last step involves perceiving the knowledge needs and behaviour of the receiver, which was extended by Lichtenstein and Hunter (2006).

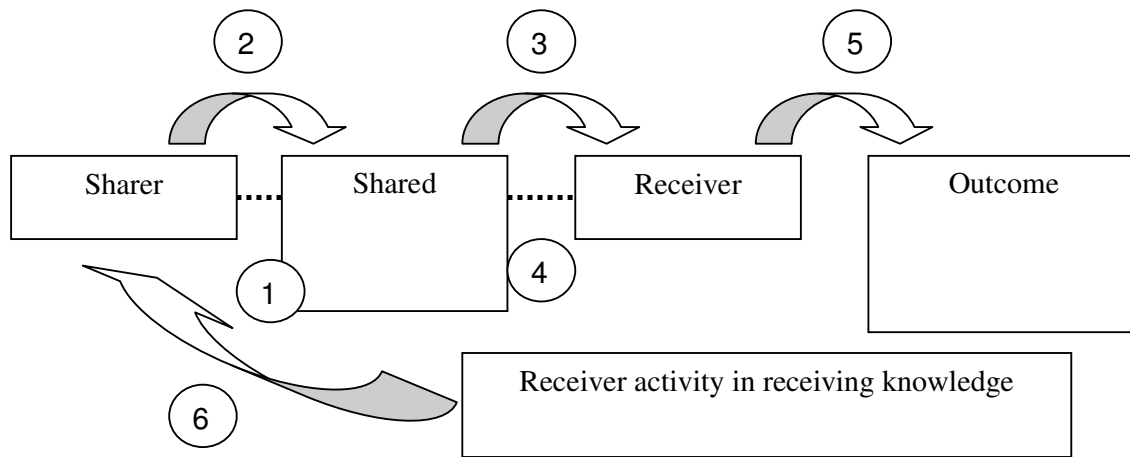


Figure 3.1: Simplified Model of Receiver Based Theory (RBT)

Specifically for this research, the sharer and the receiver are different students. Shared refers to the knowledge, which might be in the form of data or information. When information is received by the receiver, the outcome in the box becomes the knowledge. Knowledge sharing itself is what it turns into in the last box, which is the receiver's activity in terms of receiving the knowledge. That is the reason this theory is applicable to this research from a general point of view. The next theory is about Hermeneutic Theory and the justification on the relevance with this research context.

### 3.2.2 Hermeneutic Theory (HT)

The data collection might be interpreted by the researcher using Hermeneutic Theory (Berger, and Luckman, in Wong, 2005). This theory, which has existed since 1967 from the originator of the theory, comes from the areas of phenomenology and sociology (Wong, 2005). Since this research is suitable for application in an interpretive paradigm, this theory is very reliable. It focuses on defining the meaning in content (Wong, 2005). For this study, the researcher

must know how to classify the content for entries in the weblogs. In addition, this theory also suggests the content of meaning which presents the possibility of having more than one interpretation by the visitors. As well as Hermeneutic Theory, Narrative Theory in the next section may also be of concern to the researcher during analysis of the data.

### 3.2.3 Theory of Planned Behaviour (TPB)

The most reliable theory applied through this category is Theory of Planned Behaviour. The reason of suitability for this theory is that this research aims to study the behaviour of students in terms of knowledge sharing. This theory suggests that individual behaviour is motivated by the eagerness of individuals' actions (behaviour intention (BI)). An action that an individual wants to do plays a role in their approach toward their behaviour. The subjective norms (SN) surrounding the performance of the behaviour and the individual's perception can be performed under behaviour's control. Meanwhile, attitude towards the behaviour (ATAB) describes the individual's positive or negative belief in their behaviour. It is decided through their judgment of their beliefs regarding the result arising from their behaviour and the evaluation of the attraction of these results. Properly, overall attitudes can be assessed as the sum of the individual consequence attraction behaviour assessments. SN refers to ways of behaving or doing things that most people agree is the right way to act. Meanwhile, perceived behavioural control (PBC) is turned up as a belief about something of the difficulty in performing the behaviour. All in all, this theory is able to demonstrate the people who can control their behaviour as untruthful from behaviours that are easily performed (Furneaux, 2005; Sihombing, 2009).

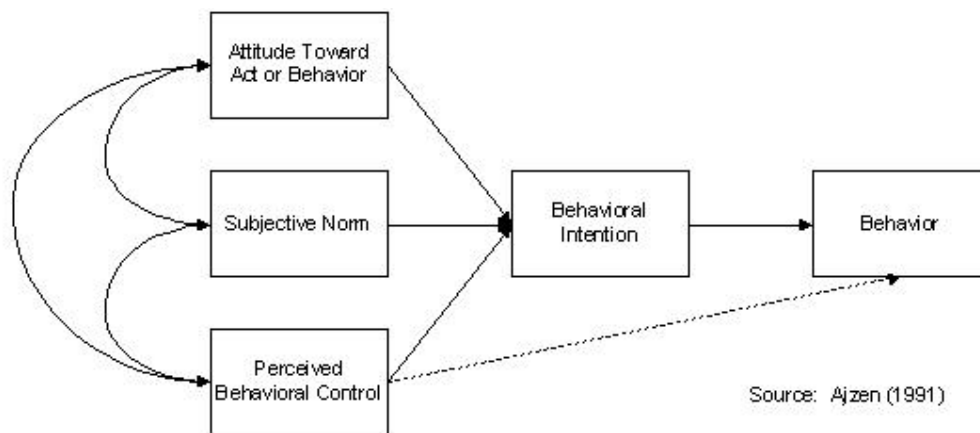


Figure 3.2: The Theory of Planned Behaviour (TPB) (Ajzen, 1991)

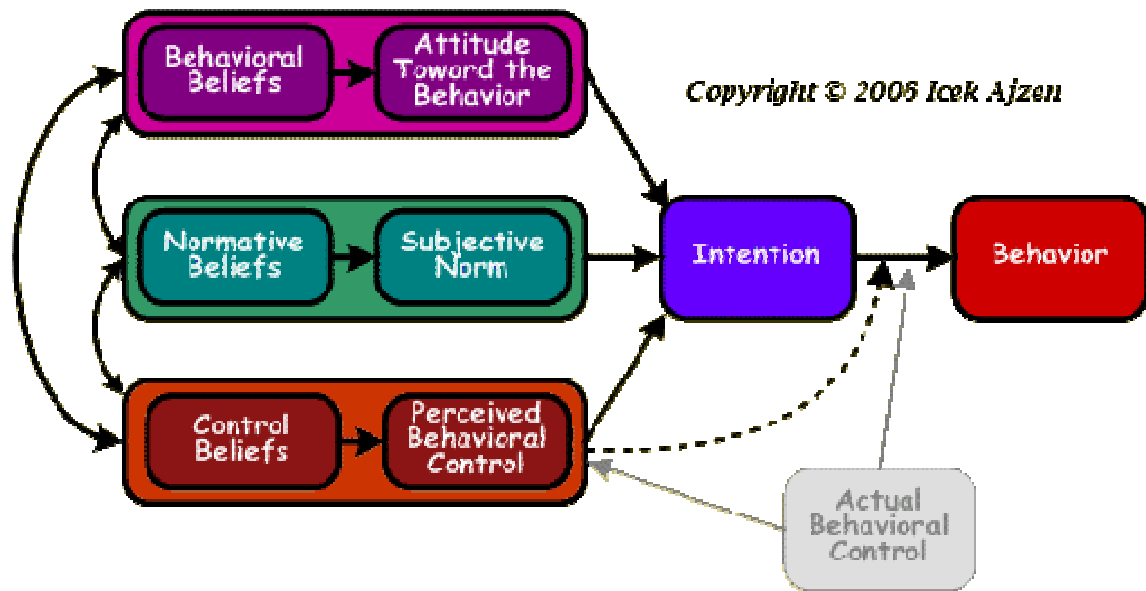


Figure 3.3: The updates of the Theory of Planned Behaviour (TPB) (Ajzen, 2006)

The only part of these methods that requires qualitative research is the elicitation of salient behavioural, normative, and control beliefs (Ajzen, 2010). A study was done by Fila and Smith (2006) shows the effectiveness of the Theory of Planned Behaviour. It was proven by predictions about healthy eating behaviour in an urban Native American youth group. They used the following Theory of Planned Behaviour constructs to administer the questionnaire survey: behaviour intention, attitudes towards the behaviour, subjective norm, and perceived behavioural control. In addition to the Theory of Planned Behaviour model, they analysed the data based on bivariate correlations and stepwise regression analysis.

Meanwhile in the study conducted by Baranowski et al. (2003), they tried to prove the most promising theory which is Theory of Planned Behaviour. The study is about health behaviour change to assist the prevention of weight gain. From this research, a variety of modifications and extensions of Theory of Planned Behaviour were proposed, including the stages to enhance belief evaluation, self-identification, effect of human behaviour and others (Corner and Armitage, in Baranowski et al., 2003).

In addition, Bock and Kim (2002) adapted Theory of Planned Behaviour to explain how the determinants affect knowledge sharing behaviour. The determinant here refers to expected rewards, expected associations and expected contributions. Then these determinants will contribute to individual knowledge sharing attitudes, the attitudes also having been determinants for intentions to share the knowledge. The adoption of Theory of Planned Behaviour for their study was used to achieve the objective of their research. The purposes of

their research relate to knowledge sharing behaviour in organisations. It is about developing an understanding of the factors supporting knowledge sharing behaviour and their effectiveness in influencing knowledge sharing behaviour. Rai et al. (2002) also used this theory to evaluate whether the Information Systems Success Model correlates with the Technology Acceptance Model (TAM). In their research, they used attitudes towards behaviour, subjective norm, perceived behavioural control and behaviour intention to correlate with the Technology Acceptance Model variables (beliefs, attitudes and usage behaviours to systems). Besides Theory of Planned Behaviour, which has a big potential for this research context, another theory which has good potential is Social Cognitive Theory which is applied heavily in Information Systems research.

#### **3.2.4 Social Cognitive Theory (ScogT)**

Social Cognitive Theory was chosen since it can provide a framework for ensuring the concept of understanding and predicting human behaviour changes. This theory looks at human behaviour as the connection between personal factors, behaviour and the environment and was originated by Bandura (1977; 1986). A person's judgement and performance plays an important role in determining the relationship between a person and their behaviour. Meanwhile, human beliefs (HB) and cognitive competencies (CC) are developed to deliver the relationship between the person and the environment. The relationship is also influenced by the social structures (SS) environment. The third relationship between the environment and behaviour is the person's behaviour (PB) which indicates how aspects of their environment – or, in other words, behaviour – are influenced by the environment (Davis, 2006a).

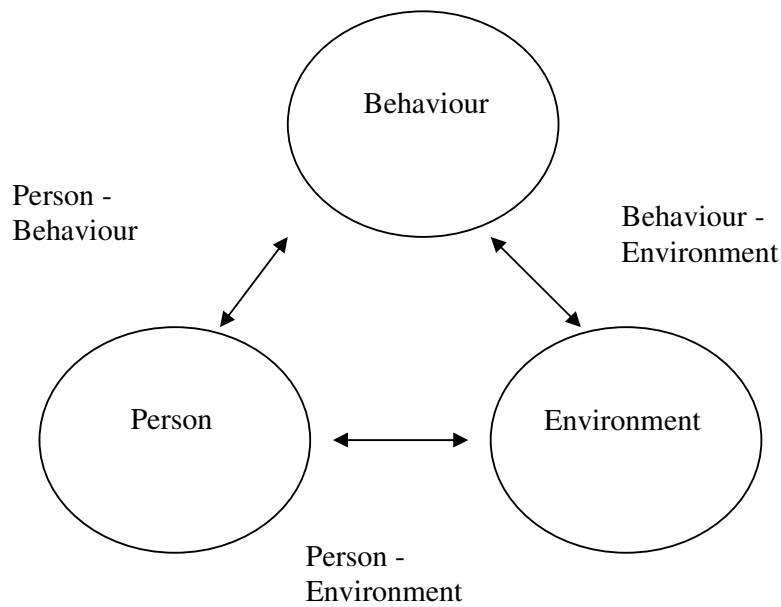


Figure 3.4: The Model of Social Cognitive Theory (ScogT) (Bandura,1986)

This theory is relevant to the category of the pistic which contains personal, motivation and also festive. The main motivation to use this theory is based on Hsu et al. (2007). They proposed a Social Cognitive Theory -based model for their study. The relationships between knowledge sharing self-efficacy, outcome expectations and multidimensional trust are tested using structural equation modelling and confirmatory factor analysis. In addition, Chiu et al. (2006) have been using the outcome expectation to investigate the motivations in knowledge sharing behaviour in virtual community. Meanwhile Bock and Kim (2002) have been adapting their understanding based on this theory for developing their third hypothesis: 'Expected contribution will have positive effects on the individual's attitude towards knowledge sharing'. This is supported by Bandura (1986) in Zhaoli and Jiong (2009) where self-evaluation in Social Cognitive Theory is based on competence and social acceptance is important for intrinsic motivation. These elements drive motivation in knowledge sharing behaviour (Bandura, 1986 in Zhaoli and Jiong, 2009). In addition, the competence through contributing knowledge collectively should happen when enjoyment in helping exists. This theory has a close correlation within Social Capital Theory which is discussed in the next section.

### **3.2.5 Social Capital Theory (ScapT)**

This theory will be adapted in the social category which includes official events, social activity, society work and also friendship. This theory which originates by Granovetter since 1973 (in Qureshi, 2006) and Coleman by 1988(in Qureshi, 2006) is mainly used in sociology and political science area. The Social Capital Theory concept ranges from small communities to big organisations; as long as humans have connections with the anticipation of similarities and trust (e.g. refer to Platteau; Platteau and Moore; Woolcock, in Qureshi, 2006); however, the term was made well-known by Bourdieu, Coleman, Granovetter and Putnam in Qureshi, 2006. There are various possible representations of social capital. Generally, social capital can be seen in five dimensions:

- i- Lateral network associations that are in a variety of densities and sizes
- ii- Behaviour in which two people or groups of people give each other help and advantages are returned;
- iii- Trustability to take initiatives (or risk)
- iv- Social norms - the unwritten shared values
- v- Personal and collective efficacy (Bourdieu, Coleman, Onyx and Bullen, Paxton, in Qureshi, 2006).

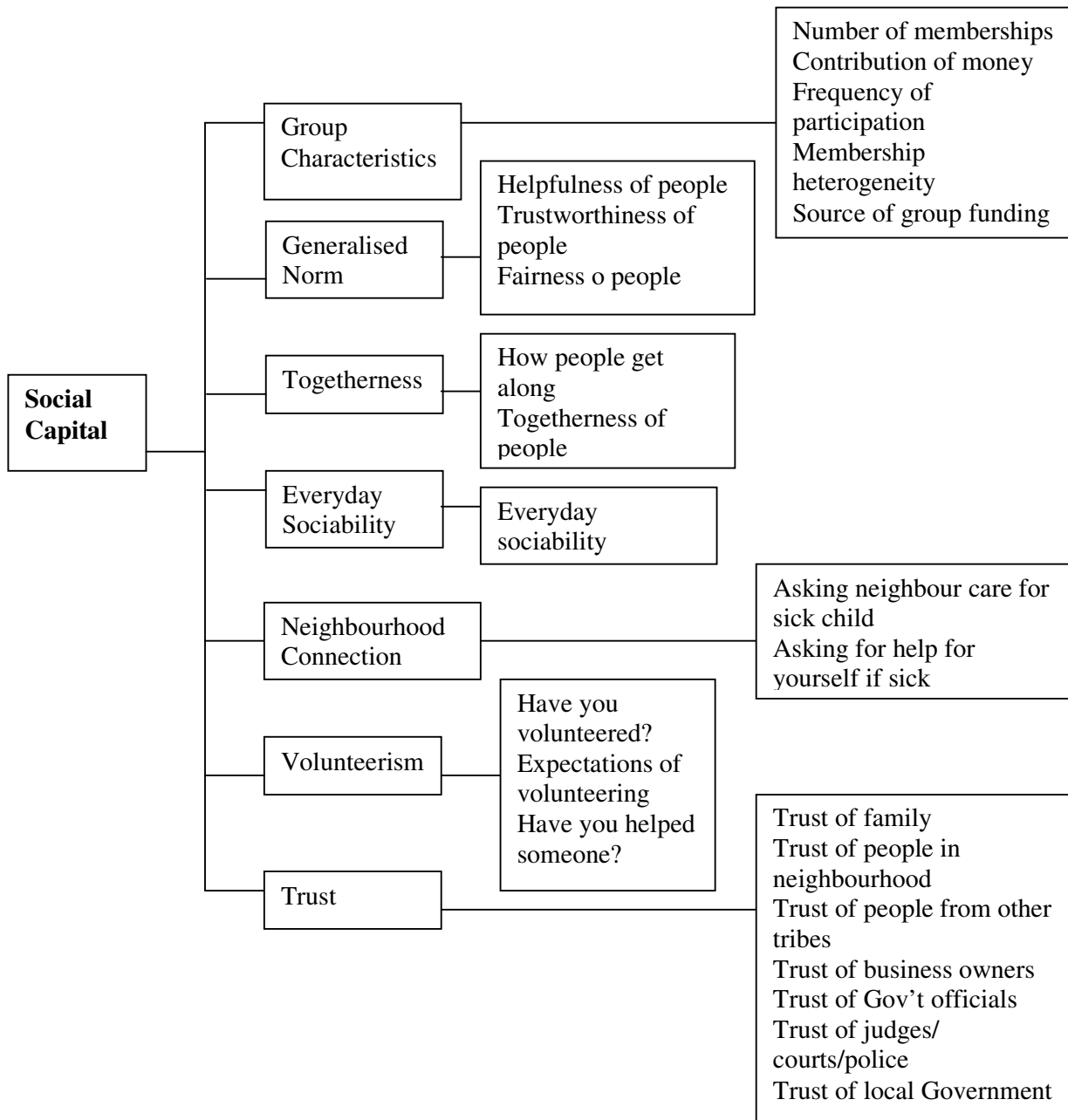


Figure 3.5: The Model of Social Capital Theory (Granovetter, 1973)

Initially, based on Figure 3.5, the researcher looked at six potential elements out of seven. The potential elements are generalised norms (GN), togetherness (T), sociability (S), neighbourhood connections (NC), volunteerism (V) and also trust (T). However, all of these potentials will be looked at again based on later data findings.



In a study by Hashim and Tan (2009), Social Capital Theory has used to explain passive knowledge sharing in a group level perspective. Social Capital Theory has also been used for mobilising resources in group relationships. In the literature, it has been proven that cooperation is positively correlated. Strong relational dimensions such as trust, reciprocity norm and group identity are used for this research. The trust dimension here allows employees to care towards each other. It indicates whether the individuals in the group have trust in each other, are willing to cooperate and not be selfish.

Meanwhile, the norm is adapted to a mutual norm, which is used to ensure that people avoid being selfish. In addition, positive group identification is gained through developing the cooperation. From the group identification, collective interests can exist and can become an important contribution (Brewer and Kramer, in Hashim and Tan, 2009). This theory also has some interrelationship and correlation with the next theory, which is Social Exchange Theory.

### **3.2.6 Social Exchange Theory (SET)**

Social Exchange Theory is one of the most accepted theories in describing knowledge sharing behaviour (Homans, in Devans, 2006; Liang et al, 2008). It originates by Homans since 1958 (Devans, 2006) and this theory is well established especially in area of economics, psychology and sociology (Devans, 2006). However, this theory might be more reliable to the friendship issue for this research context. The reason for this, it relates with social behaviour and is an exchange of goods, material goods and non-material ones, such as symbols of approval or prestige. However, for this research, the theory will be applicable to non-material ones, where the individuals will give much to others and try to get much from them. An individual who gets much from others is pressured to give much to them. This process of influence tends to work out an equilibrium where this is a balance in the exchanges. For an individual in an exchange, what given one may be a cost, just as what it consider as a reward. Then the behaviour changes less as the difference of the two, profit, tends to a maximum (Devan, 2006). In addition, the Social Exchange Theory concept states that members engage with social interaction. From the social interaction, they expect social rewards like approval, status and also respect (Liang et al., 2008, Zhaoli and Jiong, 2009). They used Social Exchange Theory for their research investigating online knowledge sharing behaviour in China. Even though their findings seem to represent selfish behaviour, the reality is that the people in the communities are the key factor in the growth of online knowledge sharing communities.

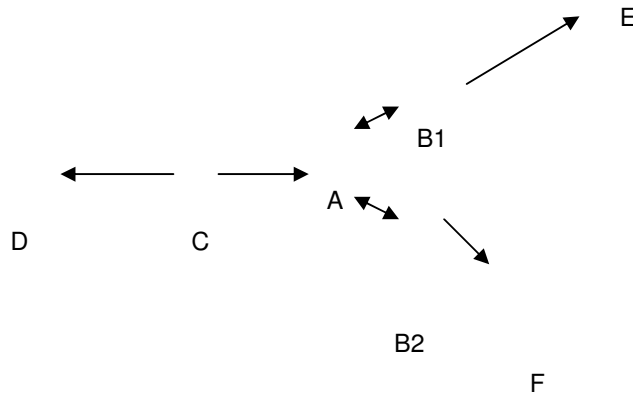


Figure 3.6: The Model of Social Exchange Theory (SET) (Cook, in Devan, 2006)

In Figure 3.6, the letters A, B, C, D, E and F represent actors and the arrows depict the movement of resources. The arrow head points to the sourcing actors with the ends at the source actors. Then, the letters B1 and B2 represent alternative exchange relations.

On the other hand, Hsu et al. (2007) claim that Social Exchange Theory is a contribution from the individual who has rational self-interest. Moreover, knowledge sharing will be achieved when the outcome exceeds its costs or is as expected (Constant et al., in Hsu et al., 2007). That statement is supported by the practitioners in knowledge management, where they always emphasise the incentive systems to ensure the success of knowledge management. From the organisational environment, based on Social Cognitive Theory, if individuals of a virtual community claim the extrinsic benefits, it makes the positive attitude towards to knowledge sharing (Bock and Kim, 2002; Kankanhalli et al., in Hsu et al., 2007). In addition, they claim that the extrinsic benefits may come from monetary rewards, promotion and educational opportunity. They have clarified that intrinsic benefits can be self-satisfaction itself, social recognition or power. Meanwhile, a study done by Bock and Kim (2002) found a second hypothesis: ‘Expected associations will have positive effects on the individual’s attitude towards knowledge sharing’. In another sense, this research is trying to prove the existing research finding of Liang et al. (2008), which claimed that information technology plays a significant role in interpersonal factors. Under the information technology context, three significant factors are contributed; these are organisational commitment, social interaction and trust controlled by information technology use (Liang et al., 2008). For this research context, weblogs and Facebook tools under technology Web 2.0 are applied to prove

the significant role in personal and interpersonal factors. In terms of technology, the next section may provide a reliable and useful connection with that theory.

### 3.2.7 Media Richness Theory (MRT)

All in all, the findings will also be proven with the Media Richness Theory (Davis, 2006b). Daft et al. (1987) tried to deliver a media richness hierarchy. This theory includes four media classifications: face-to-face, telephone, addressed documents, and unaddressed documents. The richness of each media is based on four criteria: feedback, multiple signals, variety of language and personal focus. The richest communication medium is face-to-face meetings followed by telephone, e-mail, memos and letters (Rice and Shook, in Davis, 2006b).

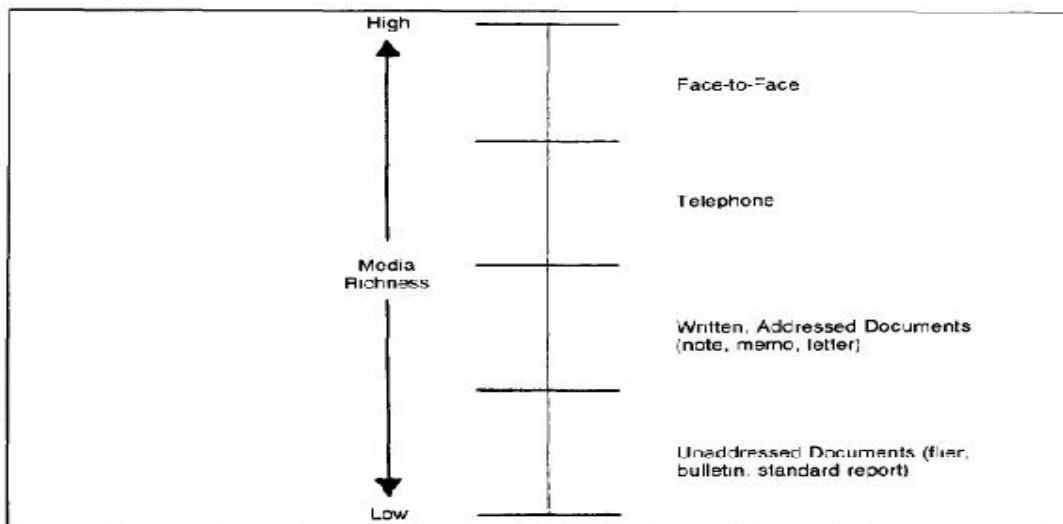


Figure 3.7: The Model of Media Richness Theory (Daft et al., 1987))

However, the researcher tries to make some intervention in this hierarchy where, besides the telephone, technology Web 2.0 can also be included either in telephone classification, written and addressed documents or unaddressed documents. For this research, video or song sharing can be added on to the telephone classification. Meanwhile the blogosphere itself, with applications such as Blogspot and Wordpress, can be seen as an example of documents written online. The last one, photo or poster sharing, can be added in the classification of unaddressed documents. In addition, it can also contribute to the role of social networks where normally it applies to three classifications: telephone, written and addressed documents, and unaddressed documents. An example of a social network that is widely used

now is Facebook. In addition to the blogosphere, which is the main tool for researchers to gain online data documents, Facebook was also highlighted in the questionnaire validation survey for this research. The next section is about the determination of categorisation based on Dooyeweerd's Theory of Modal Aspects by Dooyeweerd.

### 3.3 Determination of Categorisation

#### *i-Determination based on Dooyeweerd's Theory*

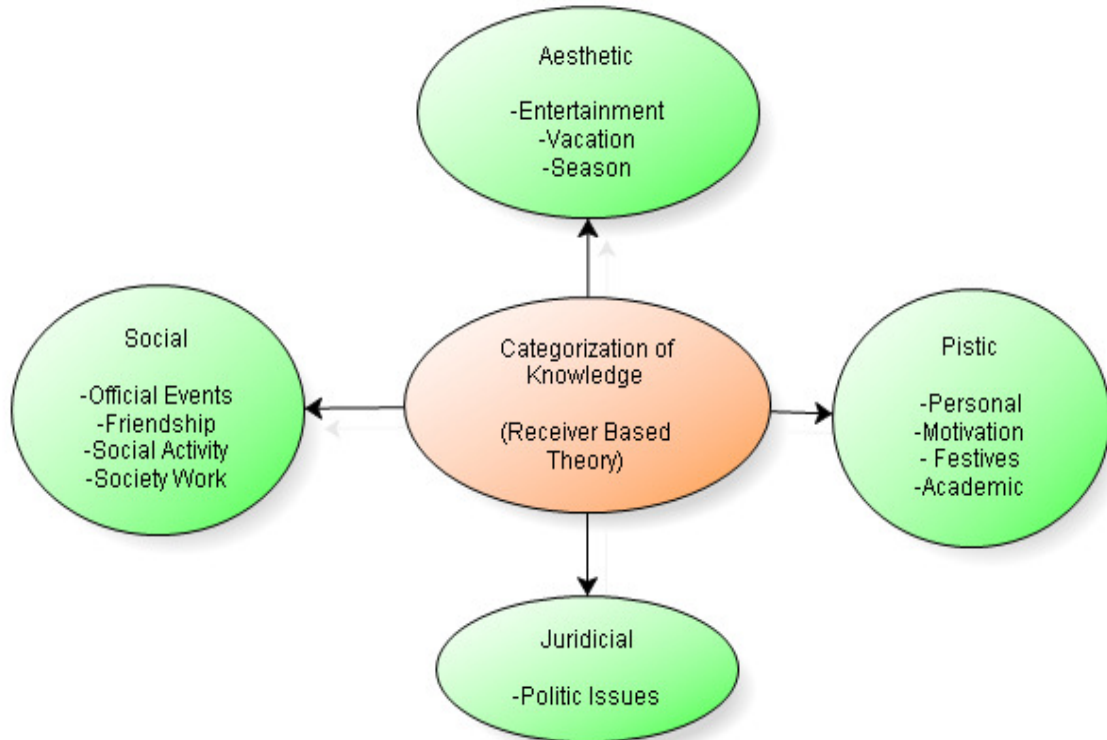


Figure 3.8: The categorisation determination adapted from Dooyeweerd's Theory of Modal Aspects (Basden, 1997)

The findings are categorised by the researcher based on Dooyeweerd's Theory of Modal Aspects (DTMA) (Basden, 1997). The four categories are the pistic, the social, the aesthetic and the juridical. In the initial stage of data collection, the researcher has decided to use her own categorisation. However, after it has finalised, Dooyeweerd's Theory of Modal Aspects is suitable for adaptation. The pistics consists of aspects such as vision, aspiration, commitment and belief. The social includes interpersonal relations such as friendship, respectfulness, mutual respect and adapting oneself to others. The aesthetic involves aspects of harmony, surprise, fun, play and enjoyment. Meanwhile, for the juridical category, the researcher will look at responsibilities and rights aspects.

This theoretical framework is developed from the main fieldwork data collection, where initially the researcher just conducted her own categorisation. However, after attending a training course delivered by Prof Andrew Basden on 17<sup>th</sup> November 2009, about Dooyeweerd's Theory of Modal Aspects, the principal researcher decided to utilise it for this work. This modal aspect seems very suitable with this research for a developed theoretical framework. Dooyeweerd's Theory of Modal Aspects is extracted from <http://www.dooy.salford.ac.uk/aspects.html>. From fifteen categories, the researcher applies it to four main categories for knowledge sharing intentions by students. All the findings adapt to the four main theories. These theoretical frameworks are divided into four main aspects: the social, the aesthetic, the juridical and the pistic. For the social aspect, the research findings have subcategories which are official events, friendship, social activity and society work. Meanwhile the aesthetic aspect has three subcategories: entertainment, vacation and season. The pistic aspect includes the subcategories of personal, motivation and festival. The last one, the juridical aspect, has the subcategory of political issues. The reason for choosing four aspects from the fifteen aspects is that these aspects are only suitable with these research findings. Furthermore, the categorisation is determined by the explicit knowledge approach where the researcher does not identify based on her tacit knowledge only. The determination is based on Dooyeweerd's Theory of Modal Aspects (DTMA) (Basden, 1997). As the social aspect was chosen, it shows that it has full meanings or functions in the social interaction or group. Interpersonal relationships involve friendship which requires mutual respect. It includes how to adapt oneself to others, friends versus strangers, and elements of politeness, rudeness, manners, agreement, consensus, disagreement and also standards and agreements about how things should be. If not, the groupings and associations will involve communities, clubs, societies, guilds, and both voluntary and involuntary associations including social role and status, such as leadership, for example.

As for the aesthetic aspect, this is matched with the appropriate categories because of its involvement in fun and enjoyment elements. Enjoyment, leisure, fun and rest are the antidotes to work, striving and achievement, which are the formative aspects, and are also interesting. Motivation has a close relationship with the pistic aspect which relates to vision, aspiration, commitment and belief in humans. The pistic aspect can exist either in deep-seated faith and ultimate commitment, a vision of what we are, or what the rest of creation is, our deep concept of what God is, our relationship with the Ultimate (God) or the relationship of the created to its Creator, or lastly any form of commitment or trust. The last aspect, juridical, is linked to responsibilities with human rights. The category is matched with 'rightness' – the responsibilities, the rights, the norms and the laws themselves. In the next section, the integrated theoretical framework based on Dooyeweerd's Theory of Modal Aspects will be discussed, along with applicable theories based on the research context.

### 3.4 New Integrated Theoretical Framework

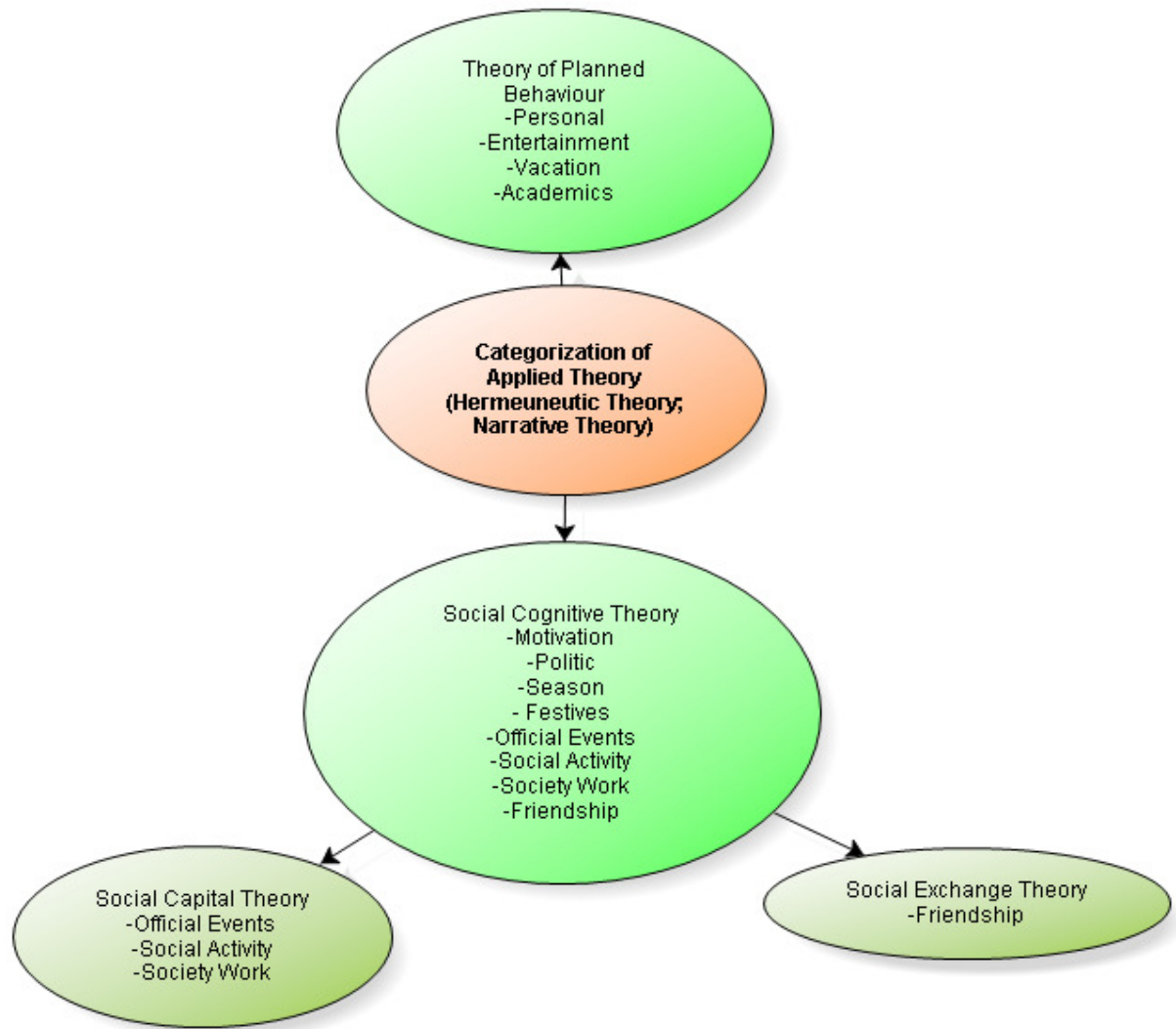


Figure 3.9: Theoretical Framework based on the classification for this research

Figure 3.9 presents the final categorisation based on applied theories. In the Theory of Planned Behaviour, the category has the sub-categories of personal, entertainment, vacation and academics. This new ‘category’ is part of the categories aesthetic and pistic. From that, the sub-categories of entertainment and vacation stem from the category aesthetic. Meanwhile, personal and academic are sub-categories of the category of pistic. In Social Cognitive Theory, the categories match with the sub-categories motivation, politics, season and festivals. This other ‘new’ category is from three different modal aspects where the sub-categories motivation and festivals are from the pistic category. The sub-category of politics is from the juridical category, while the sub-category of season is from the aesthetic modal aspect. Then, in Social Capital Theory also from the social category in modal aspect, but not

for the sub-category of friendship, which is more reliable with Social Exchange Theory and it could be integrated with Social Capital Theory too. This happens when the collection of friendship becomes a community and leads to human socialisation. The method of analysis in this stage is determined by Hermeneutic Theory. Narrative Theory and Media Richness Theory are not emphasised in depth. The reason is due to the style of the analysis through identifying the meaning of the text from the weblog entries which will be done using the content analysis method. It could be done in a variety of styles such as text, audio, pictures or videos, where it can be related with the Media Richness Theory. However, discussing both of the theories in detail will not be necessary, because the four main theories are already adequate to determine the critical success factors in knowledge sharing behaviour among the Malaysian undergraduate students. If the researcher insists on doing it, it is possible to do it as another doctoral research or another applied research in future.

***i- The New Integrated Theoretical Framework Creation Model: Combination of Four Main Established Theories***

Figure 3.10 below shows the integrated theories adapted for this research context. The new name for this combination of the four main theories is Knowledge Sharing Behaviour Theory (KSB Theory). Every perspective will identify the general name showing the content of the success factor based on the given perspectives after the data analysis is completed. These perspectives were identified based on the literature review in Chapter 2, under section 2.4, entitled **Three Perspectives of Critical Success Factors**. Meanwhile, the theories that were identified in each perspective are based on recent studies applied to these theories as discussed in this chapter.



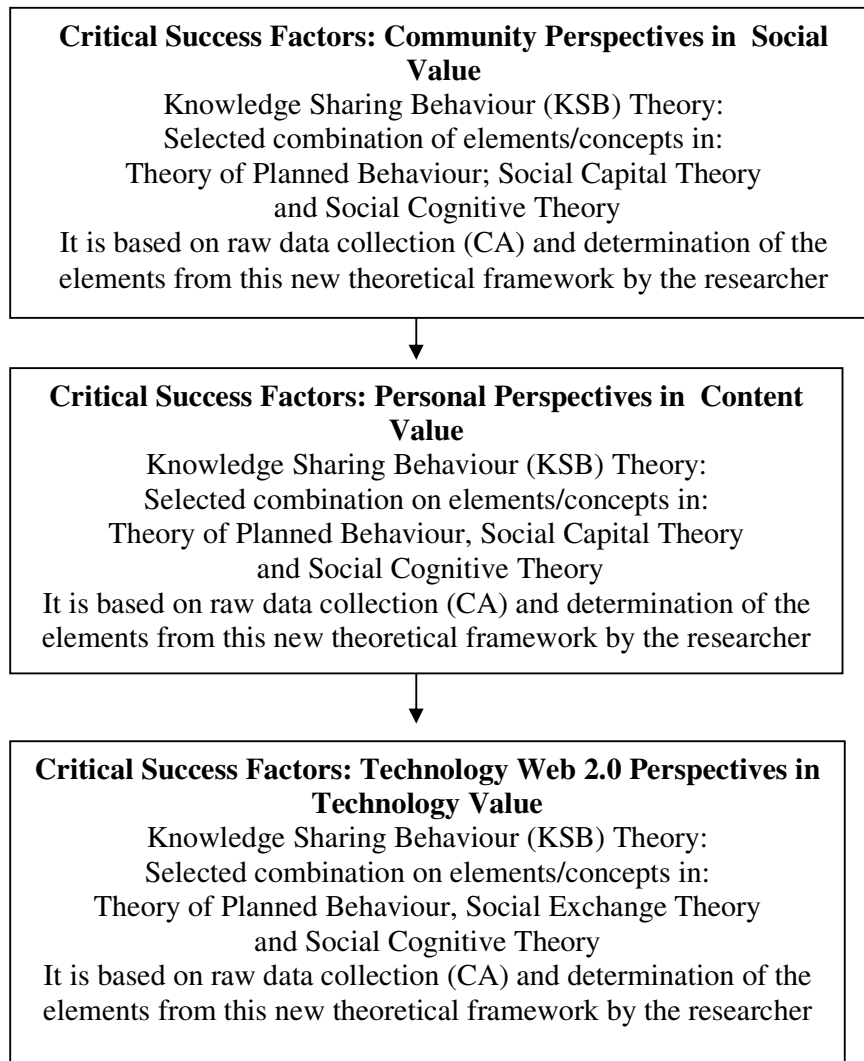


Figure 3.10: New Integrated Theoretical Framework Creation Model for this research context

In Figure 3.10, three of the perspectives were divided into three tables to show the details and the combination of elements or concepts based on the selected theories in the Knowledge Sharing Behaviour Theory. Table 3.2 shows the potential detailed combination elements from the adapted theories for success factor perspectives in the community. From here, we can see that some of elements from the different theories bring the same meaning in terms of the perspective of the success factors. The same goes for Table 3.3. All the elements are the same since this is the integration of potential elements for both of the perspectives. This may bring differences after the data analysis is done; however, Table 3.4 is quite different to the previous tables since the perspective itself is focused on technology Web 2.0. As a result, the researcher only combines the concepts and elements from Social Exchange Theory, Theory of Planned Behaviour and Social Cognitive Theory, not from Social Capital Theory at all. This

integrated theoretical framework creation model is contribute from the main data findings to the final adapted model which was discussed in **Chapter 6**.

Table 3.1: The potential detailed combination elements from adapted theories for Success Factors Perspectives in Community

<p><b>Critical Success Factors: Community Perspectives in Social Value</b>            Knowledge Sharing Behaviour (KSB) Theory:            Attitude Towards Acts or Behaviour            Subjective Norm ~ Human Beliefs ~ Cognitive Competencies            Perceived Behaviour Control            Behaviour Intention ~ Judgement            Behaviour ~ Person’s Behaviour ~ Performance ~ Generalised Norm ~ Trustworthiness ~            Volunteerism            Social and Structure ~ Generalised Norm ~ Trustworthiness ~ Everyday Sociability ~            Volunteerism</p>
--

Table 3.2: The potential detailed combination elements from adapted theories for Success Factors Perspectives in Personal

<p><b>Critical Success Factors: Personal Perspectives in Content Value</b>            Knowledge Sharing Behaviour (KSB) Theory:            Attitude Towards Acts or Behaviour            Subjective Norm ~ Human Beliefs ~ Cognitive Competencies            Perceived Behaviour Control            Behaviour Intention ~ Judgement ~ Volunteerism            Behaviour ~ Person’s behaviour ~ Performance            ~ Generalised Norm ~ Trustworthiness ~ Volunteerism            Social and Structure ~ Generalised Norm ~ Trustworthiness ~ Everyday Sociability</p>
---

Table 3.3: The potential detailed combination elements from adapted theories for Success Factors Perspectives in Technology Web 2.0

<p><b>Success Factors Perspectives in Technology Web 2.0 – Technology Value</b>            Knowledge Sharing Behaviour (KSB) Theory:            Equilibrium to a Balance in the Social Exchanges Through:            Weblogs and Facebook            Social Interaction and Trust            Behaviour ~ Person’s behaviour ~ Performance</p>
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### 3.4 Summary

This chapter has covered the theoretical framework by the researcher’s own approach. **Section 3.2** presents the main content in this chapter, where it explains about the potential theories in this research. From the seven theories, only four theories are used as main adapted theories. The main theories in this research are Theory of Planned Behaviour, Social Cognitive Theory, Social Capital Theory and Social Exchange Theory, and the other two theories, which are the Receiver Based Theory and Hermeneutic Theory, can support the

main theories while Media Richness Theory is not used extensively. The general idea about the data collection was discussed in **section 3.3**. The integrated theoretical framework was also presented and will be discussed in depth in **Chapter 3**.

## CHAPTER 4: RESEARCH PARADIGM

### 4.1 Introduction

In the previous chapter, the research was explained from the perspective of the conceptual framework review and the theoretical framework review. To ensure the continuity of this thesis, this chapter will discuss how this research was carried out from a methodological point of view. The research methodology is determined by the research question itself. This chapter starts with the determination on research paradigms. The reasons for the decision to use the research paradigm are stated. Following this, the research method considerations are explained and an example of an information systems survey research is spelled out. Moreover, the evaluation on the information systems research survey is also stated. Referring to this approach, the research technique used is qualitative. Furthermore, an information system is a wide area for academic research and can be applied to most research problems. In this research, the researcher is focusing on technology Web 2.0 under information systems as one of the solution tools to solve the problem statement. Details about technology Web 2.0 focusing on weblogs and Facebook were given in **Chapter 2** in **section 2.4.3** entitled **Technology Web 2.0**, with weblogs also being the main data collection medium in this research. The details for the process of data collection using weblogs are given in end of this chapter.

The qualitative measurement dimension has been used widely, and this includes the validation and evaluation stages. The potential measurement in this research context includes frequency, quantity or time spent by knowledge sharing variables in measuring knowledge sharing behaviour (King and Marks, Burgess, Wasko and Faraj in Liang et al., 2008; Chiu et al., 2006). Further details about this research dimension are elaborated upon in **section 4.4**.

### 4.2 Research Paradigm Consideration

Generally, in research paradigms or research philosophy, huge research practicality is applied to knowledge sharing research (Probert, 2004). It can also be the reason of importance of the research paradigm in the academic research (Lau, 1997). However, in this study, the researcher will use the paradigm to reveal the definition of this philosophical viewpoint.

The paradigm of research is about the perception of the researcher and the connection between the theory and the practice involving aspects of knowledge, and physical and social reality (Chua, 1986). Generally, the importance of the three paradigms must be acknowledged by knowledge sharing researchers (Klein and Myers, 1999; Oates, 2006; Orlikowski and Baroudi, 1991). Thus, the researcher should be familiar with the general idea of a chronological paradigm (Chua, 1986; Hirschheim, 1985; Oates, 2006; Silverman; 1998). The differences in paradigms among positivist, interpretive and critical paradigms, as initiated by Chua, have been utilised and criticised by a number of expert knowledge sharing researchers (Klein and Myers, 1999; Oates, 2006; Orlikowski and Baroudi, 1991).

Table 4.1: Chua's classification of paradigmatic assumptions (Chua, 1986)

<p style="text-align: center;">Classification of Paradigmatic Assumptions</p> <p style="text-align: center;">i. Beliefs About Knowledge</p> <p style="text-align: center;"><b>Epistemological</b></p> <p style="text-align: center;"><b>Methodological</b></p> <p style="text-align: center;">ii. Beliefs About Physical and Social Reality</p> <p style="text-align: center;"><b>Ontological</b></p> <p style="text-align: center;"><b>Human Intention and Rationality</b></p> <p style="text-align: center;"><b>Societal Order/Conflict</b></p> <p style="text-align: center;">iii. Relationship Between Theory and Practice</p>
--

***i. Beliefs about Knowledge***

In an epistemological approach, identification of the criteria of the right ways and the justification process are emphasised (Chua, 1986). This means that researchers supposedly have solid assumptions before going to the right methodology in doing the research. Furthermore, in Burrell and Morgan's (1979) view, it can be anti-positivism or positivism. Anti-positivism is suitable for interpretivism because there are no neutral grounds for knowledge. This happens since all observation is value and theory laden, which differs from positivism where it is possible to observe the empirical world through the accumulation of objective data-sense. Then from a methodological point of view, it can be ideographic or nomothetic. In contrast, interpretive, for example, is more reliable with ideographic. The reason for this is that it attempts to uncover human action. However, nomothetic is located in the unity of science and applies protocols and procedures derived from natural science (Burrell and Morgan, 1979).

***ii. Beliefs about Physical and Social Reality***

The connection in explain the concept of observation in the naturalist is based on the ontological belief (Lee, 2004). This aim of the assumption is the subjective presumption and independent researcher’s proof for the human interpretation dependence (Orlikowski and Baroudi, 1991). In alignment with the human objective and knowledge purpose, this belief must be concerned with human intention and human rationality. In addition, there are either positive or negative conflict issues regarding society development itself. Meanwhile critical researchers may have a negative assumption. Then the conflict can be common to ensure justice in the world.

In Burrell and Morgan’s study (1979), the meta-theoretical assumption regarding ontology is divided into realism and nominalism. In realism, social and organisational reality exists independently of human consciousness and cognitions, so it is more closely linked to positivism. In nominalism, reality is a simplified product of the mind and is similar to interpretivism. Meanwhile, human intention and rationality are divided into determinism and voluntarism. Determinism sees human behaviour as being determined by the situation, so it is similar to positivism. However, voluntarism is where human actions arise out of culturally derived meanings and are deployed using sense making.

**iii. Relationship between Theory and Practice**

In this assumption, believing the contribution of theory is compulsory. The question that researchers have to answer is:

“What is the aim of knowledge in the practical world?” (Chua, 1986)

A researcher must aim to achieve the outcome of the research. For example, this could be to solve the problem or intervene in the existing solution. In the argument of paradigms, the categorisation process enhances the difficulties. The next sections, from 4.2.1 to 4.2.3, will examine three paradigms based on the perspective of Chua (1986) combined with perspective of Burrell and Morgan (1979). Then the justification of the chosen option will be discussed. However, in Burrell and Morgan’s (1979) view, there are four main paradigms: radical change, subjectivism, regulation and objectivism. These are shown in Figure 4.1.

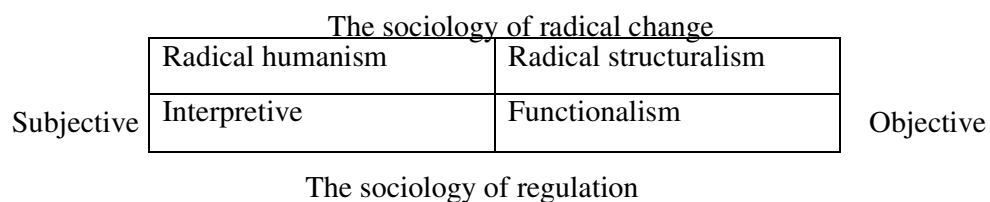


Figure 4.1: Four paradigms for the analysis of social theory  
(Burrell and Morgan, 1979)

The explanation for this paradigm is based on the work of Burrell and Morgan (1979) which is not only used by information systems researchers, but also widely used by most social science researchers. It starts with radical humanism, which is against socially constructed realities to capture the individuals who are complicit in their sustenance. The mission is to free the people from these ideological constraints through developing options. Meanwhile, radical structuralism relates to societies or organisations that dominate and exploit. The mission from this paradigm is to analyse the processes and their contradictions objectively. From this, they can identify the factors that lead to social changes. However, the interpretative paradigm is aimed more at understanding the participants' point of view. This point, to achieve the aim in understanding how to share the reality, emerges and it must be maintained. The last paradigm, which is functionalism, is related more to society or any institutions that have a concrete, tangible existence. It also produces an ordered status quo, and should be analysed before it is taken as a scientific method (Burrell and Morgan, 1979). The next section, will explain types of paradigm in this research. This research has adapted interpretive as the research paradigm because it involves human interests as the main drivers and the gathering of rich data from inductive ideas. The generalisation of the research will be done through theoretical abstraction (Easterby-Smith et al., 2008).

#### **4.2.1 Interpretive Paradigm**

Positivism is a great switch for those who are at the initial level of doing research and are interested in the natural sciences. However, the interpretive paradigm originated in social sciences. When the boundaries of positivism are limited, people form their own viewpoint; for example, when people look at a glass of water, some people might say it is half full, while others might say it is half empty (Oates 2006). Oates (2006) considers that an interpretive view is defined as the understanding of social context, social process and also social setting by the technology itself. Oates's definition is parallel with the perspective of Kaplan and Maxwell (1994) where interpretive research is not limited to dependent and independent variables. The interpretive paradigm also focuses on the complexity of human sense making as situations become known (Kaplan and Maxwell, 1994). It also tries to understand the phenomena through the people intends to them (Orlikowski and Baroudi, 1991). It is proven

by the work of Burrell and Morgan (1979), where the paradigm is based on how to understand people.

Other perspectives of interpretive methods of research in information systems focus on delivering an understanding of the context and process of the information system, and how the information system is able to influence and how it is influenced (Walsham, 1993). In addition, an interpretive researcher tries to finalise the settings by identifying, exploring and explaining the relationships and dependencies based on their perspective. Furthermore, the interpretive researcher will normally assume that reality cannot be studied without social actors involved – these include both of the subjects and the researcher (Orlikowski and Baroudi, 1991; Walsham, 1993; Walsham, 1995). Interpretive differs from positivism, because in positivist research an assumption will be made that the purposive data collected by the researcher are used to test prior hypotheses or theories (Walsham, 1995).

The characteristics of interpretive research consist of multiple subjective realities; dynamic socially constructed meaning; reflexivity research; studies on people based on their natural settings; qualitative data analysis; and multiple interpretations (Oates, 2006).

The subject matter of subjective realities relates to the truth. Reality is referred to as perception by people. This means the same situation might be perceived differently by different individuals, depending on who provides the explanation of it. Then, dynamic and socially constructed meanings define the individual or group interpretations of a certain event. A group communicates through social constructions. Meanwhile, the social construction includes language and shared understandings of meanings. In addition, reflexive work is essential because all opinions of what something means are infected by the researchers' subjective perspectives and thoughts. This means that it has to be stated since it will have an effect on the research process and its interpretations. Furthermore, studies of people should be in natural settings so that the maximum levels of real life complexity can be gained. This type of research involves qualitative data analysis, where they will use the language used by people. In addition, it can also employ expression. It is about describing a person or object in a literary way by reasoning to similar characteristics.

Furthermore, qualitative data is not limited to text but is also used in image or video interpretation. It shows that characteristics of interpretive involve multiple interpretations, which means that the researcher can have an option to choose the most convincing



interpretation. However, for doctoral research, limitations exist and specific analysis must determine text, images or video based only on the research types. This is because doctoral research is in-depth research for any particular specific research aim. It is impossible to look in depth at all the aspects of text, images and video. Furthermore, there are existing researches solely about images on photolog sharing (Khalid and Dix, 2006; Khalid and Dix, 2007a; Khalid and Dix, 2007b, Khalid and Dix, 2009, Khalid and Dix, 2010). Besides that, it can also be for analysis using all types of sources (text, images or video) but with very specific entries such as for research on long distance relationships among young mothers (Jomhari, 2010).

## CHAPTER 5: STUDY FINDINGS

### 5.1 Introduction

After an overview of the methodology for this research in the previous chapter, this chapter will then reveal how the data analysis was completed. It starts by introducing the background of the Malaysian student community in Universiti Utara Malaysia. Thus, the respondents of the research are taken from the selected community. The researcher has identified fifteen bloggers to analyse their weblogs. The justification of the selection of the respondents from the community is discussed in **5.2 Background of the Malaysian Student Community in Universiti Utara Malaysia**. Then, this chapter continues with a data analysis section, **5.3.2 Classification of Findings and Justification**. This section is the detailed analysis stage of the Study 1. Detailed analysis has to be conducted in order to acknowledge the most critical elements in theories for knowledge sharing behaviour. It also contributes to the justification of the critical success factors in section 5.4, followed by the critical success factors themselves, which are presented in **5.4.1 Community**, **5.4.2 Personal** and **5.4.2 Technology Web 2.0**. Finally, this chapter will be concluded by an end summary in **5.5 Summary**.

### 5.2 Background of the Malaysian Student Community in Universiti Utara Malaysia.

The first reason for this selection is that the researcher presently resides and studies in northern of Malaysia. Thus, it makes it easier to understand the conditions and lifestyles of students in northern of Malaysia. Furthermore, accessing information is easier to achieve when compared with getting information from Malaysian student communities in other places such as in Sydney, Australia or Cairo, Egypt. In addition, the researcher finds it easier to understand the lifestyles of students in Universiti Utara Malaysia and their living conditions in there due to the first reason.

This work has conducted solely on undergraduate's students. The researcher has several reasons for choosing undergraduate students over postgraduates. The first reason is the time limitation among postgraduates, as most of them have their own families. Their enthusiasm in updating weblogs or being involved in technology Web 2.0 applications is also not as great as the undergraduates. Some of them think that the message they are trying to deliver in weblogs

could be misinterpreted by readers (F.M Kamal, personal communication, 23 October 2009). Some of them claimed they have limited time to access internet, need privacy, no priority and do not have time or busy to update (F.Rajemi, A.Hassan, S.Rahman, S.Z.Zaidon, J.Jamil and W.N.W.A.Rahman, personal communication,7,8,9,14 and 16 Sept 2010. In addition, some of them are more comfortable within the social networking such as Facebook, not weblogs at all. They felt Facebook is more convenient and can provide quicker response and comments to socialise rather than weblogs (N.M.Noor, Z.Hanafi, H.Hamzah, and N.A.Ali, personal communication, 7 and 8 September 2010).

Meanwhile, this community has its own group on Facebook which allows all student blogger from northern university of Malaysia to join. However, the researcher also joined this group and became a participant and observer of this community and play as non-participant observer too. Moreover, the researcher is friends through Facebook with selected members from this community for data collection and data validation purposes.

Based on the researcher's personal observation and pilot interview findings, the Web 2.0 technology tool is maintained by the present leader of the community. It starts equally with the starting point of Web 2.0's period (O'reilly, 2005).

### **5.3 Data Analysis**

From **5.2 Background of the Malaysian Student Community in Universiti Utara Malaysia**, we can get some overall background information on this focus group. However, this research does not focus on the community in detail due to this research approach reason itself but more towards the individuals in the community itself. Based on the fifteen selected subjects who are bloggers from this community, the researcher has identified the categorisation that can be considered for the purpose of the analysis stage. For the main data collection, the researcher has observed and selected at least twenty entries within one year from both of the communities. The details about the bloggers and length of entries that have been studied are located in Table 5.1.

Table 5.1: The details about the bloggers and length of entries

	URL	Length study of the entries	Start as blogger
A1	<a href="http://akukay.blogspot.com">http://akukay.blogspot.com</a>	Oct 2008-Oct 2009	Oct 2008
A2	<a href="http://orkestrahidup.blogspot.com">http://orkestrahidup.blogspot.com</a>	Oct 2008- Oct 2009	Oct 2008
A3	<a href="http://husnanasir.blogspot.com">http://husnanasir.blogspot.com</a>	Oct 2008-Oct 2009	Jan 2006
A4	<a href="http://melatik.blogspot.com">http://melatik.blogspot.com</a>	Jan 2008-Dec 2008	Sept 2006
A5	<a href="http://missnini.blogspot.com">http://missnini.blogspot.com</a>	July 2008-July 2009	Jan 2008
A6	<a href="http://silentcadbury.blogspot.com">http://silentcadbury.blogspot.com</a>	Sept 2008-Sept 2009	Sept 2008
A7	<a href="http://maizuramokhtar.blogspot.com">http://maizuramokhtar.blogspot.com</a>	June 2008-June 2009	June 2008
A8	<a href="http://rebelyellshoutout.blogspot.com">http://rebelyellshoutout.blogspot.com</a>	Jan 2009-Dec 2009	Jan 2009
A9	<a href="http://pinkysue.blogspot.com">http://pinkysue.blogspot.com</a>	Nov 2008-Nov 2009	Nov 2008
A10	<a href="http://loyarlawa.blogspot.com">http://loyarlawa.blogspot.com</a>	Jan 2008-Dec 2008	May 2006
A11	<a href="http://yayasukaembun.blogspot.com">http://yayasukaembun.blogspot.com</a>	Feb 2008-Feb 2009	Feb 2008
A12	<a href="http://inibelogzizie.blogspot.com">http://inibelogzizie.blogspot.com</a>	Jan 2008-Dec 2008	Aug 2005
A13	<a href="http://dewiputri.blogspot.com">http://dewiputri.blogspot.com</a>	Nov 2008-Nov 2009	Nov 2008
A14	<a href="http://yangtersebot.blogspot.com">http://yangtersebot.blogspot.com</a>	Oct 2008-Oct 2009	Oct 2008

A15	<a href="http://saljusakinah.blogspot.com">http://saljusakinah.blogspot.com</a>	Sept 2008-Sept 2009	Sept 2008
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From the findings, the researcher determines the types of behaviours from the Knowledge Sharing Behaviour theory (which was mentioned in **3.4 Integrated Theoretical Framework**). Generally, the main idea of this theory that can be applied to this category is where the subject (student) is referring to the individual and where their life is analysed through their personal weblogs. The variety of elements based on Knowledge Sharing Behaviour Theory can be seen from Appendix 1 which is all related to life as a student. Appendix 1 shows the determination through combined and identifiable elements from the Knowledge Sharing Behaviour Theory. In other words, the Knowledge Sharing Behaviour theory is mainly applied in Appendix 1. It also shows the determination through the environment factors, the attitude factors and the personal factors. This means that these Tables have also adapted the Knowledge Sharing Behaviour Theory mainly to the Social Cognitive Theory. Before the findings discussions start, the justification of the theories in this analysis stage is discussed in the next paragraph, in **5.3.1 Applied Theories Justification**. After the justification has clarified precisely, the findings discussion for study 1 in **5.3.2 Classification of Findings and Justification** is shown.

### **5.3.1 Applied Theories and Integrated Theory Justification**

As mention in **3.4 Integrated Theoretical Framework**, the framework consists of Theory of Planned Behaviour, Social Cognitive Theory, Social Capital Theory and Social Exchange Theory which named it as Knowledge Sharing Behaviour Theory. Firstly, Theory of Planned Behaviour theory suggests that individual behaviour is motivated by the eagerness of the individuals' action (behaviour intention). Actions that an individual wants to carry out play a role in their approach towards behaviour. Then, the subjective norm is surrounding the behaviour which based on the individual's perception and can be performing the behaviour under control. Meanwhile attitude towards act or behaviour describes the individual's positive or negative belief in their behaviour. This is decided through one's judgment of their own beliefs regarding the results arising from their behaviour and their evaluation of how these results make them feel. The overall attitude can be assessed as the sum of the individual consequence attraction behaviour assessments. Subjective norm means the way of behaving or doing things that most people would agree is the correct way. Meanwhile perceived behaviour control refers to a person difficulty or easiness in performing behaviour. This

theory tries to convince the control of people have over their behaviour as untruthful from behaviours that are easily performed.

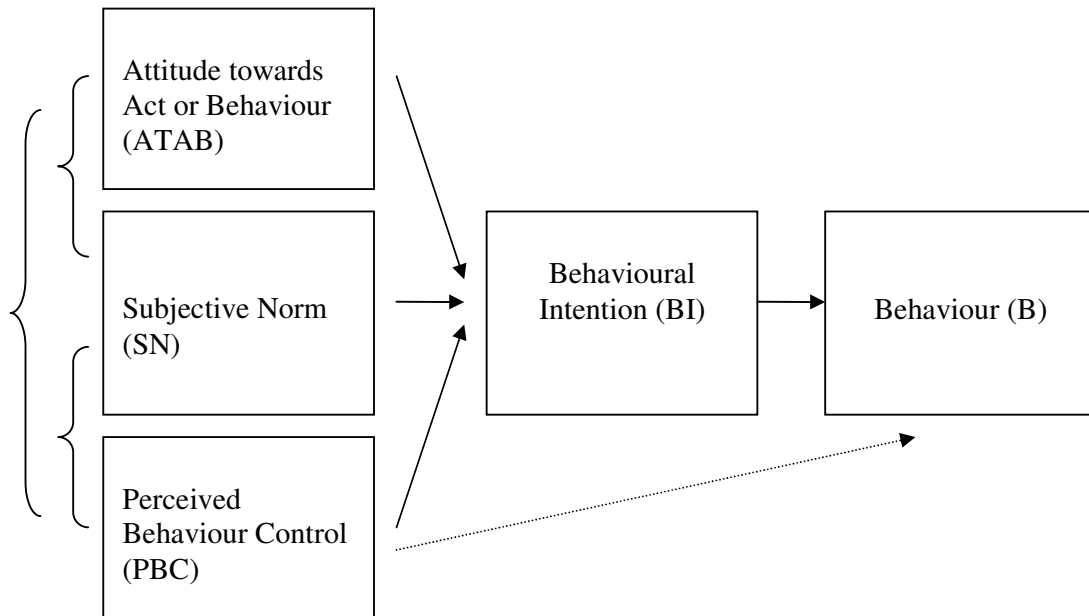


Figure 5.1: The adapted Model of the Theory of Planned Behaviour (TPB) (Ajzen,1991)

The research by Pedersen and Nysveen (2002) states that Theory of Planned Behaviour is an extension of Theory Reasoned Action (TRA) founded by Fishbein and Ajzen (1975), and Ajzen improved this theory again in 1991. Theory Reasoned Action has four general concepts which are: behavioural attitudes, subjective norm, intention to use and actual use.

The reason Theory of Planned Behaviour was introduced and became an extension of Theory Reasoned Action is for situations where a person may have the control function in behaviour performance. The perceived behaviour control is proposed for internal and external constraints in behaviour. It can function both directly between behaviour intention and behaviour itself.

Secondly, the Social Cognitive Theory was chosen since it can provide a framework for ensuring the concept of understanding, predicting and human behaviour changes. This theory looks at human behaviour as the connection between personal factors, behaviour and the environment (Bandura, 1977; Bandura, 1986). A person’s judgement and performance play an important role in determining the relationship between a person and their behaviour. Meanwhile human behaviour and cognitive competencies are developed to deliver the relationships between the person and the environment. The relationship is also influenced by

the social and structure environment. The third relationship between the environment and behaviour is person's behaviour shaping of aspects of their environment, or in other words behaviour being influenced by the environment.

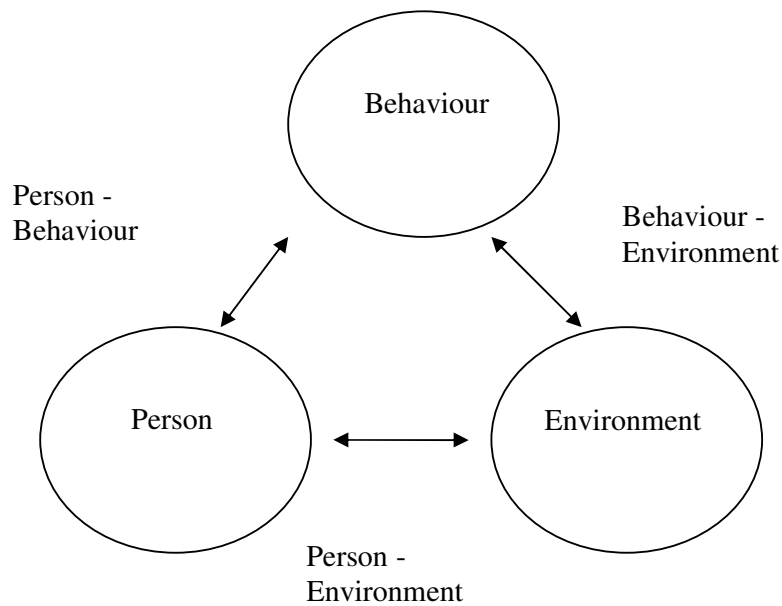


Figure 5.2: The Model of Social Cognitive Theory (ScogT) (Bandura,1986)

Social Cognitive Theory (Bandura, 1986; Bandura, 1997) is widely accepted in information system study with proven validity. This theory was chosen because the individual will act based on personal cognition within the social environment. In the expected contribution in this research, the researcher try to look either the two determinants for this theory is reliable or not, which are self-efficacy and outcome expectation. Furthermore, this research is trying to uncover the knowledge sharing behaviour; this theory is the established model theory in individual behaviour validation (Compeau and Higgins, in Hsu et al., 2007). In this model, there are three elements - personal factors, environment influence and behaviour - which act as interactive determinants. It also influences directionally (Wodd and Bandura, in Hsu et al., 2007). In addition, this theory can also support the 'triadic reciprocity among the three elements (Bandura, 1986; Wood and Bandura; Compeau and Higgins, in Hsu et al., 2007). For this study, the researcher is looking forward for the contribution that shows that personal, behaviour and environment may influence individuals' knowledge sharing behaviour.

Thirdly, Social Capital Theory is integrated into Social Cognitive Theory and also Theory of Planned Behaviour, for this research context. Figure 5.7 shows the integration between Social Capital Theory and Social Cognitive Theory, which have the same elements that suit the data categorisation. There are four suitable themes from Social Capital Theory that can be adapted

to Social Cognitive Theory: Generalised Norm, Togetherness, Everyday Sociability and Volunteerism. The details of the inter-relationship of this integration are shown in Figure 5.7. The italic words in every sub-theme show the categorisation for elements suitable for application in integrated theories.

Fourthly, Social Exchange Theory is combined with Theory of Planned Behaviour and Social Cognitive Theory. The main assumption from Social Exchange Theory is the equilibrium balance for friendship relations through weblogs and Facebook, the cost of which is equal to its benefits. All of these assumptions depend on person's behaviour (from Social Cognitive Theory) and behaviour (from Theory of Planned Behaviour).



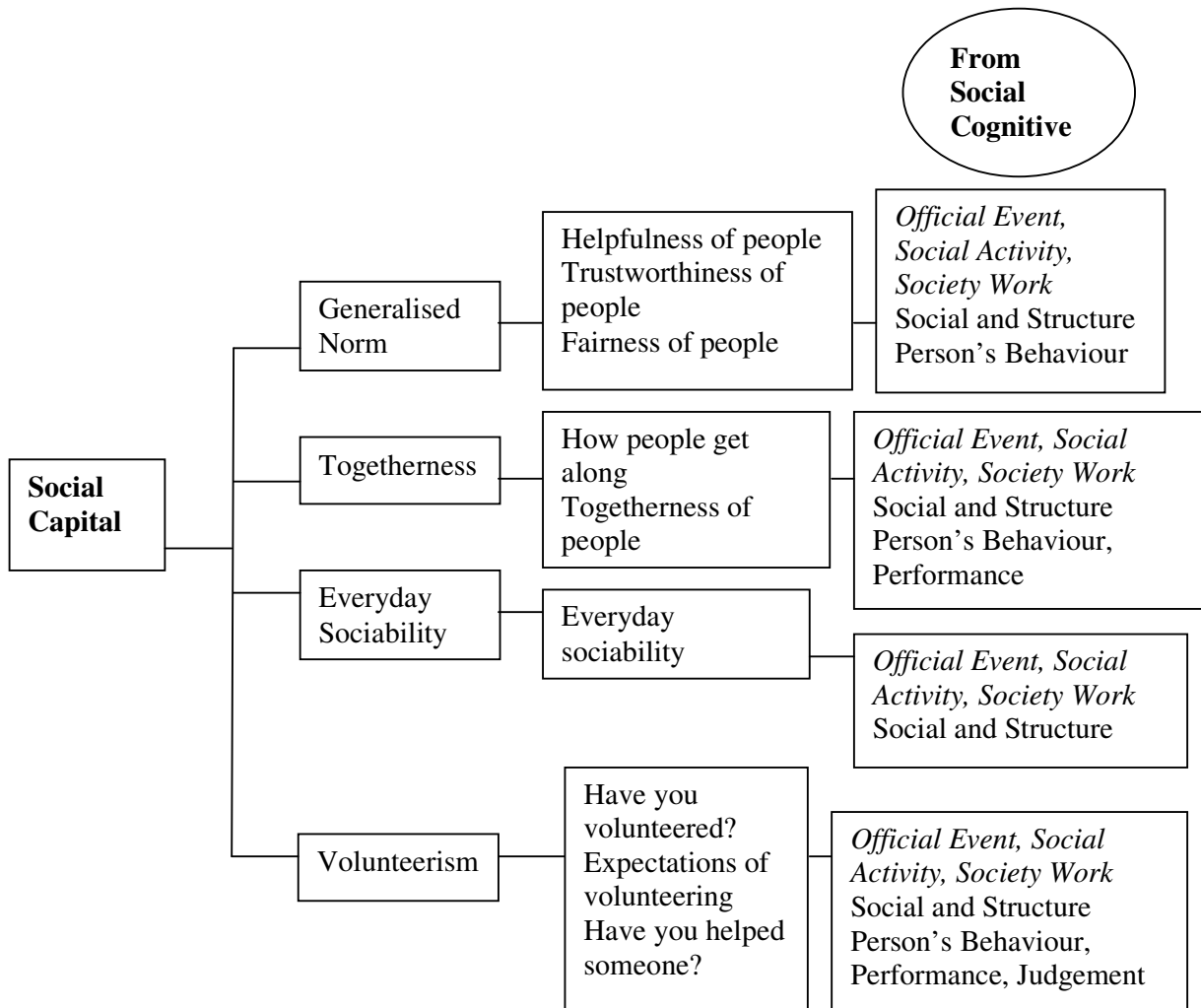


Figure 5.3: Integration between Social Capital Theory (SCapT) and Social Cognitive Theory (Scog)

The integration theory for this research context has been explained in **Chapter 3**, in **3.4 Integrated Theoretical Framework** (Figure 3.10). In addition, the potential detailed combination elements from the adapted theories for Success Factors Perspectives have also been revealed in Table 3.2, Table 3.3 and Table 3.4. This includes community, personal and technology Web 2.0 perspectives. The accurate success factors for each perspective after the analysis stage is completed are presented in this chapter and also the next chapter.

### 5.3.2 Classification of Findings and Justification

The raw data for this data analysis are located in Appendix 1. The data show how the identification of the success elements based on Knowledge Sharing Behaviour Theory is worked out. It has fifteen bloggers and the content analysis is identified by the researcher. The fifteen bloggers are coded A1S1 to A15S1. The analysis was done by reading the selected entries from fifteen bloggers. The researcher selected all the entries for one year for the blogger who had blogging for more than one year. If not, the researcher will make sure there are at least twenty entries from the bloggers to do analysis on. This procedure has also been completed in Study 2. Content analysis was done using Hermeneutic Theory or Narrative Theory to identify the suitable elements of theory for every identified entry. It requires the researcher to understand the flow of the explanation for the entries before identifying the elements for integrated theories. From the next paragraph to the end paragraph of this section, the researcher will explain the elements of integrated theories based on the category of entries which have been identified by the researcher.

The first category is about personal feelings; for example, for subject A1S1 the behaviour can be seen from her personal words about her experience in class, in the college, and her feelings through academic days. The behaviour of the subject during the campus can be detected through the personal words, *final examination mode, advice from her lecturer, says hi to the last semester of her studies*. Meanwhile, subject A2S1, the subject tries more to reveal the behaviour on the feelings in the personal behaviour. However A3S3 is more varied in terms of behaviourism sharing. A4S1, A5S1, A6S1, A9S1, A13S1 tend to share in *their feelings, self management and how to reboots the motivation after feeling down*. However for subjects A7S1, A8S1, A10S1, A11S1, A12S1, A14S1 and also A15S1, there are common attempts to share their other behaviour beside the subject itself and also their *past experience during childhood or the future of their life*. It also can be seen some entries are presented through narrative methods. Based on Figure 5.3 below, the highest number of elements is subjective

norm where this element is very reliable with this classification. The reason is that the personal perspectives is varies, depending on the individual perspective. Furthermore the subjective norm is about the human norm itself, so this is the other reason why subjective norm also becomes the main stands of human behaviour. Then, it followed by the behaviour, where all the actions or performance by the subjects is identified from the analysis stage. The point to behave or in this theory called attitude towards act or behaviour are the third highest of entries in this classification. This happened probably due to subjects always trying to justify the reason for the action or behaviour itself. The same goes for perceived behaviour control where the difficulties or the strength in doing something are the lowest entries for this personal classification.

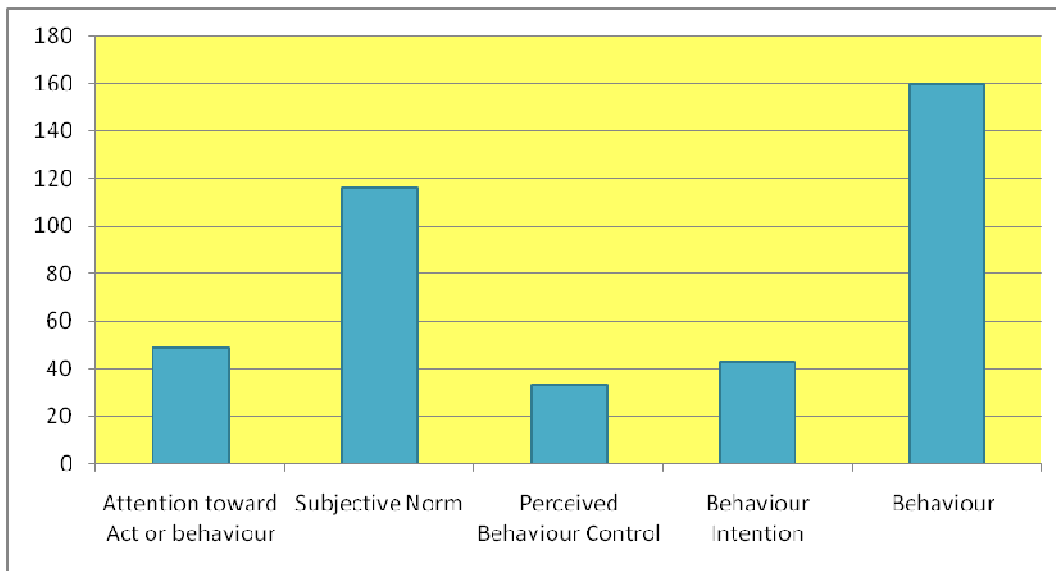


Figure 5.4: The number of entries in personal classification based of the elements in Theory of Planned Behaviour

For the entertainment classification, the elements from Theory of Planned Behaviour are mostly from the attitude towards act or behaviour and the behaviour itself. This is because this classification is about entertainment; it means the function of entertainment itself in determining the behaviour of the student. Mostly the elements of attitude towards act or behaviour come from *song lyrics, the song itself, advertisements or others, for example, song lyric from Yuna's (Yuna's is the famous woman singer in Malaysia)*. Meanwhile, the behaviour refers to the action in entertainment like *watching movies, watching konsert, watching songs on Youtube, and favouritism to singer or actress*.

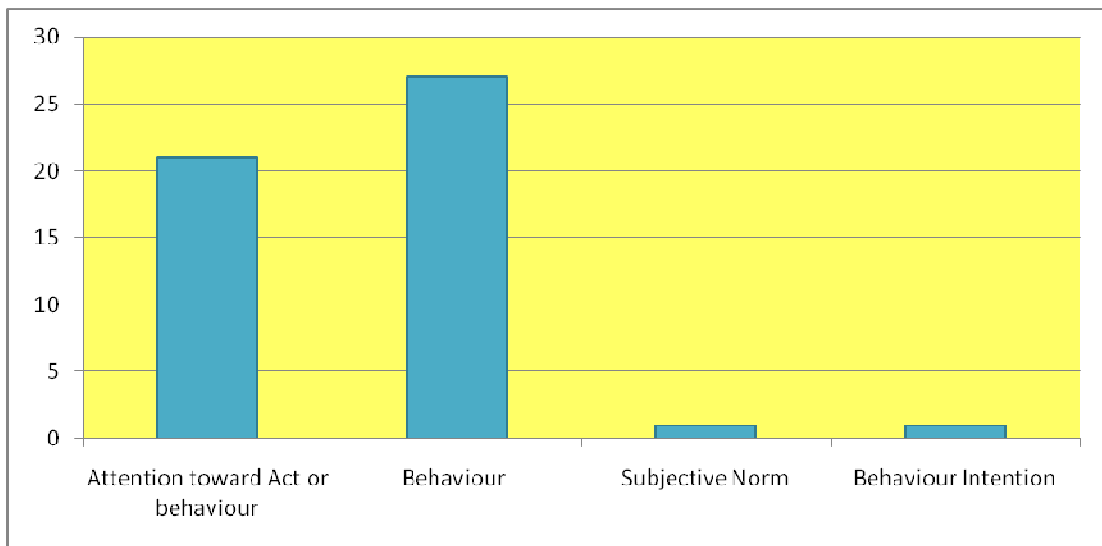


Figure 5.5: The number of entries in the entertainment classification based of the elements in Theory of Planned Behaviour

For this classification (vacation), the most reliable elements are behaviour. The reason for this is the vacation itself – it means anything action for have a holiday; it also means the subject must act before sharing the experience. Besides that, there are five types of behaviour intention, also selected when the vacation planning have been identified in Table 5.4. It shows that sometimes, before the vacation is executed, planning is important. Subject A3S1 did mention *the opinion on single travelling*, and that can be considered as behaviour intention. All in all, from this finding, the subjects are willing *to share the pictures showing the visited places*. It can be guidance for others if the others want to go to the same place. It can be seen as a trend that the subjects normally will *spend their semester break for vacation rather than weekend time which is usually packed with academic workloads within the semester*. Furthermore, sometimes it can revitalise their motivation after the tiring experience of study, of finishing assignments or facing the semester exam.

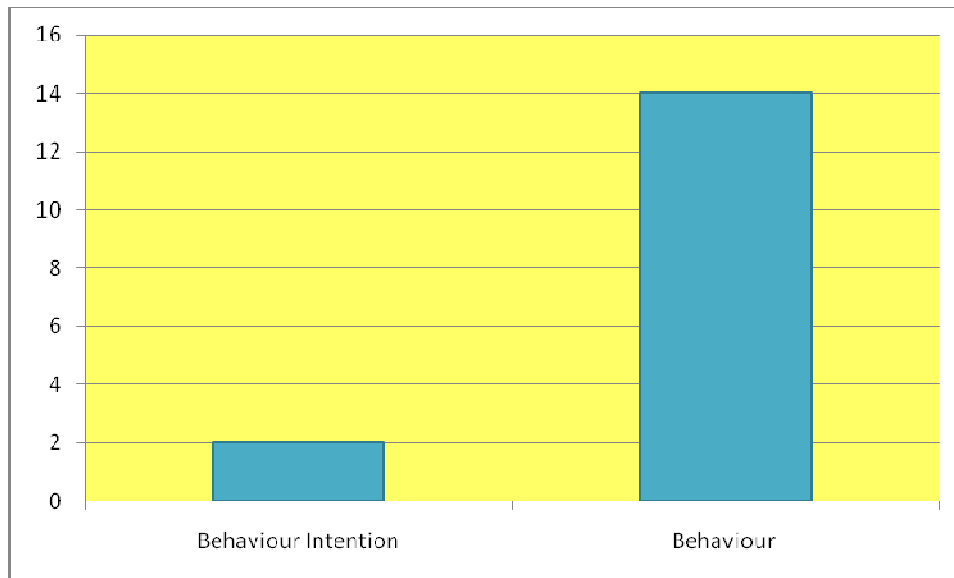


Figure 5.6: The number of entries in the vacation classification based of the elements in Theory of Planned Behaviour

For this classification (academic), the general academics themselves can be specific to the academic trips, the academic events and academic exam. Generally only the element attitude towards act or behaviour is unreliable for this classification. The other four elements are reliable and the trends are balanced either for behaviour, behaviour intention, subjective norm and also perceived behaviour control. The behaviour element usually reflects *how the subjects behave in their academic life either in study, in academic trips, academic events or preparation to face an exam itself*. The behaviour intention element is more about *planning to do such as spirit, eagerness, learning style or exam preparation*. Subjective norm refers to the opinion of the subjects in any issue in academics. Meanwhile perceived behaviour control is concerned with the difficulties in behaving or the need for support in carrying out an action.

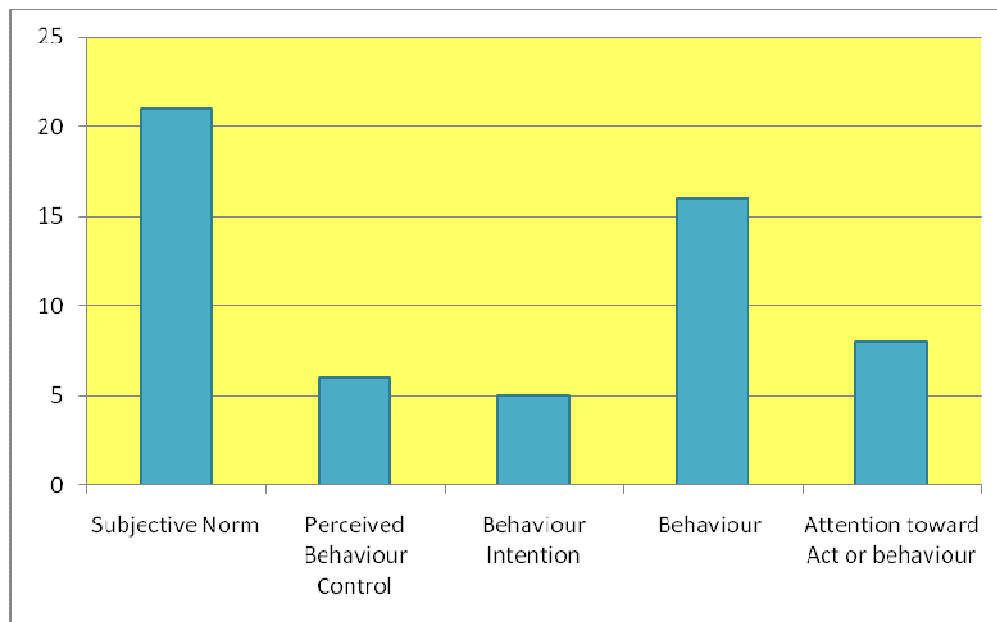


Figure 5.7: The number of entries in academic classification based of the elements in Theory of Planned Behaviour

From this (refer to Appendix 1) it can be seen that the variety of elements from Social Cognitive Theory can be adapted in this classification. Based on this theory, adaptation to the sub-elements with the basics of the theory which is the personal, the environment and the behaviour itself are performed. It seems that human belief, through personal to environment, is dominant for this classification rather the other sub-elements. The reason that human belief is dominant is that whatever behaviour is performed it must be based on human belief and the entries related to motivation are most suitable with the human belief. Besides that, judgment through personal behaviour can also be seen in (refer to Appendix 1), as almost eleven entries are identified as the judgment. This happened because the subject has to decide whether it is good or not to follow the information that had been given. In a student's life, they have competencies, so some entries can be identified as cognitive competencies through personal to environment. The environment in this context refers to the subjects' friends, campus, family and also their student life itself. From Appendix 1 also, the eight entries for this sub-elements is *about the life challenges, future career life, fighters in the life, grab 5 things before come another 5 things, value of career, benefits of Islam months, poem on strive life and also rewards in life*. Another interesting sub-element is a person's behaviour through the behaviour and environment. The nine entries are identified in (refer to Appendix 1) and is related to Theory of Planned Behaviour. The nine entries have more to do with the behaviour

of the subjects themselves, like *how to get motivation in general issues, change the lifestyle, sadness, '4 things to ensure the behaviourism', people aware from 'sleep', the feelings of experiencing beautiful scenery and also to express real feeling.*

In this classification the judgment sub-element is the dominant element besides one entry of performance and one entry of human belief. This classification is about politics, which means the subjects need the judgement of the visitors who will either agree or disagree with their stand on the information. The human belief can be viewed through personal and environments for this classification is only reliable with the entry about the quote from former United States of America's President, Theodore Roosevelt, entitled '*it is not the critic who counts*'. It can also identify as a judgement when the visitors judge whether the quotes can be accepted or not. The sub-element of performance through personal to behaviour in this entry refers to information about *malaysiakini.com*, a website which is now free to visitors as no payment is required to get the information. *Malaysiakini.com* is one of the forms of media that deals with the current politics in Malaysia.

The classification Festive in Appendix 1 is similar in Season in Appendix 1 which is dominated by the sub-element of person's behaviour through behaviour and environment. Festive here refers to the festive events that are celebrated by the subjects and how they explain them in their weblog entries. It includes Eid ul Fitr and Eidul Adha. The entries are in various styles, such as personal words, information sharing, dedications, announcements and also photo sharing. Besides that, human belief as sub-element is also identified in this classification which is the *beauty of way of life, opinion about Ramadan and fasting activity.*

In Appendix 1, only two sub-elements are adapted which are human belief and social and structures. Both of these sub-elements are through personal and environment elements. This classification is about official events, which means that the entries are reliable with the social and structures and human belief. Thirteen entries related to social and structures are more related with the official activities either organised by the society or non-society. Meanwhile the other four entries concerning human belief are more related with the subject's opinions after attending the official events in the subject's campus life.

Appendix 1 is divided into two types of social classification, which are social activity and society work. Social activity covers the sub-elements of person's behaviour, performance and

also human belief. For the sub-elements of person's behaviour and human belief, it also passes through to the same elements which are personal and environment. Meanwhile the sub-elements performance and judgement are through the same elements which are personal and behaviour. This means that this classification is related to the three elements for this theory.

The person's behaviour entries in this situation are more towards referring to personal experiences, some narrative story and also some general opinion about the behaviour itself. For judgements in this classification is adapted with the opinion of the subjects with the issue. Meanwhile the performance for this social activity is identified as the narrative story on the *beauty time just flies now and involvement in sports*. Lastly human belief is the *quotes of the evening exercises which the exercise referred as the behaviour*.

The society activities only have three sub-elements. The highest numbers are the social and structures, with almost seven entries identified. Then the judgements for the activities are five entries, and the person's behaviour is only four entries. Most of the social and structures are related to the society's activities. Meanwhile for the judgements, are related with the own activities by the subjects and also by the society joined by the subjects. Lastly, for person's behaviour is the mix in the types of the behaviour by the subject itself.

Appendix 1 relates to both personal and environment because this classification is about friendship. The most common sub-elements are identified as human belief and person's behaviour. As this classification is about friendship, logically human belief and person's behaviour dominate the subjects' entries. Human belief is mostly contributed to by poems, quotes, songs, dedications, opinions and also narrative stories. Person's behaviour is mostly identified by actions through experiences or narrative stories, feelings and also quotations to friends.



### 5.3.3 Idea Mapping

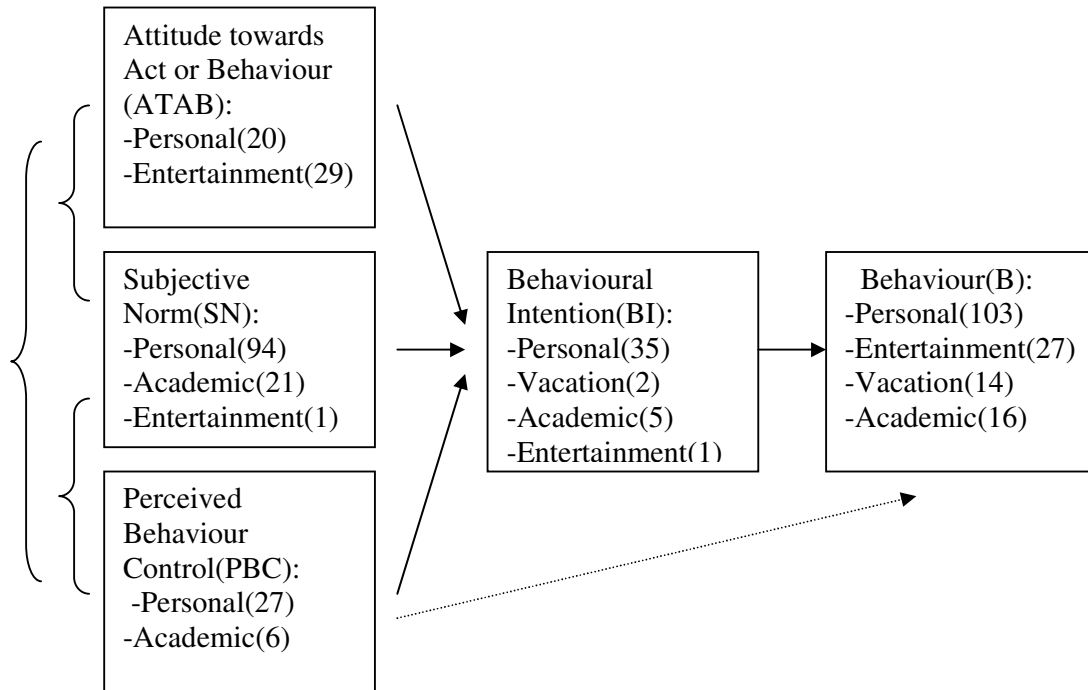


Figure 5.8: Idea mapping within the number of entries from Theory of Planned Behaviour under Knowledge Sharing Behaviour Theory

From Figure 5.8, the findings have identified from all the elements in the Knowledge Sharing Behaviour Theory. It reveals the three elements - attitude towards act or behaviour, subjective norm and also perceived behaviour control - which consist of the personal classification. It is uncover the subject tendency to give the reason of the act or behaviour is been performed. Then the subjects of research also give the norms as human beings from the personal and academics classification. The same goes for the elements of perceived behaviour control. From the findings also, behaviour intention applies to personal, vacation and entertainments only. However, when looking at the behaviour, all the classifications are adapted to it. It may be proven by the respondent's weblogs that people can read the behaviour of the individuals. For looking at the dominance of the elements based on the classifications, the readers can refer to Figure 5.9 on the next page.

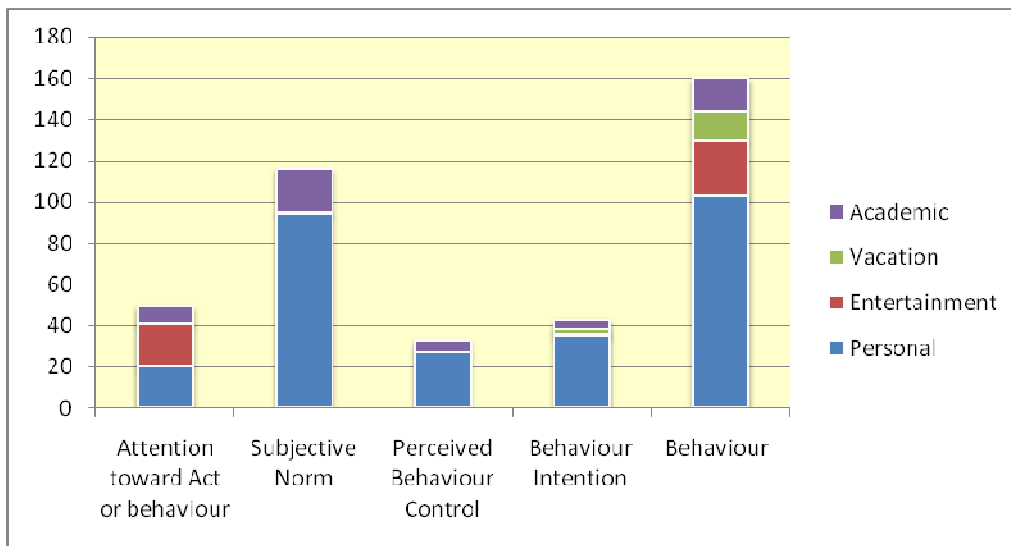


Figure 5.9: Combination of all the classifications based on the percentage of entries based on elements in Theory of Planned Behaviour

Based on this figure, the respondents normally have their own justification for behaving in any way. It shows that almost 40% of attitude towards act or behaviour is done by the personal classification. Only 39% are from the entertainment for this element. For subjective norm, it is almost 79% of the personal classification, which shows that the subject will depend on human norms whatever the situation in their student life. For the academic classification, it does not show a high percentage in this subjective norm. The reason is that it might be that the averages of the age of the subjects are in the same group, so the subjective norm does not show too many gaps. Furthermore, the subjects mostly have the same aim and mission, to get excellent academic results. The type of classification is still the same for the third element, perceived behaviour control, but it has a different percentage, whereas for personal it is only 61% and for academic it is 39%. The researcher may assume the reason is that they have to strive hard and face many barriers and challenges either in their personal life or their academic matters. Finally, the behaviour element itself consists of all the classifications and the spread of all percentages seems nearly balanced within the four elements. This means that for all classifications, the behaviour is performed based on the type of classification.

For the next part of the findings analysis, the researcher has adapted the Social Cognitive Theory under Knowledge Sharing Behaviour Theory. From Figure 5.10, the idea mapping of the findings based on the theory is presented. Generally, from the perspective of person to

behaviour, the judgment under the politics classification is dominant compared to performance. Then, from the perspective of person to environment, the human behaviour under the motivation classification is dominated. Besides that, the friendship under the human behaviour is the second highest number. Social and Structure is applicable to official events and society activities only, and not the others. For this finding, the sub-element of cognitive competencies is only adapted with the motivation. This is because it involves the human mind or cognitive. Meanwhile, from the perspective between behaviour and environment, the friendship is dominant for person's behaviour. All the classifications of entries are adapted in the perspective of person and environment. It is different to the perspectives of person and behaviour, where only motivation, politics, social activity and also society work are adapted. For the perspective of behaviour and environment, the only non-existing classification is politics. However, it is adapted for the rest of the classifications.

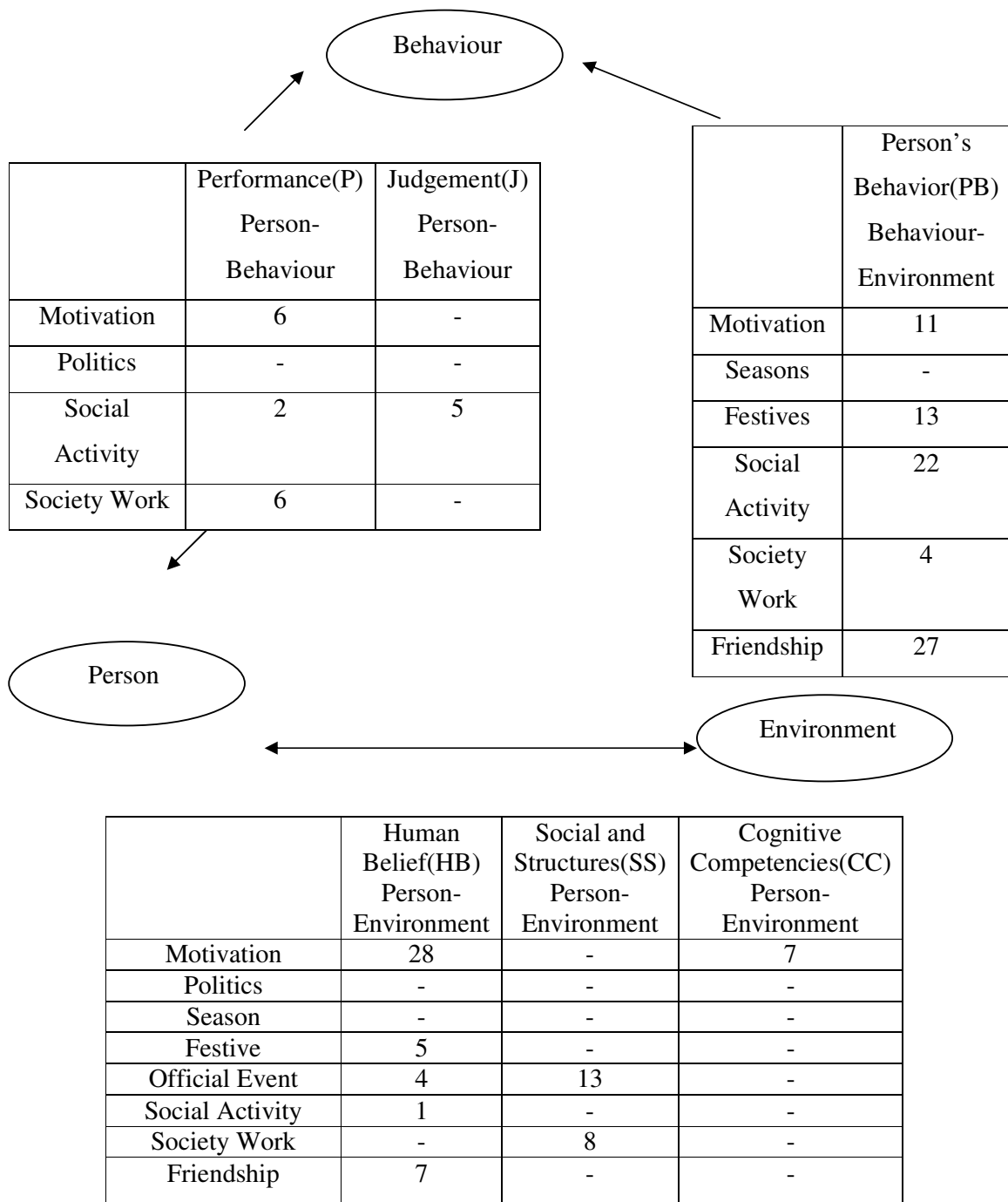


Figure 5.10: Idea mapping from the Social Cognitive Theory based on entries from subjects determined by the sub-elements in the elements in the Social Cognitive Theory.

## 5.4 Justification of Success Factors

From the findings classification in the previous section, this section looks into the justification on determination of the critical success factors in knowledge sharing behaviour among the Malaysian undergraduate students in Universiti Utara Malaysia. Generally, three perspectives of critical success factors were determined, which are community, personal and technology web 2.0. Each factor is discussed in term of whether the factors can be critical to success in knowledge sharing behaviour or not. The factor on personal and community is adapted from knowledge sharing behaviour integrated theory. The technology Web 2.0 will look up the weblogs and Facebook accounts owned by selected subjects. The technology Web 2.0 perspective is also adapted from knowledge sharing behaviour integrated theory. In this research, the success factor is not measured in specific quantity. It is only measured by the frequency of the sub-factors of the behaviour, the entries, or the characteristics. The critical success factors in this chapter is determined the final development model in **Chapter 6 - Conclusion**. Initially, the critical success factors in this research has three main factors and will finalise the sub-factors in **Chapter 6 - Discussion and Conclusions** through the final model, integrated Knowledge Sharing Behaviour Theory and adapted Information System Success Model.

### 5.4.1 Community

Table 5.2: Number of entries based from the subjects of motivation classification

	Performance (P) Person-Behaviour	Judgement (J) Person - Behaviour	Person's Behaviour (PB) Behaviour-Environment	<b>Human Belief (HB) Person-Environment</b>	Cognitive Competencies (CC) Person-Environment
Motivation	6	0	11	<b>28</b>	7

This sub-element of Social Cognitive Theory is chosen based on frequency of the knowledge in the motivation classification. The general reason why human belief becomes the highest number is stated in **5.3.2 Finding Classification and Justification**. However, the other more

detailed reason is because this human belief may also contribute to the community in the subject's environment too.

Table 5.3: Number of entries based from the subjects of the Festive classification

	Human Belief (HB) Person-Environment	<b>Person's Behaviour (PB) Behaviour-Environment</b>
Festives	5	<b>13</b>

This sub-element Human Belief: Person-Environment is the highest one and the community plays the main role in the subjects' festive celebrations. In other words, the subjects really need each other to celebrate their festive events. That is the reason the sub-element of person's behaviour is related with the behaviour to environment. Environment here refers to community. It means friends are included within the community. It uncovers the fact that the community can determine the behaviour of the individuals especially when the subject is abroad. They have nobody unless they have friends. If they do not have friends or people around them, it maybe they will not celebrate the festive events.

Table 5.4: Number of entries based from the subjects of the Official Event classification

	Human Belief (HB) Person-Environment	<b>Social and Structures(SS) Person-Environment</b>	Cognitive Competencies(CC) Person-Environment
Official Event	4	<b>13</b>	-

This classification may prove that the community can contribute to social structure by sorting out any official events. It means that any events really need the structure in handling the events. These entries are about the opinions, experiences or words expressed by the subjects. This subject is referring to what happened with the events that they had attended and shared in their personal weblogs.

Table 5.5: Number of entries based from the subjects of the Social Activity and Society Work classification

	Human Belief (HB) Person-Environment	<b>Social and Structures(SS) Person-Environment</b>	Performance (P) Person-Behaviour	Judgement (J) Person-Behaviour	Person's Behaviour (PB) Behaviour-Environment
Social Activity	1	-	2	5	<b>22</b>
Society Work	-	<b>8</b>	6	-	4

Table 5.5 shows that the community really plays a big role to the subjects. For social activity classification, even though the person's behaviour is the main contribution, it still depends on the community. Society works need the cooperation within the community to ensure that the works are a success. So the social and structures contributes to the running of the activities within the community.

Table 5.6: Number of entries based from the subjects of the Friendship classification

	Human Belief (HB) Person-Environment	<b>Person's Behaviour (PB) Behaviour-Environment</b>
Friendship	7	<b>27</b>

Table 5.6 shows how the friendship classification may contribute to the success of knowledge sharing. From the list of knowledge that has been identified, it seems that the subjects are very open in sharing their feelings, experiences, stories and anything regarding any issues within their friends. Friendship most probably comes from the community. Logically, friendship bonding will develop in the community bonding itself. This means that the friendship also plays a big role in the success factors for knowledge sharing among the students.

## 5.4.2 Personal

Table 5.7: Number of entries based from the subjects of the Personal classification

Attitude Toward Act or Behaviour(ATAB)	Subjective Norm(SN)	Perceived Behaviour Control (PBC)	Behavioural Intention (BI)	<b>Behaviour (B)</b>
20	94	27	35	<b>103</b>

Table 5.7 shows that subjective norm contributes for subjects in the Personal classification. As known, behaviour is one of the independent determinants of intention in this theory. In other words, it can also be a predictor to perform the behaviour, where the subjects perceive the social pressure in order to perform the behaviour or not. According to Ajzen (1991), the more levels of subjective norms there are in the individuals, the intention to perform the behaviour is stronger. However it varies across the behaviours and situations and depends on the type of behaviour itself (Ajzen, 1991).

Table 5.8: Number of entries based from the subjects of the Entertainment classification

<b>Attitude Toward Act or Behaviour(ATAB)</b>	Behaviour (B)	Subjective Norm	Behaviour Intention
<b>29</b>	27	1	1

Table 5.8 shows that this classification, entertainment, is represented by attitude toward act or behaviour itself. It is also represented by attitude towards act or behaviour, subjective norm and behaviour intention. However in this study, attitude toward act or behaviour proved to be the most used by the subjects in this classification. The behaviour of the subjects was performed, and then the experiences from that were shared within their friends and family.

Table 5.9: Number of entries based from the subjects of the Vacation classification

Behavioural Intention (BI)	<b>Behaviour (B)</b>
2	<b>14</b>



Table 5.9 indicates, based on the Vacation classification, where the behaviour is determined to be travelling. Back from the vacation, the subjects will share their experience with the visitors of their weblogs. Besides the behaviour itself, behaviour intention was identified in this classification. However, behaviour is the most regular contribution as this classification itself is the behaviour, in other words it is travelling.

Table 5.10: Number of entries based from the subjects of the Academic classification

<b>Subjective Norm(SN)</b>	<b>Perceived Behaviour Control (PBC)</b>	<b>Behavioural Intention (BI)</b>	<b>Behaviour (B)</b>
<b>21</b>	6	5	16

This differs from the Academic classification when looking at Table 5.21; it shows that besides the behaviour itself which has the most entries, it also includes subjective norm, perceived behaviour control and also behaviour intention. However in this study, subjective norm is the most identified. It comes from the variety of behaviours in the study, such as doing the assignment, attend the exam, dieting, attending the academic exhibition, acting for further study abroad and others.

### 5.4.3 Technology Web 2.0

Table 5.11: Findings from Facebook in eleven selected subjects; from a total of fifteen subjects for weblogs data collection.

<b>Characteristics</b>	<b>Study 1</b>	
Existing link to family	A1S1	YES
	A2S1	YES
	A3S1	NO
	A4S1	YES
	A5S1	YES
	A6S1	NO
	A7S1	YES
	A8S1	YES
	A9S1	YES
	A10S1	YES
	A11S1	NO
	A12S1	NO
	A13S1	NO
	A14S1	NO
	A15SS1	YES

State the personal blog?	A1S1	YES
	A2S1	YES
	A3S1	NO
	A4S1	YES
	A5S1	YES
	A6S1	YES
	A7S1	YES
	A8S1	YES
	A9S1	YES
	A10S1	NO
	A11S1	YES
	A12S1	YES
	A13S1	YES
	A14S1	YES
	A15S1	YES
Active through update status?	A1S1	YES
	A2S1	YES
	A3S1	YES
	A4S1	YES
	A5S1	YES
	A6S1	YES
	A7S1	NO
	A8S1	YES
	A9S1	YES
	A10S1	YES
	A11S1	YES
	A12S1	YES
	A13S1	YES
	A14S1	YES
	A15S1	NO
Active in games and quizzes	A1S1	NO
	A2S1	NO
	A3S1	YES
	A4S1	YES
	A5S1	NO
	A6S1	NO
	A7S1	NO
	A8S1	YES
	A9S1	YES
	A10S1	NO
	A11S1	NO
	A12S1	NO
	A13S1	NO
	A14S1	NO
	A15S1	NO
Received award or gift anything from friend	A1S1	NO
	A2S1	NO
	A3S1	NO
	A4S1	NO
	A5S1	NO

	A6S1	NO
	A7S1	YES
	A8S1	NO
	A9S1	NO
	A10S1	NO
	A11S1	YES
	A12S1	NO
	A13S1	NO
	A14S1	NO
	A15S1	NO
Active in note	A1S1	NO
	A2S1	NO
	A3S1	NO
	A4S1	YES
	A5S1	YES
	A6S1	YES
	A7S1	NO
	A8S1	NO
	A9S1	NO
	A10S1	YES
	A11S1	YES
	A12S1	YES
	A13S1	YES
	A14S1	YES
	A15S1	NO
Rich in personal information	A1S1	NO
	A2S1	YES
	A3S1	YES
	A4S1	YES
	A5S1	YES
	A6S1	YES
	A7S1	YES
	A8S1	NO
	A9S1	YES
	A10S1	YES
	A11S1	YES
	A12S1	YES
	A13S1	YES
	A14S1	YES
	A15S1	YES

From the second characteristics of the information in Table 5.11, it has been uncovered that the respondents have the intention to share their personal weblogs through Facebook. For the majority of subjects the number of friends they have, also high and it proves that knowledge sharing behaviour exists among students. The willingness to put their name on personal weblogs shows that they have high BI to share any information through their personal

weblogs. Besides that, the majority of them are also active in putting statuses on their account. The status can be about them, or about current affairs, academic issues or any other issues that can be relevant as students. For picture sharing, some of them seem to be very open to share their personal picture albums. Furthermore, the pictures are tagged by their friends in quite high numbers from six out of eleven subjects on Table 5.11. The numbers of profile pictures reveal the frequency the subject has for their profile pictures. The profile picture is their introduction picture that can be seen before anybody even adds them as a friend. Only three of the eleven subjects have video columns in their account and two out of eleven have tagged in the video column. Some of them are active in their video posts in their personal weblogs rather than their Facebook account. Generally all of them have experience in sharing links. Playing games or quizzes are also one of the favourite activities since seven out of the eleven subjects are involved in the games or quizzes. The other four respondents are not so eager to play the games or quizzes. In sharing the notes activity, only one respondent is active, A2S1, and only two respondents have tagged on the sharing notes. All of them also provide rich personal information in the information column and nine out of eleven have received free awards or gifts from their friends through applications in Facebook. An interesting application that has been applied to five subjects is the family link, while the other six respondents do not have a link with their family. This happens because some of them are not willing to publish who their family are on a social network.

Table 5.11 indicates that besides the personal weblogs, Facebook can also be a critical feature in knowledge sharing behaviour among Malaysian student in northern university of Malaysia. All of these characteristics reveals from Social Exchange Theory assumption under knowledge sharing behaviour integrated theory. The applied assumption is applicable for these characteristics is the cost is the assumed same with the reward in human relationship. In other words, it means that what you give is what you get in the applied assumption for this Social Exchange Theory. Furthermore, from this findings support the research findings from Liang et al. (2008) in information technology as significant role specific to two reliable factors; social interaction and trust. The trust factors including two types which are cognition based trust and affect-based trust (Mc Allister in Liang et al. (2008)). Cognition based trust is about a rational evaluation for an individual's ability to carry out the obligations. Meanwhile affect-based trust is related with an emotional attachment comes from mutual care and exist between individuals (Mc Allister in Liang et al. (2008)).

#### 5.4.4 Technique for Order Preference by Similarity to Ideal Solution (TOPSIS)

In this method two artificial alternatives are hypothesized, ideal alternative and negative ideal alternative. TOPSIS selects the alternative that is the closest to the ideal solution and farthest from negative ideal alternative.

Step 1 : Construct normalized decision matrix

\*Wd = Work Discipline, Tw = Team Work, Ca = Communication Ability

Weight	0.33	0.44	0.22
	WD	TW	CA
Community	4.6	4	4.1
Personal	4.3	4.5	4.2
Technology Web 2.0	4.2	4.1	3.7

Figure 5.11:  $x_{ij}$  Score of option i with respect to criterion j

Transforms various attribute dimensions into non-dimensional attributes, which allows comparisons across criteria. By using this formula :

$$r_{ij} = x_{ij} / \sqrt{(\sum x_{ij}^2)} \text{ for } i = 1, \dots, m; j = 1, \dots, n^i \quad [1]$$

	WD	TW	CA
Community	0.61	0.55	0.6
Personal	0.56	0.62	0.61
Technology Web 2.0	0.55	0.56	0.53

Figure 5.12: Normalized Matrix

Step 2 : Multiply each column by weight ( $w_j$ ) to get value of  $v_{ij}$

$$v_{ij} = w_j r_{ij} \quad [2]$$

	WD	TW	CA
Community	0.2	0.24	0.13
Personal	0.18	0.27	0.14
Technology Web 2.0	0.18	0.25	0.11

Figure 5.13: Element for new matrix

Step 3 : Determine the ideal and negative ideal solutions.

3(a) Ideal Solution:

$$A^* = \{ v_1^*, \dots, v_n^* \}, \text{ where}$$

$$v_j^* = \{ \max_i (v_{ij}) \text{ if } j \in J ; \min_i (v_{ij}) \text{ if } j \in J' \} \quad [3]$$

<b>A*(0.20,0.27,0.14)</b>	WD	TW	CA
Community	0.20	0.24	0.13
Personal	0.18	0.27	0.14
Technology Web 2.0	0.18	0.25	0.11

Figure 5.14: Ideal Solution (A\*)

3(b) Negative Ideal Solution:

$$A' = \{ v_1', \dots, v_n' \}, \text{ where } v_j' = \{ \min_i (v_{ij}) \text{ if } j \in J ; \max_i (v_{ij}) \text{ if } j \in J' \} \quad [4]$$

<b>A'(0.18,0.24,0.11)</b>	WD	TW	CA
Community	0.2	0.24	0.13
Personal	0.18	0.27	0.14
Technology Web 2.0	0.18	0.25	0.11

Figure 5.15: Negative Ideal Solution (A')

Step 4 : Calculate the separation measures for each alternative.

4(a) The separation from the ideal alternative is:

$$S_i^* = [ \sum_j (v_j^* - v_{ij})^2 ]^{1/2} \quad i = 1, \dots, m \quad [5]$$

	WD	TW	CA	SUM	S*
Community	0.0000	0.0009	0.0001	0.0010	<b>0.0316</b>
Personal	0.0004	0.0000	0.0000	0.0004	<b>0.0200</b>
Technology Web 2.0	0.0004	0.0004	0.0009	0.0017	<b>0.0412</b>

Figure 5.16: Separation Ideal Alternative

4(b) The separation from the negative ideal alternative is

$$S'_i = [ \sum (v_j' - v_{ij})^2 ]^{1/2} \quad i = 1, \dots, m \quad [6]$$

	WD	TW	CA	SUM	S'
Community	0.0004	0.000	0.0004	0.0008	0.0282
Personal	0.000	0.0009	0.0009	0.002	0.0447
Technology Web 2.0	0.000	0.0001	0.0000	0.0001	0.0100

Figure 5.17: Separation Negative Ideal Solution

Step 5 : Calculate the relative closeness to the ideal solution  $C_i^*$

$$C_i^* = S'_i / (S_i^* + S'_i) , \quad 0 < C_i^* < 1 \quad [7]$$

	$S'_i / (S_i^* + S'_i)$	$C^*$	Rank
Community	0.0282/0.0598	0.4700	2
Personal	0.0447/0.0647	0.7000	1
Technology Web 2.0	0.0100/0.0512	0.1953	3

## 5.5. Summary

In this chapter, the researcher has completed the data analysis under the interpretive paradigm. The research paradigm is a guidance for the researcher to think about how to analysis the data in this chapter. Besides that, details about the background of the Malaysian student community have discussed in section **5.2 Background of Malaysian Student Community in Northern University of Malaysia.**

Furthermore, the researcher has deliberated about the process of data analysis in this research. The data analysis for this research is divided into three stages: **5.3.1 Applied Theories Justification, 5.3.2 Classification of Findings and Justification** and **5.3.3 Idea Mapping.** The following section is **5.4 Justification on Critical Success Factors,** and a detailed justification on CSFs based on the findings can be seen in **5.3 Data Analysis.** Generally the main critical success factors are identified through community, personal and technology Web 2.0 technology. This chapter has significant contribution for determination of adapted model for critical success factor in knowledge sharing behaviour among Malaysian undergraduate students.

## CHAPTER 6: DISCUSSION AND CONCLUSIONS

### 6.1 Introduction

This chapter will summarise this research within the closure discussion and the final conclusion. It starts with a summary of the research activity and the creation within the adapted final model is discussed. Highlights of the contribution to knowledge from this research are explained in this chapter. In addition, the research implication, reflection from the research findings and practical issues from this research are disclosed. The limitations of the research and recommendations for future studies are also stated in this chapter. The next section provides a summary of the research activity issues that are interesting to reveal.

### 6.2 Research Outcome

The first aim of this research report, as stated in **Chapter 1**, was to identify the critical success factors for effective knowledge sharing behaviour among Malaysian undergraduate students. This identification will be transferred into ideas to create a model of critical success factors of knowledge sharing behaviour among Malaysian undergraduate students. The activities in this research included continuous literature review for all the chapters, a pilot study, main data collection and also validation works. All of these research activities contribute to valid and appropriate research findings and can ensure the originality of the research.

Table 6.1: List of project tasks, their expected and final outcome

Tasks	Expected Status	Final Outcome Completely successful?
Background study (Literature review)	Success	Yes
Design of given tasks	Complete	Yes
Participant recruitment	Meet the requirement	Yes
Data collection from participants	Collect all data from participants successfully	Yes
Data analysis	Use qualitative data analysis method	Yes
Conclusion	Draw conclusions from the overall results	Yes
Report Writing	Complete dissertation and meet the deadline	Yes



Table 6.2: Research objectives and Research questions

<b>Research objectives</b>	<b>Status of achievement</b>
1- Identifying the types of knowledge shared among Malaysian undergraduate students who are members registered within the two Malaysian online communities.	Achieved
2-Exploring the process of knowledge sharing behaviour among Malaysian students' weblogs by using content analysis (CA).	Achieved
3- Creating a way of evaluating the effectiveness of knowledge sharing behaviour.	Achieved
4- Developing a model of critical success factors of knowledge sharing behaviour among Malaysian undergraduate students.	Achieved
<b>Research questions</b>	
How to identify which factors may enable to Malaysian undergraduate students in sharing their knowledge successfully	Achieved
i)What are the knowledge sharing behaviours in this research context?	Achieved
ii) How to determine the critical success factors for this research?	Achieved
iii) Where are the selected Malaysian undergraduate students' communities in this research?	Achieved

### **6.2.1 Exploration on Literature Review for Conceptual Framework, Theoretical Framework and Justification for the Analysis Findings**

The literature review activity is very important for any research and normally they are used to argue for or against other researches and to justify or support the findings of the research (Hart, 1998; Oates, 2006). In this research, this activity also contributed important points and helped the researcher to determine the research question and research objectives. This was followed by the development of a conceptual framework and theoretical framework. Critical thinking is an important element in writing a thesis in justifying its argument and supporting its decision. In addition, the high level of interest and experience of the researcher, being a personal blogger and having a Facebook account, also enhanced the effectiveness of the work in the data collection stages. The next point is about the preliminary study in this research which is also known from previous research (Sulaiman, 2010).

### **6.2.2 Pilot Study**

The pilot study for this research was based on study has been done by Sulaiman (2010) about Malaysian student development. The pilot study findings served as hints for the main data collection of both studies since the respondents had the same main characteristics. From the pilot study findings, the researcher gained some views of the identified community members before proceeding with the main data collection. The next point about this activity is explained precisely in the following section.

### **6.2.2 Main Data Collection**

In this stage, the researcher had their strength because they also has personal weblogs and adored reading and visiting their friends' and family's weblogs or any other interesting weblogs. Thus, this experience has urged them to ensure that the data collection is finished within the required time. However, for this purpose, the researcher had to record the selected entries and did content analysis in Microsoft Excel before transforming it into a Microsoft Word document for each of the selected entries based on the categorisation. This is not an easy job without high levels of motivation since it requires the researcher to read fifteen weblogs and a total of thirty weblogs. The number of entries in the weblogs on average was more than twenty entries within a year. The researcher decided to select the weblogs within a year to ensure that they had a specified period of observed entries. Besides that, indirectly, the researcher also gained new knowledge and current issues and a variety of experiences from the subjects. The next section provides a summary of the final stage in this research - the validation of data findings.

### **6.2.3 Analysis from Multi-Criteria Decision Making (MCDM)**

This stage of the study done through Technique for Order Preference by Similarity to Ideal Solution(TOPSIS).As mentioned in Chapter 4, this technique was done to test the reliability and consistency in determine the most critical success factor between content analysis based on Knowledge Sharing Behaviour Theory. It was analysed 'quantitatively' but it viewed in a qualitative way. In addition, the result gained was consistent with the result using the other approach, which is content analysis based on Knowledge Sharing Behaviour Theory. It means, indirectly the successful main factors and sub-factors were also identified is

consistent. In addition it can be as validation purpose for the main finding. The next section is disclosure of theory building in this research.

### **6.3 Summary of Theory Building**

After the main research activity was revealed, the application of theory was disclosed. The first theory applied was Dooyewerd's Theory. This theory was only used to determine the categorisation to classify the data (entries) from the selected weblogs. Then, the four most important adapted theories for analysis purposes – Theory of Planned Behaviour, Social Cognitive Theory, Social Capital Theory, Social Exchange Theory – and the adapted Information Systems Success Model were applied. Firstly, the four appropriate adapted theories were integrated to become integrated as Knowledge Sharing Behaviour Theory. It makes this research finding more significant since this integrated theory is initiated from the researcher. The details about the Knowledge Sharing Behaviour Theory are uncovered in **Chapter 3: Theoretical Framework** and the application of the theory is applied in the data analysis chapters (**Chapter 5**).

### **6.4 Contribution**

This research is mainly concerned with the business information technology areas specific to Information Systems research areas. The researcher focuses this research on knowledge management areas towards knowledge sharing research in Information Systems areas. However, the contribution to knowledge is divided into three implications:

#### 1- Practical Implications

The research findings and the research validation have proven the acceptance of weblogs and Facebook among the young generation specific to university students. Acceptance of weblogs and Facebook can be seen through the data collection stage when the researcher had to design the method of data collection. From this scenario, the researcher did not have any major problems since blogging among the Malaysian undergraduate students is quite common. Furthermore, having a Facebook account is also easy for Malaysian undergraduate students as long as they can access the Internet. From the research findings, it was also uncovered that the knowledge sharing behaviour really happened among the Malaysian undergraduate students. Moreover, the social interaction existed without any limitations in Facebook or weblogs. It support the research findings on the importance of technology Web 2.0 among Malaysian

undergraduate students. Currently, it is impossible to look after student development with the huge number of Malaysian undergraduate students either overseas or based locally. Due to this condition, the researcher can suggest these research findings to the Ministry of Higher Education to let them know what the most critical success factor is for knowledge sharing behaviour that is required by students. Otherwise, from this research findings can suggest to Student Affairs Department in Universiti Utara Malaysia regarding on personal is the vital determinants in knowledge sharing behaviour for involvement in student activities.

In addition, the selected Malaysian undergraduate student who have good personality and charisma was appointed as Rural Ambassador under Ministry of Higher Education(Duta Luar Bandar, 2012).From this programme, it enhance confidence level to these student with other criteria's to be as high employability after graduates. These research findings are highlighted from three perspectives: personal, community and technology Web 2.0. Since the personal perspective seems the most important factor for critical success factors in knowledge sharing behaviour, showing that the individual contribute the most vital in student development. This research also has its own implication in developing the level of quality in human capital development with holistic individual characters (Wan Ibrahim, 2007).

## 2- Theoretical Implications

The literature review has proven the importance of managing the knowledge from the perspective human as individual. These studies (Yuen and Majid, 2007, Yang and Lai, 2008 and Liang et al., 2008) have supported the importance of knowledge sharing behaviour among the human behaviour research itself. The first point from the study finding is about the knowledge sharing behaviour among the undergraduate students in the learning process, proving that the behaviour intention of individuals is important. Although they study in groups or team projects for learning purposes, the behaviour intention of each individual is still a significant contribution in knowledge sharing behaviour (Yuen and Majid, 2007).

In addition, the study findings by Yang and Lai (2008) support within contribution of anonymity in knowledge sharing behaviour in virtual community. However, it must line up with self-efficacy to ensure the knowledge sharing intention towards knowledge sharing behaviour done. Self-efficacy comes from the personal responsibility itself. Normally, a good feedback mechanism, influenced by group identity and reward systems, is being the other factor that contributes to knowledge sharing behaviour in a virtual community.

The other study findings by Liang et al. (2008) argue that knowledge sharing behaviour is more reliable for individual either in community or any organization. The reason is that the effect on organisational support is weaker rather than the individual behaviour intention itself. Even though management support may influence individual attitudes, it does not guarantee to change individual behaviour (Lu et al., 2006; Liang et al., 2008).

These research findings also reveal the integrated knowledge sharing behaviour theory and Information Systems Success Model. These two adapted integrated theories and models are the main contribution of this research. Furthermore, these adapted theories and models are also well established and widely accepted in Information Systems research. For example, Social Exchange Theory in integrated knowledge sharing behaviour theory is proven to be an adequate theory in describing the individual knowledge sharing behaviour. This statement comes from significant effort by the construction of a hypothesis in Social Exchange Theory on individual knowledge sharing behaviour (Liang et al., 2008). It means that, this research findings in technology Web 2.0 perspectives is supported with this argument. These theories and models are not purely original comes from the researcher. However, the adaptation and amendments based on the conceptual framework and the findings from this research, as well as the gaps in between it, can be considered as the research's contribution to the knowledge. Figure 6.1 has shown the creation based on the adapted integration model for the critical success factors of knowledge sharing behaviour among Malaysian undergraduate students as the main contribution of this research.

### 3- Methodological Implications

Methodologically, in this research, surveys have been used as one of the research techniques even though this research is based on the interpretive paradigm. On the other hand, the original processes have been used to acquire the main data collection through selected weblogs using content analysis. A summary of the significant contributions of this research will be presented in the next section.

## **6.5 Summary from Contribution of this Research**

This research highlights the knowledge sharing phenomenon especially and indirectly, and it also proves that technology Web 2.0 is easily accepted by young generations. A variety of theories were used to prove the findings and they have been used as analysis elements. The research findings can be used for the management of the Higher Education Ministry in

Malaysia specifically, and any developing country, for the knowledge sharing behaviour of university students. Since technology Web 2.0 has become a phenomenon to the young generation, the Ministry supposedly should be aware of this phenomenon. The next section is about research reflection issues.

## **6.6 Reflection Issues**

Having looked at the research contributions, the research reflection issues are now uncovered. The research findings show that culture is not considered as a success factor for this research context. The reason is that culture is one of the knowledge sharing barriers that are discussed in **Chapter 1**. The culture issue can be considered as ‘complicated’. Besides that, there are huge publications in knowledge sharing areas that have investigated it only from a cultural perspective. These research findings are not aimed at solving the culture problems that act as knowledge sharing barriers; rather, the research findings are trying to reach a solution for the problem statement, to answer the research question of this study and present the adapted model to achieve the research aim.

## **6.7 Limitations of Research**

In this research, there are some barriers and problems that have been investigated. Firstly, to achieve at least fifteen weblogs requires the researcher to look in detail at every link for the identified weblogs. Some of the weblogs did not meet the characteristics required by the researcher. Even though some of the respondents have graduated and have their own careers, they still use the weblogs to communicate with their juniors. However, since they have met the required characteristics of the subject, they can be considered as the selected subjects. In this research, culture issues or culture dilemmas are not focused on too much, since the culture itself is already ‘big context’ for knowledge sharing behaviour research. However, it seems that, from this research, the new phenomenon of technology web 2.0 has become digital culture research. It means to overcome on any culture dilemma in digital culture phenomenon, phenomenon of technology web 2.0 can be proposed as new research. The next issue relates to potential future research, which could either be extended from this research or it could start as a new piece of research

## 6.8 Future Research

In future studies, this type of research (knowledge sharing behaviour research) could be done as a mixture of research approaches. The potential new research could be the same as this research or it could use a quantitative approach, or a qualitative triangulation with the quantitative approach. This type of research has potential in the researcher's home country since the weblogs are well accepted by the younger generation and the medium-aged generation (BlogMalaysia, 2008). Weblogs usage as data collection is an interesting method to use in the data collection stage.

In other perspectives, this research could also be basic to enhance a study where the focusing on personal issues in undergraduate university student development in any fields, since a student's development is vital for survival to ensure that they strike a healthy balance between academic and soft skills before finishing their studies. As humans, we must have a good balance between academic and soft skills for social interaction with other people.

The researcher also has used some of the subjects' information relating to Facebook. Generally the researches related with Facebook are increasing all the time (Ellison et al., 2007). In fact, for this type of research, it is not impossible for the data to come solely from Facebook. The reason for this is that nowadays Facebook is the most popular tool in knowledge sharing behaviour in Malaysia (Morrison, 2010). It allows knowledge sharing behaviour among the virtual community for any identified groups in Malaysia using their Facebook accounts or weblogs. Identified groups can be profit-oriented bloggers, academia bloggers, parenting bloggers and so on. Furthermore, as mentioned in the last point in **6.7 Limitation of Research**, the digital culture research involving in any culture dilemmas issues could be the subject of an interesting new research in future. The next section marks the end of this chapter and also the research report, and provides some closing remarks.

## 6.9 Closing Remarks

To conclude, this research has offered an account of the reasons for the widespread use of knowledge sharing behaviour based on theory and application. In this investigation, the aim was to identify the critical success factors and sub-factors in knowledge sharing behaviour among Malaysian undergraduate students in Universiti Utara Malaysia. The results of this investigation show that Malaysian undergraduate students successfully apply knowledge

sharing behaviour theory in terms of behaviour among the student community. Furthermore, the current findings add to a growing body of literature and applications on knowledge sharing theory. More information on knowledge sharing behaviour theory would help future researchers to establish a greater degree of accuracy in developing the knowledge sharing model for Malaysian undergraduate students. In addition, this research shows that the knowledge and successful functionality of the organisation should achieve an optimum of information processing (Burke, 2004). Finally, this research can also be classed as a research of digital culture, which is predicted to become one of the popular research subjects concerning knowledge sharing behaviour study in future.

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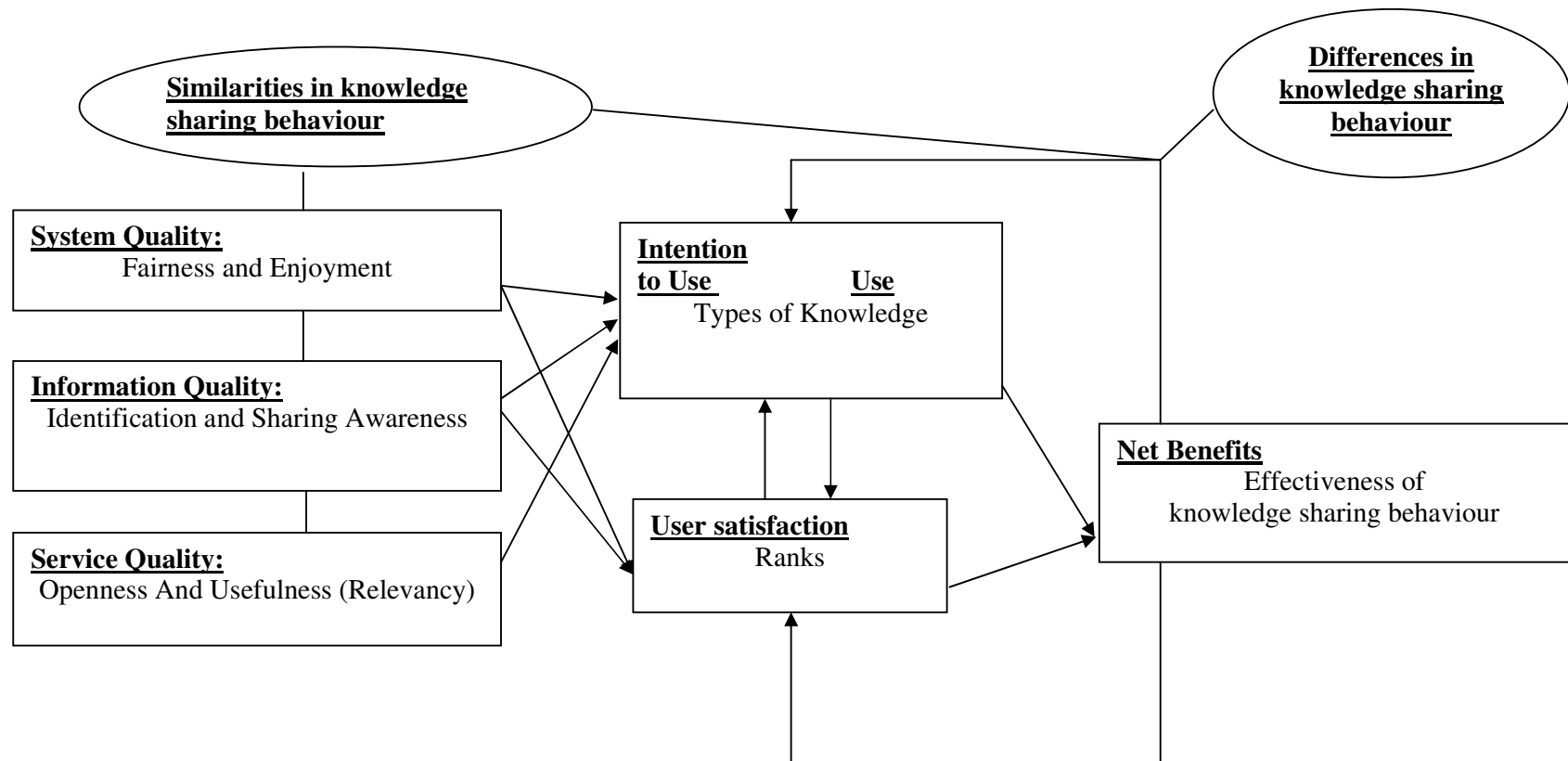


Figure 6.1: Creation based on adapted integration model for the critical success factors of knowledge sharing behaviour among Malaysian undergraduate students (adapted from DeLone and Mc Lean, 2003) as the main contribution in this research.



## ABSTRACT

This study investigates the critical success factors of knowledge sharing behaviour among Malaysian undergraduate students. Each university has their own method in delivering knowledge to their undergraduates, but occasionally there would still to met the requirement of students and this had not received . The research question is: what makes knowledge sharing behaviour successful among Malaysian undergraduate communities in Universiti Utara Malaysia The aim of this study is to identify the critical success factors for effective knowledge sharing behaviour among Malaysian undergraduate students.

On that basis, this research identifies how Malaysian undergraduate students are using Web 2.0 applications and other media for knowledge sharing behaviour. For a pilot study, document web archives are searched. A pilot study was conducted as a preliminary study.

The pilot study identified the types and mediums of knowledge shared among Malaysian undergraduate students from the perspective of community leaders. Moreover, challenges and difficulties in handling the community members of knowledge sharing behaviour have been identified. The target interviewees are student leaders in a student community representing Malaysian undergraduate students.

The second data collection has investigated done using weblogs for each study through content analysis. From the analysis of the main data collection, the researcher has identified the success factors using relevant theories. The main theory that was use is Knowledge Sharing Behaviour theory which has been adapted from four main theories. The research method in the main data collection was content analysis and online questionnaire survey.

The creation model which identifies the critical success factors in knowledge sharing (KS) methods among Malaysian undergraduate students is then presented as the main contribution of this research.

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## ABBREVIATION

KM	Knowledge Management
KS	Knowledge Sharing
KT	Knowledge Transfer
KC	Knowledge Creation
KSB	Knowledge Sharing Behaviour
CSF	Critical Success Factors
MSC	Malaysian Student Community
MUS	Malaysian Undergraduate Students
MSD	Malaysian Student Department
MOHE	Ministry of Higher Education
TPB	Theory of Planned Behaviour
SCogT	Social Cognitive Theory
SET	Social Exchange Theory
SCapT	Social Capital Theory
VC	Virtual Community
IC	Intellectual Capital
HC	Human Capital
SECI	Socialisation, Externalisation, Combination, Internalisation
HR	Human Resource
HRM	Human Resource Management
IT	Information Technology
IS	Information System
ICT	Information Communication Technology
RSS	Really Simple Syndication
CA	Content Analysis
UK	United Kingdom
USA	United States America
R&D	Research & Development
SME	Small Manufacturing Enterprise
FTSE	Financial Times Stock Exchange
TQM	Total Quality Management

## DEFINITION

The following terms have specific meaning in this monograph:

**Knowledge-** Knowledge is referred to as the tacit and explicit knowledge in the student setting. The example of tacit knowledge includes their experience in their life sharing through face to face or in social interaction. Whereas, the explicit knowledge could arise from their student weblogs and it can be from their own source or other source that they are willing to share with the others (Ali and Ahmad, 2006; Brooking, 1996; Jain et al., 2007; Selamat and Choudrie, 2007; Zheng, 2005; Song, 2002; Kim and Lee, 2006; Brent and Vittal, 2007).

**Knowledge Sharing** - Disclosure of existing knowledge to others - thus creating 'new knowledge', it happen as voluntary action which is sometimes reciprocated social interaction. (Boyd et al., 2007).

**Knowledge Sharing Behaviour-** This is related to how the student shares their knowledge during in their campus life including acquiring, learning, disseminating and sharing information and knowledge, and transferring tacit knowledge into explicit and vice versa. (Liang et al.,2008)

**Critical Success Factors-** Areas in which results, if they are satisfactory, will ensure successful competitive performance. (Rockart, 1979)

**Technology Web 2.0-** This refers to authoring tools that easy to use for non-IT background students for knowledge sharing behaviour purpose. For example tools to produce the weblogs and also it can be as web-based social networking application and services such as Facebook and Myspace. (Linhl, 2008; Gross and Leslie, 2008; ( Boyd, O'reilly (a); O'reilly (b) Fredman, Hinchcliffe, and Anderson), in Eijkman 2008 and McGee and Begg, 2008)

**Malaysian Undergraduate Student-** The person who is reading in their first degree where their home country is Malaysia. (The researcher's own definition)

# APPENDIX 2

# PERSONAL

# ENTERTAINMENT

# VACATION



# SOCIAL ACTIVITY

# SEASON

# FESTIVE

# MOTIVATION

# POLITIC

# FRIENDSHIP

# ACADEMIC

## REFERENCES

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