

**Research Article****Investigation of affecting factors on the frequency of  
online shopping by consumers**

(Case study: LED televisions produced by LG Co. in Tehran city)

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**ABSTRACT:**

Fast growing information technology and communications is considered as the most important long-term tradition in global trading for business activities these days. The emergence of internet E-commerce has granted an unbelievable marketing opportunity for trading throughout the last decade. Today, internet is accessible not only by PCs but also through TV and cellphones. Moreover, changing life style has directed consumers towards online shopping because it saves time and costs in the shortest time possible. Thus, this research was performed aiming at determining the role played by affecting factors on the frequency of online shopping by consumers of LED LG TVs. For doing so, we will investigate the effect of price promotion, organizational goal, research for information indirectly on the efficiency and the effect of the frequency of using online shopping portfolio directly on the frequency of online shopping. The statistical population of this research contains those LED LG TV consumers who have purchased them online. After data gathered, the questionnaire was provided and then we described the status of gathered data by the aid of descriptive statistic methods including average, standard deviation, tables of frequency distribution, agreed, graph drawing and calculation of indices. In this regard, we used Cronbach's alpha for reliability and parametric inferential statistic methods for answering four research hypotheses. We analyzed data using confirmatory factor analysis (CFA) and structural equation modeling (SEM) and partial least square (PLS) and LISEREL software. Results indicated that efficiency resulting from price promotion has no effects on the frequency of using online shopping portfolio but variables including organizational goal and researches and data exploration directly affects the frequency of using online shopping portfolio and directly on the frequency of online shopping.

**Keywords:** frequency of online shopping, online shopping portfolio, organizational goal, data research

**1. INTRODUCTION**

Having more than 1.5 billion users, the internet is considered as the main partner in global trading and as means of customers' authority and accomplishment. According to the recent report by Nielsen, more than 95% of internet users do online shopping in certain countries. In case of Korea, 99% of those users act so and followed by German, British and Japanese users. American consumers ranked in 8<sup>th</sup> place of this list. Based on a similar study, among all internet users only 40% of them are considered

as regular and stable buyers. However, 85% of internet users had had one online shopping in a month until the end of 2007. Basically, web is a strong tool that has revolutionized communication paths between businesses and consumers due to available opportunities and limitless offers. Today, firms are increasing their activities along with this communication channel for competitiveness in global economy. The direct result of online trading has been online consumer who uses internet for

purchasing goods and services. Understanding online decision making process is essential for increasing online business strategies and guiding for establishing marketing to repurchase online (B. Bai et al., 2008, 391).

## 2. Literature

Local changes in particular technology with extremely high speed have transformed trading and business in new millennium. Developing day technology and increasing speed of computers and designing interfaces, networks have initially been established locally and it was then that more expanding networks like local area networks emerged and finally expanding technology ended up with the creation of internet network which is used in E-commerce which is defined as good and services buy and sell using internet. This is a new method in market. Online shopping not only offers suitable purchase with various products but also fast comparison of prices and information of products is offered, too. Digital world surprises us every day and changes frameworks and tools and mingle them. One of those tools is online or internet shopping which changes consumers' behavior gradually. Information is available on the internet network freely and indicates a situation within which buy and sell is performed automatically and easier. Various firms and businesses and consumer groups inside and outside the organization are connected through wireless tools and sellers access to purchasers readily and purchasers access to goods and sellers with no trouble (Katler, 2006, 124). Internet consumers or purchasers observe goods and services using software of online shops directly and order them online. Various works have been performed in this regard including wide range of variables:

1. Gupal et.al (2013) in a case study about affecting factors on consumers' online shopping behavior using qualitative and quantitative methods investigated factors affecting consumers' satisfaction, future shopping intent, frequency of online shopping, number of purchased goods and generally online shopping costs. Results indicated that

online shopping in India is considerably affected by various variables including age, sex, marital status, size and household income and affect online shopping.

2. Rahul ArgaSen in a research entitled "identifying factors affecting on online shopping in Calcutta" investigated online shopping in 2014 and selected 150 samples and performed analysis using factor analysis by the aid of SPSS software. Findings of this study indicated that factors like cost, convenience and related seller are main factors affecting online shopping in Calcutta.

3. Monica in a research entitled "beyond shopping: online shopping portfolio consumers' concealed motives" investigated consumers' motives for placing goods in online shopping portfolio with or without shopping and named it use of virtual shopping portfolio. In this study, hedonic profit and motives of using the frequency of consumers' online shopping portfolio is explained based on a national online sample which is beyond shopping intent. Reasons of using virtual shopping portfolio from consumers' viewpoint include security, extensive advertisement, online price, obtaining information on special goods, organizing shopping items, and recreation. Based on experimental findings of this research, it is recommended to increase online shopping with purchase conversion rate.

4. SeyyedNavidNoorbakhsh stated that this research aims at identifying affecting factors on E-consumers' behavior from the time before entering the E-shop after the shopping occurred. Negative and positive effects of any investigated item as well as on the perceived risk and the quality of internet base have been discussed and suitable solutions have been offered. Results indicate that lack of appropriate environment is one of the main reasons resulted in E-business less welcomed by suppliers and consumers. High traffic and internet disorders are just few problems among all. However, regarding youth population and hearing news about internet development and establishment of internet TV, implementation of 800 pay phones provided with internet,

mobile high speed in provinces, those companies will definitely be winner in future that use electronic environment for marketing their products and services.

5. Mandani Tokenejad in a research entitled customers' attitude investigated online shopping in Shahrvand chain stores and attempted to answer following questions:

1. What is Shahrvand stores customers' attitude towards online shopping?

2. How affecting factors on Shahrvand customers' attitude are prioritized towards online shopping?

This research was performed among Shahrvand stores customers in Tehran who had used online shopping. The research questionnaire was distributed for sample with 100 persons selected by easy sampling method from 4 branches of Shahrvand and it was cleared that based on 9 available factors in theoretical model customers and Shahrvand chain stores develop a negative attitude towards online shopping.

6. In 2011, Gilani performed a study entitled investigation of mixed effects of internet marketing on online shopping intent of cosmetics stated that results of descriptive and inferential statistics indicate that there is a direct and significant relationship between internet marketing and online shopping intent.

#### Research conceptual model:

After the affecting factors on dependent and independent variables were trivialized using questionnaire and matching it with current social situations, we practiced to investigate the relationship between efficiency from price promotion, organizational goal, researches and search for information, the frequency of using online shopping portfolio and the frequency of online shopping.

Independent variables: efficiency from price promotion, organizational goal, research and search for information whose effects on mediator variables including the frequency of using online shopping portfolio and then its effects on dependent variables including the frequency of online shopping.

Based on research method (KUKAR\_KINNEY, 2010)

#### Hypotheses

- Efficiency from price promotion affects the frequency of using online shopping portfolio significantly.
- The organizational goal affects the frequency of using online shopping portfolio significantly.
- Research and search for information affects the frequency of using online shopping portfolio significantly.
- The frequency of using online shopping portfolio affects the frequency of online shopping significantly.

#### Research method

Since this research was performed to expand applied knowledge on factors affecting the frequency of online shopping by consumers it is applied kind regarding its goal and is descriptive kind regarding its data collection. Moreover, this research is from correlation type because aims at investigation and identification of affecting factors on the frequency of online shopping by consumers. This research is considered as survey type because it investigates the distribution of statistical population characteristics and it is from cross-section type due to the fact that at one point of time data was collected from a certain statistical population.

#### Research findings

In this research, we used Cronbach's alpha coefficient method to calculate reliability. In this method, variance of scores of items of questionnaire and total variance are first calculated and then alpha coefficient value is calculated using following formula:

$$\alpha = \frac{n}{n-1} \left( 1 - \frac{\sum si^2}{s^2} \right)$$

Where:

n= number of items,  $\alpha$ = cronbach's alpha coefficient

si= item standard deviation, s= total standard deviation of the questionnaire

In this research, Cronbach's alpha was calculated using SPSS 20. To do so, a initial sample containing 19 questionnaires was pretested. Then, Cronbach's alpha was obtained as 93% using data obtained from these questionnaires whose value is 0.7 and is

acceptable indicating that the research questionnaire reliable enough such that in similar conditions the results will be comparable.

Descriptive results of demographic characteristics (sample size= 213)

No.			%	Frequency
1	Sex	Male	53.9%	115
		Female	46.1%	98
2	Age	<30 years	24.6%	52
		30-45 years	28.9%	62
		35- 45 years	22.7%	48
		>40 years	23.8%	51
2	Education	Ph.D.	6.6%	14
		M.A	23.8%	51
		B.A	29.7%	63
		A.A	14.8%	32
		Diploma and lower	25.0%	53
4	Income	<1 million	5.1%	11
		1-1.5 million	52.7%	112
		1.5-2 million	32.8%	70
		>2 million	9.4%	20

**Hypotheses test**

Pearson's correlation coefficient and isolated validity index

Hidden variables	1	2	3	4	5	AVE
1. frequency of online shopping	0.829					0.688
2. frequency of using online shopping portfolio	0.44	0.823				0.677
3. organizational goal	0.05	0.18	0.832			0.693
4. research and search for information	0.15	0.48	0.05	0.810		0.677
5. efficiency from price promotion	0.24	0.76	0.09	0.29	0.837	0.701

The diagonal shows the square root of the average variance explained.

As the table indicates the value of the second square of the average variance explained index for all variables depends on the correlation between that variable with others. For an instance, the second square of the average variance explained is 82.9% for the frequency of online shopping which exceeds the value of correlation between this variable with others. The lower part of the diagonal indicates Pearson's correlation coefficients. Positive coefficient indicates a direct and positive relationship and the negative one indicates an inverse and negative relationship between two variables. All coefficients are significant with an error level less than 1%. The final column of the table indicates the value of average variance extracted for all research variables.

**Model fitting indices**

**Table 6-4:** model fitting indices

Index name	Model estimations	Limits
Chi square/ degree of freedom	2/179	<3
Goodness of fit	0/89	>0.8
Adjusted goodness of fit	0/81	>0.8
root mean square error of estimation	0/084	<0.9

Compensated fitness	0/95	>0.9
Normalized fitness	0/92	>0.9
Non-normalized fitness	0/93	>0.9
Increased fitness	0/95	>0.9

If the model approved by the model indices, it may be used for testing hypotheses related to causal relationships between variables. There is no certainty on the degree of freedom regarding chi square  $\chi^2$  ratio and a value less than 3 is acceptable in resources (Kalantari, 2009) which is estimated as equaling 2.179. The reported value for GFI is 0.89. In order to investigate the way in which the model mixed fitness and saving we used a very strong index of RMSEA (root mean square of variance estimation error estimation). The value of this index is calculated as 0.084 in this table and indicates suitable explanation of covariance. If it is to study a model how act well in particular compared to other potential models regarding explanation of a set of observed data we used values for normalized, non-normalized, increased fitness, comparative fitness indices. Values exceeding 0.9 implies that the designed model has highly fit compared to other potential models. As fitness characteristics from the above table indicate, the research data is appropriately fit to the factor structure and theoretical infrastructure indicating that questions are in line with theoretical structures.

#### Path coefficients, t statistics and research hypothesis result

Result	Sig	R <sup>2</sup>	t statistic	Bets	Research hypotheses	Hypotheses	
Rejected	P>0.05	0/46	1/45	0/08	Efficiency from price promotion- frequency of using online shopping portfolio	H1	Direct effects
Approved	P<0.01		3/73	0/24	Organizational goal- frequency of using online shopping portfolio	H2	
Approved	P<0.01		8/17	0/56	Research and search - frequency of using online shopping portfolio	H3	
Approved	P<0.01	0/12	4/07	0/35	frequency of using online shopping portfolio- frequency of online shopping	H4	Indirect effects
Approved	P<0.01	0/06	3/74	0/031	Efficiency from price promotion- frequency of online shopping	H2	
Approved	P<0.01		2/79	0/088	Organizational goal- frequency of online shopping	H3	
Rejected	P>0.05		1/37	0/21	Research and search - frequency of online shopping	H4	

$|t| > 1.96$  Significant at  $P < 0.05$ ,  $|t| > 2.58$  Significant at  $P < 0.01$ ,

**First hypothesis:** the efficiency from price promotion affects the frequency of using online shopping portfolio.

**H0:** efficiency from price promotion has no significant effects on the frequency of using online shopping portfolio significantly.

**H1:** efficiency from price promotion has significant effects on the frequency of using online shopping portfolio significantly.

Based on results obtained from structural equations, t-value for this parameter (according to 1% error in the region for H0 rejection for values out of -1.96- 1.96 of each parameter of the model) was estimated inside the range.

Thus, it can be stated that the realized hypothesis is rejected with 95% confidence. In other words, the efficiency from price promotion has no statistically significant effects on the frequency of using online shopping portfolio significantly.

**Second hypothesis:** the organizational goal affects the frequency of using online shopping portfolio.

**H0:** the organizational goal has no significant effects on the frequency of using online shopping portfolio significantly.

**H1: the organizational goal** has significant effects on the frequency of using online shopping portfolio significantly.

Based on results obtained from structural equations, t-value for this parameter (according to 1% error in the region for H0 rejection for values out of -1.96- 1.96 of each parameter of the model) was estimated as exceeding 1.96. Thus, it can be stated that the realized hypothesis is approved with 95% confidence and because the path coefficient is positive it can be stated that the relationship is positive and significant. Thus, with a confidence level of 95% it is expected that the improved organizational goal results in the frequency of using online shopping portfolio to be increased.

**Third hypothesis:** the research and search for information affects the frequency of using online shopping portfolio.

**H0:** the research and search for information has no significant effects on the frequency of using online shopping portfolio significantly.

**H1:** the research and search for information has significant effects on the frequency of using online shopping portfolio significantly.

Based on results obtained from structural equations, t-value for this parameter (according to 1% error in the region for H0 rejection for values out of -1.96- 1.96 of each parameter of the model) was estimated as exceeding 1.96. Thus, it can be stated that the realized hypothesis is approved with 95% confidence and because the path coefficient is positive it can be stated that the relationship is positive and significant. Thus, with a confidence level of 95% it is expected that the improved research and search for information results in the frequency of using online shopping portfolio to be increased.

The coefficient of determination was estimated as 0.46. Therefore, all three variables in all explain 46% of changes over the variable of frequency of using online shopping portfolio. Based on the beta coefficient, we can state that research and search for information had the highest effect on the frequency of online shopping portfolio (they had the highest beta

coefficient) and the lowest effects have been derived for the efficiency from price promotion (with the lowest path coefficient).

**Fourth hypothesis:** the frequency of using online shopping portfolio affects the frequency of online shopping.

**H0:** the frequency of using online shopping portfolio has no significant effects on the frequency of online shopping.

**H1:** the frequency of using online shopping portfolio has significant effects on the frequency of online shopping.

Based on results obtained from structural equations, t-value for this parameter (according to 1% error in the region for H0 rejection for values out of -1.96- 1.96 of each parameter of the model) was estimated as exceeding 1.96. Thus, it can be stated that the realized hypothesis is approved with 95% confidence and because the path coefficient is positive it can be stated that the relationship is positive and significant. Thus, with a confidence level of 95% it is expected that the improved frequency of using online shopping portfolio results in the frequency of online shopping to be increased.

The coefficient of determination was estimated as 0.46. Therefore, variable of the frequency of using online shopping portfolio explain 12% of changes over the frequency of online shopping.

## CONCLUSION

The descriptive results indicate that men had the highest participation such that 54% was men and 46% was women. Regarding their age, 30% of them were 30-35 years old and from education viewpoint 30% of them hold B.A and higher degrees. Results indicate that 4 hypotheses have been approved. Based on the necessity of affecting factors on the frequency of online shopping, we can conclude that to increase online shopping following steps may be devised;

- Placing suitable, inclusive, accurate and easy to understand catalogue on the site which in case of observation by current a potential purchaser will persuade them to shop.

- Low prices for products purchased online and offering off cards for next purchases.
  - Easy establishment and installation of software for the online shopping portfolio, accessible with less complexity for all social classes to be able to use it.
  - The related manager can help customers' attraction by providing creative solutions. He can benefit from internet marketing and free deliveries. Adding extra equipment and services for goods can be another way. If those equipment, services and extra facilities provided with a good and sell in a price less than all others, the customer will entrust more.
  - Setting organizational goals fitting customers' needs which may be changed over time and response their needs and results in a growing demand for the organization.
  - Predisposing search for information to make customers entrusting online shopping including: sharing ideas and comments by customers who had online shopping.
  - Providing information on the site about online shopping advantages: time and cost saving, ability to compare with other brand in a shortest possible time, and order overnight.
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## RESOURCES

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