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Providing a Comprehensive Model of Acceptance and Development of Social Business in Iran (Case Study: Zahedan City)

[1]Ahmad Bakhtiyari Shahri and [2]Mehdi Ramezanifard
[1]Faculty of Electrical and Computer Engineering,
University of Sistan and Baluchestan, Zahedan, Iran
[2]Department of Electrical Engineering, Velayat University, Iranshahr, Iran

Abstract: The social and virtual networks have led to creation of a larger yet richer bed for communication and network structure. The increasing use of this network has prepared a proper opportunity for the nonprofit businesses and firms to attract the customers. Since social networks and virtual-based e-commerce are still in the early stages of their growth, they have not been accepted by the public, in spite of the best efforts. Therefore, the current study aimed at investigating and identifying the factors that help to the acceptance of e-commerce through virtual social networks. Since the current study is quantitative, based on the related literature, a questionnaire was designed for collecting the needed information and after investigating its validity and reliability, it was distributed to the statistical population. The Structural equation modeling and Amos Software were used for data analysis. The results indicated that "performance expectancy", "subjective norm" and "perceived usefulness" factors have a significant effect on the acceptance of Virtual network-based social commerce. This model, after implementation and confirmation of the relations can encourage the Iranian nonprofit firms and organization to promote the virtual network-based social commerce.

Key words: E-commerce, social commerce, technology acceptance, organization, virtual

INTRODUCTION

Information Technology (IT) is one of the pioneer and future-making braches of human knowledge and civilization. Although, the IT has made drastic changes in human lifestyle, the scholars speak of more fundamental changes that can change the current era into the most basic transition era in human history. In fact, the extent of the potential capabilities of information technology and its progress is more important than its current applications (Agwu and Murray, 2015).

IT has changed the way the jobs are done and for example, by proposing the "e-commerce", has led to the outbreak of a fundamental shift in the exchange of business information and needed products and services. E-commerce is one of today's most important issues that have grabbed interest of researchers and managers. The studies show that the extending and updating the social networks has led to creation of a proper ground for purposeful advertising and reduction in advertisement costs. In addition, the social networks, due to providing access to the information and the users' interests, enable the marketing firms pursue their own interests in these networks. In fact, business through social networks is a sub-category of e-commerce which includes the use of social and online media supporting the social interaction and helping the transaction of the products and services on-line (Avanzo and Pilato, 2015).

There is no exact number of social networks users in Iran, due to its filtering. But according to Janati, Iran's Minister of Culture and Islamic Guidance, there are only about 4-4.5 million active Facebook users in Iran by Feb 2015 (Knowles, 2013). A recent report conducted by Iran's Ministry of Youth and Sports, shows that 67.4% of the Iranian youth use the internet. Of which 15.3% claimed they're using internet for for social media networks.

Moreover, the studies show that the use of the internet in some stages of e-commerce such as searching a product or a service is getting increased (Avanzo and Pilato, 2015). According to the Facebook, there were 2657300 Iranian subscribers with 450053 active accounts on this network among which 37690 being updated regularly (Eslami *et al*., 2015). Therefore, using the virtual social networks such as Facebook and Tweeter can greatly help the e-commerce. The use of virtual

Corresponding Author: Ahmad BakhtiyariShahri, Faculty of Electrical and Computer Engineering, University of Sistan and Baluchestan, Zahedan, Iran

and social networks for e-commerce is still in initial phases in Iran and has not been accepted by the public, yet.

Literature review: E-commerce consists of the buying and selling of goods and services between companies, individuals, governments and other public and private sector in a way that the buying and selling via is driven by computer networks (Monga *et al*., 2015). Moreover, the social commerce is the use of the social media potentials in the area of e-commerce. Since the social commerce is a sub-category of e-commerce in which the users usually deal with the use of technology, the theories and models which explain the acceptance of technology may be consistent with the social commerce acceptance explanations.

Several models such as technology acceptance model, the developed model of technology acceptance and the consolidated Theory of Acceptance and Use of Technology have dealt with the investigation of the technology acceptance in the organizations (Maillet *et al*., 2015; Marangunic and Grania 2015). Therefore, in the followings, using the mentioned problems, the effective factors on acceptance of social networks in e-commerce will be identified.

Performance expectancy: The performance expectancy is a degree to which the ease of virtual and social networks use in the commerce has been defined. Since the ease of use of IT affects its application rate, the increase in this rate equals the increase in acceptance of social commerce, in business (Ho *et al*., 2013). The studies show that the performance expectancy can improve the quality and rate of activities, facilitate them, increase the efficiency and save the job time (Chakraborty and Rashdi, 2015). Based on the support from these studies, the following hypothesis is proposed:

- H_1: The performance expectancy affects the acceptance of social networks use in e-commerce

Execution expectancy: Execution expectancy is defined as a degree to which an individual believes that use of virtual social networks helps him in reaching profits in the e-commerce and it can be considered as a determining factor for acceptance of such commerce by the users. This aspect also involves factors such as perceived efficiency and the relative advantage which are the firmest predictions of technology acceptance (Venkatech *et al*., 2000). The studies have indicated that in a business environment, execution expectancy plays an important role in decision-making and acceptance of technology and it can directly or indirectly, affect the acceptance of e-commerce through attitudinal factors. Since, the application of the performance expectancy in the field of IT means that in the users' point of view, the IT is efficient since it helps them searching for information, quickly doing other jobs and the flexibility and efficiency of access to several services, the following hypothesis is proposed:

- H_2: The performance expectancy directly affects the acceptance of social networks use in e-commerce

Subjective norm: The subjective norm refers to the perceived social pressure to perform or failure to perform a planned behavior (Wang *et al*., 2015). The subjective norms also refer to the individual's perception on the colleagues, family members or friends' beliefs and how this perception affects his decision to perform or failure to perform a behavior. In fact, it is the total subjective approaches and norms besides the perceived behavioral control determine the individual's intention for performing a behavior. The Theory of Planned Behavior Analysis indicates that better understanding the relationship between belief structures and the intention predictors need the analysis of attitudinal beliefs (Taylor and Todd 1995).

Moreover, the research indicates that the friends, relatives, family members and university friends can affect the people's subjective norms (Chau *et al*., 2007), since the important and referred people's beliefs can be a basis for affecting the people's feelings about technology use. This internalized effect means that if a superior or friends says a particular invention can be useful, it can affect the individual's perception on that invention (Yi *et al*., 2006). Although, there is no basis for predicting the effects of groups such as family or friends on the intention of accepting the social commerce, generally all of them affect the individual's intention for acceptance of social commerce, in a way or another. In general, the subjective norm plays the role of antecedent to the acceptance of e-commerce and perceived efficiency (Moon *et al*., 2003). The subjective norm which is determining factor for the intension of use, can have different effects on the users and based on these supports, it can be assumed that:

- H_3: The subjective norm directly affects the acceptance of social networks use in ecommerce

Perceived usefulness: The perceived usefulness is referred to the extent to which an individual believes using a specific technology improves his occupational

performance. Therefore, the users' understanding about social commerce through virtual networks is different from and better than its traditional form is referred to as perceived usefulness (Davis *et al*., 1989). Currently, the high costs of software, integration, service and support are among the effective factors on acceptance of commerce development through the use of social networks by the users. Based on these previous supports, the following hypothesis is proposed:

- H_4: The perceived usefulness directly affects the acceptance of social networks use in commerce

Perceived ease of use: The perceived ease of use is the extent to which the individual believes about the difficulty of understanding or using a new invention (Venkatesh, 2000). In other words, the extent to which the individual believes using the virtual networks-based social commerce does not need much effort is referred to as perceived ease of use. Difficulty in commerce through networks such as Facebook and Tweeter depends on the user's experience of the social networks and actually it requires a specific minimum level of previous technical encounter in terms of using the virtual networks (Christ, 2007). The perceived ease of use is measured through ease of learning, clear and understandable interaction with the system and system flexibility components. Based on this, we propose the following hypothesis:

- H_5: The perceived ease of use affects the acceptance of social networks use in commerce

The theoretical framework: Considering the development backgrounds and several models of technology acceptance, the 5 effective factors as: performance expectancy, execution expectancy, subjective norm, perceived usefulness and ease of perceived use have been predicted in the social commerce acceptance basen which the following model is provided.

MATERIALS AND METHODS

In the current study, by investigation of different studies and the research, firstly the identification of effective factors on the acceptance and development of e-commerce through the social networks in Iran were addressed and then based on this, a conceptual model was proposed. Since the current study is of quantitative type, 400 questionnaires were randomly distributed between the users of virtual and social networks among which 300 questionnaires were usable. The data analysis was done through SPSS and Amos, using the two-step

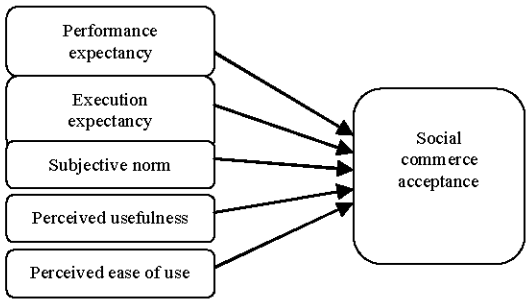

Fig. 1: Conceptual model of study

Table 1: Alpha-cronbach coefficients

Variables	Abbreviation	Initial alpha coefficient
Performance expectancy	PE	0.825
Execution expectancy	EE	0.813
Subjective norm	SN	0.765
Perceived usefulness	PU	0.777
Perceived ease of use	PEOU	0.712
Social commerce acceptance	SCA	0.765

Table 2: Factor loading matrix after remove of problematic items

Factor	EE	SN	PE	PUF	SCA
EE1	0.386	-	-	-	-
EE2	0.774	-	-	-	-
EE3	0.589	-	-	-	-
EE4	0.407	-	-	-	-
EE5	0.717	-	-	-	-
EE8	0.497	-	-	-	-
PE1	-	-	0.755	-	-
PE2	-	-	0.767	-	-
PE3	-	-	0.555	-	-
PE4	-	-	0.487	-	-
SN1	-	0.453	-	-	-
SN2	--	0.663		-	-
SN3	-	0.685	-	-	-
SN4	-	0.568	-	-	-
SN5	-	0.737	-	-	-
PUF1	-	-	-	0.504	-
PUF2	-	-	-	0.571	-
PUF3	-	-	-	0.771	-
PUF6	-	-	-	0.517	-
SCA1	-	-	-	-	0.621
SCA2	-	-	-	-	0.759
SCA3	-	-	-	-	0.644

Extraction Method: Principal Component Analysis; Rotation Method: Varimax with Kaiser Normalization.

structural equation model (Prussia *et al*., 1998). For ensuring the reliability, the alpha-Cronbach was used based on a tiny sample including 30 participants. As it is shown in Table 1, the alpha-Cronbach coefficient for the six above mentioned variables was <0.7 which is indicative of reliability of the questionnaire (Hair *et al*., 2010). Also, in order to ensure the content validity of the questionnaire, the researcher used the university professor's consultation. Finally, after applying the professor's suggestions, the questionnaire was made and its validity was confirmed by the above mentioned. Also, the face and content validity were used for validating and accreditation of the main research's variables shown in Fig. 1.

Table 3: Bartlett's test and KMO index

Bartlett's test	Value
KMO	0900
Statistics	4240.785
df	231
Sig.	0.000

Table 4: Fit the overall index measuring patterns

Index	RMSEA	CFI	GFI	IFI	CMIN/DF
Effort expectancy	0.061	0.976	0.976	0.976	2.098
Subjective norm	0.097	0.959	0.976	0.959	3.802
Performance expectancy	0.017	0.999	1.000	0.997	0.180
Perceived usefulness	0.023	0.999	.999	1.000	0.356

Table 5: Goodness-of-Fit indices of the structural model

RMSEA	GFI	CFI	TLI	IFI	CMIN/DF	p-value
0.043	0.933	0.958	0.951	0.952	11.960	0.000

Exploratory factor analysis: Exploratory factor analysis also confirms the validity of constructs. The factor loadings significantly exceeded the minimum threshold of 0.30 (Hair *et al*., 2010). Moreover, factors demonstrate sufficient convergent validity, as their loadings were all above the recommended minimum threshold of 0.35 for a sample size of 300 (Hair *et al*., 2010). The result of factor analysis shows that some items have cross-loadings with other items.

By omitting the variable "perceived ease of use", the remaining factors demonstrate sufficient discriminant validity as the correlation matrix shows most loadings were above 0.50 and there are no problematic cross-loadings. Table 2 illustrates the factor loadings using principal components analysis with varimax rotation.

Moreover, in order to obtain more precise results and explore and identify the indices, besides their relations, the exploratory factor analysis was done through Bartlett's test and KMO index. The results are provided in Table 3. The KMO index was 0.9 which is close to 1. It is indicative of the propriety of the factor analysis for identification of the structure and the factor model.

Research hypotheses evaluation: After conducting the exploratory factor analysis, the structural equations model was prepared through which the research hypotheses were evaluated. For doing this, firstly all the research variables were tested separately. The total fitness indices for the measurement patterns using Amos software are provided in Table 4.

As was mentioned, for evaluation of the final fitness model, the Fit Index (GFI), the Comparative Fit Index (CFI), root mean square error of approximation (RMSEA) and Increasing Fitness iIndex (IFI) were used (Baumgartner and Homburg, 1996). Since there is no exact threshold for these indices, the following values were provided for the proper indices:

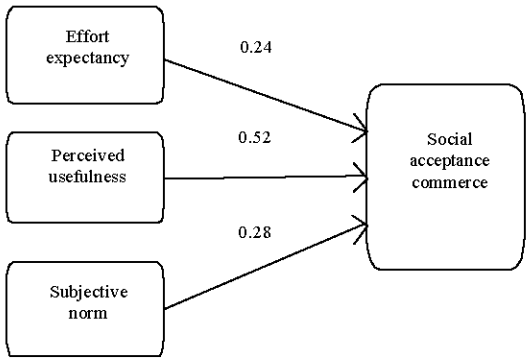

Fig. 2: Final model of social commerce acceptance

GFI, IFI, CFI>0.90, CMIN/DF<5 and RMSEA<0.08 (Kline, 2010). Regarding the values in the above table, it can be concluded that the data properly support the measurement models.

Path analysis: After the evaluation and confirmation of the measurement models, the structural equation model results for testing the hypotheses were obtained through path analysis.

As shown in Table 5, the model fit was accepted and it is ready for hypothesis analysis. Regarding the p-value, it can be concluded that this index' value is proper for the path model and in fact, it is indicative of the proper fitness of the model. Since the GFI, CFI, TLI and IFI values are >0.9, the model is properly fit. Also, the RMSEA value is indicative of the proper data support from the model.

The structural modelling approach is implemented to test the relationships among the constructs as suggested in the literature.The results of the hypothesised structural regression coefficients along with the measurement regression weights in unstandardized and standardized forms are presented in Table 6. The p-value for each regression coefficient must be less than or equal to 0.05 in order for the hypothesis not to be rejected. As shown in this table, with the exception of the path "Performance expectancy Social commerce acceptance" (0.139, p = 0.590), all other paths have regression weights that are significantly different from zero at the level of p<0.05. Therefore, it isdeleted from the model. After omitting the rejected hypotheses, the final modelfor social commerce acceptance is provided in Fig. 2. In addition, as indicated in Table 7, all the indices are indicative of proper fitness of path analysis model, so the remaining data properly support the model.

Table 6: Regression weights for structural equation model

Hypothesis	Regression coefficient	Critical value	p-value	Result
Social commerce acceptance←effort expectancy	0.240	0.165	0.041	Confirmed
Social commerce acceptance←subjective norm	0.280	0.950	0.019	Confirmed
Social commerce acceptance←performance expectancy	0.139	0.103	0.59	Rejected
Social commerce acceptance←perceived usefulness	0.520	0.124	0	Confirmed

Table 7: Model fit indices for final model

Feature	Estimation
CMIN/DF	1.542
Adjusted goodness fit index (AGFI)	0.911
Goodness Fit Index (GFI)	0.933
TLI	0.951
Comparative Fit Index (CFI)	0.958
IFI	0.959
Root Mean Square of the Residuals (RMSEA)	0.430

CONCLUSION

The results of the current study are consistent with the previous studies and to a high extent, verify and supplement other studies in this field. As, it was mentioned, the social commerce is selling products or conducting transactions and making profit with the help of social media influence. The data analysis results indicated that there is significant relationship between the perceived usefulness, performance expectancy besides subjective norm and social commerce acceptance. From the users' point of view, the perceived usefulness directly affects the social networks-based commerce acceptance. The users have understood that the commerce through virtual social networks is different and better than traditional commerce. Moreover, as was mentioned, the increase in performance expectancy led to the increase in social commerce acceptance. The users believe the social networks facilitate the communications in e-commerce and also help with the integration of business affairs. In addition, subjective norm is the third effective factor on e-commerce acceptance through the social networks. Since in a business environment, the norms play an important role in decision-making and technology acceptance, from the users' point of view, the colleagues and experts have played an important role in encouraging an individual for to use social networks in e-commerce. Moreover, the influential persons by their behavior can encourage the users to use social networks in e-commerce. The results of the current study are also in line with (Davis *et al*., 1989; Taylor and Todd, 1995; Chakraborty and Rashdi, 2015).

Also, the results of the current study indicated that for the tested environment, there are no significant relationships between the "prformance expectancy", "perceived ease of use" and social commerce acceptance. As to attain Iran's Vision 2025, the Ministry of Economic Affairs and Finance.may consider the outcome of the tested comprehensive social commerce acceptance Model. Through this study's findings, it is highly recommended that financial institutions and non-profit organization should consciously be aware that social commerce could use by social network's users in achieving electronic commerce development.

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