

The Effect of Integrating Social Plugins into e-Commerce Website: A Study on Online Consumer Behaviour

Y.Y. Chen, F.W. Lai, K.N. Goh, and S.C. Daud
Universiti Teknologi PETRONAS
Bandar Seri Iskandar
31750 Ipoh, Perak, Malaysia.

[chenyokeyie, laifongwoon, gohkimnee]@petronas.com.my, niecristal@gmail.com

ABSTRACT

The high interactivity rate in social networking sites (SNSs) has drawn the attention of many researchers and businesses. However, this has at the same time made it difficult for businesses to decide where to build their web presence - in their e-commerce website or in SNSs. Therefore, this paper explores the impact of social plugins integration into e-commerce website. An empirical study was undertaken to investigate the impact of social plugins on consumer's perceived trust, word-of-mouth (WOM) effect, and consumer's purchase intention. The result of this study shows that there is positive impact on consumer purchase intention by integrating social plugins in e-commerce website. Recommendations for future research are outlined in this paper.

Categories and Subject Descriptors

K.4.4 [Electronic Commerce]. H.5.2 [Information Interfaces and Presentation]: User Interfaces.

General Terms

Design, Reliability, Experimentation.

Keywords

Online consumer behavior, social interaction, e-commerce, perceived trust, word of mouth, purchase intention.

1. INTRODUCTION

The Social Presence Theory – the presence of interaction opportunity between real people, was introduced by Short *et al.* [1] More people are driven to spend more time over the Internet in this current technology era [2]. Indeed, active participation in SNSs today has already fused into the general society as part of the culture [3]. This acculturation is one of the major factors that contributed to the growing research interest in the study of social commerce. Social commerce is a form of e-commerce that uses social media to support interaction between business and consumers. Many businesses have been drawn to participate in SNSs due to high daily activity rate in SNSs like Facebook [4], by setting up their social business webpage where their online

consumers can receive timely feeds of their latest products or promotional information via the interactive platform provided by SNSs. These SNSs do not just help businesses disseminate marketing information more easily and effectively, they also make it possible for the online consumers to spread marketing information to family and friends within their own social networking groups easily and conveniently with just a few clicks - a powerful viral marketing advantage at no cost for businesses.

Social presence has always been very essential to e-commerce websites due to the cold and impersonal nature of the virtual environment in the online world [5, 6, 7, and 8]. Besides, people are made to be relational beings who naturally desire interaction with one another. When these two natures are related to online consumer behaviour, real human interaction and human warmth in the e-commerce website environment become crucial in order to engage the online visitors better, and to eventually convert them into consumers.

As businesses gradually realize the importance of social presence in the online business environment, many have started to integrate social presence elements into their e-commerce websites interface. For example, most of the e-commerce websites provide photos of the products they are selling in addition to short text product descriptions in order to better interact - although electronically - with the online consumers about the products they are trying to sell. Some businesses advance further to include forum, live chat as well as social plugins into their websites. Social plugins provide simple integration of the existing online platforms with the social media. It allows you to see what your friends have liked, commented on or shared on sites. Figure 1 shows examples of social plugins provided by some of the biggest social media platform [9].



Figure 1. Example of Social Plugins

This study analyses consumer behavior in e-commerce focusing on the effect of integrating social plugins into an e-commerce website. With Facebook being one of the most popular SNSs, social plugin such as Facebook 'Like' button and comments box were integrated into the web interface of an online gift shop. As mentioned earlier, many businesses has started to use social plugins to increase the engagement level with consumers and deliver specific marketing messages to the optimum target market. However, there is a need to justify if businesses can capitalize on the business benefits by integrating social plugins from successful SNSs into their business website interface.

2. CHALLENGES FOR COMPANIES USING SOCIAL COMMERCE

Due to the great business benefits associated with the SNSs which have been proven capable of increasing online sales for businesses, some, especially the small-business start-ups, mistakenly assume that it is sufficient to set up a social business webpage in SNSs as their only web presence - the presence of the business in the Internet. A few examples of such businesses that can be observed are Xuan's Bakery, Question Mark Enterprise.co and Q-Love Fashi0n Street which are all online shops set up in Facebook without their own business websites. Building web presence in SNSs alone may seem sufficient for small businesses that do not envisage growing bigger in the future, but it will raise several critical ownership-related issues for businesses that value long-term growth and online consumer engagement.

2.1 Loss of Business Data Ownership

Most data available in SNS business webpage is stored and owned by SNS. Surely it provides an extensive amount of information regarding their online consumers. Some SNSs such as Facebook provide downloadable insights on the social interaction within the social business webpage which they host. However, the business owners do not get to obtain the entire business data including its online consumers' profiles. They are not able to integrate these data with other components in its customer management system, like how they could by collecting and managing these data with a separate registration form, best done in their own e-commerce website. Moreover, consider the unknown risk of having the SNS shut down and end its social networking service, all business data will then be lost altogether. Also, the privacy of users' data raises a greater concern when businesses rely on external parties such as SNSs to store their business data and customers details [10, 11, and 12].

2.2 Lack of Control over System Reliability

The system reliability of SNSs is beyond the control of the businesses. For instance, when the SNSs server is down, businesses may be faced with the risk of losing their critical sales online if their only web presence or 'online shop' is their social business webpage in SNSs. In the case where SNSs decide to close down someday, it will also mean that the 'online shop' of the businesses has to be closed down altogether. Worst case is having other business rivals to hijack or buy over a social business webpage name directly from the SNSs without the initial owner's consent. As a result, all the engaged online consumers will also be bought over altogether by the business rival. This was

the lost faced by a German drug maker, *Merck KGaA*, when *Facebook* admitted to have mistakenly made an administrative error and transferred the ownership of its Facebook business page to its rival, *Merck & Co* [13].

2.3 Possible Weakening of Brand Reputation

A business that builds its web presence only in SNSs raises another concern of brand reputation and trustworthiness to online shoppers. It is tempting to think that a business that cannot afford or is not willing to invest for its own e-commerce website is not serious about doing real business, and thus it cannot be easily trusted. While on the other hand, when a business, which already has its own e-commerce website as its main web presence, sets up a social business webpage in SNSs as its additional web presence might not have a concern on trustworthiness of the business.

3. MOTIVATION

Previous studies have been conducted to analyze business benefits that are associated with Facebook but there is lack of studies on the beneficial business impact of Facebook social plugins towards online consumer. This has led small-business start-ups to assume that setting up their 'online shop' in SNSs is the best option - easiest and cheapest - if they decide to go online, without realizing the cost of ownership-related issues mentioned earlier. In addition, the laboratory setting of the previous studies hindered the collection of actual consumers' behaviour data, which by far can only be collected via real websites [6, 14, and 15]. On top of that, most studies conducted were selling limited variation of products or services [14, 16, and 17].

Hassanein, K. and Head, M. [14, 15] and Cyr, D. *et al* [6] has studied the impact of integrating social presence into e-commerce website interfaces through the use of socially-rich text descriptions and photos for the products or services sold online, as well as the inclusion of online chatting system and forum. So it opens doors for researchers to study on the impact of integrating other different social elements into the e-commerce website interface. To capitalize on the high popularity of SNSs nowadays, their social plugins present a new area of study: to integrate user-familiar SNSs social plugins into e-commerce website interface, instead of integrating standalone product comment boxes or content-sharing function. This is also to capitalize on the greater level of familiarity that many online users today already have with Facebook elements, to encourage more interaction within the website that uses the same Facebook social plugins such as its 'Like Button and Comment Box.

4. RESEARCH MODEL

4.1 Perceived Trust

In 2003, Riegelsberger *et al* [18] conducted a study on whether there exists the same positive effect of increased trust by adding photos in advertisements when applied in e-commerce website interface. This study shows that carefully selected photos that are relevant to the web contents do help increase online consumers' trust of the e-commerce website generally, yet it also depends on the nature of the websites [18]. Although adding relevant photos may increase trust, this resulted trust is not always necessary or beneficial to all websites. For instance, greater trust is not really

necessary for entertainment websites like 9GAG (9gag.com) in order to attract more readers and joke contributors; the purpose of adding photos into this website is only to enhance readers' amusements and enjoyments.

In addition, Harris and Goode [16], Mantymaki and Salo [8], McCole *et al.* [19], and Weisberg *et al.* [20] also conducted studies in which all concluded the importance of online consumers' trust in e-commerce websites for driving online purchasing intention. Social presence can be infused into e-commerce websites through the creative usage of socially-rich words and photos to create human warmth, and thus, trust, in the online environment [8, 14].

In the context of trust created through Facebook social plugins, when a Facebook user "Likes" or "Comments" on a product or content posted in an e-commerce website, this piece of information will appear on this user's Facebook Wall. When the user's circle of friends see the liked or shared information on the user's Wall, it will indirectly let them know that the user trusts this particular e-commerce website who owns the information that the user likes or shares. If the user Facebook friends also "Like" or "Comment" on the business information the user has "liked" or "commented" on, this will then indirectly tell how much the users circle of friends trust the contents the user has spread. The level of online consumers' perceived trust, which is strengthened by this chained trust effect, will be measured and analyzed in this study before and after integrating social plugins. Therefore, we hypothesize that:

H1: Integrating social plugins into an e-commerce website interface increases online consumers' perceived trust for the website and its contents.

4.2 Word-of-Mouth (WOM) Effect

In April 2011, a study on the impact of SNSs to organizations and their employees shows that a significant majority - as high as 74% of the studied participants - agreed that SNSs are capable to be their great 'weapons' to spread negative remarks about their organizations and harm the reputation of the organizations in cases where employees' are dissatisfied towards their organizations [21]. This result strengthens the strong influence that exists among the social networking communities through word-of-mouth (WOM). Nevertheless, it also leads to the need to justify if businesses can still preserve the benefit of viral WOM influence of the social networking communities that strongly exists

Several studies conducted earlier also presented the greater WOM opportunity and impact that SNSs can better provide for businesses as compared to traditional marketing strategies [10, 22, 23, and 24]. SNSs, especially Facebook, have been proven to have the capability of helping businesses reach more customers through their respective built-in applications for businesses [22, 23] with much lower cost via the setting up of social business webpage in SNSs.

This WOM effect works similarly like chained trust effect: a user spreads about a product or information of an e-commerce website in SNS, and the user's friends who "Like" or "Comment" on the user post about this shared business product or information will continue to spread about it, and their next level of friends will help spread the information even further. This viral marketing effect of spreading the business product or information will eventually continue to multiple levels of SNS users. Thus, the

level of this WOM effect among the online consumers in our experimental website will be another variable to be measured and analyzed, before and after the social plugin integration. Hence, we propose that:

H2: Integrating social plugins into an e-commerce website interface increases online consumers' intention to share and spread about the posts, products, programs and promotional information from the website to their family and friends.

4.3 Purchase Intention

The study conducted by Jiang *et al.* [17] has concluded that active interaction, or social presence, in the e-commerce website promotes online consumers' purchase intention, besides other factors which also affect the purchase intention, including product price and consumers' time availability for further product survey [25].

Although SNS like Facebook has very high interactivity among its users even at the rate of every second [4]. However, there is also a need to justify if this high user interactivity rate can still be preserved in the e-commerce website after integrating its social plugins into the website interface. Hence, this study also measures and analyzes the level of online consumers' purchase intention that is encouraged by the interaction between web visitors, before and after the integration of social plugins into our experiment website interface. Thus, we hypothesize that:

H3: Integrating the social plugins into an e-commerce website interface increases the online consumers' intention to purchase products from the website.

5. RESEARCH DESIGN

An empirical study was conducted to test our proposed hypotheses. Two groups of participants (Group A and Group B) were recruited. Group A consisted of 40 participants and Group B consisted of 38 students. Each participant participated in only one of the two groups. Participants were given the task of exploring the online gift shop - ToHerHeart.com. ToHerHeart.com, a young online gift shop founded and launched in 2012, has been selected to accomplish the tasks of this study. ToHerHeart.com was founded to support young people in pursuing meaningful life relationships with all the important ladies in their life - their mother, sister, partner and girl friends. Example screenshots of the study site is shown in Figure 1 and Figure 2.

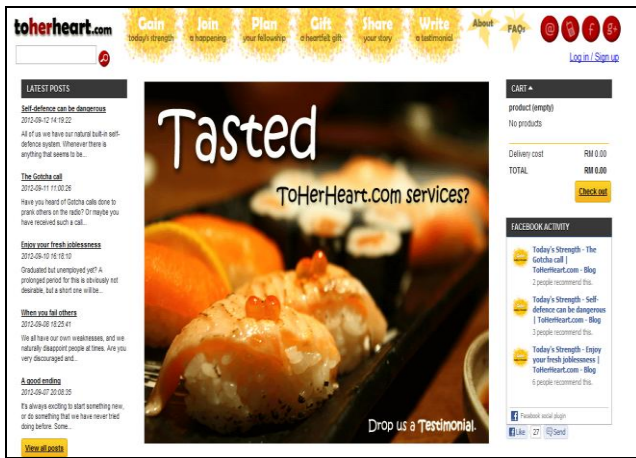


Figure 2. Home Page of ToHerHeart.com

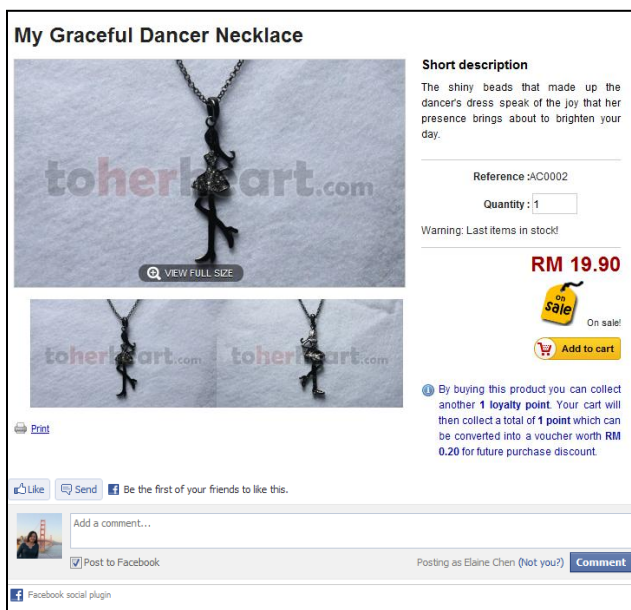


Figure 3. Product Page of ToHerHeart.com with Social Plug-ins

Participants from Group A will have to explore the website before the integration of social plugins (pre-integration). For Group B, participants will have to explore the website after its integration with social plugins (post-integration). The experiment was conducted online and participants could complete the study from any computer with Internet connection. Questionnaires were distributed to participants through email. After completion of the task, users will need to complete the questionnaire about their experiences on the online gift shop they visited.

6. RESULTS AND DISCUSSIONS

Questionnaires were distributed to all participants of the study and were returned after two weeks. The participants were asked to state their level of agreement or disagreement with each statement provided in the questionnaire. A five-point Likert scale was used and the breakdowns of the 5 points indication are:

- 1 - strongly disagree
- 2 - disagree
- 3 - neutral
- 4 - agree
- 5 - strongly agree.

Table 1 shows the mean score for pre- and post-integration of social plugins in ToHerHeart.com.

Table 1. Mean Score for Pre and Post-integration

Variables	Statement	Mean (Pre-integration)	Mean (Post-integration)
Perceived Trust (H1)	I trust the information presented in ToHerHeart.com	4.10	4.05
	I feel the owner of ToHerHeart.com will provide me with good service	4.13	4.16
	I want to be notified when ToHerHeart.com launches new gifts, products and programs	3.34	3.58
	I have confidence in the owner's integrity and I will register as member at ToHerHeart.com	3.74	3.82
Word of Mouth (H2)	I will share and introduce ToHerHeart.com to my family and friends	3.74	3.89
	I will share with my family and friends about the interesting products and services from ToHerHeart.com	3.66	3.87
Purchase Intention (H3)	I will consider buying from ToHerHeart.com when I want to find gifts next time	3.71	3.82
	I will consider sharing my relationship struggles with the Fellowship Mentor at ToHerHeart.com	2.71	3.39

Based on the mean values showed in Table 1, we can see that most of the mean values were less than 4.0. Figure 3 summarizes the mean score for (H1) perceived trust, (H2) WOM effect, and (H3) purchase intention, comparing the data collected from both the pre-integration and post-integration online surveys. According to the mean score comparison result, for H1 and H2, the mean scores increased slightly for both, perceived trust and the WOM effect among them after the integration of social plugins, but it remained in the same range between “Neutral” and “Agree”. As for H3, the integration of social plugins into the website interface has increased the mean score of online consumers’ purchase intention relatively more than that of H1 and H2, but still remained in the range between “Neutral” and “Agree”.

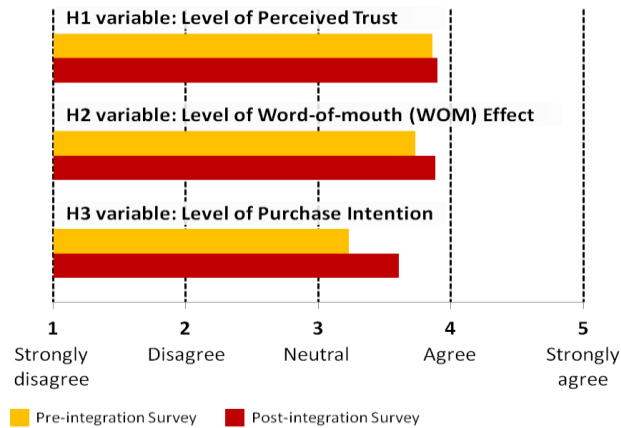


Figure 3. Comparison of pre and post-integration

Further analysis on the significance of the difference between the mean values between pre and post-integration was conducted using t-test. As shown in Table 2 and 3, the t-test conducted has shown both perceived trust and WOM is not statistically significant since both p-values are greater than 0.05. However, the p-values of purchase intention have shown to be significant ($p < 0.01$) as shown in Table 4. This indicates that the integration of social plugins in an e-commerce website has more influential impact on consumer’s purchase intention than perceived trust and WOM effect. Table 5 summarizes the results of hypothesis testing.

The increase in the mean score of online consumers’ purchase intention in ToHerHeart.com after integrating social plugins into the website interface was considered statistically significant, but it still did not reach the “Agree” scale on the five-point Likert Scale as shown in Figure 3. This could be caused by its initially low mean score during the pre-integration survey, which was very near to “Neutral” leaving a huge gap before it could reach “Agree” even after the integration of social plugins into the website. In addition, the high daily interactivity rate in SNSs may also be a value-chain result of the synergized impact by interactively blending together SNSs communities’ photos, their text-based contents, and all the social elements in the SNSs.

Table 2. Comparative Analysis of Perceived Trust between Group A and Group B

Group	N	Mean	SD	SEM	p-value
A	40	3.86	0.97	0.08	Two-tailed
B	38	3.90	0.93	0.08	p-value = 0.72

*Significant at 0.05 level

Table 3. Comparative Analysis of WOM between Group A and Group B

Group	N	Mean	SD	SEM	p-value
A	40	3.73	0.90	0.10	Two-tailed
B	38	3.88	0.83	0.10	p-value = 0.26

*Significant at 0.05 level

Table 4. Comparative Analysis of Purchase Intention between Group A and Group B

Group	N	Mean	SD	SEM	p-value
A	40	3.23	1.10	0.12	Two-tailed
B	38	3.61	0.97	0.11	p-value = 0.02

*Significant at 0.05 level

Table 5. Results of Hypothesis Testing

Hypothesis	Variable	p-value	Supported
H1	Perceived Trust	0.72	No
H2	Word of Mouth	0.26	No
H3	Purchase Intention	0.02	Yes

7. CONCLUSIONS AND FUTURE WORKS

In this study, we investigated the effects of social plugins on perceived trust, word of mouth effect and purchase intention in an e-commerce website. From the results obtained, the integration of social plugins has moderately increased the online consumers’ perceived trust, WOM effect among them, and their purchase intention in ToHerHeart.com. However, based on our statistical analysis, social plugins has positive impact only on purchase intention.

From a practical viewpoint, building business web presence solely in SNSs as compared to building business web presence in an e-commerce website each has their own advantages and disadvantages. Therefore, businesses can optimize the advantages from both options of building business web presence and minimize the disadvantages from both by first, building their own e-commerce websites, and at the same time setting up their social business webpage in the SNSs to enhance social engagement with their online consumers.

Several interesting research topics can be expanded from this study. Firstly, since this study covered only the integration of social plugins from Facebook into the e-commerce website interface, the integration of plugins from other SNSs, such as Google Plus (plus.google.com) and LinkedIn (www.linkedin.com) where each caters for different groups of market respectively, can be a valuable research area to justify if there exist differences in the impact on online consumers’ behavior.

Secondly, the impact of integrating social plugins into the website that has no other social elements, such as socially-rich photos or text descriptions, can be another valuable research topic to analyze. This will reflect the actual impact that can be contributed by the integration of social plugins into e-commerce website interface alone, and at the same time justifying the existence of synergized social impact by blending all the different social elements together creatively in an e-commerce website interface.

Next, research can be expanded across different subjects of study such as websites of different business nature, each selling specialized products. Last but not least, a study can be done on the seriousness of ownership-related issues associated with businesses solely setting up social business webpage in SNSs without having own business website, as mentioned earlier in this paper. The outcome of this study will further equip new businesses if these ownership-related issues are really critical and whether it is truly worthwhile for businesses to invest in an e-commerce websites regardless of whether or not the businesses have set up a social business webpage in SNSs.

8. REFERENCES

- [1] Short, J., Williams, E., & Christie, B. (1976). *The Social Psychology of Telecommunications*. London: Wiley.
- [2] Budden, C. B., Anthony, J. F., Budden, M. C., & Jones, M. A. (2007, Third Quarter). Managing The Evolution Of A Revolution: Marketing Implications Of Internet Media Usage Among College Students. *College Teaching Methods & Style Journal*, 3(3), 5-10.
- [3] Pookulangara, S. & Koesler, K. (2011). Cultural influence on consumers' usage of social networks and its impact on online purchase intentions. *Journal of Retailing and Consumer Services*, 18, 348-354.
- [4] The Business of Facebook. (2011, April). *Fast Company*, (154), 128.
- [5] Aragon, S. R. (2003, Winter). Creating Social Presence in Online Environments. *New Directions For Adult And Continuing Education*, 100.
- [6] Cyr, D., Hassanein, K., Head, M., & Ivanov, A. (2006, September). The role of social presence in establishing loyalty in e-Service environments. *Interacting with Computers*, 19(2007), 43-56. doi: 10.1016/j.intcom.2006.07.010
- [7] Gao, F. (2011). *A Study of Online Purchase Intention: Based on the Perspective of Customer Trust*. China: School of Business, Jiangnan University.
- [8] Mantymaki, M. & Salo, J. (2009). Trust, Social Presence and Customer Loyalty in Social Virtual Worlds. *23rd Bled eConference eTrust*, June 20-23, 2010. Bled, Slovenia.
- [9] Cvijickl, I.P., Michahelles, F. and Fleisch, E. (2011). Social Media Integration into the GS1 Framework, Auto-ID Labs White Paper.
- [10] Kaplan, A. M. & Haenlein, M. (2009). Users of the world, unite! The challenges and opportunities of Social Media. *Business Horizons*, (2010), 53, 59-68.
- [11] O'Reilly, T. (2007, March). What Is Web 2.0: Design Patterns and Business Models for the Next Generation of Software. *Munich Personal RePEc Archive* (No. 4578).
- [12] Shuen, A. (2008, April). *Web 2.0: A Strategy Guide - Business thinking and strategies behind successful Web 2.0 implementations*. Canada: O'Reilly Media, Inc.
- [13] Merck KGaA v. Facebook Inc (2011), New York State Supreme Court, New York County, No. 11113215/2011.
- [14] Hassanein, K. & Head, M., (2006). The impact of infusing social presence in the web interface: An investigation across product types. *International Journal of Electronic Commerce*, 10(2), 31-55.
- [15] Hassanein, K. & Head, M. (2007). Manipulating perceived social presence through the web interface and its impact on attitude towards online shopping. *International Journal of Human-Computer Studies*, 65(2007), 689-708. doi: 10.1016/j.ijhcs.2006.11.018
- [16] Harris, L. C. & Goode, M. M. H. (2010). Online servicescapes, trust, and purchase intentions. *Journal of Services Marketing*, 24/3(2010), 230-242. doi: 10.1108/08876041011040631
- [17] Jiang, Z., Chan, J., Tan, B. C. Y., & Chua, W. S. (2010, January). Effects of Interactivity on Website Involvement and Purchase Intention. *Journal of the Association for Information Systems*, 11(1), 34-59.
- [18] Riegelsberger, J., Sasse, M. A., & McCarthy, J. D. (2003, April). *Shiny Happy People Building Trust? Photos on e-Commerce Websites and Consumer Trust*. London, UK: University College London.
- [19] McCole, P., Ramsey, E., & Williams, J. (2010). Trust considerations on attitudes towards online purchasing: The moderating effect of privacy and security concerns. *Journal of Business Research*, 63, 1018-1024.
- [20] Weisberg, J., Te'eni, D., & Arman, L. (2011). Past purchase and intention to purchase in e-commerce: The mediation of social presence and trust. *Internet Research*, 21(1), 82-96. doi: 10.1108/106622411111104893
- [21] Baker, D., Buoni, N., Fee, M., & Vitale, C. (2011, April). *Social Networking and Its Effects on Companies and Their Employees*.
- [22] Dholakia, U. M. & Durham, E. (2010). One Café Chain's Facebook Experiment. *Harvard Business Review* (March 2010).
- [23] Enders, A., Hungenberg, H., Denker, H.-P., & Mauch, S. (2008). The long tail of social networking. Revenue models of social networking sites. *European Management Journal*, 26, 199-211.
- [24] Trusov, M., Bucklin, R. E., & Pauwels, K. (2009, September). Effects of Word-of-Mouth Versus Traditional Marketing: Findings from an Internet Social Networking Site. *Journal of Marketing*, 73.
- [25] Kukar-Kinney, M. & Close, A. G. (2009). The determinants of consumers' online shopping cart abandonment. *Journal of the Academic Marketing Science*, 38(2010), 240-250. doi: 10.1007/s11747-009-0141-5