EXAMINING THE FACTORS OF TRUSTING BELIEFS IN WEB SERVICE PROVIDER: A STUDY OF CONSUMER-TO-CONSUMER E-COMMERCE IN THAILAND

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Abstract- This research aims to examine the factors of trusting beliefs in web service provider toward the adoption of consumer-to-consumer e-commerce (through the discussion forum website). The research is primarily conducted based on theoretical discussions regarding the relationship between trust constructs i.e. disposition to trust and trusting beliefs. An exploratory sequential design generalized qualitative findings and also non-probability sampling technique was applied by using online survey to collect 800 samples who experienced online purchase on discussion forum website. The results indicated that disposition to trust (individual-based trust) has positive relationship with trusting beliefs in web service provider (trust in specific person), while trusting beliefs in e-vendor plays a supporting role in enhancing the relationship between e-buyers' disposition to trust and trusting beliefs in web service provider. Moreover, different prior online purchasing experiences of e-buyers appear to be the significant factor changing the degree of e-buyers' trust. The more trust the e-buyers have the more purchase intention they have on the website. This research play a small but significant role in e-commerce business development.

Keywords- e-trust, disposition to trust, trusting beliefs, prior online experience.

I. INTRODUCTION

When the world enters an era of the Internet of Things (IOT), consumer-to-consumer e-commerce (C2C e-commerce) would become more interesting e-commerce section than ever due to lower complexity of transactions and wide spread of products offered online worldwide. However, with a lack of physical environment of the Internet, prior consideration of products is impossible. E-vendors are also appeared as anonymous persons, e-buyer's concern of uncertain situation is an unavoidable result. According to e-commerce survey of National Statistic Office of Thailand (2011), the result shows that 61.2% of the respondents are quite concerned about the fraudulent problem, followed by receiving incorrect product and unreliable payment method which stand at 58.2% and 57.7% respectively. "How much can I trust those anonymous e-vendors, web service providers or even the website?" is commonly asked by e-buyers. However, the fact that e-buyers' trust is like the black box which cannot be examined physically, this research goes on inside the black box of how e-buyers' trust were formed and also investigates the results, if e-buyers lost their trust on web service provider of C2C e-commerce website.

In the research field, e-commerce and e-buyers' trust were widely studied in various contexts, especially business-to-consumer e-commerce (B2C e-commerce). The advantages of increasing e-trust is subjectively and fully described in which e-trust is the significant factor whether for e-buyers to participate in e-commerce (Lee and Turban, 2001), or web service provider to succeed in business (Chen and Barnes, 2007; McKnight and Chervany, 2001; Balasubramanian et al., 2003). The factors affecting e-trust were also provided completely and adequately. However, at the corner of e-commerce research, C2C e-commerce research is still in the initial stage which a few researches have been especially conducted under C2C e-commerce environment. This research adopts the theories, constructs and concepts from B2C e-commerce research of e-buyers' trust but those will be applied in C2C e-commerce area to examine trust relationship among three parties; 1) e-buyer 2) e-vendor and 3) web service provider, and also understand the influences of e-buyers' prior online experience on trust formation. The remaining sections will present the related literatures, theoretical framework and hypotheses, methodology, and the research's result. In the final section, discussion of the results, implications to practitioners, limitations and the directions for future research are provided.

II. A REVIEW OF THE LITERATURE ON KEY THEMES/ TOPICS

The research conceptual model was primarily based on a model of e-commerce customer relationship trust constructs by McKnight and

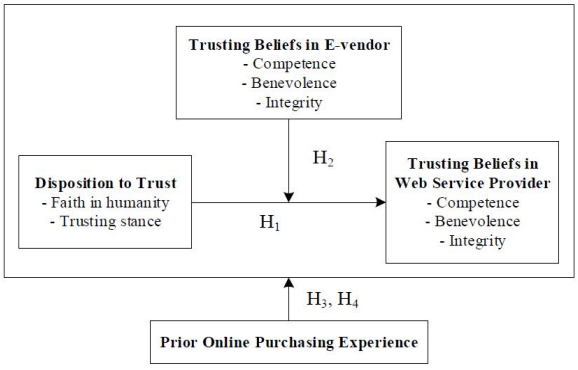


Figure 1 Developed research conceptual model

Chervany (2001) and the additional factor such as prior online purchasing experience which is added to the model, was derive from the results of individual interview. **Error! Reference source not found.** shows the developed conceptual model which illustrates the relationship among e-buyer's individual trust (disposition to trust), trusting beliefs in e-vendor and trusting beliefs in web service provider.

2.1. Disposition to trust and trusting beliefs in web service provider/ e-vendor

When e-buyer has initial interaction with web service provider/ e-vendor, where the situation is unfamiliar, the one would rely on his/ her disposition to trust (McKnight and Chervany, 2001; Johnson-George and Swap, 1982; Rotter, 1971; Kong and Hung, 2006). Disposition to trust or propensity to trust generally refers to a person's tendency to be willing to rely on others in general (McKnight and Chervany, 2001). Theoretically, disposition to trust consists of two sub-constructs namely; faith in human, meaning that one assumes that others are usually trustworthy, and trusting stance, meaning that one assume that he/ she will receive a good outcome from dealing with other. According to Hofstede (1980), disposition to trust is varied by past experience, personalities and cultural background. After the interaction reached to the point where the situation is more familiar, the characteristics of e-vendor/ web service provider would be examine. Trusting beliefs refers to a set of useful characteristics which one believes in others. Based on McKnight and Chervany (2001)'s work, trusting beliefs consists of four characteristics namely; competence, benevolence, integrity and predictability. However, there are only three characteristics selected in this research which are competence, benevolence and integrity. McKnight and Chervany (2001) explained that disposition to trust could have stronger influence on interpersonal trust construct (e.g. trusting beliefs), while the sub-construct faith in humanity has positive direction with trusting beliefs in which the e-vendor/ web service provider was supposed to be competent, benevolent and honesty person. In addition, Mayer et al. (1995) suggest that to examine the person's trustworthiness, disposition to trust should be adopted as a part of another set of variables. The degree of disposition to trust that the one has just shows how much trust one has for others before getting the data about that particular person. Therefore, the consideration of person's characteristics should be also examined. To examine the relationship between disposition to trust and trusting beliefs in web service provider, the hypothesis should be proposed as follow;

Hypothesis 1: There is no significant relationship between disposition to trust and trusting beliefs in web service provider

According to Pavlou and Gefen (2004) and Tan and Thoen (2001), there are three related-parties involved in online auction marketplace which includes e-buyer, e-vendor and intermediary (web service provider). Those three parties are necessarily related each other in C2C e-commerce, while B2C e-commerce's transactions mostly occur between two parties (web service provider/ e-vendor and e-buyer). Thus, examining the degree of trust in e-vendor as the moderating factors will clearly explain the mutual influence between e-vendor and web service provider. Verhangen et al. (2006) mentioned that online market provides a mediated environment which e-buyer may not only rely on e-vendor but also depend on the characteristics of the intermediary. However, the term "intermediary" in their research was posited as "institutional website structure" (institutional based- trust), which is not examined in this research. In addition, the interview's results indicate that there is a linkage between e-vendors' trustworthiness and web service provider's trustworthiness. In other words, if e-vendor is perceived to be trusted person, web service provider who provides the marketplace on the website will be perceived to be trusted person also. Thus, the second hypothesis to examine is as follow;

Hypothesis 2: There is no significant relationship between disposition to trust and trusting beliefs in-web service provider, controlling trusting beliefs in e-vendor

2.2. Prior online purchasing experience

It is reasonable to believe that trust of e-buyer might be affected by prior online purchasing experience as the previous studies indicates that people may grow up with disposition to trust which will be develop through their life experience (Hofstede, 1980; Erikson, 1968). Moreover, the interview's results (see Table 1) also show that each participant has his/ her own strategy in determining the credibility of e-vendor, depend on his/ her prior experience with that particular e-vendor, other e-vendors or even the website. Therefore, prior online purchasing experience (in term of difficulty in participating in e-commerce) is added to examine the relationship between disposition to trust and trusting beliefs in web service provider/ e-vendor, when grouped by two groups of respondents who have different prior online purchasing experience. The hypotheses are as follow;

Hypothesis 3:There is no significant relationship between disposition to trust and trusting beliefs in web service provider, segmented by either/ or

Hypothesis 4:There is no significant relationship between disposition to trust and trusting beliefs in web service provider, controlling trusting beliefs in e-vendor, when segmented by either/or

III. METHOD

3.1. Data

The mixed method using both qualitative and quantitative methodology designed by Creswell (2003) is applied in this research. An explanatory

sequential design approach which using result of qualitative data to design questionnaire of the survey through quantitative methodology. To test validate the research assumptions and make clearer explanation of the results, the interview processes were conducted. There are four interviewees consist of one female and three males. Two males are knowledgeable in information technology and the rest two interviewees have good enough experience of purchasing product online. Open-ended questions are asked to allow interviewee s express their opinion. If the answer is unclear, interviewee will be required to answer additional questions. Table 1 presents the results of the interview. As for quantitative methodology, the authors applied non-probability sampling method (judgment and convenience sampling technique) to select the respondents. The target population is required to have online purchasing experience through online discussion forums on www.overclockzone.com at least once. The research instrument is self-administered questionnaire, designated based on the basis of previous studies which were modified to fit the research conceptual model. To measure the attitude of the respondent, the respondents are required to rate their agreement toward five-point Likert scale ranging from strongly disagree (1) to strongly agree (5). Pre-testing processes were conducted to measure the reliability of the questionnaire. The results show great reliability of variablesused as an average of 0.84 Cronbach's Coefficient Alpha (Sekaran, 1992). A link of online questionnaire was posted on the website and the authors have invited website members to participate in the survey. There are totally 891 Thai respondents. A preliminary analysis shows that 93.94% of the respondents are males. Over half of total respondents have little difficulty in performing online purchasing transaction on the website.

3.1. Statistical treatment of data

The Statistics Analysis Software (SAS) version 9.2 is adopted to analyze the collected data. Descriptive analysis will summarize demographic information of the respondent in term of mean, frequency and standard deviation. Then, two of inferential statistics are implemented to analyze the relationship between independent and dependent variable. Firstly, Pearson's product moment correlation coefficient is a bivariate correlation analysis which indicates the magnitude and direction of the relationship between two (X and Y) or more variable (Petchoj and Chamniparsart, 2004; Davis, 2005). The symbol "r" represents the strength of the relationship in linear association which will vary over a range of +1 through 0 to -1 (Cooper and Schindler, 2003). The positive value of the correlation coefficient r illustrates a perfect positive linear relationship (Zikmund, 2003), while a perfect negative relationship is represented by -1. The formula shows as follow;

$$r = \frac{\sum_{i=1}^{n}(x_i - \bar{x})\left(y_i - \bar{y}\right)}{\sqrt{\sum_{i=1}^{n}(x_i - \bar{x})^2 \sum_{i=1}^{n}(y_i - \bar{y})^2}}$$

Secondly, Partial correlation is adopted to analyze the relationship between two variable, while controlling the effect of another variables (Cooper and Schindler, 2003; Pedhazur, 1991). For example, examining the relationship between disposition to trust and trusting beliefs in web service provider, while there is a variable such as trusting beliefs in e-vendor, which may affect the correlation of those variables. Using partial correlation will remove the confounding effect of trusting beliefs in e-vendor out of the primary two relationships. The formula of partial correlation shows as follow;

$$r_{12.3} = \frac{r_{12} - r_{12}r_{23}}{\sqrt{1 - r_{13}^2}\sqrt{1 - r_{23}^2}}$$

In addition, group analysis which is implemented in SAS program will be used to investigate the effects of prior online purchasing experience of e-buyers. From a total of 891 respondents, we have divided the respondents into two groups. First group is the respondents who have had some difficulty in participating in e-commerce and second group is the respondents who have not had any difficulty in participating in e-commerce.

Table 1 Interview results

Questions	Participants			
	1	2	3	4
1. Computer & Internet skill	Moderate	Advance	Advance	Moderate
2. What kind of product do you purchase online?	Cosmetics	IT Products	IT Products	toy and accessories
3. Do you have any negative experience in online purchasing?	✓	×	×	✓
4. Does web service provider's trustworthiness influence e-vendor's trustworthiness?	×	✓	✓	✓
5. Does e-vendor's trustworthiness influence web service provider's trustworthiness?	✓	✓	✓	✓
6. The most important characteristic of web service provider	Benevolence	Integrity	Integrity	Integrity
7. The most important characteristic of e-vendor	Competence	Known product: Integrity Unknown product: Competence	Both competence and Integrity	Integrity

Table 2 Statistical results by Pearson's correlation coefficient and partial correlation coefficient

Null hypotheses		N	Correlation coefficient (*r*)	Significant level (at confidence interval of 0.05)	Results
H_{1o}		891	0.40967	<.0001	Rejected
H_{2o}		891	0.16938	<.0001	Rejected
H_{3o}	Group 1 (experienced)[1]	409	0.33412	<.0001	Rejected
	Group 2 (No experience)[2]	482	0.47421	<.0001	Rejected
H_{4o}	Group 1 (experienced)[1]	409	0.06716	0.1757	Failed to reject
	Group 2 (No experience)[2]	482	0.25936	<.0001	Rejected

[1]Group 1 refers to the respondents who have had some difficulty in participating in e-commerce.
[2]Group 2 refers to the respondents who have not had any difficulty in participating in e-commerce.

IV. RESULTS

Table 2 shows the summary of statistical results analyzed by Pearson's correlation coefficient and partial correlation. The simple correlation analysis (Hypothesis 1) indicates that there is a significant relationship between disposition to trust and trusting beliefs in web service provider (0.000<0.05). The correlation coefficient value (r) represents a weak positive relationship. Then, the moderating variable "trusting beliefs in e-vendor" was added to the relationship and analyzed by partial correlation coefficient (Hypothesis 2), the result shows that there is a significant relationship betweendisposition to trust and trusting beliefs in web service provider, (0.000<0.05). In addition, the correlation coefficient value (r) signifies that trusting beliefs in e-vendor can strengthen the relationship between disposition to trust and trusting beliefs in web service provider by approximately 17 percent. The group analysis of two sets of respondents clearly explains the relationship of variables. Hypothesis 3 test the relationship between disposition to trust and trusting beliefs in web service provider, segmented by two groups of respondents who have different prior online purchasing experiences. The results still indicate that there is a significant relationship between those variables whether grouped by first group of respondents who have had some difficulty in participating in e-commerce or second group of respondents who have not had any difficulty. Noticeably, the result obviously demonstrates that e-buyer with no negative experience will have higher degree of trust as if his personal trust (disposition to trust) has not been corroded.

Hypothesis 4 test the relationship between disposition to trust and trusting beliefs in web service provider, while controlling the effect of trusting beliefs in e-vendor, when segmented by two group of respondents. The results indicate that the null hypothesis of the first group of respondents (experienced) is failed to reject (0.06716>0.05), which means that disposition to trust has no significant relationship with trusting beliefs in web service provider, while controlling the effect of trusting beliefs in e-vendor and segmented by group of respondents with negative experience. Then, hypothesis 4 of the second group of respondents make more clearer explanation and support hypothesis 2, in which the relationship between disposition to trust and trusting beliefs in web service provider will be strengthen by trusting beliefs in e-vendor up to 26 percent approximately, if e-buyer still has no negative experience in participating in e-commerce.

V. DISCUSSIONS & IMPLEMENTATIONS

Primarily, this research examines the factors of trusting beliefs in web service provider toward the adoption of consumer-to-consumer e-commerce in discussion forum website. The results of this research provide empirical evidence in regard to the relationship between trust constructs and the impact of e-buyer's experience, which will extends the e-commerce research, especially C2C e-commerce. With the coming of the Internet of Things era, accessing the Internet is easier than the past. Purchasing products between consumer and consumer is conveniently performed as just browse and click through discussion forum websites, even though, the problem such as cheating, often occur unavoidably. Of course, someone might think that it is an obstacle for C2C e-commerce development but in fact, it should reasonably mention that e-buyer will not place an order because he/ she does not have enough trust to deal with anonymous e-vendor. In other words, dealing in C2C e-commerce is like dealing in trust-based commerce. According to the results of descriptive analysis, the attitude of Thai e-buyers toward C2C e-commerce adoption is still over the mean and being positive. Then, we found, through our correlation analysis, that there is a significant relationship between disposition to trust and trusting beliefs (r=0.410), which is consistent with many previous researches (e.g. McKnight and Chervany,

2001; Lee and Turban, 2001), suggest that disposition to trust is one of the determinants of e-trust in e-commerce area. Moreover, the partial correlation with trusting beliefs in e-vendor as the moderating variable provides theoretical supports especially C2C e-commerce research, in which only trusted characteristics of e-vendor can significantly strengthen the relationship between disposition to trust and trusting beliefs in web service provider by approximately 17 percent. Therefore, the researcher of C2C e-commerce should pay more attention on the role of e-vendor as if it is an element in C2C environment. As Cheung and Lee (2003) suggest that e-buyer's experience and personalities are the factors establishing disposition to trust, prior online purchasing experience was found to have the significant influence on the relationship between trust constructs.

The group analysis implemented in SAS program demonstrates noticeable results when two main assumptions (Hypothesis 1 & 2) were tested by segmenting two groups of respondents; 1) respondents with difficulty in participating in e-commerce and 2) respondents without difficulty in participating in e-commerce. The results should be summarized into two ways. Firstly, e-buyers who have not encountered any difficulty in participating in e-commerce will have higher degree of trust than e-buyers who have had negative experience. Secondly, trusted characteristics of e-vendor no longer have any significant influence on e-buyers who have obtained negative experience in participating in e-commerce. Finally, the remaining questions that need to be answered is "which one of trusting beliefs' constructs is the most important characteristics for web service provider and e-vendor?" Theoretically, McKnight and Chervany (2001) suggest that the most important characteristic is the characteristic which can handle the greatest fear of e-buyers. According to the statistical results, the characteristics of being benevolent and honest are combined to be the most important characteristics for web service provider, while the ability to provide good services is for e-vendor.

The findings of this research provide some important implications for practitioners, especially web service provider of C2C e-commerce website. As the results discussed above, the degree of trust the e-buyers earlier have before they enter the website may not be more important than their trust placed in web service provider or e-vendor after getting online dealing on the website. Thus, forming and maintaining processes of e-buyers' trust should not be ignored. Significantly, trust in web service provider is affected by trust in e-vendor, web service provider therefore emphasizes on improving the credibility of e-vendors in the website's marketplace. In other words, increasing e-buyers' trust in e-vendor will be enhancing the trustworthiness of web service provider at the same time.

CONCLUSIONS AND RECOMMENDATIONS

Once again in C2C e-commerce research, the personal trust of e-buyers was found to be an important factor toward online purchase, affecting the formation of interpersonal trust in web service provider and e-vendor. Likewise, the experience which e-buyers obtained from dealing on the website will be accumulated and become an indicator of their personal trust in next time online purchase. A first recommendation to web service provider is to not ignore the maintenance of positive experience to sustain the users' trust in web service provider. Being benevolent and honest web service provider is able to gain more trust from e-buyers as in the real practice, the suggestions and supports provided by web service provider will be able to reduce the greatest concern of e-buyers. Moreover, web service provider is recommended to clearly issue online dealing rules used on the website to inform e-buyers the responsibilities of web service provider when unexpected problem occurs with e-buyers.

In addition, e-vendors' trust is known as a contributing factor of trust in web service provider. Perception of trusted e-vendors will simultaneously become a positive result for web service provider. Practically, registration system for e-vendor should be prepared. The information of e-vendor such as a copy of identification card, household registration or bank account need to be collected to identify the existence and credibility of e-vendors.

Summarily, "trust" is intangible as e-buyers' trust cannot be seen externally. Forming e-buyers' trust is difficult but returning e-buyers' trust is much more difficult task, if so, e-commerce development cannot reach its full potential without "trust".

LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

This research focuses on C2C e-commerce through www.overclockzone.com which concentrates on computer technology, therefore, it should suggest that the selection of website may differentiate the results due to different website factors such as website structures, rules, product sold, dealing transaction or even formality of website users. Thus, the results of this research may not be generalized for another websites. We suggest that another websites using discussion forum platform should be examined. Group analysis of prior online experience helps us to understand how e-buyers' trust are affected by negative and positive experience. Future research should identify other demographic variables. Although the results of this research clearly represent the relationship between trust constructs (disposition to trust and trusting beliefs) and the integration of trusting beliefs in e-vendor as a moderating variable also fits the model and the concept of C2C e-commerce environment as expected, it may not

provide a clear explanation of the relationship among trust sub-constructs. Another main trust constructs such as institution-based trust and trusting intention and other trust-related variables such as privacy concern, third-party seal and e-vendor reputation should be investigated. Finally, C2C e-commerce has its own particular environment related to three parties (e-buyer, e-vendor and web service provider). Another research should focus on this area distinguishing C2C from B2C e-commerce.

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