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Technology, Trust and Facilitating Environment: Three Cornerstones of Successful E-transactions

Dr. Mamta Sareen

Associate Professor

Department of Computer Science, Kirori Mal College, University of Delhi, India

Abstract: The rapid growth in the electronic commerce over the Internet has fuelled predictions and speculations about what makes an e-commerce web site effective. Technology, being the backbone of web based online shopping application, has a potential to play a major role in overcoming the issues users face while purchasing online which dissuades them from making successful transactions. The growth of online shopping is dependent on the spread and growth of internet usage and improvement in hardware and software technologies where more and more content can be delivered to the users at a much faster pace than before. Specifically, the present study examined the relative importance of technical, trusting, and facilitating environment in influencing consumer intention to purchase online. For this, a convenience sampling has been collected empirically using survey questionnaires method from various part of India in early 2014. The findings revealed that sites embedded with advanced technical environment and having trusting and facilitating environment help enhancing customers' buying intention. The results of the study will be useful to e-retailers and e-marketers to enhance their site preference and their customer base.

Keywords: Facilitating environment, Intention to transact, online shopping, Technical environment, trusting environment.

1. INTRODUCTION

India has experienced a spurt in technology acceptance behavior with high penetration rate of internet. With this, India is seeing a remarkable transformation in the area of trading and commerce. Changing lifestyle of Indian urban population; the convenience of online shopping in the comforts of one's home etc. might be the reasons for this growing rate of online shopping adoption [1]. Despite obvious benefits, customers are unwilling due to limitations of e-interface and low perceived security measures [2]. Researchers and e-retailers alike are looking for the answer to questions like what factors influence customer's intention to purchase online. Why consumers perceive higher risk buying online? What technical infrastructure is required to simulate virtual shopping environment to offline shopping environment? How site functionality can be modified facilitate customers with greater efficacy and convenience?

Understanding the relative importance of online shopping environment with respect to technology, trust and facilitating conditions helps e-retailers in formalizing better company strategies in order to increasing customer visits, and successful transactions. Keeping all this in mind the present study makes an attempt to better understand customer expectation and analyzing the effect of enhancing online shopping environment from the angle of technical infrastructure, trust building factors and facilitating conditions on customers' intention to transact online, especially in developing country like India. We also attempt to formulate and statistically validate an integrated model of customers' intention to transact online.

II. LITERATURE REVIEW

This section reviews related research on online purchasing intention of Indians. To support the background for this study, literature review of previous work done in the related field is very important to gain insight knowledge about the real situation of online purchasing behavior and the progress made so far by the researchers to understand that well.

A. *Intention to Transact*

The satisfaction of previous experience has been used as an influencing factor of online customer's buying behavior [3, 4]. Customers judge their self efficacy towards the shopping environment to which they are exposed. Hence, their intention to purchase online is often influenced by their willingness to perform a specified behavior [5] and by their experience with online shopping. The literature also indicates perceived ease of Internet use [6]; technical infrastructure facilitated on the site [7]; effort expectancy [8, 9]; trust in the firm's competence [10], perceived risks of online environment [11], strong privacy and security statement provided by the website [12,10], as some of the elements that have impact on customer's intention to purchase online. Keeping in view of the above, the authors have identified technical environment, trusting environment and facilitating environment as core attributes that have the potential to influence customer's intention to transact online which have been unexplored to their best knowledge.

B. *Technological Environment*

Researchers have often laid emphasis on the technical environment offered by the web-store influencing customers' intention to purchase online. In a previous paper, we have noted that the technical environment of the website provides an assurance to the customer that significant measures have been taken so as to offer features that reduce efforts and time, thereby increasing customer's efficiency [7]. Website ease of use helps customers with easy access to information they are looking for and also enhances the communication over user interfaces between the site and the customer [13, 14]. Researchers have also identified impact of features like convenience, and site design [15, 16]; quality information and visual cues of the site on customer's intention to purchase online [17]. Till virtual reality and holographic interfaces become common place, the 2D screen is the only interface available to the e-retailer. As a result, online environment limits a customer's perception of the products [18]. Emerging technologies like recommender systems, 3D image processing etc. are designed to overcome these constraints and give users a strong sense of virtual presence. Previous studies have analyzed visual cues from the perspective of aesthetic layout of the site [19, 20, 9]; appeal of the user interface design [21]; a proper allocation of space for text and graphic [22]; and effective presentation and visualization of images [9]. On the basis of the above discussion we propose technological environment as one of the core antecedent of customer's intention to transact online, from the perspective of navigation, accessibility, visual cues, and information quality. To summarize, we propose and have subsequently tested the following hypothesis *H1: Technical Environment associated with online shopping environment has the potential to influence customer's intention to transact online.*

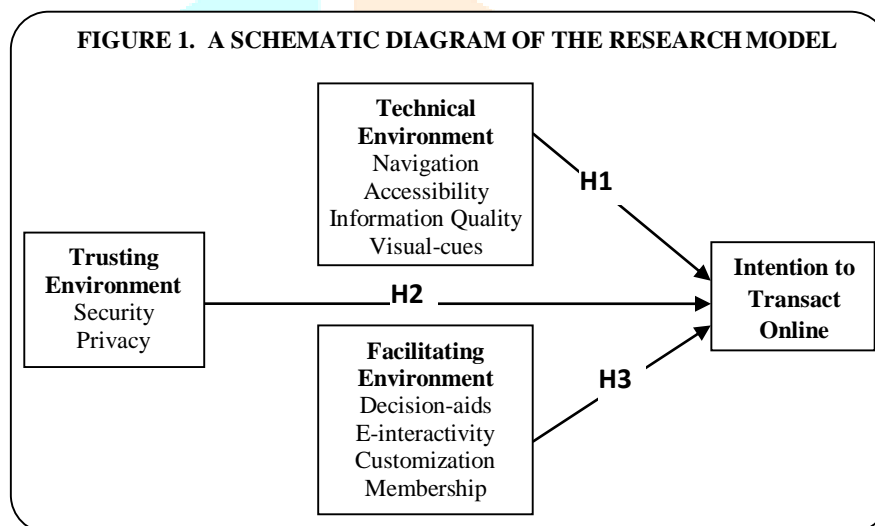
C. *Trusting Environment*

Trusting environment can be viewed as the degree of confidence and sense of security that customers experience from online shopping environment [23], so that they can make transaction online and share their sensitive information comfortably. Since customers lack direct contact with the retailer or sales personnel, they perceive a higher risk in sharing sensitive personal financial information, such as credit card numbers, in order to complete the transaction [4]. Therefore, embedding a trusting environment is of prime importance to e-retailers [24, 25, 26, 27] and has gained interest of many researchers also. Bélanger et al., found security to be one of the major concerns cited by the respondents and stated that these concerns need to be taken care by the technical protection measures like encryption and authentication [28]. Researchers have also identified a positive relationship between customer's trust and intentions to purchase online [29] from the perspective of ability, integrity, and benevolence [30]; security, privacy, brand name, good online experience [31]; quality of information [32]; site information such as address and contact details. Following the above discussion, the authors have identified the importance of trusting environment from the perspective of authentication and authorization mechanism, trusted third parties, security and privacy policies as one of the major antecedent of customers' intention to purchase online. Taking these factors, the authors define the second hypothesis of the current work as *H2: Trusting Environment associated with online shopping environment has the potential to influence customer's intention to transact online.*

D. Facilitating Environment

The user interface of an e-retail website must be a balance between providing the required variety of the primary product in question and the related ancillary products. It must not seem to the user that time is being wasted in evaluating too many product varieties [33]. Decision aids such as product comparisons, peer-consumer reviews and recommendations of product combinations help in smoother decision making for the customer [34]. Websites offering static information such as frequently asked questions (FAQs) and services such as live chats tend to have a higher success rate in facilitating purchase orders from customers. With tremendous increase in the sheer number of e-commerce websites in recent times, e-retailers must endeavor to provide the highest level of e-interactivity. All these features together contribute towards a congenial facilitating environment. A major difference between traditional retailing and online selling lies in the extent of interaction that a customer can have with the merchant. In order to compete effectively with conventional retailers, online merchants have to offer electronic interactivity in order to attract customers [35]. An e-commerce website also has the burden of building a good relationship with the customer over the e-interface using its effectiveness for content delivery and usability [18]. An effective B2C web site should be able to accommodate different connecting capacities, depending on the choice of user, in order to reduce delays and waiting times. Therefore our final hypothesis in the current work is *H3: Facilitating Environment associated with online shopping environment has the potential to influence customer's intention to transact online.*

We summarize our three hypotheses that affect intention to transact online in Figure 1



To collect customers' perception to purchase online, a survey to identify factors influencing customer's intention to transact online was administered in the beginning of the year 2014. Prior to the final distribution, the questionnaire was pilot-tested with 25 respondents having high level of adoption of online shopping. Based on their feedback, the questionnaire was updated. Both online and offline methods were used to collect the responses from target group belonging to different age groups and of different educational background from various states of India. The questionnaire instrument consisted of 3 sections. The first section was designed to obtain online customers' demographic profile. The second section was designed to ask respondents to rate attributes having potential to influence online customers loyalty on a ten-point Likert scale ranging from 'strongly disagree/absolutely untrue (1)' to 'strongly agree/absolutely true (10)'. The last section consisted of overall perception of the respondents regarding the major factors under which the questions in section two were grouped.

In total about 250 responses were received and of which around 207 responses were judged to be complete and fit for further analysis. Hence, the response rate was about 80 percent. Collected data was analyzed using Statistical Package for Social Science (SPSS) Version 20.0. Firstly the reliability test of scales was performed using Cronbach's alpha test. Then the linear regression model was used in order to study the significance of independent variables influencing dependent variable i.e. intention to transact online.

IV.RELIABILITY

Reliability can be defined as the degree to which a person or system perform consistently in routine as well as unexpected circumstances. Reliability of the proposed model was tested by calculating the coefficients Alpha for the constructs of intention to transact (see Table 1) for a complete list of reliability coefficients). As can be seen from Table 1, the composite reliability score for each of the constructs was found to be above 0.70 which is considered to be the acceptable critical value for reliability [36]. Further a composite reliability of all the factors was also calculated and was found to be 0.899.

Table 1. Reliability of measurement items

Constructs	Cronbach's alpha (>0.7)
Intention to transact	0.848
Technical environment	0.829
Trusting environment	0.842
Facilitating environment	0.783
Composite	0.899

V.RESULTS AND INTERPRETATIONS

The purpose of regression analysis is to investigate the relationship between the independent variables and the dependent variable and to test the fitness of the model so developed. As explained in the above section, the model described customer's intention to transact to be dependent on technical environment, trusting environment, and facilitating environment of the site. Hence, the results of the data analysis primarily relate to factors influencing customer's intention to transact online. The results with respect to the hypothesis (stated above) tested have been discussed in the current section.

In order to identify various factors that have significant influence on customers' intention to transact online, Technical environment, Trusting environment and Facilitating environment were regressed against the dependent variable intention to transact as perceived by the respondents. According to the results (shown in table 2) obtained, all the factors were found to be statistically significant ($R^2=0.443$). The adjusted R^2 obtained is 0.434 indicating that around 43.4% of the variation in customer's intention to transact online could be collectively explained by the identified factors. This is often statistically accepted for real time data. Further, F-test outcome is 53.247 (sig=0.000) obtained is highly significant, so the model fits the data.

The results clearly imply that technological factors contribute most significantly towards positively influencing customer's intention to transact online. Technological factors, as perceived by the authors, are based on features like information quality, quick accessibility, adequate navigation mechanism and pleasing visualization. Hence these elements indicate technological support of the website which contributes towards enhancing customers' efficiency to work on website and thus influence them to make purchases. Trust building factors embedded on the website was found to be next significant contributor to influence customers' intention to transact online. This indicates that a customer's intention to transact online is often related to membership facilities and security and trust building measure like TTP's, authentication and authorization mechanism, data integrity, security and privacy policies or mechanism to ensure safely of personal and sensitive data, notifications and check policies at different transaction stages like order placed, transaction succeed, order dispatch and so on. Thus if the customer is able to gain trust in the website as a whole then he/she is more likely to make purchases online. The functionality of the website was also found to be contributing towards influencing customers' decision to transact online. As per the authors, the functionality measures include recommender system, customization options, comparative analysis, and maintenance and display of viewed history. This indicates that the user intention to purchase online is influenced by his/ her working experience with the site. Thus the results support hypothesis H1, H2 and H3.

Table 2. Coefficients[‡] of regression analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	6.796	.097		70.181	.000
Trusting Environment	.410	.137	.223	2.999	.003
Technical Environment	.565	.144	.308	3.926	.000
Facilitating Environment	.410	.144	.223	2.839	.005

[‡]Dependent Variable: Intention to transact

VI.CONCLUSION

In an attempt to identify the significance of customer's intention to purchase online, contribution of factors namely technical environment, trusting environment and facilitating environment (in the specified order) were hypothesized. The analysis of the data collected empirically validates the proposed research model. The results so obtained after in depth analysis of the proposed model indicates a positive relation between dependent variable customers' intention to transact online and independent variables technical environment, trusting environment and facilitating environment. It is found that if the website ensures customers with technically enhanced environment, then the probability of them purchasing online will increase significantly. A customer is found to be more concerned about the quality of the information with respect to product, site or transaction process available on the site. They are also found to be attracted towards aesthetic layout of the site and appealing user interface design. Their ease with respect to navigation and accessibility of the site also impacts their decision to stay on the site and make purchases.

During the survey, the customers were found to be concerned about features like customization of the look and feel of the website, tools to save and track history and create wish list so that they can make final transactions at some future time. Customers were also found to be influenced by ease in searching criteria like discounted goods, product categorizations etc. A customer who experiences better functionality in a site is more likely to persist using it and also make purchases.

The results of this study have also identified the importance of trusting environment of the web-site on consumers' buying behavior. The virtual environment of online shopping and lack of face to face interaction between customers and e-retailer leads to an increase in perceived risk among customers while sharing their personal and confidential information over the site during the shopping transactions. Hence, it became more difficult for the customers to trust the e-retailers and essential for e-retailers to incorporate features that enhance trust building factors over the website.

A couple of limitations of this study suggest potential research opportunities. The proposed model is empirically tested only in broad perspective of technological infrastructure, but social-cultural beliefs also play a major role in influencing customers' decision. Therefore, analyzing the customer behavioral intention from the perspective or socio-cultural beliefs could result in fruitful research in future. The impact of demographic profile of the respondent like age, sex and occupation are also considered to be significant to their buying behavior. Regressing customers' intention to purchase online and its antecedents with respect to different demographic profiles will help e-retailers to get clearer picture of the actual target customers.

REFERENCES

- [1] Verhoef P.C., Langerak F., 2001, Possible determinants of consumers' adoption of electronic grocery shopping in the Netherlands, *Journal of Retailing and Consumer Services*, vol. 8 (5), pp. 275–285.
- [2] Reichheld F.F., Scheffer P., 2000, E-loyalty: your secret weapon on the web, *Harvard Business Review*, vol. 78 (4) pp. 105–113.
- [3] Wixom, B.H.; Todd, P.A., 2005, A theoretical integration of user satisfaction and technology acceptance, *Information Systems Research*, vol. 16, pp. 85–102.
- [4] Jain A. and Sareen M., 2015, Antecedents of e-loyalty towards online shopping: An empirical analysis of Indian online customers, *International Journal of Research in IT & Management*.
- [5] Salisbury W.D., Pearson R.A., Pearson A.W., Miller D.W., 2001, Perceived security and worldwide web purchase intention, *Industrial Management & Data Systems*, vol. 101(4), pp. 165-177.
- [6] O'Cass, A.; Fenech, T., 2003, Web retailing adoption: Exploring the nature of internet users web retailing behaviour, *Journal of retailing and Consumer Services*, vol. 10, pp. 81- 94.
- [7] Jain A. and Sareen M., 2014, Technical Assurance to Online Customers: Key Determinant of Online Purchasing Intention *International Journal of Recent Trends in Electrical & Electronics Engg*, vol.4(1), pp. 8-19.
- [8] Gefen D. and Straub D. W., 2000, The Relative Importance of Perceived Ease of Use in IS Adoption: A Study of E-Commerce Adoption, *Journal of the Association for Information Systems*, vol. 1(8), pp. 1- 28.
- [9] Sareen M. And Jain A., 2014, The role of social influence and consumer's effort expectancy on online shopping: an empirical study of India, *International journal of management research and business strategies*, vol. 3(1), pp. 139-158.
- [10] Schlosser A. E., White T. B. and Lloyd S. M., 2006, Converting Web Site Visitors into Buyers: How Web Site Investment Increases Consumer Trusting Beliefs and Online Purchase Intentions, *American Marketing Association*, vol. 70, pp. 133-148.
- [11] Lwin M. O. and Williams J. D., 2006, How consumers respond to warranties in Internet retailing, *The Journal of Consumer Affairs*, vol. 40(2), pp. 236-260.
- [12] Jarvelainen J., 2007, Online Purchase Intentions: An Empirical Testing of a Multiple-Theory Model, *Journal of Organizational Computing*, vol. 17(1), pp. 53-74.
- [13] Corritore C., Kracher B. and Wiedenbeck S., 2003, On-line trust: evolving themes, a model, *International Journal of Human-Computer Studies*, vol. 58, pp. 737-758.
- [14] Pearson J. M., Pearson A. and Green D., 2007, Determining the importance of key criteria in web usability, *Management Research News*, vol. 30(11), pp. 816-828.
- [15] Szymanski David M. and Richard T. Hise, 2000, E-satisfaction: An initial examination, *Journal of Retailing*, vol. 76(3), pp. 309-322.
- [16] Jayawardhena C. and Foley P., 2000, Changes in the banking sector – the case of Internet banking in the UK, *Internet Research*, vol. 10(1), pp.19-31
- [17] Eroglu S. A., Machleit K. A. and Davis L. M., 2001, Atmospheric qualities of online retailing a conceptual model and implications, *Psychology and Marketing*, vol. 20(2), pp. 139-150.
- [18] Jiang, Z. and Benbasat, I., 2003, The effect of interactivity and vividness of functional control on changing web consumers' attitude, *ICIS 2003 proceedings*, pp. 93.
- [19] Turban E., Lee J., King D. and Chung H. M., 2002, *Electronic Commerce: A Managerial Perspective*, Prentice-Hall, Inc.
- [20] Than C. R. and Grandon E., 2002, An exploratory examination of factors affecting online sales, *Journal of Computer Information Systems*, vol. 42(3), pp. 87- 93.
- [21] Kin J. and Lee J., 2002, Critical design factors for successful e-commerce systems, *Behaviour and Information Technology*, vol. 21(3), pp. 185-189.
- [22] Ronan de Kervenoael D., Selcen O. and Christophe Bisson, 2008, January 7th International Congress, *Marketing Trend*, Venice, pp. 17-19.
- [23] Gefen F., Karahanna F., and Straub D. W., 2003, Inexperience and experience with online stores: The importance of TAM and trust, *IEEE transaction on engineering management*, vol. 50, pp. 307- 321.
- [24] McKnight, D. H., and Chervany, N. L., 2001, What trust means in e-commerce customer relationships: An interdisciplinary conceptual typology, *International Journal of Electronic Commerce*, vol. 6(2), pp. 35-39.
- [25] Balasubramanian, S., Konana, P., and Meron, N. M., 2003, Customer satisfaction in virtual environment: A study of online investing, *Management Science*, vol. 49(7), pp. 871-889.
- [26] Grabner-Krauter S., and Kaluscha, E. A., 2003, Empirical research in on-line trust: A review and critical Assessment, *International Journal of Human-Computer Studies*, vol. 58, pp. 783-812.
- [27] Koufaris, M., and Hampton-Sosa, W., 2004, The development of initial trust in an online company by new customers, *Information & Management*, vol. 41, pp. 377-397.

- [28] Bélanger France, Janine Hiller and Wanda Smith, 2002, Trustworthiness in electronic commerce: The role of privacy, security, and site attributes, *Journal of Strategic Information Systems*, vol. 11, pp. 245-270.
- [29] Kim D. J., Ferrin D. L., and Rao H. R., 2008, A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk and their antecedents, Elsevier B.V., vol. 44, pp. 544-564.
- [30] Lewicki1, R.J., McAllister D.J., and Bies R.J., 1998, Trust And Distrust: New Relationships and Realities, *Academy of Management Review*, vol. 23(3), pp. 438-458.
- [31] Ha H.Y., 2004, Factors influencing consumer perceptions of brand trust online, *Journal of Product & Brand Management*, vol. 13(5), pp. 329-342.
- [32] Hoffman, D.L., Novak, T.P. and Chatterjee, P., 1996, Commercial Scenarios for the Web: Opportunities and Challenges, *Journal of Computer - Mediated Communication*, vol. 1(3).
- [33] Shih H.P., 2004, An empirical study on predicting user acceptance of shopping on the Web, *Information and Management*, vol. 41 (3), pp. 351–368.
- [34] Haubl G. and Trifts V., 2000, Consumer decision making in online shopping environments: the effects of interactive decision aids, *Marketing*, vol. 19(1), pp. 4-21
- [35] Teo, Thompson S.H. and Yon Ding Yeong, 2003, Assessing the consumer decision process in the digital marketplace, *Omega*, vol. 31, pp. 349-363.
- [36] Suh B. and Han I., 2003, The impact of customer trust and perception of security control on the acceptance of electronic commerce, *International Journal of Electronic Commerce*, vol. 7(3), pp. 135- 161.

