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THE USAGE OF SOCIAL MEDIA FOR LEARNING AND TEACHING PURPOSES: AN IMPLEMENTATION OF EXTENDED THEORY OF REASONED ACTION MODEL

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ABSTRACT: The growing popularity of the social networking sites has presented new options for the development of learning and teaching environments to provide informal learning. In this study, the usage of social networking sites for the purpose of learning and teaching has been analyzed using the extended Theory of Reasoned Action (TRA) model. A survey has been conducted to analyze the behavior in regard to the acceptance of social media for learning and teaching and the results were systematically analyzed with linear univariate and multivariate regression analysis techniques to apply the path analysis approach. The test results indicated that TRA has significant predictive power regarding the usage of social media for learning and teaching purposes. Among external variables, only PRB showed significant influence on the research model.

Key words: Social media, social networking, informal learning, theory of reasoned action

INTRODUCTION

From the early 2000's social networking sites (SNS) have emerged to establish a framework for creative expression, information sharing, interoperability and collaboration on the web such as Facebook, Twitter, Wikipedia, YouTube, etc. (Dabbagh & Kitsantas, 2012; Hong & Shaoi, 2012). According to the Global Digital Statistics, 1.8 billion people who use the Internet have social media accounts, worldwide. Whereas in Turkey, 45% of the population use the Internet, and 36 million active Facebook accounts exist (İnternet ve Sosyal Medya Kullanımı İstatistikleri, 2014). Furthermore, the report published by the Ministry of Youth and Sports states that the Internet usage rises to 76% in the 18-24 age range, and the users spend an average of 2 hours and 32 minutes on the social media (T.C.Gençlik ve Spor Bakanlığı, 2013).

This enormously popular infrastructure provides new opportunities for informal learning and teaching which can take place anywhere and anytime in the world. The users of the SNS can access learning and teaching systems in a personalized manner, voluntarily, based on their interests and are eager for the continuity of learning (Bull et al., 2008).

With the growing number of social learning environments, predicting and explaining the behavior of users regarding the adoption of SNS for their learning and teaching activities have gained importance for the acceptance, development and assessment of such systems. For this purpose, in this research, a survey was conducted to investigate user's behavior towards social learning systems, and the results were analyzed using the extended Theory of Reasoned Action (TRA) model which is a widely accepted tool to measure the user acceptance of new technology (Ajzen & Fishbein, 1980). For analysis, linear univarite and multivariate regression analyis techniques to apply the path analysis approach were utilized.

The remainder of the paper is arranged as follows. The next section introduces the research model, followed by the discussion on the external factors. Then, the research instrument and data are explained. In the next section, the descriptive and test results are presented which are followed by the conclusion.

RESEARCH MODEL

The objective of this paper is to analyse the adoption of social media for learning and teaching purposes based on the conceptual framework referred to as the Theory of Reasoned Action (TRA) (Ajzen & Fishbein, 1980). The TRA was specifically developed and used to predict and explain behavior of IT usage in the literature. The model has been proven to be successful in many of the IT studies from different perspectives (Godin et al., 2008; Marandu et al., 2010)**.** For this reason, TRA has been chosen to assess individuals' actual behavior in adopting social media for learning and teaching purposes (Figure 1). As can be seen from Figure 1, the basic TRA model contains "Attitude Towards Behavior (ATB)", "Subjective Norms (SN)", Behavioral Intention (BI)", and "Actual Behavior (AB)" as its main constructs. On the other hand, Ajzen and Fishbein (1980) proposed to include external variables to make the theory more general. Additionally, as indicated by Burton-Jones and Hubona (2006), above mentioned traditional TRA constructs fully mediate the influence of external variables on usage behaviors. For this reason, we used two external constructs in our research model such as person related beliefs and level of awareness.

The present study performs a systematic analysis approach to investigate the significance of extended TRA to predict usage of social media for learning/teaching purposes. The extensions include Person Related Beliefs (PRB) and Level of Awareness (LA). The hypotheses were categorized according to the following empirical factors:

- External factors
- TRA constructs

The justification for empirical factors and their corresponding hypotheses is provided below.

External Factors

The factor belief has been studied in the context of usage of social media. In a recent study, Al-Gahtani (2011) stated that beliefs are salient factors in conceptual models and can be used to ascertain intentions. Kiraz and Ozdemir (2006) suggested that educational ideology may affect one's decisions directly or indirectly since every individual has a belief system. They indicate in reference to O'Neill (1990) that educational ideologies are related to individuals' beliefs with regard to the overall goals of education, the objectives of the school, the nature of the curriculum and instructional methods. Furthermore, it is known that perceptions about the usefulness of technology directly or indirectly affect the frequency of use of technology (Kiraz & Ozdemir, 2006). Based on this backdrop, we used Person Related Beliefs, which considers individual's perceptions about the reliability, convenience and enjoyment in using social media to construct the following hypothesis:

H1: *PRB has significant impact on ATB.*
Awareness has been studied from different perspectives in ICT literature. For example, Hossain (2009) indicated that individuals with high awareness and skills have above-average computer experience and uses the internet more than others. This view is also supported by Aladwani (2003) that awareness regarding ICT issues such as internet security and ethics dominates the usage attitude. Humaidi and Balakrishnan (2012) also studied the influence of security awareness and concluded that this kind of awareness should be one of the significant factors in behavioural assessment of ICT usage. On the other hand, according to Taherdoost and Masrom (2009), having knowledge about a technology significantly affects the intention to adopt that technology and cause the users to enjoy its benefits. Suwannatthachote (2012), who examined the relationship between teachers' awareness and using SNS behaviors also supported this view. Finally, Taherdoost et al. (2011) studied awareness from ethical point of view and pointed out the existence of serious moral dilemmas due to lack of ethical awareness. All of these may be used as the indication of the importance of awareness for the assessment of actual behaviour towards adopting ICT. Additionally, to the best of our knowledge, none of the above literature inspected the social media usage behaviour in terms of learning and teaching purposes. Therefore, the following hypothesis is postulated.
H2: *LA has significant impact on ATB.*
The TRA is an important model for measuring user behavior as stated by Lee et al. (2006) and Wu and Liu (2007) since it provides a strong fit with the overall data (Ajzen & Fishbein, 1980). Different studies also mention the success of TRA over the other conceptual models such as Theory of Planned Behaviour (TPB) and Technology Acceptance Model (TAM) in studying general consumer information technologies and knowledge

sharing (Peslak, 2012). Studies by Wu and Liu (2007) and Kwok and Gao (2006) are only two of the examples of such studies. One of the most important means of communication for many people at different ages today is social networking and Theory of Reasoned Action (TRA) has been utilized to investigate human behavior towards usage of social network sites (Peslak, et al., 2012). Based on this backdrop, we decided to use TRA for our main research model and constructed following hypotheses accordingly.

H3: *There is a significant relationship between ATB and BI.*

H4: *There is a significant relationship between SN and BI.*

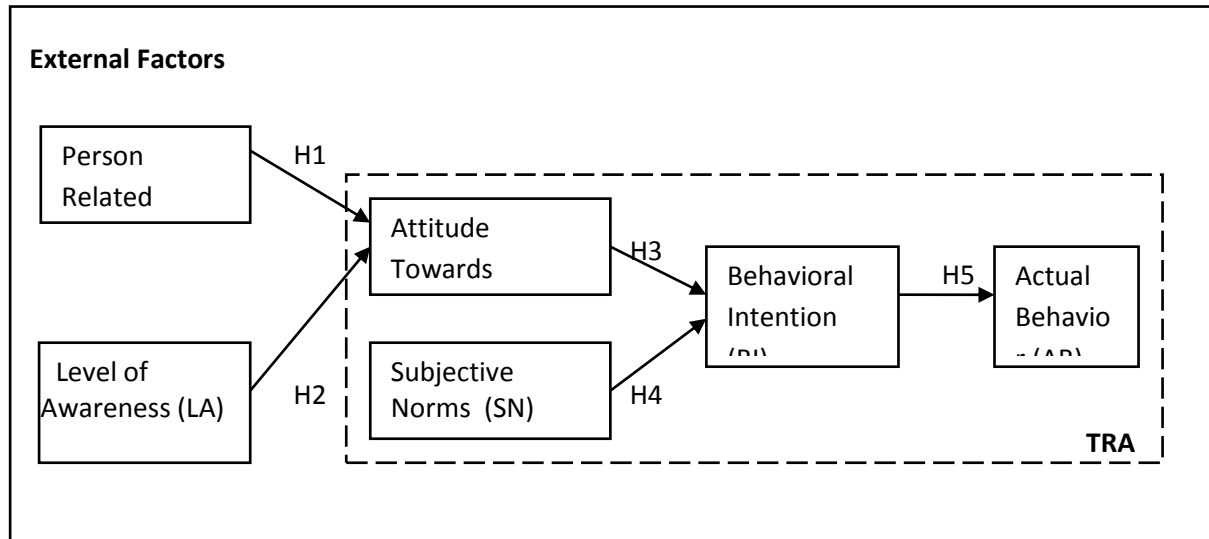H5: *There is a significant relationship between BI and AB.*

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.

RESEARCH INSTRUMENT and DATA

A survey was conducted to analyse the behaviour regarding adoption of Social Networking Sites (SNS) for learning and teaching (Figure 1). The data were obtained by means of a questionnaire containing 15 research questions grouped under 7 constructs according to TRA (Table 1). This questionnaire also included the variables gender (male, female) and age (<30, 31-40, 41-50 and >50) for descriptive analysis. Except for the descriptive variables, to be in parallel with the existing literature, 5-point Likert Scale (5=very much, 4=much, 3=moderate, 2=little, 1=very little) is used to collect data since this scale is the most widely used tool for survey-type studies (Table 1).

The data was collected during the 2nd International Engineering Education Conference, the 29th National Information Convention, and from various academicians and university students. A total of 142 completed survey questionnaires were obtained.

The linear univariate and multivariate regression analysis techniques were employed to apply Path analysis approach.

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 learning/teaching.* *I think that most people who are important to me use social media for learning/teaching.*

Attitude Towards Behavior (ATB)	*I have favourable attitude towards using social media for learning/teaching.*
	Using social media is convenient for me in learning/teaching.
	Using social media is beneficial for me in learning/teaching.
Behavioral Intention (BI)	*I intend to use social media for learning/teaching in the future.*
	I intend to embed social media in my learning/teaching activities on a regular basis.
Actual Behavior (AB)	*I use social media for learning/teaching.*
	I use ICT (Inf. & Comm.Tech.) for learning/teaching.
Person related Beliefs (PRB)	*Social media is a convenient support for my learning/teaching activities.*
	Social media is a reliable support for my learning/teaching activities.
	I enjoy using social media for my learning/teaching activities.
Level of Awareess (LA)	*In general, I believe I have awareness of social media issues.*
	I have awareness of social media.
	I have awareness of online learning/teaching.

The cronbach's alpha (Brown, 2002) was used to assess reliability of the survey data. As a result, the overall internal reliability was found to be 0.698, which shows that the data exhibit reasonably high reliability (Yu, 2007).

RESULTS

Descriptive results

According to the descriptive results given in Table 2, of the males in the sample, 6% reported their awareness to be below average. Surprisingly, this percentage for females is only 2%. However, the test results do not indicate any significant difference for gender versus SNS awareness (Chi-Square = 2.858; DF = 3; P-Value = 0.414). Most of the respondents reported that they use SNS for learning and teaching activities at average level or higher (63%). The gender diversity for adoption of SNS for learning and teaching purposes was found to be significant (Chi-Square = 9.998; DF = 4; P-Value = 0.040). However, no significant diversity was observed for age in this regard.

The age distribution showed almost equal percentage for the male groups of below and above 30 years of age (49.49% and 50.51% resp.), whereas these percentages for females are 72.09% and 17.91% respectively. It is interesting to note that age and gender are negatively correlated (r= -0.256), meaning that female respondents are generally younger than males. Age also appears to be negatively correlated with social media usage for learning and teaching (r= -0.268). This may be used as an indication of the fact that younger respondents tend to use SNS for learning and teaching more than the older ones. Another interesting note is that the correlation between gender and using SNS for learning and teaching was found to be positive (r= 0.214) meaning that younger males use SNS more frequently for learning and teaching.

Table 2. Descriptive Statistics

Variable	Number	%
Gender	142	100
Male	99	70

Female	43	30
Unknown	-	-
Age	142	100
<30	80	56
31-40	26	18
41-50	24	17
>50	12	9
SNS usage for Learning/Teaching	142	100
Very often		
Often	29	20
Average	29	20
Less	32	23
Very less	26	18
Unknown	25	18
	1	1
Awareness level on SNS issues	142	100
Very high		
High	51	36
Average	53	37
Lows	27	19
Very low	5	5
Unknown	2	1
	3	2

Test Results

The proposed hypotheses based on the research model were tested using path analysis approach. The univariate and multivariate least-squares regression analysis techniques were used for that purpose and the pertaining results are given in Figure 2 along with their perspective path coefficients.

The inspection of p-values given in parantheses above the arrows in Figure 2 indicate that there is sufficient evidence to accept H1 ($p<0.001$). This shows that person related beliefs have significant effect on attitude towards behaviour. This effect appears to be positive and its magnitude is 0.709. This means that increase in the personal beliefs regarding the convenience, reliability and enjoyment regarding SNS usage has an important effect on the attitude. The indirect effect of person related beliefs on behavioural intention is 0.11 (0.701*0.155). Interestingly, p-value for the relationship between level of awareness and ATB indicates that awareness does not influence the attitude and therefore we do not accept H2. This is probably because most of the respondents reported their SNS awareness to be higher than averege (73%).

The regression test results provide sufficient evidence to accept hypothesis H3 since p-value was found to be significant at 0.1% significance level. Similarly, we accept H4 since the corresponding p-value is 0.039 ($p<0.05$). These can be interpreted as attitude has positive predictive effect on behavioural intention for actual use of SNS for learning and teaching purposes since coefficient was found to be positive (coeff=0.155). On the other hand, interestingly, the regression coefficient for subjective norm was obtained to be negative (-0.170). The indirect effect of subjective norm on actual usage is -0.09 (-0.170*0.526) and significant. This may be interpreted as the other peoples opinion or behaviour increasingly effects an individual's behaviour on actual usage. Finally, inspection of p-value for the relationship between intention and actual behaviour is significant (p-value=0.000) at 0.1% significance level and therefore we accept H5. The magnitude of the predictive effect is observed to be 0.526. This shows a strong predictive power of behavioural intention on actual usage of SNS for learning and teaching purposes.

All these can be summarized as, an increase in the individuals PRB and ATB will increase their intention and actual usage of SNS for learning and teaching purposes.
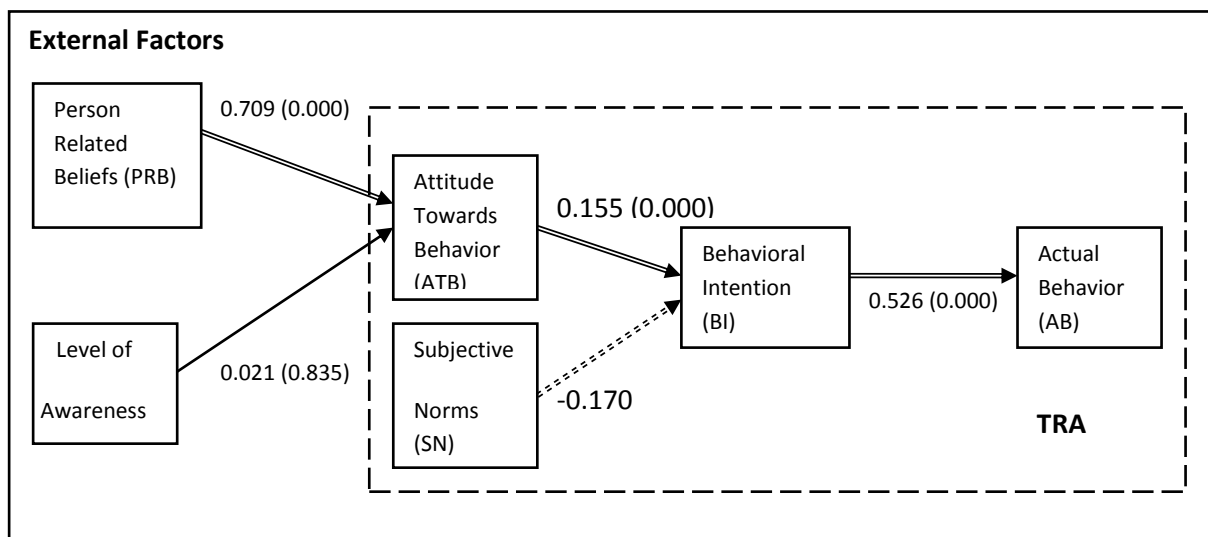
Figure 2. Test results. The path coefficients are given over the arrows. Double lines represent supported hypotheses for p<0.001, double dashed lines represent supported hypotheses for p<0.05 and single lines represent not supported.

CONCLUSION

Present study used a survey approach for the purpose of investigating the usage of SNS for learning and teaching purposes. The data was collected during the 2nd International Engineering Education Conference, the 29th National Information Convention from various academicians and university students. For the analysis, extended Theory of Reasoned action was used. Along with four traditional constructs of TRA (subjective norm, attitude towards behavior, behavioral intention and actual behavior), two external factors have been included in the analysis as extensions. The external factors are person related beliefs and level of awareness. The results supported the predicted power of TRA and external factor PRB. However, LA does not show any direct or indirect significant influence on actual use of SNS for learning and teaching purposes.

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