# Formulation of an integrated social commerce framework to promote social capital for energy sectors

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# Article InfoABSTRACTArticle history:<br/>Received Dec 13, 2018<br/>Revised Feb 25, 2019<br/>Accepted Mar 8, 2019Social capital refers to the resources available in personal and business<br/>networks. In developing a culture that values and practices social capital,<br/>social factors are considered one of the main precursors. With the<br/>proliferation of social commerce and the maturing of social media, social<br/>capital can be acquired and further developed for productive benefits,<br/>particularly for energy sectors in Malaysia. In this study, an integrated social<br/>commerce framework to promote social capital is presented and evaluated.<br/>The framework attempted to define the relationship between the Theories of

Social capital Social commerce Social support Theory of planned behavior networks. In developing a culture that values and practices social capital, social factors are considered one of the main precursors. With the proliferation of social commerce and the maturing of social media, social capital can be acquired and further developed for productive benefits, particularly for energy sectors in Malaysia. In this study, an integrated social commerce framework to promote social capital is presented and evaluated. The framework attempted to define the relationship between the Theories of Planned Behavior (TPB) and Social Support Theory (SST) alongside satisfaction and perceived value factors towards promoting social capital development in energy sectors. This research uses SPSS to analyse the data collected from employee in the energy sectors in Malaysia. Research reveals that social capital is present when there is trust and loyalty among the users and the significance of social capital is monumental for energy sectors' productivity, efficiency and profitability. A survey is adapted and distributed to 20 respondents from the energy sector in Malaysia as a mean to study on the validity and reliability of the research factors. Results indicate that all proposed factors are significant in promoting social capital except one, which is the Perceived Behavioral Control (PBC) of the TPB.

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# 1. INTRODUCTION

The notion of social capital first emerged from social relations [1] with a range of potential benefits including facilitation of higher levels of growth in gross domestic products, facilitation of more efficient functioning of labor markets and improvements in the effectiveness of institutions of government [2-5]. With the recent emergence of globalization and social commerce era, the economic and business performance are affected by social capital and focuses more on the participation of users in a social commerce context. Literature has reported that the intervention of social capital makes a company an effective network by bridging and bonding cultures social influences with the aim on knowledge exchange communication [6] to promote social capital.

There is a wide range of online platforms and technologies that can be utilized to support social capital in industries, particularly the energy sectors. Evidence show that social capital theory suffers from much criticism for being poorly defined and conceptualized [7]. It is also unclear to which extend social commerce, a prominent cursor to social relations assist in promoting social capital for productive benefits. In order to optimize the gains from social capital, it is central to investigate and apply social related

constructs to empower the growth of social capital in an industry such as the energy sectors. In fact, recent research on knowledge-based urban development for emerging economies like Malaysia is being undertaken and emphasized for prosperous development [8] in which social capital is prioritized.

In an energy sector, social capital needs to be accentuated for producing good results in the implementation of energy efficiency policy [9]. Simply put, social capital is not simply the sum of institutions which underpin a society but more of the glue that holds them together. Evidence also show though there are many studies on energy sectors with regards to energy consumption and social capital, there do not appear to be any that empirically attempt to directly examine a link between them [10]. Although a study associating both social support and social capital in an online community context affirmed the benefits of social support in fostering the creation and maintenance of social support, no theories or models emerged as a novel finding of this research [11]. It is therefore necessary to exploit and develop components necessary for the accumulation of social capital from a social commerce perspective for the importance of societal wellbeing, particularly in energy sectors.

# 2. LITERATURE REVIEW

# 2.1. Social Capital

Social capital theory comes from sociological and political discussion around the formation and survival of communities communities [12]. Recently social capital theory have been used in many domains such as management, economics, and the design of IT [13]. Putnam defines social capital as the value of social committee such as network, norms and trust that build up coordination and cooperation to achieve goals [14]. Social capital is also stated as a multidimensional theory that consists of few factors such as trust, loyalty, information support, emotional support [15] and cooperation [16]. In this study, social capital is discussed using three factors which are trust, loyalty and cooperation.

Trust plays an important role in social capital where it increases individuals intuition to interact with others and show off their best behavior [17]. Trust is defined as an understanding between individuals or groups that are known as trustor and trustee where trustor will evaluate decisions based on a trustee's behavior [18]. Trust is also known as a common mechanism for reducing community problems and risk of transaction by increasing the positive expectation of trustee [19]. The level of trust among individuals can be observed from the impact on the value of any transaction [20]. Therefore, as the level of trust placed by individuals increase the social capital level becomes higher.

Loyalty is considered as a feeling, affection or opinion of people towards other people, products or services [21]. From the definition, we can conclude that when a person is buying from the similar firm several times, loyalty is present. Past research states that loyalty is present among individuals if the product or services meets user requirements and satisfaction [22]. Trust, emotion and also affection are the important components that are needed to build true loyalty [23]. People's loyalty is strongly predicted by the trust that they have on the products and services. In this study, loyalty can be observed from the continuance use of social networking sites.

Cooperation on the other hand involves a group of people that have a strong relationship to work together [24]. To build a strong relationship among the people in a group or in an organization, mutual trust, respect and friendship is needed [25-26]. According to Fukuyama, social capital is related to cooperation between two or more individuals [27]. Past research has reported that the presence of social capital will improve efficiency by enabling cooperation among individuals [27]. In this study, cooperation between employees in energy sector is believed to increase the productivity and efficiency.

# 3. RESEARCH MODEL AND HYPOTHESIS DEVELOPMENT

# **3.1.** Theories of Planned Behavior

Theory of planned behavior (TPB) is an extension of Theory of reasoned action (TRA) [28]. The difference between TPB and TRA is in the presence of perceived behavioral control [29]. The formation of TPB is to examine and differentiate between behavioral intention and actual behavioral [30]. TPB is a multidimensional factor that consists of attitude (ATT), subjective norms (SN) and perceived behavioral control (PBC) [26]. These three factors are merged together in predicting human intentions and behavior [31].

Attitude refers to a person's feelings, thinking or action that they show in involving and performing a task or situation [32]. Past research states that attitude exists in two levels which are explicit level and implicit level that effect individual's behavior [33]. Explicit level is considered as a level that can still be controlled while implicit level is the level that cannot be controlled [34]. In this study, attitude is related to

**4**29

the social network community's behavior on using social network sites. Past research has proven that attitude positively influences behavioral intention [30].

Perceived behavioral control is defined as perceived ease or can be stated as a difficulty on performing behavior [35]. Based on past research, it is stated that perceived behavioral control is a concept based on experiences, individual's opinion and second hand information [30]. Past research has also reported that perceived behavioral control directly influences behavioral intention [28, 30]. Thus, there is a positive bonding between perceived behavioral control and behavioral intention.

Subjective norms is known as a social pressure from group of individuals to decide whether to act or not to act upon an action [36]. Subjective norms is known to be an important variable than attitude, where it is important to create interruption activities that would change perceive norms based on the problems [35]. Previous research has reported that subjective norms positively influences behavioral intention [30]. This study therefore proposes the following hypotheses:

- H1. User's attitude influences behavioral intention
- H2. User's perceived behavioral control influences behavioral intention
- H3. User's subjective norms influences behavioral intention

### 3.2. Satisfaction

Satisfaction can be defined as people's behavior and feelings towards products, services or activities [37]. In this research, satisfaction refers to loyalty of online community on using their favourite networking sites. The loyalty from online communities can be achieved by having accurate and protected information that increases their trust level. The satisfaction level is increased if the level of loyalty is higher [38], while loyalty can be achieved from individuals by meeting all their requirements and needs [26]. Previous study has proven that satisfaction positively influences perceived value [26]. Therefore, a positive relationship between satisfaction and perceived value for individuals using social networking is hypothesized as follow:

H4. User's satisfaction influences perceived value.

#### **3.3. Perceived Value**

Perceived value is defined as the overall assessment of goods and advantages associated with products and services [39]. Past research has stated that perceived value can be obtained from four factors namely economic, functional, emotional and social utility [40]. Moreover, according to [41-42], perceived value can also be considered as a factor to build long-term relationship within customer and industry. In this study, perceived value is present when online communities evaluate the benefits and quality from using social networking sites to gain trust and show loyalty in using their favorites networking sites. Furthermore, gaining of trust and loyalty from social communities directly give a positive impact on social capital. Previous research also affirms that perceived value positively influences social capital [39]. The following hypothesis is therefore formulated:

H5. User's perceived value drives social support

# 3.4. Social Support

Social support refers to individual's feelings when they are being loved, cared for and helped by others [43]. Social support is always intent to be positive and helpful where it avoids from negative intention and interaction [44]. In this study, social support refers to the feelings of online communities when they get solution for their problems. People nowadays use social networking sites to share their knowledge, emotion and experience [44]. Past research has reported that social support is categorized into three factors: emotional support, tangible support and informational support [45]. For the purpose of this study, the emotional and informational support is deem appropriate due to the nature of online communities.

Emotional support refers to an attachment among individuals that show feelings such as love, care and respects for each other [44]. Presence of emotional support among individuals reduces stress level [46]. In this study, emotional support is related to the opinion or feelings that people show to each other in social networking sites. This support makes people gain trust from social communities where they feel secure in sharing their emotion through social networking sites [30].

Informational support is related to the involvement of data, information and knowledge that are shared among individuals for a better decision making [47]. Understanding of emotion will improve the relationship among individuals and provide active support [44]. According to [48] information, particularly factual evaluation information, posted in response by members might help to solve problems. In this study,

Formulation of an integrated social commerce framework to promote social capital... (Mohana Shanmugam)

informational support is present when online communities share their information and knowledge in social networking sites where they have a high level of trust towards social networking sites. There is also evidence that social support positively influences social capital by building trust and loyalty among users [49]. Consequently, the following hypotheses are formulated:

- H6. User's social support drives behavioral intentions
- H7. User's social support drives social capital

## **3.5. Behavioral Intention**

Behavioral intention is defined as a user's opinion to react upon a specific action [26]. It is also known as an individual's perception on acting towards their favorable or unfavorable action [32]. Past research has reported that perceived value is used to predict the actual behavior [36]. In this study, behavioral intentions refer to online communities' intention to continue using their favourite social networking sites in future. The intention increases if the level of trust towards the social networking sites increases [36] thus promoting social capital. Therefore, the following hypothesis is populated. Research model as shown in Figure 1.

H8. Behavioral intentions of users drive social capital



Figure 1. Research model

#### 4. RESEARCH METHODOLOGY

An online survey was conducted using questionnaire as the main data collection instrument. The questionnaire design was based on prior literature [50] adapted accordingly to suit this study. To validate the survey instruments, 5 respondents were engaged. This phase of study validated the face validity and content validity of the instrument. Based on the feedbacks and comments during this phase, the questionnaire items were modified to ensure that the purpose of the study is made clear and appropriately validated. Subsequently, a pilot test was run with 20 respondents to assess the reliability of the questionnaire items. The questionnaire survey used ordinal scale for demographic data collection and interval scale (7-point Likert) for remaining data collection. The details of the respondents' demographic are as shown in Table 1.

#### 5. PRELIMINARY RESULTS

The number of indicators for the initial instrument is as shown in Table 2. The Indicator Reliability for Indicator Loadings is as presented in Table 3. These indicator loadings measure how much of the indicators variance are explained by the corresponding latent construct. All loadings except for three items PBC1, PBC2 and PBC3 is reported low and therefore is dropped for the actual study.

The study model was assessed using SPSS. The model was first evaluated in terms of reliability. Reliability was evaluated using the composite reliability. As shown in Table 4, the composite reliability of the seven latent variables is all larger than 0.70 which indicates an acceptable level and ideal internal quality of a model for exploratory research except for one variable which is lesser than 0.70 which indicates a poor internal consistency.

Demographic	Group	Frequency	Percentage (%)
Gender	Male	12	60.0
	Female	8	40.0
Profession	Intern student	5	25.0
	Professional	8	40.0
	Executive	5	25.0
	Other	2	10.0
Member of social networking sites	Yes	20	100
-	No	0	0
Social networking sites used	Facebook	9	45.0
-	LinkedIn	0	0
	Twitter	3	15.0
	Google+	4	20.0
	Other		
Social networking sites usage experience	Less than 1	0	0
	year		
	1 - 2 years	1	5.0
	2 - 3 years	4	20.0
	3 - 4 years	4	20.0
	More than 4	11	55.0
	years		

Table 1. Demographic Details of the Respondents

Constructs	Number of indicators	
Social support (SS)	7	
Satisfaction (SAT)	3	
Attitude (ATT)	3	
Perceived behavioral control (PBC)	3	
Subjective norms (SN)	2	
Perceived value (PV)	3	
Continuance participation intention (CPI)	3	
Social capital (SC)	4	

Factors	Item	Scale mean if item	Scale variance if	Corrected item-total	CA if item
		deleted	item deleted	correlation	deleted
SS	SS1	33.24	68.090	0.955	0.955
	SS2	33.38	68.348	0.865	0.963
	SS3	32.90	73.890	0.917	0.961
	SS4	33.19	68.662	0.883	0.961
	SS5	32.95	71.648	0.928	0.959
	SS6	33.05	69.548	0.913	0.959
	SS7	33.29	69.214	0.770	0.971
SAT	SAT1	4.38	4.948	0.913	0.930
	SAT2	4.48	5.562	0.948	0.908
	SAT3	4.10	5.390	0.863	0.965
ATT	ATT1	11.76	3.790	0.785	0.935
	ATT2	11.81	3.962	0.895	0.851
	ATT3	11.86	3.629	0.854	0.877
PBC	PBC1	8.57	2.957	0.401	0.605
	PBC2	6.24	6.790	0.086	0.482
	PBC3	9.86	3.729	0.114	0.240
SN	SN1	5.81	1.262	0.576	
	SN2	5.33	2.233	0.576	
PV	PV1	11.90	3.490	0.934	0.914
	PV2	11.81	4.362	0.930	0.910
	PV3	11.81	4.562	0.861	0.958
CPI	CPB1	11.86	5.129	0.844	0.975
	CPB2	12.05	4.048	0.907	0.939
	CPB3	11.90	4.590	0.979	0.878
SC	SC1	16.86	12.629	0.898	0.941
	SC2	17.14	11.529	0.892	0.943
	SC3	17.19	11.562	0.923	0.932
	SC4	16.95	12.948	0.866	0.950

# Table 3. Analysis of Reliability for Pilot Study

\*Cronbach's Alpha (CA)

Formulation of an integrated social commerce framework to promote social capital... (Mohana Shanmugam)

Table 4. Summary for Reliability for Pilot Study			
Factors	CA	Summary	
SS	0.967	Very good internal consistency	
SAT	0.955	Very good internal consistency	
ATT	0.922	Very good internal consistency	
PBC	0.244	Poor internal consistency. Drop it.	
SN	0.712	Acceptable	
PV	0.952	Very good internal consistency	
CPI	0.954	Very good internal consistency	
SC	0.956	Very good internal consistency	

#### 6. CONCLUSIONS AND FUTURE WORK

In the social commerce era, individuals are increasingly using online communities. This study examines the constructs that drive social capital in energy sectors, Malaysia through social networking communities. To achieve its aims, this study extends the standard Theory of Planned Behavior by including social support constructs; namely the informational and emotional constructs alongside with the perceived value and satisfaction construct in promoting social capital. The main purpose of this paper is to highlight the importance of social capital in the growth process of energy sector. Results show that all proposed factors of the study have acceptable and good internal consistency except for PBC from TPB. We can also conclude that when the employee's ability to share and cooperate is high, the employee's output also increases, resulting in higher energy sector's productivity.

Future study will look into testing the proposed research model with a wider target audience from the energy sector. Data gathered from the future study will be analysed using the Partial Least Squares (PLS) of the Structural Equation Modeling (SEM).

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Formulation of an integrated social commerce framework to promote social capital... (Mohana Shanmugam)

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