HABIT AS A MODERATOR AND EXOGENOUS PREDICTOR OF SOCIAL NETWORKS: THE CASE OF ONLINE SOCIAL NETWORKING

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Abstract

This paper tests the factors likely to impact continuance intentions through the medium of online social networks (OSN) for business transactions. The expectation-confirmation theory (ECT) from the consumer behaviour literature is made use of; to forward a set of theories that validate a prior model from IS usage research. Eight research hypotheses, after a field survey of OSNs participants for business transactions were conducted are empirically validated. 300 useable responses from LinkedIn and Twitter social networking platforms users for business transactions were analysed with the WarpPLS 4.0 bootstrapping technique. The study results provide significant evidence in support of perceived trust and user satisfaction, as determinants of the continuance intention of people using OSN platforms for business transactions. Above all, the research model was tested for the moderating effects of usage habit, which was found to impact relationships between continuance intention and perceived trust, resulting in an improved predictive capability of (R2=0.55) as compared to base model of (R2=0.52). The moderating result indicates that a higher level of habit increases the effect of perceived trust on continuance intention.

Key Words: Financial Crises, Canada, Regulatory System

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Motivation for the study

The quest to understand consumer behavioural intentions with regards to information systems (IS) and IT usage have attracted a great deal of research, hence presenting a daunting task for researchers to uncover the predictive factors. Many have deployed various theories to try to comprehend this philosophy of continuance intention, especially on IT post-adoptive behaviours. From early researchers (e.g., Bhattacherjee, 2001; Bhattacherjee and Premkumar, 2004; Jasperson 2005; Ahuja and Thatcher, 2005) to the present lots, these researchers of IT continuance have examined different factors and/or processes that motivate continued usage or discontinuance of products and services that are offered through technological means to users after the initial acceptance. The dominant theory used to explain this phenomenon of IT continuance/discontinuance behaviours include the expectation-confirmation theory (ECT) (Bhattacherjee, 2001), which propound that individual’s satisfaction with IT usage is positively influenced by the degree to which their original expectations of the IT usage was confirmed or disconfirmed after using the said IT.

The proponents of this theory posit that users’ IT continuance intention is based on two factors: their prior IT usage experience and their expectation of future benefits from continued IT usage, capturing this argument diagrammatically as below:

Figure 1. An ECT-based Model of IT Continuance

![Figure 1](image-url)
The above lines of reasoning have attracted researchers for more investigations. For instance, Bhattacherjee after his initial study in 2001 has maintained that factors that motivate continuance usage are not the same as those of initial acceptance (Bhattacherjee and Bafar, 2011) in the online purchases. The two authors (Bhattacherjee and Bafar, 2011) have suggested an investigation of IS continuance investigation after imposing habit as a moderator on a five construct model of post acceptance continuance as shown in figure 2 below.

**Figure 2. Extended ECT Model of IT Continuance**

In other words, little is known even after determining the likely factors that influence continuance intention, of IT usage, how habit as an exogenous predictor affect this intention of continuance usage.

In line with the above suggestion, this paper imposed habit on one of the determinants of OSN continuance factors to find out how habit influence the effects of perceived trust (PT) on OSN continuance intention (CI). This was done after substituting CI in figure 2 (the proposed model) with PT and continuance behaviour with CI, in order to contribute a more scientific knowledge to the research community. For it is noted that, neglect of moderating effects leads to a lack of relevance (Henseler and Fassott, 2010), assuming that relationships that hold true, regardless of the context factors, are perfect and work under all conditions. This could be really misleading.

Recently, doing business online has become complex with new models aside e-commerce emerging. Known among such phenomenal is the OSNs concept where both buyers and sellers establish a personal profile in a community of friendship to share, discuss, comment, and listen to others before deciding to do business on this platforms. The OSN phenomenon has not only been a medium for socialising but business as well. Organisations have managed to use it to lead to sales and continued sales. For instance, working with the Medill IMC Spiegel Digital and Database Research Initiative at Northwestern University in Chicago and the Ivey School of Business at the University of Western Ontario, LoyaltyOne study (which was believed to be the first published study of its kind) demonstrates that positive social media interaction can and does lead to a significant and sustained increase in transaction volume from participating customers. Specifically, the study isolated and confirmed a direct and positive link between consumer social media activity with a major, well-known Canadian brand and increased transaction volume for that brand (Everett and Sullivan, 2012).

The evidence that OSN can lead to actual business is beyond any controversy as there exist abundance prove to that effect. The below snapshot attest to a real life scenario where a deal was made between a participant and a sales executive of a company on the Twitter OSN:

**Figure 3. A snapshot of a Twitter follower who has decided to buy**

![Twitter snapshot](https://collinkromke.com/ford-twitter)
All that the company had to do to earn the business of the above participant was to join his community of networks, respond to his tweets and continue engaging him for all his queries to enable a business to take place. The evidence from the snapshot in figure 4 below is a testimony:

IT continuance was referred to as sustained use of an IT by individual users over the long-term after their initial acceptance (Bhattacherjee, 2001). This paper agrees with the above author that, the topic of continuance intention is important for research because the expected benefits of a given IT cannot be realized and its implementation cannot be considered successful if its usage is not sustained over a long-term by the users who are expected to benefit from its usage (Bhattacherjee, 2001), in this case OSNs. OSN is an IT platform that is used these days to perform business. It success therefore depends on the continuance usage of its participants.

Figure 4. A snapshot of a Twitter follower confirming his willingness to buy

According to a sales expert, Colleen Francis (2014), she has seen salespeople pursue leads using social media and end up with sales of between $30,000 and $250,000. “The biggest sales have come from salespeople using Twitter to find opportunities and LinkedIn to find the names of the true buyers inside organizations.”

In investigate continuance purchases in line with the above assertions, the goal of the current study is to investigate the continued intention of OSN participants using OSN to buy as against initial acceptance, and how habit moderates this intention after having used it to buy once.

Theoretical Extension and Background

The Expectation-Confirmation Theory (ECT)

In continuance intentions studies, the expectation-confirmation theory (ECT) in IS is often used and the objective is to find consumer satisfaction and repeat behaviour for transactions. The basic logic of the ECT is stated by Oliver (1999), Bhattacherjee (2001) and Kim et al. (2009) and postulate that: first, a consumer shapes an expectation of the special goods or services form to a contract. After a time of use, the consumer shapes the senses about his/her transaction behaviour. Second, the consumer calculates his/her perceived deed, compared to initial expectation, and decides the measure to which the expectation is met. Consequently, the consumer accumulates the satisfaction decision, based on the degree of validation and expectation on which that validation was built. In the end, the consumer forms the repeat purchase or continuance intention and behaviour, built on the degree of satisfaction.

Examining the influence affecting users intentions to continue or not to continue participating in OSN synthesizes the above theory and could be of great interest to the research community, especially that of the IS (Bhattacherjee, 2001; Bhattacherjee and Premkumar, 2004). Infact some of the OSNs have been in existence for quite a long time yet not much is known about its continuity potential, not forgetting that some have emerged but never succeeded (i.e. post-adoptive behaviour). Successful OSN therefore depends primarily on the continuance usage and engagement of its participants. All constructs in ECT, other than expectation, are repurchase variables (Limayem et al. 2007) and the evaluation is found in the consumer’s actual experiences with an online vendor, of which OSN is no exception. In as much as this research study agrees with Limayem et al. (2007), it contends that consumers’ perceived trust is another important factor that will act as a ‘reminder’ whenever consumers think of repurchase, hence the inclusion of this construct. Behavioural control such as habit will always consolidate any decision arrived at and cannot be taken for granted.

This paper, in a bit to synthesis the popular theory of ECT believes that there is a need to understand users’ continuance interaction and
participation of OSNs at a deeper level (Nolker and Zhou, 2005), but more so the continuance intention.

Following this line of conviction, this study adopts perceived trust, satisfaction, expected benefit, and confirmation, to validate figure (2) above as suggested by Bhattacherjee and Barfar (2011) to explain the continuance intention of people using OSN for business transaction. Habit is thereafter superimposed on the arrived model to determine any moderating effect.

Past e-commerce studies have found that online shopping behaviour has been studied using constructs such as users’ continuance, acceptance decisions, online shopping intention and purchase behaviour (Gefen et al. 2003; Hsu et al. 2006). These terminologies are these days, seen in the OSNs communities as followers, Tweets and the likes to generate participants’ interest of continuance usage. This leads to the conclusion that the online consumer-vendor relationship becomes stronger when both the vendor’s ‘before-and-after’ performance, is felt to be trustworthy, satisfactory, sociable then participants can be trusted to continue using OSN platforms for business.

3. Hypothesis Developments

3.1 User satisfaction and Confirmation

There are studies that have investigated online shopping intention with constructs such as user continuance, acceptance decisions and purchase behaviour (Gefen et al. 2003; Hsu et al. 2006). Bhattacherjee and Premkumar (2004) particularly, made a substantial contribution in using ECT to study user satisfaction and continuance behaviour whiles many others established the relationship between user satisfaction and continuance intention as a well-supported research findings (Bhattacherjee, 2001; Liao et al. 2009; Yusliza and Ramayah, 2011; Akter et al. 2013; Shiau and Luo, 2013). User satisfaction is in turn influenced by their confirmation of expectation from prior IS use and perceived usefulness.

This premise leads us to the following hypothesis of OSN continuance intention:

\[ H1: \text{Users' satisfaction with OSNs will positively influence their continuance intention to use OSNs for business transactions.} \]

\[ H2: \text{Users' satisfaction with OSNs will positively influence their level of trust for OSN use for business transactions.} \]

\[ H3: \text{A customer's confirmation of OSN site positively affects a customer's OSN shopping satisfaction} \]

3.2 Expected benefits and trust

Expected benefit is a term suggested to replace perceived usefulness in his new model (Bhattacherjee and Barfar, 2011) and defined it as “user’s perception of expected benefit of IS use” In the context of OSN for business transactions, expected benefit refers to the extent to which a participant perceives that doing business on OSN will improve his or her business experience. This expectation is anticipated to impact the level of trust in doing business on OSN.

The following hypothesis is therefore stated:

\[ H4: \text{Confirmation of expectations positively affects expected benefit of OSN usage.} \]

\[ H5: \text{A customer’s Expected benefit of OSN positively affect his level of trust for OSN usage} \]

Trust

Trust, according to Bianchi and Andrew (2012), “makes consumers comfortable sharing personal information, making purchases, and acting on web vendor advice, all of which are behaviours essential to widespread adoption of e-commerce”. The issue of trust is very important when it comes to business, let alone conducting such business in an environment where participant do not see each other. Therefore, an understanding of the influence of trust is critical to both researchers and practitioners (Palvia, 2009; May, 2011). Several studies have focused on various issues of trust in e-commerce (Kim and Benbasat, 2009; Luo et al., 2010; Chai and Kim, 2010; Riedl et al., 2010) and evidence appears to suggest that consumer trust in the online vendor has a positive relationship with attitudes towards purchasing on OSN, hence, the below hypothesis:

\[ H6: \text{A customer’s perceived trust in OSN will strongly affects a customer’s OSN continuance intention.} \]

3.3. Habit

Prior research in IT usage indicates that Habit determines much of IT continued usage (Kim and Han, 2009; Kang et al., 2009; Cho et al., 2009). Defined as “a well-learned action sequence, originally intentional, that may be repeated as it was learned without conscious intention, when triggered by environmental cues in a table context” (De Guinea and Markus, 2009). When IT use is habitual, it ceases to be guided by conscious planning and is instead triggered by specific environmental cues in an unthinking or automatic manner (Bhattcherjee and Barfar, 2011). Guinea and Markus. (2009) asserted that the mere presence of IT or a specific task that a user is confronted with, say to communicate with a colleague about writing a report, are important cues that may trigger habitual IT usage. Previous research has found a strong relationship between habit and continuance behaviour in IS, and many efforts have been made by different researchers in showing how habit influence IT usage and the conclusion is almost invariable the same. Understanding the IS feature that develops habitual behaviours among OSN...
participants is crucial in promoting habitual use of OSN in the long-run. In light of the above, we hypothesize that:

H7: A customer’s habit has a direct positive effect on IT continuance intention.

H8: A customer’s habit moderates the relationship between trust and continuance intention.

4. Research Methodology

4.1 Research method

After three months of hosting the assessment model on the researcher’s online social network, for friends to fill in, the survey responses were very poor, which led the researcher to seek the assistance of the online survey agent ‘SurveyMonkey’, to collect data on the web by sending the model to respondents in their database. The questions were formulated in such a way, that only people using OSN to transact business would find it meaningful to answer, as it addresses key and technical concepts not common to unfamiliar persons.

The survey model asked, the participants a series of pre-established questions with a limited set of response categories, meant to disqualify intruders. A 5-point Likert scale rating, as indicated earlier on, was used, ranging from (1) strongly disagree to (5) strongly agree, to measure the relative importance of constructs.

Through this agent, who has a database of respondents specifically for this targeted sample, qualify clients were targeted for such an assignment, sending them the web address for the model. The survey, whiles on the web and through the web link address, allowed the researcher to monitor respondents through the IP address accompanying all responses, ensuring respondents were within the targeted group.

4.2 Respondents and sampling procedure

Data were collected from online buyers and sellers who have accounts with Twitter and LinkedIn, and are members of Survey Monkey’s panel of networks. A sample population of 317 (Bearden et al. 1980) was collected, with 17 disqualified due to various inconsistencies. Physical evidence, in the form of printouts of responses, was collected and filed for reference during analyses and write ups. The advantages of such data collection are:

(1) Faster responses, (2) Lower cost, and (3) A geographically unrestricted sample (Bhattacherjee, 2001). This method was deemed appropriate to solicit information from people who visit Social Networking Sites (ONSs) because such users of OSNs are widely dispersed but can be reached with technology such as Web 2.0.

4.3 Data Analysis and Results

Construct validity for the five measurement scales (IS continuance intention, satisfaction, perceived trust, expected benefit and confirmation) was assessed through structural equation modelling analysis (SEM) using WarpPLS 4.0. (Kock, 2010) each scale item was modelled as a formative indicator of its hypothesised latent construct allowing them to covary in the SEM program. The estimation of the model was performed using the maximum likelihood method with the item correlation matrix used as input. Table 2 and 3 present the results of the SEM analysis.

4.4. Measurement Reliability

Data analysis was performed to validate the research model and because constructs in this study are formative, the assessment of the measurement model sought to estimate internal consistency, the convergent and discriminant validity7 (Bollen 1990; Chin and Gopal, 1995). This was done using Cronbach’s alpha and Fornell’s composite reliability (Fornell and Larcker, 1981). The composite reliability should be greater than the cut off 0.7 to be considered adequate (Fornell and Larcker, 1981). The composite reliabilities of constructs have values higher than the threshold hold 0.7, making it reliable (Nunnally, 1978). The study shows all constructs have AVE of at least 0.5 (Fornell and Larcker, 1981). This means more than 80% of the variance of the measurement items was explained and can be accounted for by the latent variables associated with a given construct (Table 2). The Cronbach reliability coefficients of all variables are higher than the minimum cut off score of 0.60 (Nunnally, 1978).

4.5. Construct validity

The measures shows construct validity. This was examined by convergent validity and discriminant validity, which is defines as the measure of constructs that theoretically should be related to each other and the measure of constructs that theoretically should not be related to each other respectively. Both of them work together as subcategories; neither of them is sufficient for establishing construct validity (Chin, 1998). The acceptable level of convergent validity is when all item loadings are greater than 0.50 (Wixom and Watson, 2001), and the items for each construct load onto only one factor with an eigenvalue greater than 1.0; this is an indication of convergent validity (Table 2).
Table 1. Normalized pattern loadings and cross-loadings

<table>
<thead>
<tr>
<th>Construct</th>
<th>Number of items</th>
<th>Reliability</th>
<th>AVE</th>
<th>EB</th>
<th>PT</th>
<th>SA</th>
<th>HB</th>
<th>CF</th>
<th>CI</th>
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<tbody>
<tr>
<td>EB</td>
<td>10</td>
<td>0.427</td>
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<td>.776</td>
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<td></td>
<td></td>
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<tr>
<td>PT</td>
<td>5</td>
<td>.552</td>
<td>.887</td>
<td>.680</td>
<td>.831</td>
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<td></td>
<td></td>
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<td>.394</td>
<td>.920</td>
<td>.656</td>
<td>.608</td>
<td>.898</td>
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<tr>
<td>HB</td>
<td>8</td>
<td>-</td>
<td>.905</td>
<td>.672</td>
<td>.703</td>
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<tr>
<td>CF</td>
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<td>-</td>
<td>.896</td>
<td>.610</td>
<td>.594</td>
<td>.578</td>
<td>.642</td>
<td>.840</td>
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</tr>
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<td>.895</td>
<td>.651</td>
<td>.651</td>
<td>.611</td>
<td>.666</td>
<td>.666</td>
<td>.810</td>
</tr>
</tbody>
</table>

Note 1: Loadings and cross-loadings shown are after oblique rotation and Kaiser normalisation.
Notes 2: P values < 0.05 and VIFs < 2.5 are desirable for formative indicators; VIF = indicator variance inflation factor; WLS = indicator weight-loading sign (-1 = Simpson's paradox in l.v.); ES = indicator effect size.
Note 3: ExpBen = Expected Benefit, PerTrus = Perceived Trust, UserSat = User Satisfaction, Habit = Habit, ConFm = Confirmation, ContInt = Continuance Intention

Table 2. Scale Properties and Correlations

The structural model after running the SEM came up as shown below:

Note: Square roots of average variances extracted (AVEs) shown on diagonal.
Figure 1. Post acceptance structural model

Habit as a moderator was imposed on the baseline model to investigate its effect. There is an improvement from ($R^2 = 0.52$) to ($R^2 = 0.55$). Figure 2 displays the new results.

Figure 3. After moderation of base model

After moderation, it is clear that the predictive power of the research model increases from 0.52 to 0.55. This is a clear indication that habit actually influences the continuance intention of OSN participants to use it to buy.

5 Empirical findings

This result of this paper confirms the theoretical argument that the strength of trust to predict continuance intention is strengthened by usage habit. Generally this has practical implications for individuals who desire to offer commercial services on online social networking technologies.

5.1 Habit

Prior research in IS usage indicates that habit determines much of IS continued usage (Limayem et al. 2007) and using it to investigate the possible roles of moderation is common in this domain of study. However, this study result has taken us to another level of knowledge discovery which really emphasise the importance of habit. By increasing the predictive power of the study model, habit of using OSNs for purchases when formed leads to the continuance and sustainable business transaction. A study, of the roles of habit and website quality in e-commerce, found that habit has a significantly positive effect on trust, among others (Liao et al. 2006; Shiau and Luo, 2013). Nevertheless, this study on the contrary has proved a negative effect from ($\beta = 48$ to $\beta = 29$). The
reason being that, as habit is formed regarding the usage of a particular OSN to transact business, trust plays less crucial role whenever participants decide to buy because their buying process is done with less conscious intention. Guinea and Markus (2009) define habit as “a well-learned action sequence, originally intent that may be repeated as it was learned without conscious intention, when triggered by environmental cues in a table context” (Guinea and Markus, 2009) and this is exactly what this study has discovered.

When IS use is habitual, it ceases to be guided by conscious planning and is instead triggered by specific environmental cues in an unthinking or automatic manner (Bhattacherjee and Barfar, 2011). Guinea and Markus (2009) maintain that the mere presence of IS, or a specific task that a user is confronted with, for instance, to communicate with a colleague about writing a report, are important cues that may trigger habitual IS usage.

Previous research has found a strong relationship between habit and continuance behaviour in IS and many efforts have been made by different researchers in showing how habit influences IT usage. The conclusion is almost invariable the same. For instance, habit refers to “the extent to which people tend to use IS automatically, as a result of prior learning” (Limayem et al. 2007), it is a set of ‘situation-behaviour sequences’ that is or has become automatic, resulting from prior experience (Gefen et al. 2003). This study has validated this strong relationship by increasing the predictive power of the model.

Understanding the IS feature that develops habitual behaviour among OSN participants, in addition to showing how it moderates these feature(s), is therefore crucial in promoting habitual use of OSN in the long run. Past research reports that habit is a major driver of affect (Limayem and Hirt, 2003) and an ‘emotional response to the thought of the behaviour’ (Limayem and Hirt, 2003). By giving rise to a favourable feeling towards behaviour, habit can affect continuance intention directly. In other words, this study believes that a customer is likely to be more trusting and more influenced by behavioural factors of OSNs stores, when the habit of shopping online has been acquired.

### 5.2 Continuance Intention

Current research (e.g. Choi et al. 2011; Zhou 2011) argues that studies on continuance behaviour are becoming increasingly important, particularly for firms seeking to achieve profitability and sustainable, competitive advantage, through online business activities. The understanding of the factors that influence continuance behaviour, at this stage of the Internet’s diffusion as a business avenue, is important. Online participant retention will ensure OSN continuity. Both IS continuance intention and repurchase intention are influenced by the initial use or purchase experience. Nevertheless, IS continuance intention in an OSN context is slightly different from the online repurchase intention as demonstrated by this study. What will make a participant to continue using OSN is the continuance engagement of vendors to answer all queries. OSN continuance emphasizes the continued usage of OSN sites, for business, instead of the use of physical stories; while online repurchase underlines consumer behaviour (Wen et al. 2011).

Continuance intention has been shown to have correlation with actual IS continuance (Bhattacherjee, 2001) and is used as the endogenous construct in many models, including this study. The phenomenon becomes more important for OSN systems because, such systems, being a Web 2.0 system of cloud computing, typically have some benefits that could only be realized in the long run. For instance, the issue of trust in OSN can build up because of familiarity with a member of one’s network and the continuance visit of a particular OSN. Furthermore, Limayem et al. (2007) suggests that IS continuance behaviour or IS continuous usage described behavioural patterns; reflect the continued use of a particular IS. How to enforce the habitual behaviour and participation in Web 2.0 systems, therefore, contributes greatly to an OSN’s continued existence. This is an area worthy of pursuit because of the business value of OSN as a tool of both leisure and convenience, a way of communication and a new business venture.

In summary, it is worth mentioning that consumer satisfaction/dissatisfaction is not dedicated to modeling IS continuance per se, but is a general model for describing a person’s reiterative behaviour, in performing certain tasks (Oliver 1980) such as continuance buying from OSNs.

### 5.3 Limitations

Various issues impacting on the study includes mode of data collection. The collection of only 300 responses could be considered to be somehow small looking at way this study intends to generalize its findings. Reviewing relevant literature proved to be quiet difficult as Social Networking literatures in the field if IS is still growing given the fact that they are quite recent development. Academic literature and peer reviewed materials have not explored all aspects, making most of the fact used here vulnerable for criticism. Many sources of reference came across are not academic based and thus could not be used. This resulted in a time consuming search for relevant literature. However the rapid collection of research data was a pleasant result.
6 Conclusions

Social networking and related matters are gaining research interest in the field of IS research. In line of this, the aim of this paper was to identify the noticeable impacts of habit on IS continuance intention through OSN, in addition to understanding the determinants factors and how they influence the dependent variable (OSN continuance intention). To this end, ECT was adapted from the consumer behaviour literature and integrated with other IS use research to theorize a model of OSNs continuance intention. Data collected from a survey agent was used to support the analysis and research model which was adopted from prior IS research proposal. The outcome really points to the fact that, anytime researchers refuse to moderate outcomes to provide an alternative insight to a discovery, they do a great disservice to the research community because, such outcome assume only a one dimensional result.

References