



Analysing Bangladeshi consumers' e-commerce security and privacy satisfactions in small to mid-sized enterprises (SMEs)

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Suggested Citation:

Gide, E. & Karim, S. (2015). Analysing Bangladeshi Consumers' E-Commerce Security and Privacy Satisfactions in Small to Mid-Sized Enterprises (SMEs). *Global Journal of Information Technology*. 5(1), 10-17.

Received 25 January, 2015; revised 12 February, 2015; accepted 03 March, 2015.

Selection and peer review under responsibility of Prof. Dr. Adem Karahoca, Bahcesehir University, Turkey

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Abstract

The world has entered the new millennium with great hopes. E-commerce is playing the central role in transforming the old economy into the high speed economy. E-commerce has created a vast range of business opportunities for both firms and individuals in developing countries to market their products and services abroad and earn foreign exchange for the countries. While many E-commerce systems have been implemented successfully in the special business industries, a considerable number have been unsuccessful. This study aims to block this space by developing an effective assessment of E-commerce success, termed E-commerce Security & Privacy Satisfaction (ESPS). This study brings about the analysis of Security & Privacy Factors (SPFs) in E-commerce implementation. An attempt has been made to focus on E-commerce implementation in Bangladesh and identify the crucial barrier—cybercrime. This study also aims to design some ideas that will allow the users in Bangladesh to deal with e-commerce with safety and without cybercrime. To provide a firm stand for the study, various theoretical studies are analysed and examined allowing for in-depth knowledge on ecommerce in Bangladesh. In order to fill the gap between theoretical information and actual practices in the context of e-commerce, and security and privacy satisfaction in Bangladesh, it is very important to collect field data. The scope of this field research covers an interview of students, Academics, Government Officials and IT Professionals. As there is at present no benchmark for measuring ESPS, this study has implemented a qualitative research method. This research is the first relative lesson into small and medium enterprises, SMEs, using secured E-commerce systems in Bangladesh.

Keywords: E-Commerce, E-Business, Security & Privacy, E-commerce Satisfaction, Security & Privacy Factors, Evaluation, Service Commerce, Small and Medium Enterprises, SMEs.

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1. Introduction

E-commerce is a modern business methodology that addresses the needs of organizations, merchants and the consumers to cut costs while improving the quality of products and services, and increasing the speed of service delivery with high quality checks. Computer crime is a term that encompasses a variety of offences associated with the use of information and communication technology. It includes offences where a computer is used as a tool in the commission of the offence.

This section outlines the purpose and scope, objectives, research aim and the satisfaction of the research project. This study brings about the analysis of current security and privacy factors and responses of e-consumers who are using SME e-commerce web sites in Bangladesh. Then, it develops standard strategies to help SME e-commerce companies to provide more secure and private environments on their e-commerce web sites. This study plans to fill the space by developing a single assessment of e-commerce success, termed E-commerce Security & Privacy Satisfaction (ESPS). This study also involves the investigation of a variety of significant success factors in e-commerce implementation to support a comprehensive framework for measuring ESPS [1].

1.1 Purpose and Scope

This study focuses on the different sectors in the service industry in Bangladesh such as retail, wholesale, accommodation, transport, communication services, finance and banking, property services etc. Bangladesh is the chosen country for this research because it is the developing country with a strong potential for growth in both the IT and e-commerce industries.

1.2 Objectives

- Finding out the background of IT, e-commerce security & privacy systems in Bangladesh.
- Finding out the reasons behind the slow improvement of the IT and e-commerce industry in Bangladesh.
- Identifying the requirements for an effective evaluation of Service SMEs.
- Establishing a current framework for measuring e-commerce security & privacy systems accepted in the Service industry.
- Categorizing common SPFs for customer and business satisfaction by using e-commerce systems in Service SMEs in Bangladesh.
- Extending a successful assess for e-commerce security & privacy satisfaction (ESPS) for Service SMEs in Bangladesh.
- Learning how secured IT and e-commerce can help in the economic growth of Bangladesh [2].

1.3 Aim of the Study

The aim of this study is to develop a model of security in e-commerce for successfully assessing ESPS for Service SMEs in Bangladesh. It allows for the identification of SPFs for businesses that currently have e-commerce systems. These can then be used as an indicator to support the completeness of the ESPS evaluation process.

1.4 Research Questions

This research aims to answer the following Research Questions (RQs) on the information gathered about E-commerce Security & Privacy Satisfaction (ESPS) in Bangladesh:

RQ1: What is the background and current status of IT, e-commerce security & privacy systems in Bangladesh?

RQ2: What are the reasons for the slow improvement in IT and e-commerce industry in Bangladesh?

RQ3: What is the current security and privacy status of e-commerce using service SMEs in Bangladesh?

RQ4: What structures for evaluating satisfaction with e-commerce systems have been accepted in service SMEs in Bangladesh?

RQ5: What is the possibility of developing a successful assessment of E-commerce Security & Privacy Satisfaction (ESPS) for service SMEs in Bangladesh?

RQ6: How can secure IT and e-commerce help in the economic growth of Bangladesh?

RQ7: How could Bangladesh build up the opportunity to develop e-commerce security & privacy satisfaction for its own economic growth [2]?

1.5 Significance of the Study

This study is very significant for the people of Bangladesh and by reaching the policy makers of the country, can relay concerns in relation to the improvement of the economy through a secured IT and e-commerce sector. IT and e-commerce are moving on rapidly to become the common fixture of modern social and economic life. They are providing more opportunities and new avenues for scores of people worldwide. Most of the countries have already achieved a moderate level of success in IT. From all over the world, people are allowed to engage in online shopping and online banking, and deal with e-commerce fully by using internet technology [3].

2. Literature Review

This study details that studying Business Critical Success Factor (BCSFs) is the key to measuring e-commerce success in security and privacy. This part provides the obtainable understandings on fulfillment with e-commerce systems, gives the definition of e-commerce business and security satisfaction, and provides a projected study form for analyzing SPFs and e-commerce satisfaction.

2.1 The Technological Dimensions of E-commerce

E-commerce refers to the buying and selling of products and/or services over electronic systems through the internet and other computer networks. It combines a range of processes such as: Electronic Data Interchange (EDI), Electronic Mail (E-Mail), World Wide Web (WWW), Internet Applications, Network Applications, Enterprise content management, Instant messaging, Newsgroups, Online shopping and order tracking, Online banking, Domestic and international payment systems, Shopping cart software, Teleconferencing, and E-tickets [4].

2.2 The Existing Situation and Potential of E-Commerce

Internet services and the use for e-commerce by the producers to export and access inputs are dependent on their willingness and ability to use this medium, as well as that of the buyers of the final products and the sellers of intermediate goods and services.

2.3 Internet Usage and E-commerce Industry in Bangladesh

The communication sector in Bangladesh, including the Internet, has changed extensively within the past couple of years. The incentives both from the government and from public sectors have encouraged this progress, which can brightly be reflected by the volume of Internet users in Bangladesh. In the year 2000, just 0.1%, or 100,000, of the Bangladesh population had internet access, compared to the 0.3%, or 450,000 subscribers, in 2014. Currently over 600,000 of Bangladeshis, or about 0.5% of the population, use the Internet actively. Though the penetration still remains very low, within the country the growth is significant – over 40%. Internet connection appeared in Bangladesh rather late with connectivity only beginning in 1996. Recently the government decided to cut the tariff by 50% [5].

The table below depicts the numbers and statistics of internet users in relation to the total population of Bangladesh.

Table 1: Internet usage and population statistics in Bangladesh: Per Capita GDP in US dollars: United Nations Department of Economic and Social Affairs [5]

Year	Internet Users	Total Country Population	1 Year Growth%	GDP p.c.
2000	100,000	134,824,000	0.10%	N/A
2007	450,000	137,493,990	0.30%	US\$ 466
2009	556,000	156,050,883	0.40%	US\$ 574
2010	617,300	158,065,841	0.40%	US\$ 624
2011	5,501,609	158,570,535	3.50%	US\$ 700
2012	8,054,190	159,083,804	5.00%	US\$ 700
2014	10,867,567	161,411,249	9.00%	US\$ 800

2.4 E-commerce Sector in Bangladesh

E-commerce is very important and relevant to the economy of Bangladesh—a developing economy – in general and to the export market in particular. The Information Technology (IT) revolution has been too phenomenal to predict its future growth and its use in an economy like Bangladesh's. Obviously, the e-commerce sector commenced development due to the boost in Internet penetration growth, however, it is still in the lowest stages of progress. Importantly, online transactions could boost the GDP growth in a poor country such as Bangladesh.

Bangladesh's E-commerce can be represented by popular industries:

- Bid In BD - marketing itself as the Best Auction Site in Bangladesh
- Hutbazar.com - the largest Bangladeshi online shopping complex
- Bangladeshi Online Mega shop
- Adhuli.com – online shop also offering large gift choices
- ClickBD.com - Bangladesh's online marketplace [6]

2.5 Major Constraints to E-Commerce in Bangladesh

This study highlights various constraints to commerce and trade in general and e-commerce in particular. These include:

- Too few telephone connections
- Absence of a strong independent regulatory body for the telecommunication sector
- Absence of encryption law that precludes acceptance of digital signature
- No encryption laws to accept electronic authentication of transactions
- Very poor number of pre-shipment agents (PSA) found

- No system for fines and penalties on PSIs for breach of rules and regulations
- Very tight foreign exchange controls available on travel and for business and international credit cards [7]

2.6 Present Situation of Cyber Crime in Bangladesh

Recently in Bangladesh, some people send malicious mail to different Foreign Diplomatic Missions and other VIPs which sometimes cause serious problems for the police and also for the government. One group of people hacked the web site of Rapid-Action-Battalion in Bangladesh. When this incident was published in the media almost all of the government institutions became scared. After that, RAB arrested a few individuals who are now in jail. One of the main RAB website hackers stated that nobody should use his acquired computer skills in such criminal activities like the hacking of important government or private websites. In Bangladesh, the current youths are increasingly using cyber cafes as their dating places. According to newspaper reports, various types of antisocial activities take place in these cafes in the name of net browsing. For Internet browsing, there are separate cabins for pairs where their intimate moments are videoed secretly [7].

3. Methodology

Qualitative research is concerned with the collection and analysis of information in a non-numerical form e.g. the collection of people's opinion about an event and the subsequent analysis of this data to establish the range of opinions. This study was conducted using a qualitative method based on the interview system, which includes a focus group. It also includes the analysis of interviews [8].

3.1 The Strategy

In this study, the qualitative approach was chosen as the leading design as it provides a large amount of data, and is therefore, the better method to use when approaching this research field. This study starts with reviewing published secondary sources to provide a wider picture of the topic. New information about e-commerce security and privacy satisfaction in Bangladeshi enterprises was produced by analysing the secondary data from the documents and other reports. The participants were examined in order to identify the problems of e-commerce privacy and security satisfaction and get the probable solutions from the secondary sources. The subsequent stage of data collection was also part of the qualitative research approach, in which interviews were conducted to collect important data from IT experts, government and non-government officials, IT students, and university academics [8].

3.2 Document Analysis

In this study, the existing documents and reports were analysed to establish the current situation of e-commerce security and privacy satisfaction. In addition, government and non-government organisations were involved in the collection of data. Documents from international agencies were obtained to provide statistical data. The overall aim of document analysis is to achieve a better understanding of the research topic [8].

3.3 The Qualitative Method

This section discusses the qualitative stage of data collection, the communication process of the participants, the selection method of the participants, the ethical clearance process, the focus group study and the semi-structured and in-depth individual interviews. This study

requires strong commitment, trust, and good friendship between the interview and interviewee. Confidentiality is essential during the interview sessions. An invitation letter was sent prior to the interview to gain an increased number of participants. Once the universities and organisations were finally listed, the key people for the interview were informed by email. To receive consent from the organisations and universities, the researcher approached them and also contacted the Business and IT faculties to gain approval. In terms of student selection process, the lecturers communicated with the students and those interested volunteered for the study. Once the project was officially approved, the researcher contacted the relevant departments/faculties of the universities by sending a request letter to identify the potential students. Fifteen potential students were selected who responded positively by email and telephone [8].

3.4 Data Analysis

All of the interview sessions were one hour long per session. Interviews were recorded digitally. iPads and Laptops were used and Skype was used as the internet software. All data was sorted and analysed. Qualitative data analysis with relevant computer software (NVivo) was used. The researcher then categorised all of the transcripts by alphabetical order of the interviewees surname. Key issues were checked thoroughly and noted in the list. The researcher also prioritised the contributors and the respondents who had provided a larger contribution to the study [8].

4. Data Collection and Research Analysis

4.1 Qualitative Results

This section has defined qualitative results from in depth interviews. The results have been developed from the potential interviewees such as IT experts, government and non-government officials, Academics, and IT students, identified by I1, I2, I3, I4, I5....., G1, G2, G3, G4, G5....., A1, A2, A3, A4, A5 and S1, S2, S3, S4, S5.....[8]. The interview data generated was mainly about e-commerce privacy and security satisfaction in Bangladeshi small to mid-sized business, and were subject to the analysis process resulting in the below vital key issues: the impact of secured e-commerce in Bangladesh, the main reasons contributing strongly to the non-operation of e-commerce in the past in Bangladesh, business restrictions that exist in the development of e-commerce in Bangladesh, Bangladeshi consumers' concerns about security and privacy issues in e-commerce, the economic importance of secured e-commerce in SMEs in Bangladesh- as a developing country, the economic impact of e-commerce on business costs and productivity and how this facilitates the development of businesses in Bangladesh, the current situation of network infrastructure in Bangladesh, industrial solutions that can provide consumers with confidence regarding security and privacy in e-commerce, the role of the private sector and the public sector in developing secured e-commerce, and the role of Bangladeshi enterprises in making fast and easy going communication between the buyers and sellers [9].

4.2 Data Collection and Analysis

This part analysed the collected data together with the relevant literature. This is the most important section of the research study. It discusses the background of IT, e-commerce security & privacy satisfaction in Bangladesh, the current views regarding the impact of secured e-commerce in Bangladesh, the reasons for the slow improvement in IT and e-commerce industry in Bangladesh, Bangladeshi consumers' concerns about security and privacy issues in connection with the implementation of e-commerce, Bangladeshi consumers' presence in the promotion and development of the secured e-commerce among SMEs, industrial solutions to give Bangladeshi consumers' confidence about security and privacy in e-commerce, the network infrastructure and operations that can provide secured e-commerce services in Bangladesh, the possibility of developing a successful assessment of E-commerce Security & Privacy Satisfaction

(ESPS) for Service SMEs in Bangladesh, how secured e-commerce can help in the economic growth of Bangladesh, and how Bangladesh can build up the opportunity to develop e-commerce security & privacy satisfaction for its own economic growth [10].

5. Research Results and Key Findings

Though e-commerce is rapidly growing in developed countries, in Bangladesh it is completely different. However, e-commerce is now considered a significant instrument for the development of the Bangladeshi economy. Trade over the internet has not been quickly adopted in Bangladesh because there are a number of barriers that have inhibited e-commerce from properly taking off. There is a great difference between Bangladesh and the other developed countries in the services provided for business men. It is clear that Bangladesh also wants to incorporate e-commerce into its businesses because it has the potential and at the same time cannot afford to be left out. The Bangladesh government has launched several initiatives to promote this new methodology of trade such as the Bangladesh's E-commerce initiative. This can be vital in outlining important issues, raising awareness, and hopefully proposing action plans to implement solutions for upcoming problems [11].

This study has revealed some valuable key research findings which are listed below:

- The Bangladesh government and people are not yet fully convinced of using e-commerce in the business environment in order to achieve its aims (e.g. sustainable development).
- E-commerce is a blessing to businesses and people's daily lives.
- E-commerce is an effective and efficient channel of information in Bangladesh.
- E-commerce is still not being used extensively in Bangladesh.
- In Bangladesh, there are not many popular websites that are extensively used for various e-commerce.
- A major field of use for e-commerce in Bangladesh is the Ready Made Garments (RMG) sector.
- Mobile communication and networks are having a growing impact on the economy of Bangladesh.
- One of the main reasons contributing strongly to the non-operation of e-commerce in the past in Bangladesh is that the infrastructure was not very supportive.
- Poor Internet speed and the misuse of e-devices are some of the vital reasons for the slow improvement of e-commerce.
- Online customer satisfaction and an improvement in e-commerce is much related.
- Many CEOs and/or MDs in Bangladeshi organisations do not use e-mail for the simple reason that they were not raised in the information age.
- Bangladeshi people are very social and usually share their experiences with others in nature and via social media.
- The private sector and the public sector in Bangladesh can make significant progress if secured e-commerce can establish itself in the industry [12].

6. Conclusion & Recommendation

This study primarily has made suggestions for both service industry and e-commerce solution companies including small to mid-sized enterprises to complete e-commerce privacy and security satisfaction, shaped research limitations and provided brief and final suggestions for

further research. E-commerce as a vehicle to boost up trade, especially international trade, has already been recognized by the international business community, in both developing and developed nations. However e-commerce and its related technologies are still in its infancy stage in Bangladesh. The future of e-commerce will be a system where users are able to interact with their banks “worry-free” and banks are operated under one common standard.

For achieving the best possible results through the use of e-commerce, the researcher has offered some recommendations. These are as follows:

- Bangladesh government should provide a legal framework for e-commerce and implement the proper National ICT security policy.
- IT experts in Bangladesh should develop in-house software for banking systems.
- Bangladesh telecommunications companies should utilize their extensive network so that the corporate users can connect their banks and major business institutions.
- Every transaction should have some desirable properties like authenticity, confidentiality and integrity.

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