EXPLORATION OF COMMERCIAL USAGE OF SOCIAL MEDIA

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Abstract - In this study, adoption of Social Media for commercial purposes (SMC) has been analyzed using the extended Theory of Reasoned Action (TRA) model with two external variables. The external variables include Perceived level of Awareness (PLA) and Perceived Reliability/Enjoyment (PR/E). A survey has been conducted for this purpose. The data were systematically analyzed using path analysis approach based on univariate and bivariate least square regression. The test results indicated that TRA has significant predictive power regarding adoption of SMC. Additionally, all of the external variables showed significant influence in the research model.

Keywords - Social media, social networking sites, E-commerce, Theory of Reasoned Action, regression, path analysis.

I. INTRODUCTİON

In the last decade, social media has become highly popular and its influence on e-commerce has become extremely important due to the advantage of many-to-many spread of information (Kwahk and Ge, 2012). 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 (OTX Research, 2008; Kwahk and Ge, 2012). Jansen, et al. (2011) studied sharing behaviours in the e-commerce domain on four social networking sites (Facebook, MySpace, myYearbook and Twitter). According to their study, SNSs are among the fastest growing segment representing a valuable informa¬tion source for especially e-commerce. Additionally, SNSs have made a significant impact on marketplaces and it is believed that by augmenting online marketplaces with social networking, trust between transaction partners can be improved and user satisfaction can be increased. However, little is known about how the organizations are using SNSs to cultivate relationships with their publics. Additionally, information sharing within SNSs (e.g. Facebook, MySpace and Twitter) is not well understood since there is limited research relative to information sharing in other social media platforms (e.g. blogs) (Jansen, et al. 2011). This was also supported by Kwahk and Ge (2012) and Hunsinger, (2005). Kwahk and Ge (2012) stated that despite its growing interests, there are currently few studies on social media and how it affects e-commerce. Hunsinger (2005) pointed that there has been less research into the use of SNSs for information sharing including e-commerce purposes.

II. RESEARCH MODEL

The objective of this paper is to analyse adoption of SMC based on the research model TRA (Ajzen & Fishbein, 1980). The TRA provides a conceptual model used to assess IT usage behaviour and proved to be successful in many of the IT studies from different perspectives (see for example, Godin et al., 2008, Marandu et al., 2010). For this reason, we used TRA containing the factors "Attitude Towards Behavior (ATB)", "Subjective Norms (SN)", Behavioral Intention (BI)" and "Actual Behavior (AB)" to assess individuals' actual behaviour in adopting SMC (Figure 1). Our research model also includes two external variables since they make the theory more general as stated by Ajzen and Fishbein (1980). The external variables of this study include Perceived Reliability/Enjoyment (PR/E) and Perceived Level of Awareness (PLA).

The hypotheses were categorized according to the following empirical factors:

- External factors
- TRA constructs

External Factors

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, (2011), 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 suggested by Al-Gahtani (2009). Sundararajan (2009) mentioned the existence of relationship between communication and perceived motivation. Munguatosha, Muyinda and Lubega (2011) 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 has 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 Vankatesh (2000) and therefore, PE is a salient determinant of usage behaviour (Lee et al., 2005). According to Vankatesh (2000), 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 analytical approach of how perceived reliability and enjoyment relate to adoption of SMC. Therefore, the following hypothesis is proposed (Figure 1).

H1: Rerceived Reliability and Enjoyment has positive influence on Attitude Towards Behaviour.

Awareness has always attracted interest as one of the external factors in different TRA studies (see for example, Hosein, 2009; Davey, 2012; Gundu and Flowerday, 2013). There has been a steady increase in the attention given to the importance of awareness-building in different fields since individual factors often attributed to increased awareness (Davey, 2012). It is also important to raise awareness to promote appropriate Information Technology (ICT) usage behaviour (Gundu and Flowerday, 2013). This view was supported by Hosein (2009) that awareness regarding ICT issues dominates the usage attitude. All these may be used as the indication of the importance of the role of awareness for the assessment of actual behaviour towards adopting ICT for commercial purposes. Additionally, to the best of our knowledge, the literature inspecting SMC usage behaviour is not matured in this respect. Therefore, following hypothesis is postulated.

H2: Perceived Level of Awareness has positive influence on Attitude Towards Behaviour.

The **TRA** is an important conceptual model, which provides a framework necessary to not only predict behavior, but also to understand behavior by examining an individual's beliefs, attitudes, motivation and perception of social norms in regard to using social media (Fishbein & Ajzen, 2009). The success of TRA over the other conceptual models in studying general consumer information technologies has also been reported by Peslak et al. (2012), Wu and Liu (2007) and Kwok and Gao (2006). According to Orr, Thrush and Plaut (2013), the TRA 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. Despite these advantages of TRA, it has also been used much less frequently for business applications in social networking context (Peslak et al., 2012). Based on this backdrop and to be in parallel with the available literature, we decided to use TRA as our research model and constructed the following hypotheses accordingly.

H3: Attitude 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.

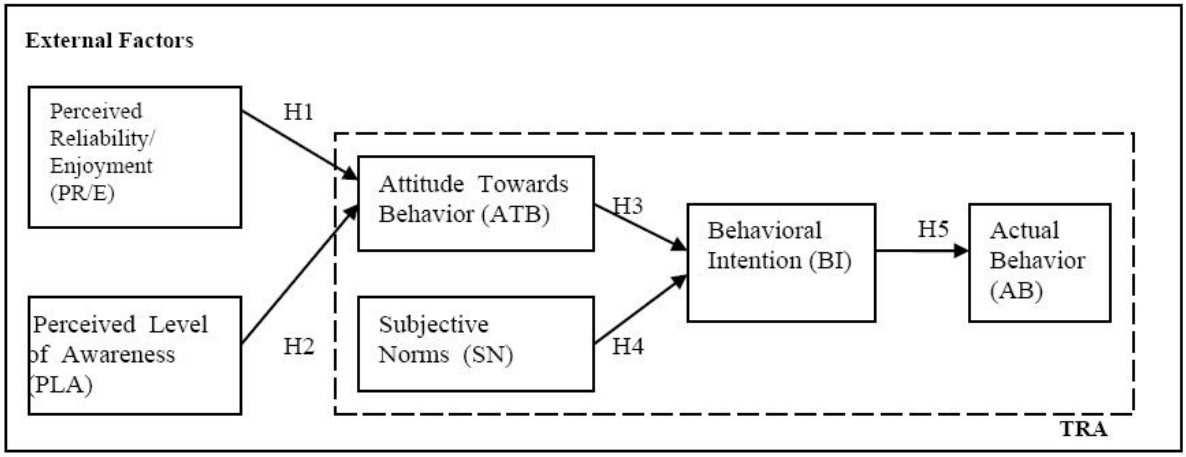


Figure 1. Research model. Boxes represent the constructs. The constructs inside dashed rectangle represents TRA, whereas others are extensions to TRA. Casual effects are given by arrows connecting boxes.

III. RESEARCH INSTRUMENT AND DATA

A survey was conducted to analyse the behaviour regarding adoption of SMC (Figure 1). The data were obtained by means of a questionnaire containing 19 research questions grouped under 7 constructs (Table 1) according to research model (Figure 1). This questionnaire also includes two descriptive variables as gender and age. 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. 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 0.754. This shows that the data exhibit high reliability (Yu, 2007).

Table 1. List of constructs and corresponding items

Construct (Variable)	Item
Gender	*What is your gender? (Male, Female)*
Age	*What is your age? (< 21; 21-30; 31-40; 41-50; >50)*
Subjective Norms (SN)	*I think that most people who are important to me expect me to use social media for commercial activities.*
	I think that most people who are important to me use social media for commercial activities.
Attitude Towards Behavior (ATB)	*I have favourable attitude towards using social media for commerce.*
	Using social media is convenient for me in commercial activities.
	Using social media is beneficial for me in commercial activities.
Behavioral Intention (BI)	*I intend to use social media for commercial activities in the future.*
	I intend to embed social media in my commercial activities on a regular basis.
Actual Behavior (AB)	*I use social media for commercial activities.*
	I use ICT (Inf. & Comm.Tech.) for commercial activities.
Perceived Reliability/enjoyment (PR/E)	*Social media is a reliable support for my commercial activities.*
	I enjoy using social media for my commercial activities.
Perceived Level of Awareess (PLA)	*In general, I believe I have awareness of social media usage for commercial activities.*
	I have awareness of social media.

IV. RESULTS

Descriptive results

According to the descriptive results, 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-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 older ones.

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 2. 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 ($p<0.01$) and H2 ($p<0.001$) are accepted. This shows that perceived reliability and enjoyment, and level of awareness have significant effect on attitude towards behaviour. This effect appears to be positive and its magnitude is 0.391 for PR/B and 0.387 for PLA. This means that increase in the perceived reliability/enjoyment and level of awareness regarding adoption of SMC results in significant increase in the attitude towards actual behaviour. On the other hand, the indirect effects of PR/E and PLA on behavioural intention are 0.04 (0.391*0.112) and 0.02 (0.387*0.046) respectively. These also show significant positive indirect effect of PR/E and PLA on individuals' actual use of SMC.

More importantly, the test results were observed to be supporting all hypotheses regarding the relationships between TRA constructs. This means, there is sufficient evidence to accept H3 ($p<0.1\%$), H4 ($p<1\%$) and H5 ($p<0.1\%$). The regression coefficients for attitude towards use and subjective norm were both obtained to be positive (0.112 and 0.046 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 0.03 (0.046*0.709) 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-value=0.000) at 0.1% and the magnitude of the predictive effect is considerably high (Coeff. = 0.709). This shows a strong predictive power of behavioural intention on actual usage of SMC. All these conclude that TRA is in support of adoption of SMC.

Table 2: Path Analysis Test results

Emp. Factor				Test results		
	Independent construct	Dependent Construct	Hyp.	Coeff.	p-val	Significance*
External Factor						
	PLA	ATU	H1	0.391	0.010	Significant**
	PR/E	ATU	H2	0.387	0.000	Significant*
TRA Const.						
	ATU	BI	H3	0.112	0.000	Significant*
	SN	BI	H4	0.046	0.009	Significant**
	BI	AU	H5	0.709	0.000	Significant*

(*) and (**) indicate statistically significant at 0.1 and 1 per cent significance levels respectively.

CONCLUSİON

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 TRA was adopted as the research model and path analysis approach was used for the analyses. Along with four conventional constructs of TRA (subjective norm, attitude towards use, behavioural intention and actual use) two external factors have been included in the analysis as extensions. The external factors are PR/E and PLA. The results supported the predictive power of TRA and external factors for the actual behaviour of individuals in adopting SMC.

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