

An Empirical Study on Usability and Security of E-Commerce Websites

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Abstract— Nowadays the availability of internet has revolutionized the global world immensely. In today's modern society people uses modern facilities and e-commerce to buy their everyday household products. The major success story of this e-commerce websites lies in building a trustable and honest relationship with its most precious and lovable stakeholders that is the customers and consumer base. One of the key accomplishments of an e-commerce website is in improving and improvising the usability of e-commerce platform by considering user's preferences. User preferences can be explained as a combinational feeling and attitudes of users for the interface and functional design of the ecommerce platform. This influences user's decision and behaviour. Considering the users preferences within an e-commerce platform enhances user's satisfaction and increases user's loyalty to the platform. The other aspect of installing the faith and trust within the customer is by installing a sense of security and incognito feeling to avoid the fear of online theft and cheat. Besides, the e-Commerce websites are also provided the assurance of safety, security and protections by amending various changes in the IT online market. This factor is also increasing the number of enthusiastic customers in the global arena of online e-Commerce arena. The growing number of customers and other related factors like commerce growth and prosperity seeks proper management of this e-commerce websites. They need to handle the matter more sensitively and seriously and need to fill up every loophole within their system. The e-commerce websites need to improvise and make their security measurements and usability intense. This will not only help their business development but also install cyber ethics and values within the global market of consumerism. Creating a safe and secure software program is a multifaceted and time-consuming procedure that seeks to harbour repeated challenging factors, such as functionality, scalability, clarity, productivity, etc. In this paper, we have focused on various security issues and usability of e-commerce websites. Methods and techniques to integrate security problems in software blueprint have already been constructed. However, there is one vital facet of the design of complex and composite secure systems, which has always been ignored by various well-known e-commerce organizations. Most of the research in e-commerce security program and usability emphasizes on supplying better and improved user interfaces (UIs), but it is evident that usability troubles with secure systems are more than just UIs and requires relevance of various related factors and design methodology. This process cannot function without the participation of people (the customers and consumers).

Keywords: Usability and Security, E-Commerce Websites

I. INTRODUCTION

In security, the focal point tends to focus on those unwanted people who want to mistreat the system (hackers and

attackers). This is to the harm the ordinary and regular users, who play as a significant fraction in shielding it. Any secure system is a socio-technical system, and the necessities, scrutiny, and design process must consider this. Users can have significantly varying levels of understanding, experience, comprehension and expertise. Designing a system that suitably assists these contradictory levels of ability and aptitude, it requires basic training procedure if the countermeasures are to so reliable. Therefore, the design and the improvement of a secure software system need the addition of yet another vital.

Requirement: usability. This supplementary requirement launches an additional layer of complexity in the development process. The main aim and objective of this project work are to discuss the potential security concern and usability in an e-commerce website.

II. RESEARCH METHODOLOGIES

Research approach, research designs and research philosophies are the three main research parameters, which the investigator adopts in the proceedings of the investigation procedure.

The three kinds of research philosophies are positivism, realism and interpretism. Based on the requirements of the investigation procedure the analyst decides whether to choose the research philosophies. The three kinds of research philosophies have different kinds of utilities. In the present research paper, the investigator has used the concept of the positivism research philosophies. Positivism research philosophy allows the investigator to support the investigation procedure with real facts and materials with scientific approaches, which already exists in the universe. Inductive research approach and deductive research approach are the two kinds of research approach. The most important jobs of the investigator is choose whether to use inductive method of research approach and inductive method of research approach. In the present research approach, the analyst has used the concept of deductive research approach in order to organization the investigation procedure based on different issues E Commerce websites. With the help of the deductive method of research approach, the investigator will be able to develop the investigation procedure with relevant hypothesis. The investigator in the present research paper will be able to develop a proper research hypothesis with the application of deductive search approach.

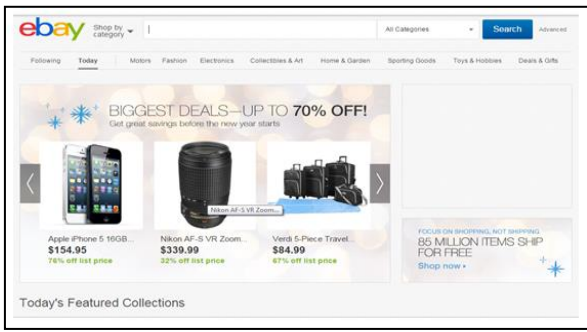


Image of Ebay

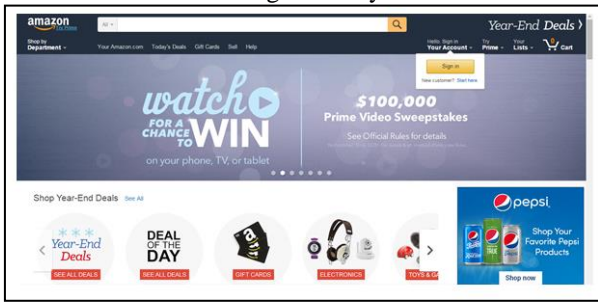


Image of Amazon

Data sampling method is also an important part of the analyzing procedure. The investigator used both probability method and non-probability method of sampling. Researcher has undertaken different research methodologies for qualitative data collection. By maintaining the ethical constipation of the investigator procedure mainly the Data Protection Act and maintaining the confidentiality of the investigation, the investigator has organized the present research study

III. RESULTS AND DISCUSSION

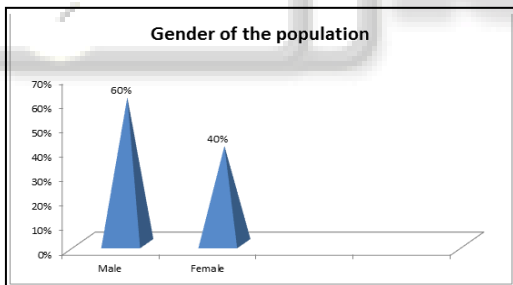


Fig. 1: Gender of the population

A. Findings and Analysis Based on Population

From the above tabular information, about the gender of the population. The majority of the people present in the population were male and on the other hand, the remaining respondents were female.

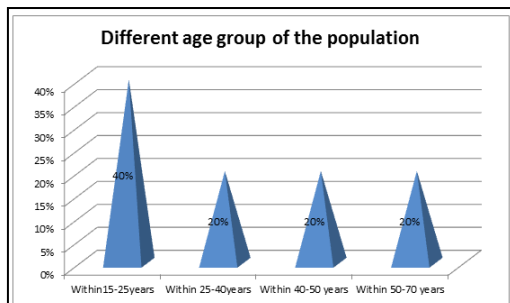


Fig. 2: Different age group of the population

B. Findings and Analysis Based on Age group

From the above tabular information, the investigator has concluded about the age group of different people present in the present research survey. It has classified the entire age group into four divisions. The first division of age group is between 15-25 years, the second division of age group belongs to 25-40 years, the third age group is divided between 40-50 years and the final division of the age group belongs to 50-70 years

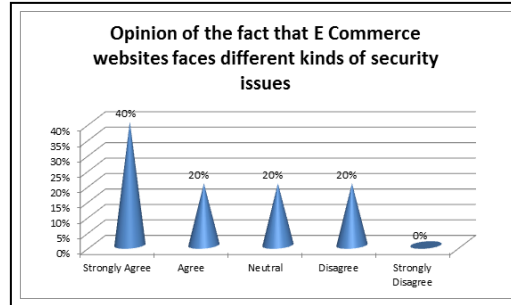


Fig. 3: Opinion of the fact that E Commerce websites faces different kinds of security issues

C. Findings and Analysis of different kinds of security issues

Nearly 20% of the people agreed with the fact E commerce websites need to focus on different kinds of security issues and on the other hand, the remaining 20% of the people were neutral and disagree with the point that E commerce sites faces different issues in the business transactions.

Globally there are certain issues, which are faced by different E commerce companies in the operations of the online transactions. Majority of the of the E commerce sites faces different kinds of issues on online payment transactions.

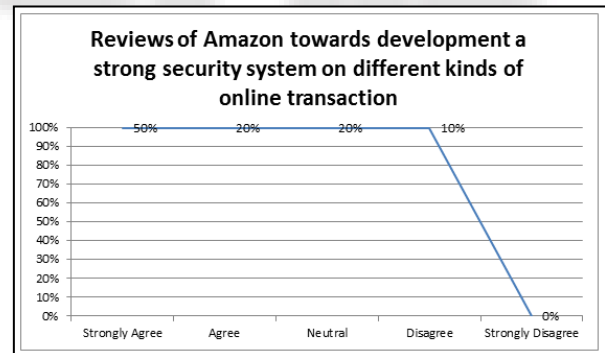


Fig. 4: Reviews of Amazon towards development a strong security system on different kinds of online transaction

D. Findings and Analysis of development on security system of online transaction

From the above tabular information, it is concluded that 50% of the entire population agreed with the fact that Amazon has taken different kinds of steps in the development process of online securities in the operations of the online transactions. Majority of the people globally do not want to use the online system as a mode of payment due to lack of security. Most of the people prefers the concept of cash on delivery instead the concept of online money transaction. In order to solve this particular problem, Amazon has developed the entire structure of the online

security system. Amazon introduced the concept of HTTP(S) instead of HTTP in order to secure different modes of online transactions.

Amazon needs to increase and develop more security on the online business transactions in order to make the majority of the people more secure from different kinds of online and internet frauds.



Fig. 5: Frequency of using E commerce websites for marketing and online shopping

E. Findings and Analysis of using E-commerce website for marketing

The objective of the research paper is to identify the disadvantages of online marketing faced by the users globally. Security is one of the major concern which majority of the E commerce websites faces in the operations of the business.

With the effect of online marketing, nearly 50% of the entire population prefers the concept of online marketing. This group of people wants to be benefited with the additional advantages that the E commerce websites offers to the people. Wide varieties of product and discounted price are the primary reason behind the online shopping. The remaining people in the population were often and rarely use the concept of online shopping. With the help of the technological advance most of the people globally prefers the concept and application of online shopping.



Fig. 6: Challenges faced by the customers while buying products on online with the help of E commerce Sites

F. Findings and Analysis of problems while buying online

It is one of the most common and important questions which the investigator has developed in the operations of the analysis. These are the some major issues, which the buyers face in the process of online marketing. Most of the people in the population agreed with the fact the payment system and different kind's security issues are the primary problem

in the concept of online shopping. With the technological advancement, most of the E Commerce companies have developed a strong online business. However, there are some problems in the operations. The primary disadvantage is lack of security. On the other hand, 30% of the people in the population concluded that security issues is also an important problem in the in the overall process. Nearly 20% of the people suggested that the concept of last minute promotion is one of the most common issues, which the majority of the buyers face in the process of online shopping.

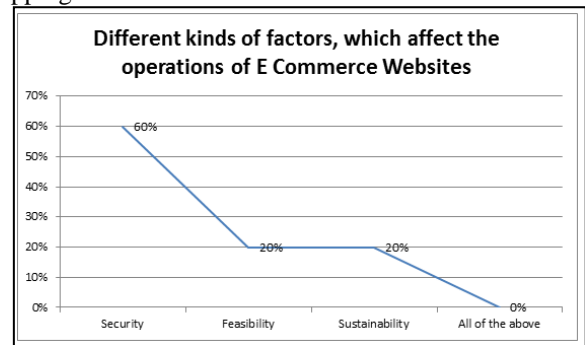


Fig. 9: Different kinds of factors, which affect the operations of E Commerce Websites

G. Findings and Analysis of factors affecting the operations

From the above tabular information majority of the people concluded that security is the only issues in online marketing. On the other hand, remaining 20% of the people concluded about that feasibility and sustainability are the other two problems, which hamper the purchasing decision of the customers. Mode of payment is the payment is the primary issue, which majority of the customer's fears in the concept of online shopping. Feasibility is another important factor, which affects the operation of online marketing. The last important factor, which is considered in the overall E commerce website, is the concept of the sustainability.

Hence, it can be concluded that, the security issues is one of the major factor in the application of the online shopping.

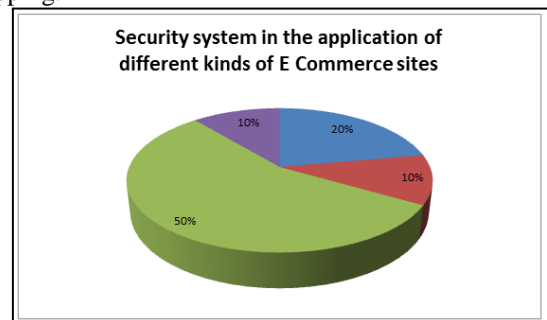


Fig. 10: Security system in the application of different kinds of E Commerce sites

H. Findings and Analysis of different security system of e-commerce site

From the above tabular information, the investigator has a mixed review on the security system of E commerce. Majority of the people in the survey agreed with the fact, the security system of E commerce is average. Nearly 50% of

the total people in the survey agreed with the fact that the security system of the entire E commerce site is average. On the other hand, some people in the population concluded that the security system of the E-commerce site is poor followed by 20% of the people concluded that the security system of E commerce is very poor. In recent time, with the technological advancement, all the companies based on the nature of the trade tries to develop a proper security system. The concept and application of online shopping has changed the entire trend of shopping. Majority of the people based on the requirements prefers the concept of online shopping as compared with the traditional mode of shopping in order to be benefited in different ways. However, there are certain challenges and certain issues and certain challenges faced by majority of the E commerce sites.

IV. CONCLUSION

The concluding part of the research paper summaries about different kind's usability and security issues faced by different commercial websites in the operations of the business. The concept of online marketing has certain advantages as well as disadvantages. The objective of the present study is to highlight some of the major disadvantages in the operations of the E commerce site.

The present study is divided into several parts. The first part of the study is the introduction part, the second part of the study mainly describes about the methodologies. The third chapter is the most crucial part in the entire research paper. The fourth chapter summarizes the concluding part as well as the recommending part of the research paper. Keeping in mind the requirements of the research paper, has organized the entire investigation procedure. The study mainly focused on various kinds of disadvantages and issues, which are faced by the uses on the time of online business transaction.

The application and the concept of E commerce have brought one of the major breakthroughs in the operations of the business. This part of the study will highlight the advantages and disadvantages which on E commerce. The primary advantage it allows the customers to save time and it allows the customers to save time and on the other hand, it provides all the customers to select the products from wide varieties. On the other hand, there are certain disadvantages in the concept of E commerce. The research's in the present study highlights some of the major issues and challenges which majority of the E Commerce sites faced in the business operations. Security and website instability are the major two global problems, which some group of users faced while shopping online. The researcher in the study mainly spotlight on the different kinds of securities issues and challenges faced by the users while shopping online. In order to support the research work with effective data and information the investigator has searched different E commerce websites. For example, Amazon.com, Ebay.com and are the other three commercial websites, which the researcher searched in the operations of the research work.

In order to solve this particular problem different initiative have been taken by different companies in order to make the technological advancement in a much better

manner. In order to develop a proper security system in the website the application of HTTP(S), introduced by the majority of the companies in order to make it more secure from different kinds of frauds.

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