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## **ENHANCING PERSONAL INTERACTION THROUGH THE WEB INTERFACE IN ONLINE SHOPPING: AN EXPLORATORY STUDY**

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### **ABSTRACT**

Recent research has called for a need to infuse social presence into e-commerce websites, suggesting that a website low in social presence will be difficult to satisfy consumers' social needs (for interacting with other humans) when they are shopping online. This study finds that web interface elements of socially rich text and picture and virtual community, which provide means for personal interaction, lead to higher perception of social presence. Results, however, also show that social presence per se is not significant in predicting online purchase intention. Even so, e-vendors may also benefit from offering high level of personal interaction through their web interface as those three website features have influential impacts on trust and perceived value, two predictors of online purchase intention found in this study.

*Keywords:* Personal interaction, socially rich text and picture, virtual community, e-commerce, social presence, trust, perceived value, satisfaction, technology acceptance model

### **INTRODUCTION**

Thanks to the fast development of information technology, Internet has become the core component of our contemporary society and has brought about multi-faceted impacts. In the field of business, more and more firms, even individuals, begin to use the web to sell their products and services. Though the advantages of electronic commerce (e-commerce) are well recognized, nowadays online vendors are facing two major challenging questions: (1) why consumers do not purchase in an online shopping environment; and (2) how to achieve competitive advantages over other counterparts.

A traditional view is that a user-friendly interface is a vital key to the success of commercial websites. Nielsen [30] calls for a need to improve website usability in a belief that low usability will lead to unsatisfied users and the site will not grow into long-term success. In investigating consumers' reluctance to buy within an online environment, Davis's [11] technology acceptance model (TAM) has also been adopted in extensive e-commerce empirical studies. On the other hand, in industry, most of the design guidelines for generating web interfaces predominantly center on facilitating efficient communications between the website and its users [22].

All of these traditional views, which treat a website simply as an information technology, tend to only deal with functional and performance aspects of websites and they are insufficient in providing online vendors with guidance to satisfy online shoppers' social needs. Therefore, as a supplement to traditional views, social presence theory has been introduced to investigate e-commerce issues [8] [15] [17] [18]. It focuses on one of the major differences between offline and online consumer markets – the lower level of social presence which is characterized by less information richness, reduced interactivity, and decreased presence of human warmth and sociability in an online environment [15] [17] [18]. It gives attention to fulfill consumers' social needs when they are shopping online. Nowadays, many online stores are low in social presence, displaying products with little emotional or social appeal [18] and are relatively lacking social forms of interaction [6].

One of the major objectives of this research is to further the understanding of social presence in e-commerce field: whether it actually is associated with consumers' purchase intention; if so, assessing the relative importance of social presence in comparison with TAM constructs – perceived ease of use and perceived usefulness, trust, satisfaction and perceived value is also necessary in order to evaluate the relative importance of these factors in predicting online purchase intention. Another objective of this study is to investigate how certain web interface features (that help consumers evoke a sense of interaction with other humans) can be manipulated to impact the predictors of online purchase intention found in this study.

### **LITERATURE REVIEW**

Online consumer bears the dual nature of both a traditional consumer and an information technology user [47]. Hence, in order to study online B2C relationships, many variables have been proposed from different perspectives. These include social presence, trust, perceived value, satisfaction and TAM constructs.

#### ***Social Presence***

While the traditional usability and TAM view focus on the operational aspect of the website, viewing it simply as an information technology, social presence theory borrowed from communication literature, has been recently introduced to explore online shopping environments, indicating that e-commerce settings lack human warmth and sociability [15] [17] [18].

#### ***Social Presence and Its Theoretical Foundation***

Social presence refers to the degree to which a medium allows a user to establish personal connection with other users [43]. Some researchers stress on its close relationship with the richness or interactivity of the media [9] [38] [44]. The theoretical foundation

of social presence consists of media richness theory and social presence theory [22].

Media richness theory is first brought up by Daft and Lengel [9] and it makes two assumptions: (1) organizations process information to reduce uncertainty and equivocality, and (2) commonly used media in organizations works better for certain tasks than others. Later, using four criteria, Daft, Lengel and Trevino [10] presented a media richness hierarchy which incorporates four media classifications: face-to-face, telephone, addressed documents, and unaddressed documents. And the criteria they use are: (1) the availability of instant feedback, (2) the capacity of the medium to transmit multiple cues such as body language, voice tone, and inflection, (3) the use of natural language, and (4) the personal focus of the medium. According to media richness theory, enjoying the ability to transmit instant feedback, body language, facial expressions and tone of voice, face-to-face communication are regarded as the richest communication media, followed by telephone, e-mail, and memos and letters. Electronic media like e-mail and fax are generally viewed as information-lean because they can only convey facts. Websites are even leaner as their contents are generated by hosting server, representing a machine response rather than that of a social being [35]. Whereas rich medium is rated toward the sociable, warm and personal end of the continuum [22], lean medium (representing decreased level of social presence) is rated as more unsociable, insensitive, cold, and impersonal [37] [42]. Therefore, it is not surprising that currently, most e-commerce websites are viewed as lacking human warmth and sociability. Short, Williams and Christie's [43] social presence theory is similar to media richness theory [5], where high social presence characterizes face-to-face communication as opposed to low social presence characterizes paper-based mail and electronic media [45].

### *Social Presence and Media Selection*

Researchers have long wondered which medium one would use to accomplish an aimed task. Both media richness theory and social presence theory argue that use of a medium is effective when characteristics (which refer to the degree of information richness in media richness theory and social presence in social presence theory) of the chosen medium match the requirements of the aimed task. For example, due to its lower level of social presence, a girl may prefer to use email to refuse the dinner invitation from the boy she has no crush on. Actually, these two theories have been grouped together as the "task-medium fit" hypothesis to explain media selection [45]. However, despite the plethora of research efforts giving empirical evidence to support the "task-medium fit" hypothesis, some fail [39] [40]. A possible explanation is that "task-medium fit" hypothesis fail to take into account other determinants such as social environment and user attributes. For example, as one of the major components of social environment, presence of a critical mass of users is important because a medium cannot be used without sufficient communication partners [26] (Markus, 1987). The impact of user attributes has also been found, Papacharissi and Rubin [32] argue that people who avoid face-to-face interaction tend to use Internet (traditionally thought of as a lean medium) more for interpersonal communication. In discussing consumers' selection of e-commerce websites to perform purchase tasks, this paper excludes such intervening factors in order to simplify research process, which is also consistent with previous e-commerce literature. Here we believe that it will be beneficial if we step back and examine shopping motives within the context of traditional consumer market.

Tauber [46] proposes that apart from those related to the product itself, traditional shopping behavior is also motivated by a variety of social needs, among which four motives (except pleasure of bargaining) can also be applied to Internet settings where online shoppers' needs for social interaction can also be found [33]. Therefore it is reasonable to expect that websites low in social presence may hamper online consumers' purchase intention due to its difficult to satisfy their social needs. Thus we hypothesize that:

H1a: The higher level of social presence consumers perceive when shopping online, the higher purchase intention they will have;

H1b: Consumers' perception of social presence is a significant predictor of online purchase intention.

### *How to Enhance Social Presence*

Dennis and Valacich [12] indicate that one medium may possess different levels of social presence or richness depending upon how it is configured and used. Kumar and Benbasat [22] argue that "the versatility of web allows different configurations to be used to support the avowed goals of a website (from selling products and information to enhancing corporate image)". Hence, consumers' perception of social presence can be enhanced through interface elements that enable personal interaction with other humans. According to Hassanein and Head [18], those elements can be categorized into: (1) features stimulating imaginary interaction with other humans, including socially rich text and picture content, personalized greetings, human audio and video, etc.; and (2) features providing means for actual interaction with other humans, including online communities, message boards, online chat, e-mail after-sales support, human web assistants. As an extension of Hassanein and Head's [17] [18] work, when continuing to use socially rich text and picture content, this study further incorporates virtual community to explore the impacts of enhancing personal interaction in e-commerce settings. By helping online shoppers evoke the imagination of interacting with other humans, socially rich text and picture have been empirically shown to be an effective way of increasing online shoppers' perceived social presence [17] [18]. Compared to its counterparts like human audio and video, socially rich text and picture (if given proper size and resolution) are easy to access on Internet due to their low requirement on bandwidth.

In this study, virtual community is selected as a feature providing means for actual personal interaction. With the increasing development of open source movement, free virtual community software is readily retrievable on Internet. It is so convenient to use that even e-vendors without adequate IT literacy may add this website feature to their online stores. Enjoying the ability to aggregate people who share same interests or other commonalities together, virtual community can be the conduits where interpersonal relationships can be forged [22]. The effect of virtual community may be even more pronounced in that it is superior to socially rich text and picture features in terms of interactivity level. On the other hand, virtual community does enable

shoppers to interact with other social beings who are “real people” and such interaction is realistic, not fictitious.

### **Trust**

Trust is a complex and multidimensional concept [31] which has been conceptualized by the plethora of research efforts in various ways. According to the summarization by Gefen, Karahanna and Straub [14], trust refers to “(1) a set of specific beliefs dealing primarily with the integrity, benevolence, and ability of another party; (2) a general belief that another party can be trusted, or the willingness of a party to be vulnerable to the actions of another; (3) affect reflected in feelings of confidence and security in the caring response of the other party, or (4) a combination of these elements”. This study adopts the second perspective where trust is also viewed as the willingness of a party to behave based on expectation about the behaviors of others when considering the risk involved [25].

#### *Trust in Online Environment*

The value of trust has been recognized in various academic fields such as sociology [23], psychology [13], computer-mediated communication [27], economics [48], and marketing [29]. Researchers [14] [35] argue that trust is especially important within the context of an online environment that involves typically high social complexity and risk. Such high social complexity and risk stems from different aspects between the electronic and traditional environment, for example, hacker attacks on consumer credit-card information or increased risks incurred by those who considered “fly-by-night” due to a low barrier to entry and exit, one of the major advantages of e-commerce [49]. Furthermore, in an online environment, social proximity and face-to-face interaction with salespeople and other shoppers are replaced by and converted into a complex human-web-site interaction [41] where the behaviors of e-vendors cannot be monitored [35] and they may engage in a number of undesirable yet possible opportunistic behaviors, for example, send spam email.

Trust has been shown to positively impact intended use [14], transaction willingness [2], and customer loyalty [8] in e-commerce settings. Gefen and Straub [15] further confirm that trust has a strong effect on purchase intention within the context of an e-service website. This study focuses on electronics product website and despite domain difference, we are confident to hypothesize that:

H2: The higher level of trust, the higher purchase intention online shoppers will have.

### **Perceived Value**

A general view is that perceived value represents a trade-off between “give” and “get” components of a product where “give” refers to perceived sacrifices and “get” refers to perceived benefits from purchasing that product [49]. In this study, the notion of perceived value needs to be modified since an e-commerce website per se is not a product that one purchases but a channel to purchase products [20]. Earlier work by Teo, Oh, Liu and Wei [47] provides guidance to help us conceptualize the concept of perceived value of a commercial website. In order to examine the effects of website interactivity on the formation of user attitude, they established a research model where perceived value emerged as a key mediating factor and was measured by the estimation of the usefulness, importance, helpfulness and worthiness of the web site. In this paper, we adopt this perspective where value is defined as conceptions of the desirable means and ends of action. Keeney [20] has suggested that consumers’ perception of commercial website value can be maximized by providing opportunities for personal interaction.

In the context of mobile internet (M-Internet) adoption, Kim, Chan and Gupta’s [21] Value-based Adoption Model (VAM) demonstrates that consumers’ perception of the value of M-Internet is a principal determinant of adoption intention as it represents an overall assessment of the adoption object. Chen and Dubinsky [49] also contend that perceived value is an indicator of online purchase intention. Therefore, we hypothesize that:

H3: The higher level of perceived value, the higher purchase intention online shoppers will have.

### **Satisfaction**

While perceived value is related to cognition, satisfaction is primarily viewed as an affective-based construct [34]. It was initially defined as an evaluation of an emotion that reflects the degree to which a consumer believes that the possession and (or) use of a service evokes positive feelings [7]. When it comes to the IS field, according to ISO 9241-11 (1998), satisfaction can be described as the user’s comfort with and positive attitude towards the use of the system. In the present study, the use of the system refers to purchasing (mobile phone) on the experimental e-commerce website. This study focuses on initial purchase behavior, which is the period when a consumer visits an e-commerce website and makes purchase decision for the first time. It has been suggested that e-vendors may benefit from creating an enjoyable online shopping environment because consumers purchase products both for their utilitarian and hedonic purposes [6]. Other studies have also shown the positive impacts of satisfaction on the outcome of the shopping experience within various contexts [4] [16] [47]. Thus, we hypothesize that:

H4: The higher level of satisfaction, the higher purchase intention online shoppers will have.

### **TAM Constructs**

Proposed by Davis [11], TAM model has long been well regarded in predicting information system usage, a model suggesting that the intention to use a technology is directly affected by PU (perceived usefulness) and PEOU (perceived ease of use). TAM model has been extensively applied in numerous e-commerce empirical studies with the underlying logic that e-vendor interacts with consumers through a website that is, in essence, a type of information technology. Gefen, Karahanna and Straub [14] attest that “the more useful and easy to use is the website in enabling the users to accomplish their task, the more it will be used”. Thus, we hypothesize that:

H5: The higher level of usefulness consumers perceive when shopping online, the higher purchase intention they will have;  
 H6: The higher level of ease of use consumers perceive when shopping online, the higher purchase intention they will have.  
 More important, as previous mentioned, the present study will evaluate the relative importance of social presence, trust, perceived value, satisfaction, TAM constructs in predicting online purchase intention. Thus, the following research question is raised:

RQ1: What is the relative importance of social presence, trust, TAM constructs, satisfaction and perceived value in predicting online purchase intention?

Effort is also put in exploring:

RQ2: By helping consumers evoke a sense of interacting with other human, how certain website features can be manipulated to impact the predictors of online purchase intention found in this study?

We believe the answers to these research questions will provide the most immediate and attainable recommendations for practitioners.

## RESEARCH METHODOLOGY

### *Task and Procedure*

To answer the proposed research questions and test our proposed hypotheses, an empirical study was conducted where personal interaction levels were manipulated within three groups. Each group had 20 members, consisting of 10 male and 10 female. The equal number of male and female in each group allowed us to eliminate confounding effects incurred by gender difference. We had created three versions of websites on behalf of a fictitious electronics product company (called iBuy.com) for these three groups. The website for each group had the same products and followed the same design but differed in terms of personal interaction level that was achieved with different types of web design features as shown in Table 1. In contrast with PI-1 where product information was shown in a simple yet functional form, higher level of personal interaction was infused into PI-2 and PI-3 through imaginary interaction elements of emotive text and picture and through actual interaction element of virtual community respectively. The three groups conducted the experiment entirely online and they might access to the website from any computer, if it has an Internet connection.

**Table 1. Experimental Manipulation of Personal Interaction**

Website Name	Personal Interaction Level	Available Features
PI-1	Low	<ul style="list-style-type: none"> <li>product information</li> </ul>
PI-2	Medium	<ul style="list-style-type: none"> <li>all features of PI-1</li> <li>socially-rich text and picture</li> </ul>
PI-3	High	<ul style="list-style-type: none"> <li>all features of PI-2</li> <li>virtual community</li> </ul>

Subjects were told to assume the role of class presidents who need accomplish the task of purchasing a mobile phone as a gift for a new classmate. Subsequently, they were asked to browse through the experimental website for that purpose. In this experiment, it was not necessarily for subjects to make a real order. Instead, they were told to focus their attention on viewing the specific product information and evaluating the website. Upon the completion of the experimental task, subjects were given a questionnaire to fill in personal information voluntarily. This questionnaire also contained measures for the dependent and independent variables with open-ended questions raised for deeper explanations and discussions.

### *Subjects*

A total of 60 subjects were involved in this study. Considering the exploratory nature of this study, this sample size is acceptable for the purpose of generating statistically reliable results through hierarchical regression analysis. Subjects were undergraduate or graduate students at three major Hong Kong universities and each participated in only one group. They were randomly assigned to three personal interaction groups so as to minimize confounding effects incurred by potential variations in individual characteristics. The three groups were separated by different sessions. The website for each experimental group was only available during its corresponding session and it would be removed from the hosting server after the session was due. Exquisite gifts were prepared for subjects to ensure that they would take this study seriously. Based on personal information provided by questionnaires, ANOVA tests confirmed that there were no significant differences across treatment groups in terms of individual characteristics like age, Internet and online shopping experience. Our randomization of assignment was successful as expected.

### *Measurements*

All the research constructs were measured on seven-point Likert scales adapted from previous studies, with 1 representing strongly disagree, 4 representing neutral, and 7 representing strongly agree. Minor modifications were made to fit the specific context of a B2C website selling mobile phone in this study. Specifically, social presence and purchase intention were measured using questions adapted from Gefen and Straub [15]. Trust was measured using two questions adapted from Gefen and Straub

[15], one question from Gefen, Karahanna and Straub [14] and one question from Pennington, Wilcox and Grover [36]. TAM constructs were measured using questions adapted from Hassanein and Head [18]. Perceived value was measured using questions adapted from Teo, Oh, Liu and Wei [47]. Satisfaction was measured using questions adapted from Li, Browne and Wetherbe [24]. All the items used in this study are presented in appendix. The reliability for social presence, purchase intention, trust, perceived value, perceive ease of use, perceive usefulness and satisfaction were high, with Cronbach's alphas equal to 0.92, 0.91, 0.88, 0.90, 0.80, 0.90 and 0.93 respectively.

### Data Analysis

First, Pearson's correlational coefficients were computed to test the proposed six hypotheses. Next, hierarchical regressions were run to determine the relative importance of social presence, trust, perceived value, perceived usefulness and satisfaction in predicting online purchase intention. Finally, a series of one-way ANOVAs was conducted to check potential differences across the three experimental groups in terms of perceived social presence and other factors, if they had been shown to be important predictors of purchase intention.

## RESULTS

### Hypotheses Testing

In order to test the six hypotheses, correlational analyses were performed. Results presented in Table 2 show that social presence ( $r = .64, p < .01$ ) was significantly related to purchase intention. This indicates that the higher social presence consumers perceived when they were shopping online, the higher purchase intention they would have on the visited website. Thus, H1a was supported. Furthermore, perceived value ( $r = .72, p < .01$ ) also had significant effects on purchase intention. It suggests that perceived value is highly predictive of online purchase intention. Thus, H3 was supported. Purchase intention was also found to be positively related to trust ( $r = .83, p < .01$ ), satisfaction ( $r = .77, p < .01$ ), PU ( $r = .58, p < .01$ ) and PEOU ( $r = .53, p < .01$ ). Thus, H2, H4, H5, H6 were also supported.

**Table 2. Hierarchical Regression Analysis of Online Purchase Intention Using Social presence, Trust, Perceived Value, Satisfaction, Perceived Value, Perceived Ease of Use as Predictors**

Predictors	Purchase Intention	
	r	$\beta$
Social Presence	.64**	.10
Trust	.83**	.52***
Perceived Value	.72**	.25*
Satisfaction	.77**	.21
PU	.58**	-.01
PEOU	.53**	-.09
R <sup>2</sup>		.78
Final adjusted R <sup>2</sup>		.76

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

### Predicting Purchase Intention

In order to answer the first research question, a hierarchical regression was conducted to examine the relative importance of social presence, trust, perceived value, satisfaction, PU and PEOU in predicting online purchase intention. Results presented in Table 2 reveal that trust ( $\beta = .52, p < .001$ ) and perceived value ( $\beta = .25, p < .05$ ) were two important predictors of purchase intention. They combined to explain 76 percent of the variance. While both were important, trust appeared to be a stronger predictor than perceived value. Results also indicate that social presence is not significant in predicting purchase intention in this study. Thus, H1b was not supported.

### Analysis of Effects of Website Features

In response to the second research question, a series of one-way ANOVAs was conducted to examine the effects of imaginary interaction elements of emotive text and picture and actual interaction elements of virtual community. ANOVA tests were run comparing PI-1, PI-2 and PI-3 on the aspects of perceived social presence, trust and perceived value, with the underlying logic that the three experimental groups in this study were only differed in terms of personal interaction level, thus any difference across PI-1, PI-2 and PI3 could be directly attributed to the incremental level of personal interaction (as shown in Table 1). Table 3 summarizes the results.

It is showed that the three experimental groups were significantly different in terms of subjects' perception of social presence ( $F(2, 57) = 44.91, p < .000$ ). Specifically, subjects in PI-3 ( $M = 27.15$ ) perceived significantly higher social presence than in PI-2 ( $M = 22.05$ ) and social presence in PI-2 is significantly higher than in PI-1 ( $M = 13.75$ ).

Further, as previously suggested, trust and perceived value were strong predictors of online purchase intention. So next, we explored examining the effects of website features on these two factors. The three groups were significantly different in terms of trust ( $F(2, 57) = 8.03, p < .005$ ) and perceived value ( $F(2, 57) = 10.54, p < .000$ ). Specifically, as shown in Table 3, there were no significant differences for trust and perceived value between PI-1 and PI-2. Hence, while the use of imaginary interaction elements of textual and graphic information did have the impact on perception of social presence, it did not influence the two

predicators of purchase intention found in this study. However, there were significant differences between PI-2 and PI-3 and between PI-1 and PI-3 in terms of trust and perceived value. This finding indicates that in contrast with emotive text and picture, the use of virtual community on website design was a more effective way of increasing users' trust with e-vendor and their perceived value of the website.

**Table 3. ANOVA Comparing the Social Presence, Trust, Perceived Value between PI-1, PI-2 and PI-3**

	PI-1 Low Mean	PI-2 Medium Mean	PI-3 High Mean	Contrast			Overall F, p≤
				PI-1	PI-2	PI-2 PI-3	
				p≤	p≤	p≤	
Perceived social presence	13.75	22.05	27.15	.000	.001	.000	.000
Trust	14.25	16.50	19.85	.115	.021	.000	.001
Perceived Value	15.70	17.55	20.70	.098	.006	.000	.000
N =	20	20	20				

## DISCUSSION

In traditional business settings, Tauber [46] has proposed that consumers' shopping behaviors are significantly motivated by a variety of social needs. Afterwards, with the explosion of e-commerce selling products and services online, Parsons [33] indicated that such social needs for social interaction can also be found within an online shopping environment. However, websites, in their simplest and barest form are low in social presence [15], thus they are difficult to satisfy online shoppers' social needs for social interaction. Hassanein and Head [18] suggested that social presence can be infused into web interface through imaginary interaction elements of socially rich text and picture. Following this line of inquiry, the present study intended to investigate website features that help online shoppers evoke a sense of interaction with other humans and to examine their effects on the predicators of online purchase intention. To accomplish it, in addition to socially rich textual and graphic information suggested by Hassanein and Head, interface feature of virtual community was also selected as it provides means for actual interaction with other humans. We hypothesized that consumers' perception of social presence was a significant predictor of online purchase intention. Results in Table 2 and Table 3, however, indicate that while the selected website features do have influential impacts on it, social presence is not significant in predicting consumers' intention to purchase from an e-commerce website. Rather, trust and perceived value are two important predicators and they are heavily influenced by the selected interface features in this study. Further analysis of the open-ended questions disclosed some interesting insights into our research findings:

- For the low personal interaction website, some subjects commented that it was "ease to use" and presented the product in a "simple and clear" layout that was "convenient to view and understand the main features of the product". Most subjects, however, agreed that "the product information was quite normal that could be found from other electronics product website". This version of website was generally "boring", "of little importance", and at the very least, "lacking trust".
- For the medium personal interaction website, it is interesting to note that the presence of socially rich text was ignored by most subjects. Even for those who had noticed the textual information, comments were made toward the negative end of the continuum due to "a strong advertisement feeling" in description that is "useless in assessing the product". By contrast, the addition of socially rich pictures to web interface were considered as "colorful", "creative", "exciting", "interesting", "entertaining" and "attractive". It offered "a nice shopping experience" that subjects have "an imagination of interacting with the people in pictures" and "a sense of connection with the website". They also consented that it provided more or less additional information useful in assessing the product. Reasons were given like "I am happy to see people showing products in various poses and scenes", "I got some ideas related to the use of the mobile phone" and "it provides me with a new perspective understanding the product". However, socially rich pictures might also be misleading because "they tend to focus on the appearance or style issue of the mobile phone rather than its digital properties". On the other hand, some subjects commented that they "have no trust with the website" as "the sexy girls and the pictures have strong commercial feelings". "I need objective information like other people's comments" another subject said.
- For the high personal interaction website, subjects tended to value high on the addition of virtual community to web interface, the benefits of which can be summarized into three aspects. First, it emerges as "a platform in which consumers can communicate with each other, providing a form of social interaction". The process of viewing other consumers' feedbacks is "interesting" and "quite pleasing". Second, it gives consumers more information. "I can seek for advice from others who have already bought the product". One subject remarked that "it gives me some confidence (in purchase decision)". This website feature becomes particularly "helpful" for laymen because they "need some basic and extra knowledge regarding the product". Third, it helps building trust with the e-vendor. By "displaying other consumers' response", virtual community "reduced the subjective tendency of the website. While some commented that "I am not sure whether these feedbacks are believable" or that "too much information, it makes me upset", the majority agreed that this version of website was "valuable" and "persuasive".

Accordingly, the impacts of socially rich text and picture and virtual community on trust may be attributed to two points. First, trust can only occur within the context of a social environment [3] [15]. Hassanein and Head [18] indicates that in traditional business settings, consumer trust can be established by their assessment of seller's physical investments in geographic location,

decoration and personnel, and the physical evaluation of products can be performed (based on sense of touch or smell). Though absent in an online environment, these factors can be made up with virtual community where potential buyer may seek advice from those who have already bought the product. Second, the addition of these interface features may lead to consumers' belief that the e-vendor is endeavoring to maintain vendor-client relationship and thus increase consumer trust. In other words, the incorporated website features can be viewed as similar to sellers' physical investments in offline environments. Socially rich text and picture and virtual community may impact value perception in a way that provide additional substantial product information that is useful, helpful, and valuable in making purchase decision.

### CONCLUSION

Online consumer bears the dual nature of both a traditional shopper and a website user [47]. In traditional business settings, consumers' social needs has long been recognized as a significant motivator of shopping behaviors. The social aspect of shopping has been shown to be a vital contributor to positive emotions [19] [28], which in turn contributes to a series of benefits, for example, increased time spent in the store, increased spending and increased unplanned purchasing [1] [19]. Social motives for shopping can also be found within Internet settings [33]. However, currently, most e-commerce websites are low in social presence, thus keeping online shoppers from interacting with other humans. Following this perspective, past researchers call for a need to improve social presence of e-commerce websites [8] [15] [18]. The present study tentatively indicates that social presence may be less important; at least in this case, it is not significant in predicating online purchase intention. However, it is still worthwhile to enhance personal interaction on e-commerce websites because the addition of social interaction elements to web interface positively impacts consumer trust and perceived value (of the website), two significant predictors of purchase intention in this study. While both are important, trust is a stronger direct predictor than perceived value.

This study confirms earlier work stressing on the importance of trust in e-commerce settings [2] [14] [15] [36]. In response to Teo, Oh, Liu and Wei's [47] findings that perceived value acts as a strong antecedent to attitude towards websites, our results further reveal that it is also highly predictive of online purchase intention. Our findings also show that trust is a stronger direct predictor than perceived value. It provides additional empirical support for Reichheld and Scheffer's [35] proposition that trust rules the web.

Most notably, in order to enhance personal interaction in an online environment, we selected socially rich text and pictures (as suggested by Hassanein and Head [18]) that stimulate imaginary interaction with other humans and virtual community that provides means for actual interaction with other humans. Findings from this study have revealed that the selected interface features positively impact consumer trust and perceived value of the website, which may provide immediate and attainable recommendations for practitioners. In this study, the finding about the positive effects of socially rich pictures on the e-commerce website selling electronic products is inconsistent with earlier research by Hassanein and Head [17]. This disagreement could be attributed to the factor that in our experimental website, a product was presented using more than four emotive pictures which were displayed in the form of Flash. However, practitioners should be cautious about adopting flash because the file size of it has to be optimized for the constraints of consumers' internet bandwidth. The management of virtual community where consumers share shopping and product-use-related experience must be taken into consideration as well. For example, online vendors should provide incentives to encourage consumer to share their relevant knowledge and develop a series of measures to avoid "spam posting" and fake information.

There are a few limitations to the present research. First, only 60 subjects participated in our study. The statistical results may be biased due to the small sample size. Second, all of the subjects are university students. Though the student groups are utilized by the majority of e-commerce studies, they are constrained by a number of issues like economic conditions. Hence, generalizability of the findings to other settings is restricted. Third, though the experimental websites were designed by professionals who have accumulated several years of experiences on e-commerce web interface design, the inherent nature of the experiment was inevitably evident to the participants. Accordingly, asking subjects to indicate their trust, perceived value and purchase intention within an artificial and experimental environment tends to be less meaningful and appropriate.

As B2C e-commerce adoption is a worldwide phenomenon, future studies could be conducted across difference countries. On the other hand, research effort could be put in investigating other social website elements such as "testimony" and other forms of user recommendation system.

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#### APPENDIX

##### **Social Presence**

- SP1 There is a sense of human contact in the web site
- SP2 There is a sense of personalness in the web site
- SP3 There is a sense of sociability I the web site
- SP4 There is a sense of human warmth in the web site
- SP5 There is a sense of human sensitivity in the web site

##### **Perceived Usefulness**

- PU1 This web site provides good quality information
- PU2 This web site improves my performance in assessing mobile online
- PU3 This web site increases my effectiveness for mobile assessment online
- PU4 This web site is useful for assessing mobile online

##### **Perceived Value**

- PV1 This web site is useful
- PV2 This web site is important
- PV3 This is a user-friendly web site
- PV4 This web site is valuable

##### **Purchase Intention**

- PI1 I am likely to buy mobile from iBuy.com
- PI2 I am willing to buy mobile from iBuy.com
- PI3 It's possible for me to consider buying mobile from iBuy.com

##### **Trust**

- T1 Even if not monitored, I'd trust this web site to do the job right.
- T2 I can trust this web site.
- T3 I trust the information presented on this web site.
- T4 I feel this online vendor would provide me with good service.

##### **Satisfaction**

- S1 I feel satisfied with this web site
- S2 My experience with this web site is very pleasing
- S3 This web site makes me happy
- S4 This web site does a satisfactory job of fulfilling my needs

##### **Perceived Ease of Use**

- PEOU1 iBuy.com is easy to use for mobile assessment
- PEOU2 I can quickly find the information I need on this website
- PEOU3 This is a user-friendly web site
- PEOU4 My interaction with this web site is clear and understandable
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