

Analysis of the Relationship Between Perceived Security and Customer Trust and Loyalty in Online Shopping

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Advancements in the internet technology triggered a line of developments in the field of marketing. As an alternative to the conventional shopping, online shopping over the internet has gained substantial share of retail market. Customers get used to this new shopping venue and nowadays prefer it more and more according to the researchers, ten percent of the global population now uses internet for shopping. In this research, the author explored the relationship between the security measures implemented by a company, very active in the online shopping domain, and the customer trust and loyalty on the online services provided by this company. Findings of this research are based on survey data analyzed in SPSS. This research supports the existence of a relationship between the security of a company's website and customer trust and loyalty on the online services of this company. When the perception of security measures improves, customer trust and loyalty increases accordingly.

Keywords: customers, customer trust, perceived security, loyalty, online shopping, websites

Introduction

Today's companies have to take advantage of the opportunities offered by the internet in order to be one step ahead of its competitors. Leaving aside the traditional shopping, they need to differentiate themselves via this modern communication channel as online shopping emerges as a new domain.

However, customers are confused with the increasing numbers of websites day by day. In this context, companies have to generate publicity, create user blogs and provide the most honest information about their products and services in order to shine out among the realm of websites. Only then, they can attract the attention and interest of the customers, according to Faks (2008).

Only after companies fully meet the customers' needs and expectations, customer trust starts to build-up, according to Ural (2009). Online shopping turnover is increasing year by year, and the main drivers of this increase include the form of payment options offered to ease up the process and value-added services provided to increase the customer satisfaction. With these advancements, online shopping today has reached about four times the size of the traditional shopping for certain goods and services.

Today, from the electronic goods to car rentals to all kinds of sports materials, a wide range of goods and

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services can be purchased over the internet. Traditional retail companies are under continuous pressure of pleasing their customers and following the advancements in business to maintain their position in the market. From this perspective, easy and secure online payment applications facilitate the everyday business of these companies. A list of companies, including banks and credit card companies, have lost market share in this dynamic era as they failed to carry over the customer loyalty, brand awareness and thereby, the share of mind they used to own to the online media. Even if these companies make online payment available, their brands can get lost among numerous e-wallets. In particular, credit card and payment companies remain behind the competition when the customer accounts are linked directly to e-wallets.

In the study, the literature reviewed is primarily about online shopping and its effects on the perceived reliability, and the trust and loyalty variables are explained and the relationship between these variables and online shopping are revealed.

Literature Overview

In the study which researched the impact of customer trust on e-commerce, Kim, Chung and Lee (2011) concluded that internet security measures have positive impact on customer trust and no impact on transportation costs while customer satisfaction has positive impact on trust and commitment. Bellman, Lohse and Johnson (1999) explored the relationship between customers' demographic characteristics, personality traits and attitude towards online shopping; they identified that customer lifestyle is effective on attitude towards online shopping and customers with time limitations tend to do more online shopping. Separately, Jarvenpaa, Tractinsky and Vitale (2000) explored the setup of online shopping website and company reputation in relation to risk perception, customer trust and attitude and demand; they emphasized that there is a positive relationship between company reputation and consumer trust and as trust improves, risk perception decreases.

Ou, SIA and Banerjee (2007) explored the Chinese market and identified the mistrust in the websites, lack of regulatory framework and limited product offer as the reasons behind the slow development of online shopping over there. Teo (2002) examined customer attitude towards online shopping and Internet and concluded that companies do not encourage customers to shop online and customers do not embrace the idea of online shopping. In addition, he emphasized that customers do use internet to collect information, rather than shopping.

Perceived Security, Trust and Loyalty

In the online shopping domain, website security is important for the sense of trust and loyalty. The security of the website is essential to attract customer traffic and this is only possible with the security measures put in place.

Perceived security. Security is the fundamental concern of the customers who want to shop over the internet, according to Suh and Han (2003). Failure to put in place adequate security measures that assure the confidentiality of the customer data is the major barrier in front of the e-commerce development, according to Furnell and Karweni (1999). In the online shopping domain, perceived security depends on the reliability of the payment methods as well as the data transmission and storage. In other words, perceived security is the customer perception on the quality of tools and processes used for personal information transmission and storage, according to Kolsaker and Payne (2002).

Trust. In the online shopping, companies with online sales services thorough their websites focus on the customer trust and online purchasing experience. In traditional shopping, customer trust depends on the salesperson and company image whereas in online shopping, it depends on the reaction of buyers, their e-commerce experience and purchasing style, according to Kim, Ferriand and Rao (2008). Trust is a relationship of exchange between the uncertainty, sensitivity and commitment, according to Jarvenpaa, Noam, and Vitale (2000). Trust is also considered in connection with the communication, commitment, satisfaction and relationship marketing theories, according to Flavian and Guinaliu (2006).

Loyalty. Loyalty in online shopping means customers continuing to shop at a website that they have shopped before and recommending it to their friends, according to Cyr (2008). Loyalty is a result of consistent satisfaction the customer gets from a product or service the purchases for himself and his family, according to Assael (1990) loyalty is also defined as a “saturation in satisfaction”, according to Altintas (2000) to develop loyal customers, companies create online virtual communities; by focusing on online virtual communities, they both gain potential customers and retain the existing ones, according to Kim, Lee, and Hiemstra (2004, p. 343).

Methodology

As part of this study, a questionnaire was prepared, collected data were analyzed using SPSS 16 program and the results were interpreted. Studies of Chen (2006), Kim, Chung and Lee (2011), Wu and Chang (2003) were used as references while preparing the basic scale expressions in the survey form.

Objective of the study. This research aims to understand the relationship between perceived security and customer trust and loyalty towards online shopping and different websites. The study covers online shopping customers in Turkey.

Findings of the study. Findings of the research, as the outcome of the analysis conducted, are shown below. Reliability of the scale statements has been also analyzed.

As the result of reliability analysis, the overall average of the scale statements is found as 2.8670 and the correlation between questions is 0.4501. These findings show that the correlation between questions is low. The analysis of the reliability value is obtained as 0.8986 accordingly, indicating a high reliable scale ($0.80 < \alpha < 1$).

Table 1 shows the demographic characteristics of people who filled in the questionnaire.

Among the participants of this survey, 42% were female and 58% were male. According to the data collected, the larger portion of the survey respondents were male and men use online shopping more. The distribution of respondents by age groups are as follows: 33% of respondents are aged 18-25 years, 23% are aged 26-35 years, 21% are aged 36-45 years, 8% are aged 46-55 years, 8% are aged 56-65 years and 7% are more than 65 years old. According to these findings, most respondents are aged 18-25 years and young. This is a well-expected finding as younger people use the Internet more frequently. Seven percent of survey respondents are primary school graduates, 7% are secondary school graduates, 22% are middle school graduates, 13% are associate degree graduates, 40% have undergraduate and 11% have graduate degrees. Accordingly, most respondents have a graduate degree which indicates that online shoppers have relatively high levels of education. Sixty percent of respondents are married and 40% of them are unmarried. Among the respondents of survey, 3% earn 500-1,000 TL, 14% earn 1,001-1,500 TL and 1,501-2,000 TL, 9%, earn 2,001-2,500 TL, 15% earn 2,501-3,000 TL, 18% earn 3,001-3,500 TL, 8% earn 3,501-4,000 TL, 9% earn 4,001-4,500 TL, 4% earn

4,501-5,000 TL and 6% earn 5,001 TL or more than on monthly basis. This finding shows that the majority of the respondents in the range of 3,001-3,500 TL income level have a high level of income compared to the overall country average. Six percent of the surveyed work in public sector, 19% of them work in private sector, 5% are housewives, 8% are retired, 12% of them are students, 32% are self-employed and 13% are trader. Most of the participants are self-employed.

Table 1

Demographic Characteristics

	Frequency	%	Occupation	Frequency	%
Gender					
female	175	42.16	Businessman, top executive	24	5.78
male	240	57.84	Public sector worker	25	6.03
Age			Private sector worker	80	19.28
18-25	135	32.53	housewife	20	4.81
26-35	95	22.89	Retired	31	7.47
36-45	85	20.49	Student	50	12.05
46-55	35	8.43	Self-employment	134	32.29
56-65	35	8.43	Tradesman	51	12.29
65 and more	30	7.23	Revenue		
Education			500-1,000	13	3.1
primary	30	7.23	1,001-1,500	56	13.5
secondary	30	7.23	1,501-2,000	58	14.0
collage	90	21.68	2,001-2,500	38	9.2
two-year degree	55	13.25	2,501-3,000	61	14.7
university	165	39.76	3,001-3,500	75	18.1
master degree	45	10.85	3,501-4,000	32	7.7
Marital status			4,001-4,500	38	9.2
married	250	60.24	4,501-5,000	17	4.1
single	165	39.76	5,001- and more	27	6.5
Total	415	100	Total	415	100

Table 2

Results of Factor Analysis

Factors definitions	Trust	Perceived security	Loyalty
G1	0.604		
G2	0.779		
G3	0.748		
S1		0.753	
S2		0.683	
S3		0.733	
S4		0.637	
B1			0.882
B2			0.874
B3			0.888
B4			0.823

As shown in Table 2, the first factor, trust has 3; the second factor, perceived security has 4 and the last factor, loyalty has 4 questions. Factor loadings of the questions for the first factor are between 0.604 and 0.779;

for the second factor are between 0.637 and 0.753 and for the third factor are between 0.888 and 0.823. All factor load values high. The first factor explains 30.566% of the total variance, the second factor explains 23.747% and the third factor explains 25.277% of the total variance. According to the obtained findings, the first factor, trust is more explanatory than the other factors.

Table 3 shows the correlation between the scale dimensions.

Table 3

The Correlation on the Scale Dimensions

		Trust	Perceived security	Loyalty
Trust	Pearson correlation	1	0.715	0.637
	Sig. (2-tailed)		0.000	0.000
	No.	415	415	415
Perceived security	Pearson correlation	0.715	1	0.871
	Sig. (2-tailed)	0.000		0.000
	No.	415	415	415
Loyalty	Pearson correlation	0.637	0.871	1
	Sig. (2-tailed)	0.000	0.000	
	No.	415	415	415

There is a strong direct correlation between trust, perceived security and loyalty dimensions.

Table 4

T-test Results of the Scale on the Statements

Definitions	No.	Mean	Std. deviation	Std. error mean
Trust				
The web sites which provides online shopping are honest	415	2.7590	1.00470	0.04932
The web sites that offer online shopping are reliable	415	2.7012	0.94146	0.04621
Web sites are safe	415	2.7060	0.93784	0.04604
Perceived security				
The web site which I give credit card number to get my product, is safe	415	2.8627	1.08031	0.05303
In general, making online payment is risk-free	415	2.6747	1.05533	0.05180
Online sales firms, honest about my personal data is kept private	415	2.9012	0.98901	0.04855
Online sales firms offer a guarantee of confidentiality in all matters	415	2.9205	1.02667	0.05040
Loyalty				
Web sites easy to think that the process of purchasing	415	3.6241	1.03951	0.05103
I would recommend to friends online shopping	415	3.3446	1.15859	0.05687
I prefer online shopping and traditional shopping methods	415	2.6096	1.16590	0.05723
Most of my purchases are in online shopping	415	2.4337	1.06767	0.05241

When the scale expressions are evaluated in 5-point Likert scale, response 3 means that customers are undecided on this specific point. Accordingly, test value was taken as 3. In Table 3, the average values of the scale are given. If the average value of the expressions is more than 3, then it means that the respondents agree. However, when the *t* values in Table 4 interpreted together with the values in Table 5, respondents do agree in the statements 8 and 9. These statements are as follows: "I think the online purchasing process is easy" and "I would recommend online shopping to my friends". Respondents do not agree on the other statements about perceived

security and trust. The two expressions respondents agree are about with loyalty. Accordingly, it can be concluded that respondents are more loyal to the online shopping than the average.

Table 5

Levels of Significance on the Statements of Scale

Test value = 3						
	<i>t</i>	df	Sig. (2-tailed)	Mean difference	95% trust interval of the difference	
					Lower	Upper
G1	-4.886	414	0.000	-0.2410	-0.3379	-0.1440
G2	-6.465	414	0.000	-0.2988	-0.3896	-0.2080
G3	-6.386	414	0.000	-0.2940	-0.3845	-0.2035
S1	-2.590	414	0.010	-0.1373	-0.2416	-0.0331
S2	-6.279	414	0.000	-0.3253	-0.4271	-0.2235
S3	-2.035	414	0.042	-0.0988	-0.1942	-0.0034
S4	-1.578	414	0.115	-0.0795	-0.1786	0.0195
B1	12.231	414	0.000	0.6241	0.5238	0.7244
B2	6.059	414	0.000	0.3446	0.2328	0.4564
B3	-6.821	414	0.000	-0.3904	-0.5029	-0.2779
B4	-10.805	414	0.000	-0.5663	-0.6693	-0.4632

In this study, the following hypotheses are formed to explore the relationship between perceived security for online shopping, customer trust and loyalty.

H₁: There is a relationship between trust and perceived security;

H₂: There is a relationship between trust and loyalty;

H₃: There is a relationship between perceived security and loyalty.

When the hypotheses were tested with regression analysis, the relationship between trust and perceived security was found to be statistically significant ($p < 0.05$). The relationship between trust and perceived security is a very strong and positive one ($r = 0.890$). In addition, the correlation coefficient (r^2) was calculated as 0.792, which means that 79.2% of the variation in trust depends on the perceived security. As the perceived security of online shopping improves, customer loyalty increases. Hypothesis H₁ is accepted.

The relationship between trust and loyalty was significant ($p < 0.05$). The relationship between trust and loyalty is a positive one ($r = 0.737$). However, the correlation coefficient (r^2) was calculated as 0.543; i.e., 54% trust variability depends on the loyalty. H₂ hypothesis was also accepted. Customer loyalty in online shopping increases in line with the trust.

The relationship between perceived security and loyalty variables found to be significant ($p < 0.05$). There is a positive relationship between perceived security and loyalty ($r = 0.871$). In addition, the correlation coefficient (r^2) was found to be 0.75, i.e., 75% of variation in the loyalty depends on the perceived security. Accordingly, customer trust towards online shopping depends on perceived security and trust leads to loyalty.

In the online shopping domain, website security measures improve customer trust and this trust results in a customer loyalty.

Results

This study considered three factors associated with online shopping: perceived security, trust and loyalty.

Respondents of the study questionnaire in general argued that the websites have not taken adequate security measures and thereby, they do not have trust in online shopping. However, customer trust and loyalty are very important in online shopping, and customers do continue to shop at the websites which they have shopped before and recognized as trustable.

Following conclusions are derived with hypothesis testing in this study; as a company's perceived security of online shopping site increases, also does the customer trust. With increasing level of customer trust in online shopping, loyalty also increases. All in all, customer loyalty depends on the security measures provided by online shopping websites; these measures improve the perceived security and consumer trust, which in return increases the loyalty.

Discussion

In recent times, online shopping is more and more gaining edge towards the traditional shopping. As of today, approximately one-tenth of the world's population buys and sells over the internet. Customers purchase more books, video games and plane or bus ticket over the internet than they do over the counter.

To succeed in online shopping, companies have to own a website which carries certain features. For instance, the website should be simple but eye-catching, easy to access and navigate through. All in all, perceived security of the website is fundamental as it directly affects the consumer trust and loyalty. Customers need to disclose sensitive information, such as personal and financial information, while shopping online; accordingly, companies should take stringent security measures to ensure the confidentiality of disclosed information, especially in their payment processing systems in use.

Businesses should clearly treat security as a priority as consumer trust is the key to success. Customers, not surprisingly, prefer to only trustable website. In recent years, among the multiplying number of companies with online sales services, the ones that have invested more on security measures attracted more customer interest.

The navigation functionality metric, comprised of operational efficiency, the speedy transmission of words and images, and modern technology, has a significantly positive effect on a site's perceived trustworthiness and reliability. Security also had a significantly positive influence on satisfaction. These and other relationships have been tested in previous studies and our findings are consistent with other reports (Kim & Lim, 2005; Shankar, Urban, & Sultan, 2002; Suh & Han, 2003). Our findings indicate that increasing customer trust in online shopping results in increased loyalty.

Findings of this study are consistent with the prior researches, such as Kim and Lim (2005); Shankar, Urban and Sultan (2002); Suh and Han (2003), which have explored the relationship between security and loyalty; depending on the security measures provided by online shopping websites, customers become more loyal to the site.

Limitations and Future Research

This study has a few limitations that need to be pointed out and recognized when interpreting the results. One obvious limitation is that the study covers customers using the online shopping in one province of Turkey. However, to reach all customers nationwide who shop online would necessitate a larger budget, more staff and longer time—all of which could not be afforded due to the economical constraints. Convenience sampling

method was applied; 450 survey forms were distributed and recollected in the scope of the study—out of which, 35 of them were missing or filled in with contradictory and erroneous information; these were excluded from the scope of research. The final number of valid responses was 415.

Another potential limitation is the use of behavioral intention to measure the behavioral component of attitude. In addition, this research only explored the customers in Turkey, and future studies can be performed in other countries to compare similarities and variations among different countries. Such reviews and summaries provide a solid foundation on which we, as researchers, can build future studies.

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