MEASURING IMPORTANT SUCCESS FACTORS IN KNOWLEDGE SHARING BEHAVIOR AMONG ONLINE BUSINESS NETWORK USERS USING ANALYTICAL HIERARCHY PROCESS

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Abstract: Researchers believe that social network such as facebook is an innovative knowledge sharing technology. The increase use of social network each year has shown that these effective medium can be extended beyond simple communication within a community. A few studies were conducted to explore knowledge sharing behaviour among social network users. However, research study that focuses on online business network users still has not been explored yet. Communication among online business network users within the community is important in sharing and exchanging knowledge. This will lead to factors that motivate them to share knowledge through online communication. Identifying factors in online knowledge sharing behaviour is essential in order to improve their communication and business activities. Thus, this research is intended to identify the most important factors in knowledge sharing behaviour among online business network users by using Analytical Hierarchy Process (AHP). AHP technique is used to prioritize eleven factors which are reciprocal benefits, altruism, mutual trust, identification, reputation, social network ties, shared vision, shared interest, computer self-efficacy, technology innovation and controllability. This study will benefit virtual entrepreneurs as it provide ways to recognize the important factors in sharing knowledge and to improve their communication, business activities and contribution to the existence of long term sustainability of online business through social network.

Keywords: knowledge sharing behaviour, social network, analytical hierarchy process
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Introduction

In general definition, knowledge sharing is related to an action which refers to individual's behaviour in sharing or not sharing knowledge, donating and collecting knowledge (Sulaiman, 2010). Knowledge sharing has been the most discussed topic and a challenge for organizations because of its importance for the success of knowledge management efforts (Amin, Hassan, Ariffin, & Rehman, 2009). Past researches have highlighted variety of factors that affect the

willingness of individuals in knowledge sharing, such as incentive system, costs and benefits and also intrinsic and extrinsic benefits (e.g., Bock, Zmud, Kim, and Lee, 2005; Kankanhalli, Tan, and Wei, 2005; Wasko and Faraj, 2005). Hsu, Ju, Yen, and Chang (2007) reasonably assumed that individuals' behaviour in sharing knowledge will be based on the personal characteristics and environment they are in.

In attaining the knowledge management process, the right knowledge must be presented to the right person and the person is bound and willing to learn. Thus, it must go through the process of socialization and involve social interactions in order to achieve knowledge sharing behaviour (Sulaiman, 2010). This social interaction consists of individual interactions and participation and when both of these important elements involved, knowledge sharing turn out to be more effective. For instance, Bock et al. (2005) stated that "the stream of knowledge across individuals and organizational boundaries, and into organizational practices relies heavily on individual employees' knowledge sharing behaviour". In online social network, knowledge sharing behaviour cannot be forced but can only be encouraged and facilitated because it concerns the willingness of individuals in online social communities to share the knowledge with others through active participation (Yu, Lu, and Liu, 2010).

A few studies were conducted to explore knowledge sharing behaviour among social network. However, research study that focuses on online business oriented users still has not been explored in Malaysia. Reluctance to share is one of the main obstacles in implementing knowledge sharing in Malaysia (Singh et al., 2008). Sometimes, individuals are reluctant to share knowledge due to a sense of insecurity (Elahi & Mushtaq, 2011). This problem can also occur to online business oriented users when they fear that their ideas or entries in social network will be stolen (Ahmad, 2011). As a result, successful knowledge sharing can be difficult to achieve when open sharing of knowledge by online business oriented users is limited across social network. Therefore, Malaysian citizen need to be more open in accepting social network as one of the latest communication tools in sharing knowledge and one of the way to generate their income.

This research will concentrate on success factors in knowledge sharing behaviour among online business oriented users. Thus, the main objective is to rank success factors for online business oriented users in knowledge sharing behaviour using AHP. In this regard, this study aims to fill this gap by identifying success factors in knowledge sharing behaviour among online business oriented users. Findings were expected to expand the field of research in knowledge sharing behavior and allowing social network users especially online business oriented users to have knowledge of the successful factors in managing their social network.

Literature review

Success Factors of Online Knowledge Sharing Behaviour

The usage of internet for sharing knowledge has resulted in increasing interest among our society. This supported by (Hassandoust, Kazerouni, & Perumal, 2012) which stated that there are increasing usage of internet for learning and training purposes. Searching knowledge through internet to resolve problems are very popular, but give restricted value without rich knowledge (Chiu et al., 2006). Thus, there is a need to explain why people in social network choose whether to share or not to share knowledge with other community members. These also called as motivations in sharing knowledge. Understanding knowledge sharing behaviour

among online users is required to stimulate knowledge sharing through social network. There are some theories that can help the authors in determining the success factors that can play an important role in online knowledge sharing behaviour specifically among profit oriented users in Malaysia. Hence, this study adopted two relevance theories; Social Capital and Theory of Planned Behaviour.

The Social Capital Theory perspective can promote knowledge sharing between social group if they share common values thus facilitating them to create mutual trust (Liu, 2011). This theory has been proved as capable in motivating individual to share their knowledge in social networks (Wasko & Faraj, 2005; Chiu, Hsu, & Wang, 2006; Hall & Wulff, 2008). According to Hung et al. (2011), this theory argues that cooperation and tacit understanding are formed over a long period of time, leading to the development of mutual trust and long-term relationships in groups. In the context of their study, individuals will reciprocate others' effort to share knowledge by contributing more knowledge. Theory of Planned Behaviour can be used to explain and predict individuals' attitude. This model is accepted in social psychology and posits that individuals' behaviour is determined by perceived behavioural control and behavioural intention. Behavioural intention is determined by attitude towards behaviour, subjective norm, and perceived behavioural control. Attitude towards behaviour indicates individual's positive or negative feeling about performing a behaviour. Subjective norm indicates that individual perception is accepted, encouraged and implemented by others. Perceived behavioural control indicates that individual perception of the availability of resources or opportunities is necessary in performing a behaviour (Ajzen, 1991). Some researchers claimed that Theory of Planned Behaviour can be used as a theoretical guideline in explaining knowledge sharing intention (Bock et al., 2005) or online behaviour.
Based on two theories above, there are eleven factors in online knowledge sharing behaviour which were selected based on literature reviews. These factors are:

1. Reciprocal benefits
Previous research indicated that knowledge sharing in online communities is facilitated by a strong sense of reciprocity (Wasko & Faraj, 2005). Individuals will reciprocate others' effort to share knowledge by contributing more knowledge (Hung et al, 2011). Results from Lin (2007) showed that reciprocal benefits significantly influence employee attitudes and intentions towards knowledge sharing. This finding is consistent with Scott (2000), who argued that collaboration ability depends heavily upon trust as open reciprocity, and that information and knowledge sharing will not occur freely without such reciprocity.

2. Altruism
The benefit of enjoying helping others is originated from the concept of altruism (Kankanhalli et al., 2005). Othman and Siew (2012) examined the individual, organizational and technology factors that affect the intention in sharing knowledge by using blog in Malaysian organization. The results show that individual participation in organization blog is produced from positive outcome expectation and also their enjoyment in helping each other. Wasko and Faraj (2005) found that individuals in the electronic networks are intrinsically motivated to disseminate their knowledge to others because they obtain pleasure in doing that.

3. Trust
Trust is described as an expression of confidence between several parties during whatever exchange, which means confidence that does not harm or risk through other parties' action, or confidence that is not exploited by any party (Ismail & Yusof, 2008). Hsu et al. (2007) argued

that the biggest challenge in nurturing an individual's knowledge sharing behavior in virtual communities is the willingness to share knowledge with others. They concluded that self-efficacy and trust play important roles in guiding individuals' behavior. Based on Social Capital Theory, knowledge sharing between social group can be promoted if they share common values thus facilitating them to create mutual trust (Liu, 2011).

4. Identification

Identification is an identity based on the interests when individual's interests merge with social network's interests. Nahapiet and Ghoshal (1998) point out that trust, norms, and identification are three key factors that can define the context for knowledge sharing. According to Wen (2011), in social capital development, the passion, commitment, and identification were included in the individual of a small group. Identification is viewed as an important contextual factor affecting knowledge contribution (Chiu et al., 2006; Chow & Chan, 2008; Hsu & Lin, 2008; Kankanhalli et al., 2005).

5. Reputation

The contribution of knowledge by individuals occur when they believe that participation increase their professional reputation, share their expertise, and become part of the network structure (Wasko & Faraj, 2005). Reputation can be categorized as intrinsic motivators to individual in sharing knowledge (Kankanhalli et al., 2005; Wasko & Faraj, 2005). Wasko and Faraj (2005) used reputation as motivational variables to explore individual's knowledge contribution in virtual community.

6. Social Network Ties

Social network ties are considered as a link between two users based on one or more relation in network (Chen, Chen, & Kinshuk, 2009). Through frequent interaction of people a strong social relation between them is appeared in the form of social ties. These social ties will enhance the relationship of trust, beliefs and respect with member of communities along with sharing of useful knowledge (Elahi & Mushtaq, 2011).

7. Shared Vision

Community members share their ideas and thoughts. Individuals take part in online communities to secure knowledge, resolve problems, improve individual capability, absorb specialized knowledge, and create innovations (Chen & Hung, 2010). Through conversations in online community, people begin to develop a sense of belonging and collective identity (Byington, 2011).

8. Shared Interest

The sense of community is an essential characteristic of online communities. It also becomes a sense of belonging to a community where the members matter to one another for their commitment to be together (Martin-Niemi & Greatbanks, 2010). The characteristics of online communities vary, based on the quality or depth of their social relationships that members form with other individuals within the digital environment, as well as on their mutual goals and shared interests (Kim, Park, & Jin, 2008). Online communities can be a place for recognition, degrees of intimacy and shared understandings. Majority of the people interact with one another to resolve their problems and share their expertise.

9. Computer Self-efficacy

Self-efficacy applies to computing behaviour. Computer self-efficacy, or an individuals' judgment of computing capability, is a significant influence in choosing technology, attitudes towards technology, and performance in a wide variety of computing technologies (Tang et al., 2012). Teh et al., (2010) has been done the research on the factor of internet self-efficacy affecting the individuals' knowledge sharing behaviour based on theory of planned behaviour. They concluded that expertise or capability to utilize an internet application help to increase confidence levels of an individual and this factor can motivate individuals' knowledge sharing with others.

10. Technology Innovation

Innovation is defined as the generation, acceptance and implementation of new ideas, processes, products or services (Kamasak, Bulutlar, Kamaşak, & Bulutlar, 2010). In our research field, innovation can be defined as a process wherein knowledge is acquired, shared and assimilated with the aim to create new knowledge, which embodies products and services (Plessis, 2007). The management of knowledge also produces new knowledge and the ability for innovation. At the fundamental level, the sharing of knowledge should be encouraged as that further enriches resources in the public commons that support the process of creativity and innovation (Azmi, 2010). The exchange of knowledge and reconstruction of knowledge will be influenced for the better innovation (Lei & Xin, 2011).

11. Controllability

Controllability is defined as individual judgments about the availability of resources and opportunities to perform the behaviour (Pavlou & Fygenson, 2006; Chen, Chen, & Kinshuk, 2009). Hsu and Chiu (2004) suggested that the nature of perceived behavioural control comprises two distinct dimensions: self-efficacy and controllability. Pavlou and Fygenson (2006) have also carried out similar studies on electronic service acceptance research, using the extended version of Theory of Planned Behaviour with some additional component into perceived behavioural control: self-efficacy and controllability.

Social Network

The activities of knowledge sharing can be implemented through various methods such as discussions in group, informal face-to-face meetings or using technology applications such as through social network. In June 2017, the Internet World Statistics reported that there were about 24.5 million internet users in Malaysia which accounted for almost 78.8% of the population and stood at the third place among Asian Developing Countries after South Korea 92.7% and Singapore 81.2%. Changes in technology and the increasing number of internet users especially through Facebook which are reported around 17 million users will encouraged the Malaysian citizen to share knowledge through social network.

Social network can manage the content of interaction as a material of knowledge sharing in the online environment (Yates & Paquette, 2011). It is also can boost and nurture the sharing behaviour among users. Study from Cheung, Chiu, & Lee (2011) stated that when users realize the similarity of their values with their groups, they will have higher tendency to use Facebook. Thus we can concluded that the most popular social network via Facebook, Twitter and Instagram can widely be used to promote online business in Malaysia.

Analytical Hierarchy Process

Analytical Hierarchy Process (AHP) is a mathematical method that is used for multi-criteria decision-making (MCDM). The AHP (Saaty, 1990) was proposed as a method to solve decision problems using a hierarchical structure of criteria and alternatives. AHP has become one of the most popular decision-making methods due to the use of pairwise comparisons to input qualitative information. There are numerous types of previous studies regarding AHP which enables people to make decisions including applications in knowledge management system (Greco, Grimaldi & Hanandi, 2013) academic area (Jandaghi, Irani & Jandaghi, 2014), online banking (Hossein & Mehdi, 2014), healthcare (Ahmadi et al, 2014), government sector (Ravindra Kumar et al, 2015) and online purchasing (Singh, Kumar & Dash, 2016). Hence, AHP help decision makers in comparing the relative importance of the factors or criteria in a systematic and quantitative manner. Therefore, the application of AHP for this study is robust and do not constitute any bias result as the judgment on the weightage is depends on the respondents' decision.

Methodology

This study will be used a quantitative research design to determine the most influencing success factors for online business oriented users in knowledge sharing behaviour. This study reviews the literature to determine the success factors in knowledge sharing behaviour. Then the survey form will be conducted and will be analysed by using AHP method to rank the success factors. The questionnaire will be developed based on the important factors that had been identified from the survey form.

AHP is a MCDM approach and due to nice mathematical properties of the method, it has fascinated many attention of researchers. AHP is used to rank the preference criteria. The basic procedure of AHP consists of the following steps (Saaty, 1980; 1990):
1. Structuring a decision problem, listing and selection of criteria.
2. Priority setting of the criteria by pairwise comparison (weighing).
3. Pairwise comparison of each criteria (scoring).
4. Checking for consistency in every pairwise comparison exercise.
5. Obtaining an overall relative score for each option.

Eleven preference criteria are involved. The description of each criteria are stated in Table 1.

Table 1: The description of the criteria

Criteria	Description
1. Reciprocal benefit	Reciprocate benefits such as reputation and reward
2. Altruism	enjoy helping each other
3. Trust	an expression of confidence between several parties during whatever exchange
4. Identification	an individual's sense of belonging and positive feeling toward online community
5. Reputation	build reputation in online social network and as profit oriented users
6. social network ties	social relationship in network
7. shared vision	common understanding of proper actions and collective goals
8. shared interest	common interests in online business and gain profit
9. computer self efficacy	Individual's confidence in his/her ability to perform using computer technology
10. personal innovation	the willingness of an individual to try out a new information technology
11. controllability	Individual's belief based on available resources regarding the extent to which performing the behaviour using technology is up to the actor

The weightings of the comparison for each criterion is rated using nine scales of importance (Saaty, 1980), as shown in Table 2. The respondent's weightings of the different criteria are extracted from a pairwise comparison of the relative importance of all pairs of criteria using the AHP computer software package Expert Choice 11. Convenience sampling are used to obtain the number of online business Facebook users as the potential respondents. Flow chart of this study shown in Figure 1.

Table 2: AHP scale of importance

Preference Level	AHP scale of important
Equally preferred	1
Equally to moderately preferred	2
Moderately preferred	3
Moderately to strongly preferred	4
Strongly preferred	5
Strongly to very strongly preferred	6
Very strongly preferred	7
Very strongly to extremely preferred	8
Extremely preferred	9

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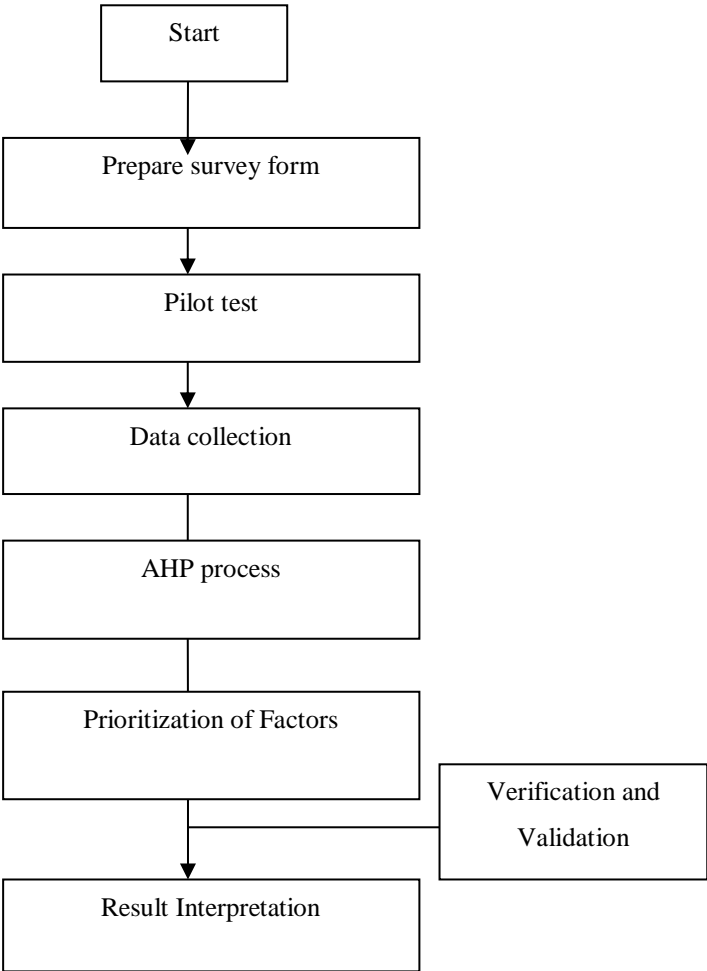
Figure 1: Flow chart of the study

Conclusion

The main contribution of this research is to enhance the knowledge of social network users to reach their full potential as online business oriented users in order to improve their ways of life by getting the income or profit through social network. Understanding these issues can also contribute to the existence of long-term sustainability of online business oriented users in developing country. Knowing important success factors in online knowledge sharing behaviour is beneficial as it can be a source of knowledge and it is also beneficial to other online business oriented users' survivability.

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