

Exploring Adoption of Social Media Commerce Using Extended Theory of Planned Behaviour

Ibrahim Akman

Abstract—In this study, adoption of Social Media for Commercial purposes (SMC) has been analyzed using the conceptual research model Theory of Planned Behaviour (TPB). Apart from conventional ones, the model contains two external variables such as perceived reliability and enjoyment, and personal characteristics. A survey approach has been adopted for this purpose. The path analysis is used for data analyses and least square regression technique was adopted to investigate direct and indirect relationships among the variables included in the research model. The test results indicated that TPB has significant predictive power regarding adoption of SMC. Additionally, perceived reliability and enjoyment also has significant influence in the research model.

Keywords—Path analysis, regression social media, Theory of Planned Behaviour.

I. INTRODUCTION

IN the last decade, social media has become highly popular and its influence on commerce has become extremely important due to the advantage of many-to-many spread of information [1]. According to reports, in 2008, 70% of consumers visited SNSs to get information on companies, brands or products and 49% of these consumers made a purchase decision [1], [2]. This means commercial organizations cannot ignore the social networking phenomenon and therefore, should promote these sites as relationship building tools in terms of commercial activities [3]. However, little is known about how the organizations are using SNSs to cultivate relationships with their publics. Additionally, customer behaviour within SNSs is not well understood since there is limited research regarding factors affecting information sharing in social media platforms [4]. Kwahk and Ge [1] and Hunsinger [5] also supported this view that there are currently few studies investigating the relationships between social media and e-commerce. Against this backdrop, the current study investigates social media commerce adoption using the TPB. The TPB is well established for human behavior related studies [6]. It has strong predictive power and capable of explaining behavioral intentions in information technology.

Ibrahim Akman is with the Computer Engineering Dept. of Atılım University Incek Bulvarı, 06836, Gölbaşı Ankara Turkey (corresponding author's phone: +90 312 5868348; e-mail: Ibrahim.akman@atilim.edu.tr).

II. RESEARCH MODEL

A. External Factors

Our research model uses extended TPB (Ajzen, 1991) since it provides a conceptual model used to assess IT usage behaviour and proved to be successful in many of the IT studies from different perspectives [7], [8]. The conventional factors included in TPB are “Beliefs Towards Behavior (BTB)”, “Subjective Norms (SN)”, Behavioral Intention (BI)” and “Actual Behavior (AB)” (Figure 1). Our research model also includes two external variables such as Perceived Reliability/Enjoyment (PR/E) and Personal Characteristics (PC). The PC includes gender and age of respondents. The external variables make the theory more general as stated by Ajzen [6]. The hypotheses were grouped according to the following empirical categories such as 1) External factors; 2) TPB constructs.

The PR/E is used as one of the external factors in this study (Figure 1). The SNSs basically provide media for communication, participation, collaboration and information sharing. According to Munguatosha, Muyinda and Lubega, [9], how users perceive issues regarding adoption of SNSs plays a determinant role. For example, the relevance and convenience of using an SNS depend on perceived beliefs as reported by Al-Gahtani [10]. Munguatosha, Muyinda and Lubega [9] found that perceived system use depends on the perceived mental belief that the system can be learnt in short period of time and with less effort and infrastructure. The perceived reliability and enjoyment related concepts have attracted interests in recent studies. For example, as an intrinsic motivator, Perceived Enjoyment (PE) was reported to be significantly and directly impacting intention towards actual usage by Venkatesh [11] and therefore, PE is a salient determinant of usage behaviour [12]. According to Venkatesh [11], it is expected that system-specific perceived ease of use reflects system-specific perceived enjoyment. However, most of the available studies do not provide a systematic approach of how perceived reliability and enjoyment relate to adoption of SMC. Therefore, the following hypothesis is proposed (Figure 1).

H1: Perceived Reliability and Enjoyment has positive influence on Beliefs Towards Behaviour.

Factors concerning socio-demographic have always drawn special attention in previous empirical researches using conceptual models in IT. The gender and age are amongst such factors. Venkatesh and Morris [13] and Chung et al. [14] examined gender and age differences in perceptions of online communities held by people using the conceptual model TAM. They reported significance of these factors. Studies of Morris, et al. [15] and Chang, et al. [16] constitute two other examples of conceptual model-based investigations regarding the role of gender and age. However, available literature does not seem to be mature enough in terms of the adoption of social commerce. Based on this backdrop, experience and age are used to develop a construct (PC), and the following hypothesis is postulated.

H2: Personal Characteristics have positive influence on Attitude Towards Behaviour.

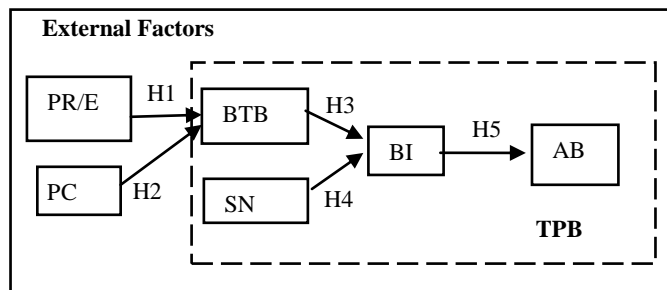


Fig.1 Research model.Boxes represent the constructs. The constructs inside dashed rectangle represents TPB, whereas others are extensions to TPB. Casual effects are given by arrows connecting boxes.

B. TPB constructs

The TPB is an important conceptual model, which provides a framework necessary not only to predict, but also to understand behavior by examining an individual’s beliefs, attitudes, motivation and perception of social norms in regard to using social media [6]. The TPB is a widely studied from social psychology. It has been used successfully in a wide range of applications in behavioural science to empirically predict and understand individual’s behaviour [17]. This model provides a strong theoretical foundation and has significant constructive effect on E-commerce in explaining consumer behaviour [17]. The TPB has also proven to be successful over the other conceptual models in explaining various types of Behaviour [18], [19]. According to Zhang [20], in the past several decades, TPB has influenced the IS field on technology acceptance research, from the formation of the famous Technology Acceptance Model. Additionally, the TPB is suggested by the social networks literature due to the facts that it can accommodate the dynamic nature of behaviors and capture changes in the intentions [21]. Despite these advantages, TPB has also been used much less frequently for business applications in social networking context. Based on this backdrop and to be in parallel with the available literature,

we decided to use TPB as our research model and constructed the following hypotheses accordingly.

H3: Beliefs Towards Behaviour has positive influence on Behavioural Intentions.

H4: Subjective Norm has positive influence on Behavioural Intentions.

H5: Behavioural Intentions has positive influence on Actual Behaviour.Document Modification

III. RESEARCH INSTRUMENT AND DATA

A survey was conducted to analyze the behaviour regarding adoption of SMC (Figure 1). The data were obtained by means of a questionnaire containing 13 research questions grouped under 6 constructs (Table 1). The data was collected using a 5-point Likert Scale (5=very much/very strong/very high, 4=much/strong/high, 3=moderate, 2=little/weak/low, 1=very little/very weak/very low) for the constructs since this scale is widely used for survey-type studies in the literature.

TABLE I
LIST OF CONSTRUCTS AND CORRESPONDING ITEMS

| Constr. | Item |
|---------|---|
| SN | <i>I think that most people who are important to me expect me to use social media for commercial activities.</i> <i>I think that most people who are important to me use social media for commercial activities.</i> |
| BTB | <i>I believe that social media commerce is useful.</i> <i>I beleive that using using social media commerce is beneficial.</i> |
| BI | <i>I intend to use social media for commercial activities in the future.</i> <i>I intend to embed social media in my commercial activities on a regular basis.</i> |
| AB | <i>I use social media for commercial activities.</i> <i>I use ICT (Inf. & Comm.Tech.) for commercial activities.</i> |
| PR/E | <i>Social media is a reliable support for my commercial activities.</i> <i>I enjoy using social media for my commercial activities.</i> |
| PC | <i>What is your gender? (Male, Female).</i> <i>What is your age? (< 21; 21-30; 31-40; 41-50; >50).</i> |

The data was collected during the 2nd International Engineering Education Conference organized by Atilim University and the annual one-day meeting on issues - problems and developments - in the use of IT, organized by the Turkish Informatics Association (TIA). A total of 143

completed survey questionnaires were obtained. The linear univariate and bivariate regression analysis techniques was employed to apply Path Analysis approach.

The cronbach's alpha was used to assess reliability of the survey data and the overall internal reliability was found to be 0.841. This shows that the data exhibit high reliability and measure the same concept [22]. The analyses also show existence of internal reliability for multi-item constructs PC, PR/E, BTB, SN, BI and AB since their corresponding factor loadings are measured as 0.979, 0.740, 0.772, 0.641, 0.832 and 0.617 respectively [22]. For the establishment of content validity, the items and their corresponding constructs were adapted from prior studies and modified according to the context of this study. Additionally, an extensive refinement process was used during the selection of items based on a pilot study and expert opinions.

IV. RESULTS

A. Descriptive results

According to the descriptive results (Table 2), of the males in the sample, 15% reported their SMC awareness to be below average. Interestingly, this percentage for females is slightly less (13%). Naturally, the test results do not indicate any significant difference in this respect (Chi-Square = 1.098; DF = 3; P-Value = 0.777). Most of the respondents reported that they use SMC at average level or higher (63%). The gender diversity for adoption of SMC was also not found significant (Chi-Square = 5.210; DF = 4; P-Value = 0.266). Similarly, no significant diversity was observed for age in this regard.

The age distribution showed a skewed trend towards younger male respondents. In other words, the percentages for the male groups of below and above 31-40 years of age interval are 58% and 22% respectively, whereas these percentages for females are 72% and 13% respectively. It is interesting to note that age and gender are significantly negatively correlated ($r=-0.168$; $p\text{-val}=0.045$), meaning that female respondents are generally younger than males. Age and gender also appear to be negatively correlated against social media usage for commercial purposes ($r=-0.105$ and $r=-0.015$ respectively). This may be used as an indication of the fact that younger male respondents tend to use SMC more frequently than their older and female counterparts.

B. Test results

The proposed hypotheses based on the research model were tested using path analysis approach. The univariate and bivariate least-squares regression analysis techniques were used for this purpose and the pertaining coefficients and p-values are given in Table 3. The inspection of p-values and coefficients indicates that there is sufficient evidence that the hypotheses in external category are supported by the survey results. Namely, H1 ($p<0.10$) and H2 ($p<0.001$) are accepted.

TABLE II
DESCRIPTIVE RESULTS

| Variable | Number | % |
|------------------|--------|-----|
| Gender | 143 | 100 |
| Male | 90 | 63 |
| Female | 53 | 37 |
| Age | 143 | 100 |
| <31 | 24 | 17 |
| 21-30 | 66 | 46 |
| 31-40 | 26 | 18 |
| 41-50 | 15 | 11 |
| >50 | 12 | 8 |
| SMC usage | 143 | 100 |
| Very often | 30 | 21 |
| Often | 26 | 18 |
| Average | 34 | 24 |
| Less | 16 | 11 |
| Very less | 37 | 26 |
| Awareness on SMC | 143 | 100 |
| Very high | 41 | 29 |
| High | 47 | 33 |
| Average | 35 | 24 |
| Lows | 19 | 13 |
| Very low | 1 | 1 |

This shows that respondents' personal characteristics and, perceived reliability and enjoyment have significant effect on beliefs towards behaviour. This effect appears to be positive and its magnitude is 0.204 for PR/B and 0.666 for PLA. This means that being older and/or female and, increase in the perceived reliability/enjoyment results in significant increase in the belief towards actual behaviour of adopting SMC. On the other hand, the indirect effects of PC and PR/E on behavioural intention are 0.126 ($0.204*0.620$) and 0.412 ($0.666*0.620$) respectively. These also show significant positive indirect effect of PC and PR/E on individuals' actual use of SMC.

More importantly, the test results were observed to be supporting all hypotheses regarding the relationships between TPB constructs. This means, there is sufficient evidence to accept H3 ($p<0.1\%$), H4 ($p\leq 0.1\%$) and H5 ($p<0.1\%$). The regression coefficients for belief towards behaviour and subjective norm were both obtained to be positive (0.620 and 0.225 respectively). This can be used as an evidence of the fact that behavioural intention and actual usage are proportional to level of perceptions regarding convenience, benefits and favorable attitudes for adoption of SMC. Additionally, the indirect effect of subjective norm on actual usage is 0.174 ($0.225*0.773$) and significant. In other words, the opinion of respondent's close colleagues' opinion regarding his/her SMC usage and respondent's opinion regarding his/her close colleagues' SMC usage have increasing effect on behavioural intention and actual usage. This shows the existence of social pressure in adopting SMC. Finally, the p-value for the relationship between intention and actual behaviour is significant ($p\text{-value}=0.000$) at 0.1% and the magnitude of the predictive effect is considerably high (coeff. = 0.773). This shows a strong predictive power of behavioural intention on

actual usage of SMC. All these conclude that TPB is in support of adoption of SMC.

TABLE III
PATH ANALYSIS TEST RESULTS

| Relationships | | | Test results | | | |
|---------------|--------|------------|--------------|--------|-------|---------------|
| Indep. | Const. | Dep | Hyp. | Coeff. | p-val | Significance* |
| | | Con st. | | | | |
| PR/E | | BT | H1 | 0.204 | 0.063 | Significant** |
| PC | | BT | H2 | 0.666 | 0.000 | Significant* |
| BTB | | BI | H3 | 0.620 | 0.000 | Significant* |
| SN | | BI | H4 | 0.225 | 0.001 | Significant* |
| BI | | AB | H5 | 0.733 | 0.000 | Significant* |

V. CONCLUSION

Present study used a survey approach for the purpose of investigating the usage of SNS for e-commerce purposes. The data was obtained by means of a questionnaire during the 2nd International Engineering Education Conference and the annual one-day meeting on issues - problems and developments - in the use of IT, organized by the Turkish Informatics Association (TIA). The extended TPB was adopted as the research model and path analysis approach was used for the analyses. Along with four conventional constructs of TPB (subjective norm, belief towards behaviour, behavioural intention and actual use) two external factors have been included in the analysis as extensions. The external factors are PC and PR/E. The results supported the predictive power of TPB and external factors for the actual behaviour of individuals in adopting SMC.

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Ibrahim Akman is a professor in the Computer Engineering Department of Atilim University (Turkey). He is also undertaking the chairmanship of the same department and is the director of the Graduate School of Natural and Applied Sciences. He has published over 100 articles in various international journals and, national and international conferences.