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To cite this article: Shaffiah Ali *et al* 2019 *J. Phys.: Conf. Ser.* **1196** 012001

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## Social Media Element for Persuasive B2c E-Commerce

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**Abstract.** Persuasive communication is a form of communication that encourages or changes consumer behaviour towards a certain product or service. Several researches have been conducted to understand the efficiency and effectiveness of persuasive communication. Among these researches is the development of the persuasive system design model that guides the development of e-commerce websites with persuasive features. However, the persuasive system design model does not take into consideration the effect of social media as it was developed when the social media world is coming into being. Considerations were not given to the social media element in the model development. Hence the need to incorporate the social media features that will extend the persuasive system design model to become all-encompassing and comprehensive. The aim of this study is to extend the persuasive system design model in business to consumer (B2C) e-Commerce. We employed a systematic literature review to identify the factors that will extend the persuasive system design model in a comprehensive manner. This study develops measurement items that will lead to the examination of the proposed model. These items were investigated for their reliability and validity using 30 respondents in Malaysia. The results showed that the items are a good representation of the constructs and hence can be used to assess the proposed model. This study will help in changing business trends that will lead to a successful implementation of persuasive communication in B2C e-commerce in Malaysia.

### 1. Introduction

The Electronic Commerce or e-Commerce is not restricted to the purchase of a product; it includes communication platforms that a company may offer to its customers over computer network, from pre-purchase information to after-sale services and support [1]. There are 4 types of e-Commerce and they are; Business to Business (B2B), Business to Consumer (B2C), Consumer to Business (C2B) and Consumer to Consumer (C2C). B2B referred to companies selling product or services to each other, for example, manufacturer selling to distributor or wholesaler selling to retailer. Meanwhile, B2C referred to companies selling directly to public consumer with minimal human interference. Companies such as Tesco, Starbuck and fast-food chains are some of examples of B2C that are popular in Malaysia. A scenario of C2B is totally a reverse of B2C. In C2B scenario, end user or consumer will provide the product or services to the companies. C2B becomes a trend today, whereby consumer will get paid from companies after consumer writes a review in a company's blog or give any input to add value to the product, for an example e-Contact, e-Tender, et cetera. In C2C, consumer will directly sell the product



to another consumer; e-Auction and e-Market place such as eBay are the best C2C examples. Companies now partake in a blended business approach.

The variety of services in e-commerce has broadened in recent years and consumers have adopted those services as part of their everyday lives [1]. Nowadays, the issues that affect e-commerce include fraud or strategy in winning customer. This has resulted demanding for offline payment via Cash on Delivery (COD) rather than online transfer or credit card payment. Effective customer support and services also plays the major challenges in E-Commerce. In B2C E-Commerce, effective customer support and services are vital to encourage customers to shop online as it is a lonely experience, does not allow touch and feel and has a higher degree of concern regarding security and privacy of information [2]. This has resulted in the exchange and growing influence of online reviews as a form of persuasive communication.

The aim of this study is to develop an enhanced persuasive model in B2C e-Commerce and list out the persuasive factors that encourage success of B2C e-Commerce. We carried out an extensive review on the extant literature. Subsequent to the systematic literature review, we found that Persuasive System Design Model (PSD) model consists of 4 elements, which are; Primary Task Support, Dialog Support, Credibility Support and Social Support. In the existing PSD model, Social Support consists of 7 features which are; Social Learning, Social Comparison, Normative Influence, Social Facilitation, Cooperation, Competition and finally Recognition. However, at the present time, almost all aspect of social media has business element in it. Consequently, this study will extend the Social Support element of the PSD model by adding 3 more features; Social Network, Social Affiliation and Social Analysis.

## 2. Literature Review

### 2.1. E-Commerce

E-Commerce is the use of electronic means to exchange information and carry out transactional activities [3]. E-Commerce consists of wide range of financial and other applications, such as electronic fund transfer (EFT), electronic stocks exchange activities, online commercial auction, online electronic bidding, distribution and exchange of digital data and direct consumer sales. The Gartner- Group lists three types of e-commerce technology: Sell-side which enabling a company to sell its products to buyers, Buy-side which allowing internal personnel to perform corporate procurement activities, and Marketplace which define electronic marketplaces bring multiple buyers and sellers together in a single Web application [4].

In progress of B2C e-commerce, persuasive factors that encouraged consumer to continue purchasing through online is one of the aspects that need to be focus by online companies. Persuasion is human communication designed to influence the autonomous judgments and actions of others [5].

### 2.2. B2C E-Commerce

E-commerce has become an important part of everyday life for consumers during the twenty-first century [1]. Electronic commerce also known as E-commerce is the use of electronic way to exchange information and to carry out activities and transactions [3]. In other word, e-commerce refers to selling or buying goods or services in electronic medium. During e-commerce process, fund and data will be transmitted via internet. Digital business or e-Business, encompasses e-commerce but goes far beyond it to include the application of information technologies to all other activities in which a company engages in addition to commercial activity [4]. Commercial activities refer to marketing, human resources, manufacturing, or finance. Selling goods or services in the cyberspace is very different from selling in physical markets, and it requires a critical understanding of consumer behavior and how new technologies challenge the traditional assumptions underlying conventional theories and models [6]. Therefore, well known online companies such as Amazon, Alibaba, eBay, Uber etc. need to trying really hard to sustain in the business.

Business-to- Consumer (B2C) is one of the most common types of e-commerce and it has penetrated businesses in many ways [7]. Companies such as Uber, Tesco, Starbuck and fast-food chains are some

of examples of B2C that popular in Malaysia. E-commerce is fundamental form of information system. Buyers conduct online transactions mainly through interacting with the website [8].

2.3. *Persuasive System Design Model*

Persuasive technologies are designed to change or shape a person’s attitude and/or behavior concerning an issue, object, or action without using coercion or deception [9, 10]. In the past, several researches has analyzed the effectiveness along with the usefulness of persuasive communication, behavior factors underlying susceptibility to persuasion, and the encouragement of social roles on resistance to acceptance of new ideas. This leads to the development of the persuasive system design (PSD) model. The PSD model is also used to identify distinct persuasive features currently assimilated in e-commerce websites. Figure 1 present the persuasive design model by [11]. The model is made up of four tasks namely primary task support, dialog support, credibility support, and social support.

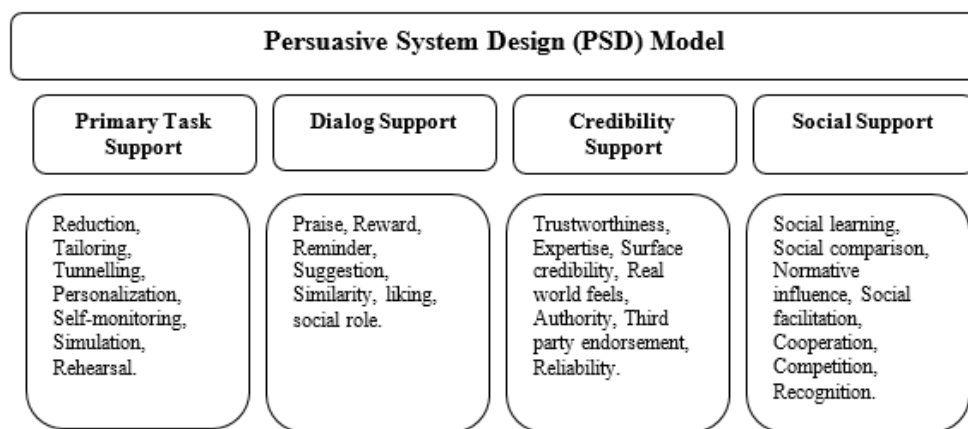


Figure 1 Persuasive System Design (PSD) Model

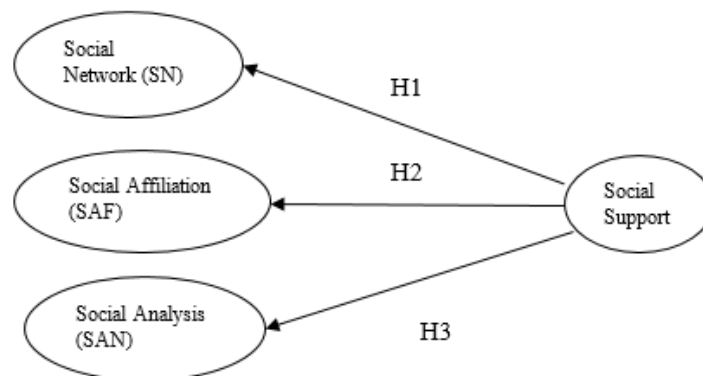


Figure 2: Hypothesized extension of the PSD model

3. **Hypothesis Development**

The hypothesis developed in this study is based on the PSD model where the social support aspect is extended with additional 3 features. These features are Social Network, Social Affiliation and Social Analysis. Figure 2 present the hypothesized model.

3.1. *Social Network*. Social network refers to the ability of the system to help users persuade or influence other users that are not in the same group but related with other members in the group. For instance, if A is a friend with B in a social network, and C who is a friend of B would be persuaded by A’s shopping trends. Thus,

H1: The higher the level of consumer agreement with positive review by 2nd level friend, the higher chances for the consumer to buy the same products.

3.2. *Social Affiliation*. Social Affiliation deals with competence of the system to link or associate with the well known and establish social networking websites such as Facebook, Twitter, LinkedIn, Instagram, etc. For example, if user would like to purchase at Lazada’s website he/she need to log-in prior to making payment, but nowadays user can purchase items from Lazada by using Facebook account. Its shows that single account can be used at two different website.

H2: The more collaboration with established social media, the higher chances for consumer to buy in that website.

3.3. *Social Analysis*. Social analysis refers to the capacity of the system to analyze report on actions or behaviours of other user in the community. Social analysis also indicates the capability of the system to analyze users needs base on previous action or behaviour. For example, Amazon website has capability to show sales percentages and give suggestion to their customer on matching items for their previous purchased goods.

H3: The higher the level of agreement and trust by consumers with website’s analysis, the greater the chance of purchase by the consumer at that website.

**Table 1:** Factor Loading and Reliability of Constructs using PLS-SEM

Construct	Item	Outer Loading	CA	CR	AVE
<b>Persuasive Social Support</b>	SS1	0.821	0.879	0.926	0.808
	SS2	0.943			
	SS3	0.929			
<b>Social Network</b>	SN1	0.728	0.701	0.815	0.527
	SN2	0.779			
	SN3	<b>0.603</b>			
	SN4	0.780			
<b>Social Affiliation</b>	SAF1	0.905	0.904	0.933	0.776
	SAF2	0.891			
	SAF3	0.868			
	SAF4	0.860			
<b>Social Analysis</b>	SAN1	0.778	0.775	0.856	0.598
	SAN2	0.823			
	SAN3	0.738			
	SAN4	0.750			

#### 4. Results

To obtain the results of this study, the researcher employed PLS-SEM algorithm using the SmartPLS 3.0 software. The researchers evaluate the validity and reliability of the measurement items using 30 valid responses.

##### 4.1. Reliability and Validity Analysis

The reliability test in the present research shows that all the indicators of the proposed model have their loadings above 0.7, but one of the indicators failed to satisfy the acceptable value of 0.7, which is SN3 when measuring social network element. [12] suggest that an item is considered for removal when its outer loading is below 0.4 and if it increases the AVE or composite reliability. In this study, indicator SN3 value is 0.603, since the value is higher than 0.4, it is acceptable [12]. Construct reliability is also calculated by internal consistency reliability using Cronbach’s Alpha coefficient (CA) and Composite Reliability (CR). The factor loading, CA, CR and AVE for all the indicators are presented in Table 1.

In this study, the discriminant validity is measured using the Fornell-Larcker criterion. These criterion measures the square root of each construct's average variance extracted among its correlations through all other constructs in the model [12]. The fornell-larcker criterion is presented in Table 2. As a result, the discriminant validity of the measurement model is established.

**Table 2:** Fornell-Larcker criterion results

	SS	SAF	SAN	SN
SS	<b>0.899</b>			
SAF	0.989	<b>0.881</b>		
SAN	0.698	0.743	<b>0.773</b>	
SN	0.686	0.729	0.938	<b>0.726</b>

#### 5. Discussion

In this study the researcher set out to extend the persuasive system design model with 3 additional features. These features were integrated and a survey using 30 respondents was conducted to ascertain the reliability and validity of the items used in order to set the stage for a robust data collection that will enable the researchers to evaluate the structural model. From the results presented, the reliability and validity criteria were established, thus giving the researchers the needed boost to proceed to the main data collection which will lead to the final analysis.

#### 6. Conclusion and Future Work

In conclusion, this research has shown the need to extend the persuasive system design model in order to accommodate the growing influence of social media. The instruments have been confirmed to be valid and reliable in this study using 30 valid responses. In the future study, the researchers intend to carry the main data collection to validate the proposed model.

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