

# Consumers' Perceptions on Privacy and Security in Ecommerce

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## Abstract

This report provides an analysis of consumers' perception on security and privacy issues in e-commerce. The main objective of this research is to analyze the consumers' perceptions on security and privacy and formulate recommendations based on the findings that would contribute in eradicating these issues and boosting consumer confidence. It also provides a brief discussion on the implications of e-commerce for both customers and companies, the emerging concerns over privacy and security, and the importance of consumers' perceptions on security and privacy issues in bolstering e-commerce adoption. Data is collected through questionnaire and interviews in order to give a comprehensive view of consumers' perceptions. Data collected have been represented in the form of graphs and charts to facilitate understanding of the study. Determining the perceptions of consumers on security and privacy issues related to e-commerce will benefit IT security providers and web businesses in crafting a multifaceted approach in addressing those perceptions, one that effectively combines technological solutions and sociological and psychological approaches in order to resolve one of the last remaining obstacles to the widespread use of e-commerce.

**Key words:** e-commerce, consumers' perception, technological solutions,

## 1. Introduction

The term e-commerce refers to the business of delivering services to customers via the Internet. E-commerce includes everything from buying, selling and promoting goods and services on the Internet (Kalakota & Whinston, 1996). Consumers' participation in the development of e-commerce is essential to its success. The Internet has proven itself to be very useful for many business-related and personal purposes, from providing simple driving directions to answering tough research questions, thus broadening its usage. However, e-commerce has its drawbacks. Financial and personal information exchange in e-commerce happens via the Internet, and it gets stored in databases and back-end systems, which makes it vulnerable to attacks from imposters. Since the inception of e-commerce, there have been numerous events where systems were compromised, which raised concerns over security and privacy, and thus, have adversely affected the consumers' perception.

## 2. Literature Review

E-commerce began with the launching of the very first website to offer a product or service in exchange for payment. Since that time, millions of businesses have opened their own websites to offer a plethora of products and services to consumers. E-commerce offers customers with numerous advantages compared to traditional brick-and-mortar stores and mail-order catalogs. Consumers can browse product catalogs, compare prices, place their orders and make their purchases from anywhere in the world. They also find it more convenient to shop online than to take time to visit malls since one can shop at any time. Many who are working like couples order the items as they leave their workplaces to have something upon reaching home. Some people shop late at night and have it the following day. Online shopping is good because: one can shop directly from home or the workplace or anywhere. Because of these conveniences, it is not surprising that the preference for online shopping is growing. Aside from online shopping, we have also seen the availability of a diverse number of e-services such as online banking, e-learning (online courses), e-government (online government services such as tax information and other services) and (Fazlollahi, 2002).

E-commerce also provides companies with many advantages: time and cost savings, instant information transfer, as well as global communication without time and space constraints. Online retailers can now reach customers globally without the need for expensive advertising campaigns, and they can compete with larger competitors in a level playing field through the use of creative promotions and customized services (Adetransact, n.d.). E-commerce also reduces transaction and coordination costs. The adoption of online shopping channels has also made it cheaper and easier for firms to extend their markets, manage their operations and coordinate value chains across borders (Cavusgil, 2002).

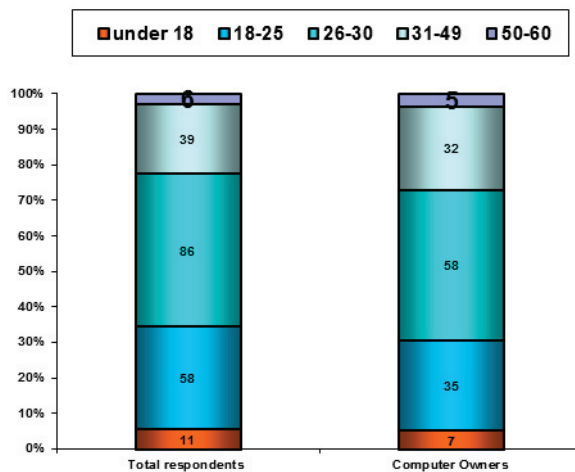
### 3. Methodology

This research is conducted to identify and analyze consumers' perceptions towards security and privacy in e-commerce. The quantitative methodology was used on data collected from individuals using a questionnaire on consumers' perceptions on e-commerce security and privacy. The results of the quantitative research are measurable and it can also be presented in numbers and statistics. Information gathered in research is transformed to numbers that can be analyzed statistically. Qualitative methodology was also used in personal and telephone interviews to identify any incidents / events that adversely affected the consumer's perception on e-commerce were analyzed. The survey strategy was employed for this research since it is suitable for descriptive research. A questionnaire was administered to a sample and these data were standardized to allow for easy comparison (Saunders, et al., 2007).

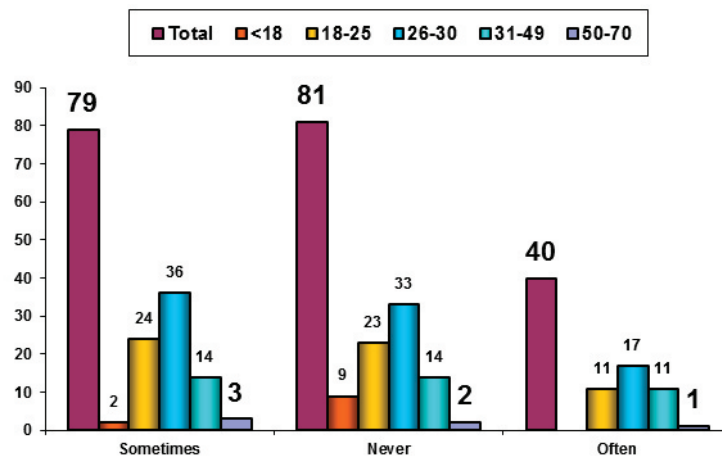
### 4. The Findings

Consumers' perception on e-commerce is an important criterion for deciding the penetration of e-commerce to the masses. Since problems are common with respect to security and privacy in e-commerce, data was collected for the age group spanning between 15 – 60 years. People coming from different backgrounds participated in the survey. Consumers from the IT or computer background, as expected, showed greater concerns about security and privacy and have much more knowledge about these concerns as compared to consumers from non-IT background like manufacturing, construction, fashion industry etc. Although these people have more concerns they know what security features to look for on a web-portal and other logistics which makes the transaction safe. Because the domain and profile of work they are in they have up to date knowledge about happenings in Information technology which makes them more confident on the system as they are the builder of e-commerce. They are very confident of the system that even some of the IT consultants who were interviewed even confirmed that although internet does not have boundaries there are measures in place for tracking every activity on the network.

This graph depicts number of consumers who own a computer versus total no of consumers who participated in the survey.

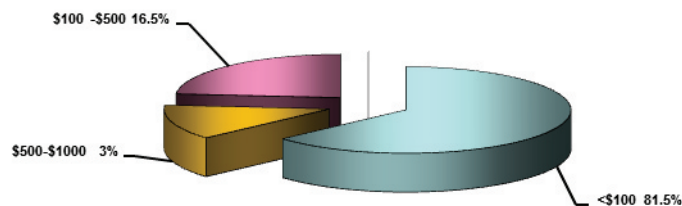


This graph plots the frequency by which consumers do trading on the internet.



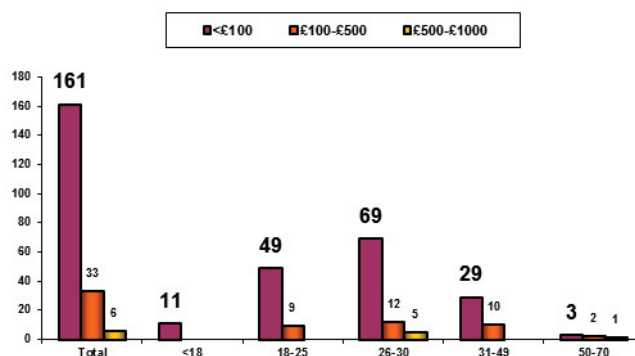
Out of 200 internet consumers 40.5% i.e. 81 consumers never trade on the internet. 40 consumers which constitute 20% of consumers in the survey often do trading on the internet. 38.5% i.e. 79 uses sometimes do trading on the internet. From the survey it is quite clear that 40% of the consumers who don't trade on the internet don't have much awareness about e-commerce and are happy going the traditional way of shopping. They don't have enough knowledge about IT, e-commerce and what advantages they get by going online.

Out of 200 consumers who took part in the survey 161 consumers i.e. 81.5 % use the internet for carrying out transactions (buying or selling) worth < \$100 every onth. 16.5% i.e. 31 people spend \$100-\$500 and only 3%



spend more than \$500 a month.

Below graph shows the expenditure/month via the internet divided amongst different age group.



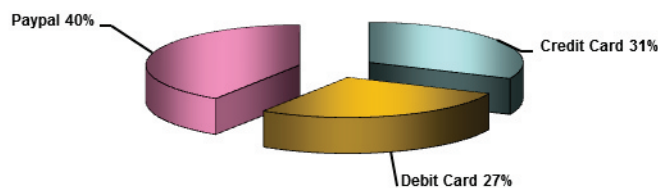
Mainly the good purchased on the internet are one time goods like electronics goods television, mobile phones, books etc. Other transactions that can be included in the category of online transactions are mainly direct debits and standing orders (for the payment of rent, taxes, and monthly contracts), buying tickets, booking hotels etc which hold a big percentage in the total transaction. The results clearly indicate that all the expensive and luxurious items are bought by consumers inside a shop after examining the item personally. Even though most of

the super markets offer online shopping, the consumers prefer to buy them by visiting the shops in person. Consumers have got issues around the security seal that are provided on the products that they buy online, as they are seller specific and they are not sure whether to trust it or not which leads to doubt in their mind. Consumers are of the view that shop is a good place for impulsive shopping, on the internet they have to look for specific things as compared to shops where items catch their eye. It is quite clear that consumers prefer going for online transactions but the overall transaction cost is less which is mainly because of the kinds of good consumers prefer to buy online.

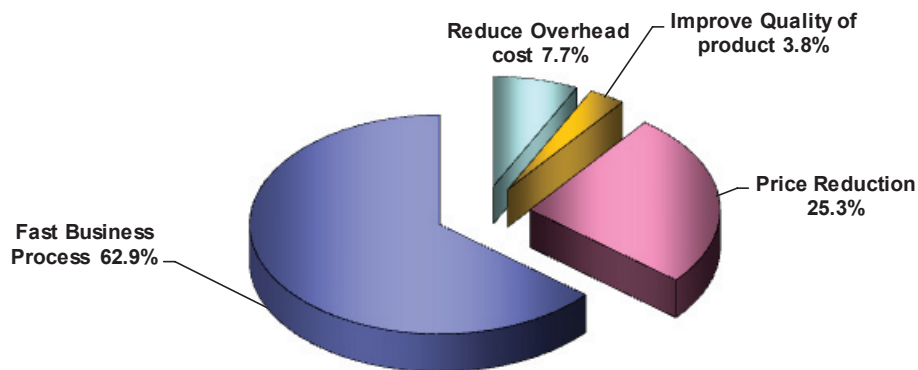
This is mainly due to the fact that people are not comfortable making huge transactions on the internet with the fear of if something goes wrong. Consumers are not aware of legal and ethical fundamentals of e-commerce which can support them in case of any fraud, which is one of the issues raised by consumers in the survey.

Other reasons for which consumers prefer not to buy goods on the internet are due to the kind of goods, people preferred to buy on the internet. Consumers are bit apprehensive about buying products on the internet as they don't actually see what they are buying and there have been instances where consumers have reported getting an old/broken item which was advertised as a new one.

This graph plots different mode of payment used by consumers for trading over the internet. Total of 119 consumers which uses online banking have given their option for the preference of payment they use for the payment.



This graph plots what consumers think is the primary benefits of using e-commerce. The consumers in this survey were given 4 different choices for selecting what they think are the benefits of e-commerce.



## 5. Summary and Conclusions

The survey sought to bring out the consumers' perceptions towards security and privacy in e-commerce. From the survey, it is evident that e-commerce has penetrated into all sectors of the economy and society, thus becoming a part of the day-to-day life of consumers. It has changed the traditional trading environment and is helping to build a business environment that is faster and more efficient. It has opened up new horizons for businesses, but has also brought about concerns over security and privacy. These concerns require a multifaceted approach for their resolution, not only on the part of IT companies, but also consumers, who also play an important role in establishing trust in the e-commerce system. One way of achieving customer satisfaction is by understanding customer value, which contributes to their satisfaction. These values can be defined anything related to the quality of service, security, availability of service and others. Consumers need to be educated and their confidence and trust in e-commerce have to be developed before business organizations can get around to discussing their offerings. It is clear from the survey that although there are vulnerabilities in e-commerce, most of the time they are because of the consumer's negligence. Websites have been offering security measures, but due to lack of awareness, consumers still fall prey to imposters. It is difficult to establish consumer trust on something that is virtual and impersonal. This can only be achieved through consumer education, which will definitely help in boosting their trust. This will lead to higher consumer participation in e-commerce and cut down the fraudulent practices happening in the system. Consumers' rights on service satisfaction, erroneous billings and poor quality of products require that proper information be shared with the consumers.

Website owners should get their websites certified and endorsed by IT security authorities, which will give them an edge in getting consumer confidence in e-commerce. Websites should not only have a strong security infrastructure but should depict them on the consumer interface to give them the confidence to continue the trade. They should ensure system security, which includes any alteration to the website, cannot be done by the hackers, along with information security, which ensures that data cannot be hacked out from the system. Website host providers should keep their servers and other software like operating systems up-to-date with the latest patches. If any software is installed, it should be installed with desirable access. Most of the time, there are loopholes in the software that can grant access to intruders. If the website is providing rule base access, proper care should be taken to avoid any loose ends by which unauthorized access can be obtained. Websites should have mechanisms to find out when it is compromised and should have proper preventive measures in place to stop the attack. Consumers should be made aware about the internet, e-commerce security and privacy system dwelling in the background, and the measures taken by websites for keeping their information confidential. IT security providers should work in filling up the loopholes present in the network, building up an environment which is impermeable for any attacks. Consumers should be made aware of the security, privacy and best fair practices of e-commerce being followed by the companies. Once the consumer develops trust, it will be easy to boost e-commerce and will surely show stunning growth with its greater widespread applications than previously imagined.

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