

The Effect of Website Quality on Customer Loyalty and Satisfaction with the Mediating Role of E-Learning

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Abstract

This research aims to investigate the effect of website quality on customer loyalty and satisfaction with the mediating role of e-learning. The study is applied in terms of purpose and is a descriptive survey regarding methodology and the data collection method. The research statistical population included all the students of Tehran Technical Complex, Mirdamad branch. Since the statistical population was unlimited, Cochran's formula was applied, and 384 students were selected using the available non-random sampling method. The data needed in the research was collected using a website quality questionnaire, an e-learning questionnaire, a customer loyalty questionnaire, and a customer satisfaction questionnaire. Convergent and divergent validity methods were used to confirm the questionnaire's validity, and Cronbach's alpha coefficients, extracted variance, and composite reliability methods were used to measure the questionnaire's reliability. The structural equation modeling method and SmartPLS were used to analyze the data. The paper concludes by discussing the research findings.

Keywords: website quality, customer loyalty, customer satisfaction, e-learning

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Introduction

Customer loyalty is the most important driving force for a business to succeed in competitive circumstances. Therefore, companies should focus on creating and maintaining customer loyalty [1]. Customer loyalty refers to the commitment of customers to repurchase a product or service. Customer loyalty reduces costs such as advertising costs, promotions costs, and the cost of sales activities to attract new customers. Loyal

customers can increase their profits by increasing their purchases from the company [2]. The main goal of any business is to satisfy existing customers and attract new customers. To satisfy customers, companies should focus on effective customer service to meet their needs [3]. Customer satisfaction with the received services affects their retention [4].

Today, customers know that their choices in a service-oriented market matter to the service companies.



Therefore, improving public relations to achieve competitive advantage strategies is very important. Service quality is a basic tool for creating a competitive advantage and helps to achieve a market-oriented system [5]. Academic researchers and practitioners have recognized the need to support the creation of new distribution channels to increase service quality and efficiency [6, 7]. Information and communication technology and the Internet have significantly transformed the information and communication exchange [8]. Websites are used as a suitable channel to manage customer relations and describe a satisfactory and relevant image of the service provider, which can lead to higher sales volume [9]. Website quality is very important for consumer engagement, which is the key to revolution and getting revenue [9]. The rapid development of information and communication technology increases the need to use learning systems that are based on information and communication technology. Nowadays, the popularity of e-learning due to its ability to exchange multimedia information at a low cost is increasing [10].

Regarding the development of information and communication technology, many institutions around the world today implement this form of learning. The main features of this type of learning are efficiency, practicality, and flexibility. This form of learning, regardless of time, is applicable worldwide because scholars can learn as much as they want, whenever they want, and wherever they want [11]. Studies have shown that students' satisfaction positively affects their motivation, increases their retention rate, reduces efforts to conquer enrollment, and increases funding. As a result, institutions have employed greater commitment to satisfy their student and create quality experiences to increase their loyalty. For this reason, loyalty is a key indicator for higher education institutions, so their graduates must perceive their institutions as places they can return to throughout their professional lives to update their knowledge and develop their competencies [12].

Educational activities become completely disrupted due to Covid-19, which the World Health Organization declared as a pandemic in 2020. Since traditional learning and training were out of reach, online learning was an alternative to support continued education amid the pandemic with flexibility, accessibility, and convenience. Most higher education institutions replaced their face-to-face learning with inevitable distance learning. However, this unplanned and rapid change has raised concerns about the quality of learning, educational growth, and satisfaction because there was little information available to educators about online teaching best practices [13].

Tehran Technical Complex is an educational institution with numerous agencies throughout Iran, and its mission is to develop employment and entrepreneurship through skill-based training. Since most of the training in this complex was practical, the training classes were held physically before the spread of the coronavirus. However, after the coronavirus epidemic and the need to continue skill training, most of the training in this complex was held online. Since the training had a skill-based nature, the training's suitability was decreased, and students had to study in depth. Therefore, regarding these changes and the study gaps that different institutions faced during online education, this study examines the effect of website quality on customer loyalty and satisfaction with the mediating role of e-learning in the Tehran Technical Complex.

The research hypotheses are as follows:

1. Website quality affects customer loyalty.
2. Website quality affects customer satisfaction.
3. Website quality affects e-learning.
4. E-learning affects customer loyalty.
5. E-learning affects customer satisfaction.
6. E-learning with a moderating role of gender affects customer satisfaction.

The conceptual model of the current research is as follows:

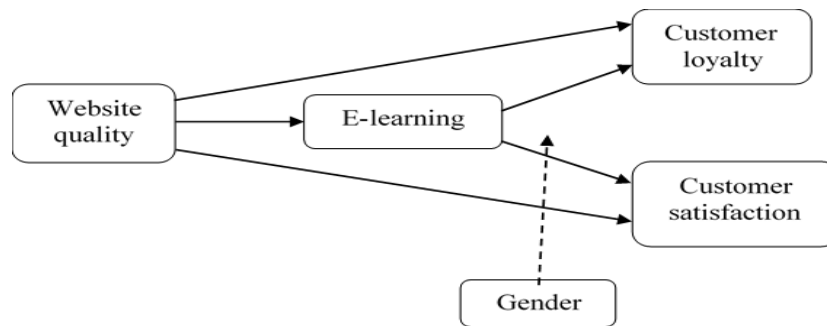


Figure. 1: The research conceptual model

Research Methodology

This study is applied in terms of purpose, and it is a descriptive survey regarding the data and information collection method. The statistical population of the research includes all students of Tehran Technical Complex, Mirdamad branch. Cochran's formula was applied to the unlimited statistical population of the study, and 384 students were selected using a non-random available sampling method.

The library method was used to collect information about the theoretical foundations and background of

the research. In addition, the field method with a questionnaire was used to collect the necessary information to examine the research hypotheses. Website quality was measured using a questionnaire proposed in [14, 15] with 14 questions. E-learning was measured using a questionnaire proposed by Agarwal et al. [16] with 5 questions. Customer loyalty was measured using a questionnaire proposed by Isla et al. [17] with 4 questions, and customer satisfaction was measured using a questionnaire proposed in [17, 18] with 4 questions.

The factor loadings, Cronbach's alpha, composite reliability, and extracted variance indices were used to examine the questionnaires' reliability (see table below).

Table 1. The factor loadings of each variable's indicators

Variable	Item	Factor loadings	Variable	Item	Factor loadings
Customer loyalty	CL1	0.856	Website quality	WQ1	0.783
	CL2	0.760		WQ2	0.736
	CL3	0.772		WQ3	0.739
	CL4	0.846		WQ4	0.784
Customer satisfaction	CS1	0.830		WQ5	0.766
	CS2	0.683		WQ6	0.811
	CS3	0.841		WQ7	0.795
	CS4	0.760		WQ8	0.666
E-learning	EL1	0.748		WQ9	0.751
	EL2	0.828		WQ10	0.767
	EL3	0.844		WQ11	0.709
	EL4	0.819		WQ12	0.740
	EL5	0.860		WQ13	0.710
				WQ14	0.787

A factor load is a numerical value indicating the intensity of the relationship between a latent variable and the corresponding manifest variable during the path analysis. The higher the factor loading is concerning a

specific structure, the greater its contribution to explaining that structure. In addition, if the factor loading of an index is negative, it means its negative effect in explaining the related structure. If the factor loading is less

than 0.3, the relationship is considered weak and is ignored. It is acceptable if the factor loading is between 0.3 and 0.6; if it is more than 0.6, it is desirable.

In the above table, the factor loadings of all model indices are more than 0.5, which indicates that what the

Table 2. The reliability index values

Variable	Cronbach's alpha	Composite reliability	variance extracted
Customer loyalty	0.824	0.883	0.655
Customer satisfaction	0.789	0.861	0.610
E-learning	0.878	0.911	0.674
Website quality	0.941	0.948	0.569

The construct reliability is confirmed if the composite reliability (CR) is more than 0.7 and the average extracted variance (AVE) is more than 0.5. In addition, Cronbach's alpha is acceptable if it is more than 0.7. As can be seen, the obtained values meet the mentioned conditions, so the measurement tool is reliable. The convergent and divergent indices are used to measure validity. The convergent validity is confirmed if the factor loading is more than 0.5. The Fornell-

Table 3. Fornell-Larcker test

Variable	CL	CS	EL	WQ
Customer loyalty	0.809			
Customer satisfaction	0.759	0.781		
E-learning	0.805	0.621	0.821	
Website quality	0.779	0.666	0.781	0.754

researcher intended to measure by the questionnaire has been realized. Therefore, the relationship between the constructs or the latent variables is significant. Indices with a higher factor loading are more important than other indices.

Larcker test is used to measure divergent validity. According to this criterion, a latent variable should have more dispersion among its observables compared to other latent variables to have higher divergent validity. Table 3 presents the results of the Fornell-Larcker test. As can be seen, the main diameter values for each latent variable are higher than the correlation of that variable with other latent variables of the model, so the model's divergent validity is confirmed.

Findings

The results of applying the structural equation modeling (SmartPLS) to the research hypothesis are as follows. (fig 2 and 3)

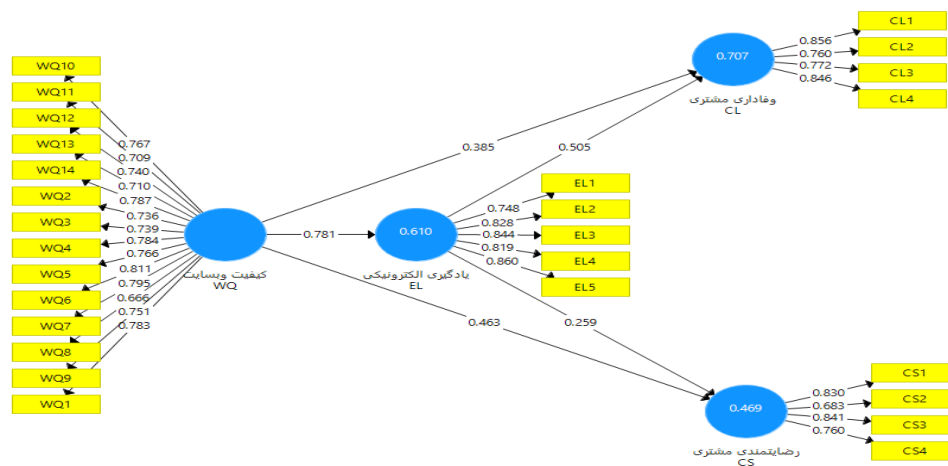


Figure 2. The research structural model in standard mode

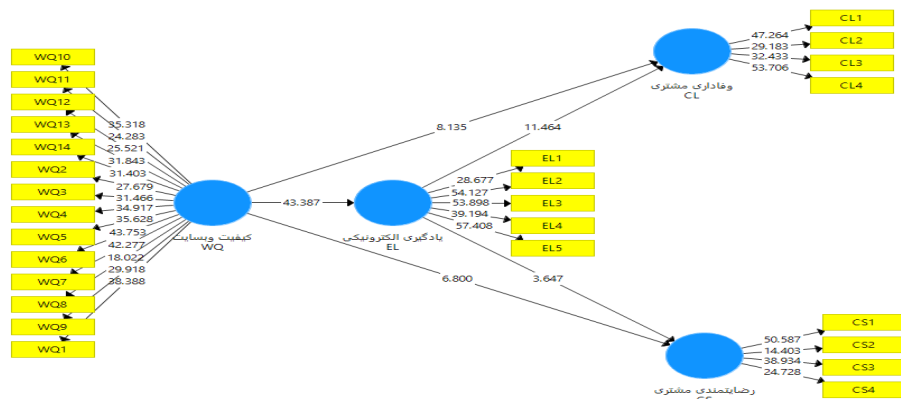


Figure 3. The research structural model in the significant mode

The research model in the gender group is as follows.

1. Male group

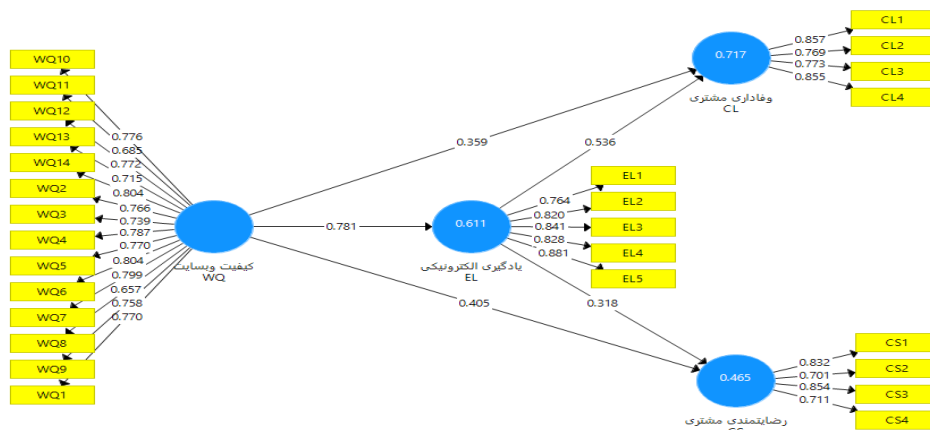


Figure 4. The research structural model in the standard mode [male]

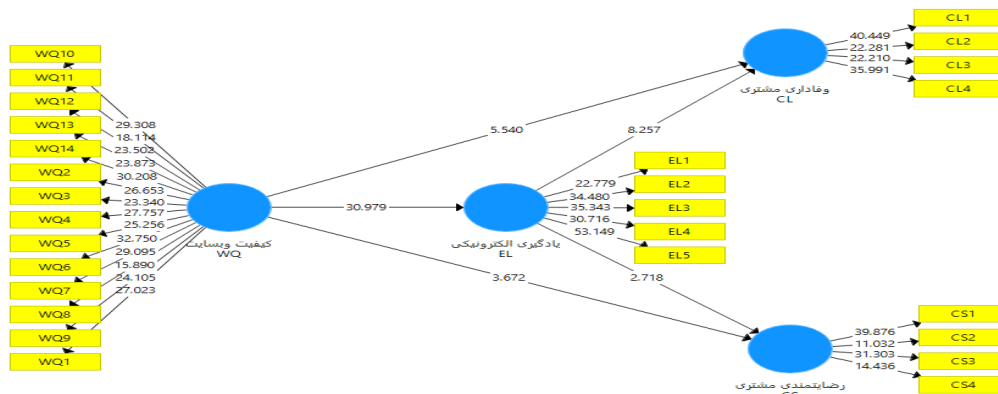


Figure 5. The research structural model in the significant mode [male]

2. Female group

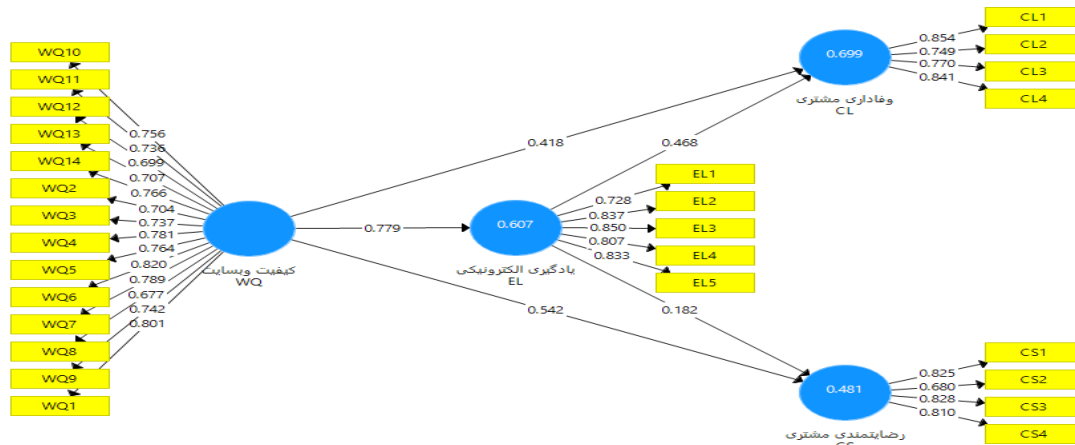


Figure 6. The research structural model in the standard mode [female]

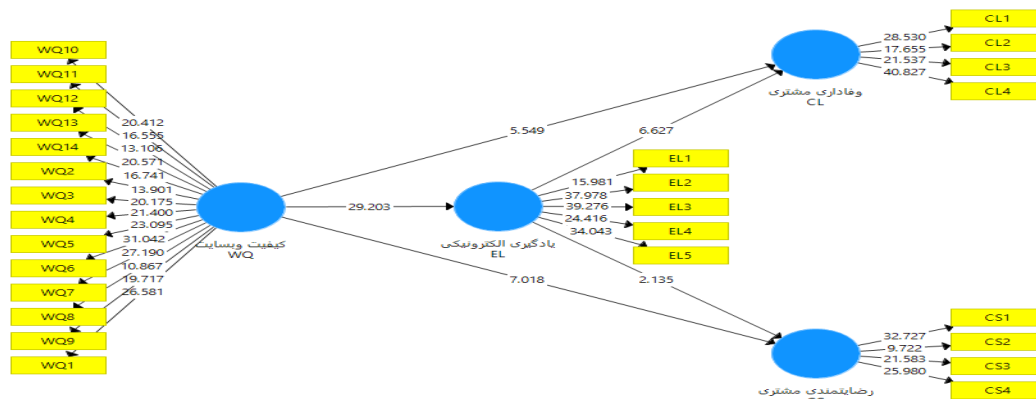


Figure 7. The research structural model in the significant mode [female]

The results obtained from testing the research hypotheses based on the path significance and standardized coefficients are given in the table below.

Table 4. The summary of the results

Hypotheses	Path coefficient	Significance coefficient [t]	Result
Website Quality - Customer Loyalty	0.385	8.135	Accepted
Website quality - customer satisfaction	0.463	6.800	Accepted
Website quality - E-learning	0.781	43.387	Accepted
E-Learning - Customer Loyalty	0.505	11.464	Accepted
E-learning - customer satisfaction	0.295	3.647	Accepted

Table 5: Examining the moderating variable's effect on the research model's hypotheses based on gender

Structural path	Standard error	Path coefficient	Sample size		T-test	Result		
	Male	Female	Male	Female				
Effect of E-learning on customer satisfaction with the moderating role of gender	0.117	0.085	0.318	0.182	203	181	31.0	Rejected

The T-test presented in Table 5 is less than 1.96. Therefore, it can be concluded that the moderating variable in the gender group (i.e., male and female) does not moderate the relationship between e-learning and customer satisfaction at the 95% confidence level.

Discussion

This study investigates the effect of website quality on customer loyalty and satisfaction with the mediating role of e-learning. The research population includes all the students of Tehran Technical Complex, Mirdamad branch, and the intended data are collected using the library and field methods (i.e., a questionnaire). The convergent and divergent validity methods were used to measure the questionnaire's validity, and Cronbach's alpha coefficients, extracted variance, and composite reliability were used to measure its reliability. The results are summarized in Table 4, which confirms all the hypotheses, consistent with previous studies [19-24].

This significantly contributes to research in the field of online shopping. The results of this study provide specific fundamental implications for e-retailers, managers, and marketers who develop strategic plans and implement tools to improve their e-commerce performance and customer satisfaction. This research can help e-retailers understand the important factors that fully determine customer satisfaction and loyalty, which can help them improve their IT and management strategies and increase profits. This result emphasizes the importance of website quality and e-learning in predicting customer loyalty for e-retailers. E-retailers should invest in good quality websites to retain existing customers and attract potential customers. Customer orientation is important due to its positive and significant effect on e-commerce consumers' loyalty and satisfaction. This finding explains

the information, system, and service quality and provides a better e-shopping experience for users. Managers should be committed to improving the operating system and providing a faster and easy-to-access website. User-friendly and high-quality e-commerce websites have accurate product information, reliable and workable system, and complete customer service (e.g., active customer support, delivery service, and secure payment mechanism). Consumers prefer this type of website for online shopping of products.

In addition, this study shows that e-learning is a mediator and predictor of satisfaction and loyalty. Satisfied customers are like ambassadors for retailers' websites. Unsatisfied customers of online shops will stop using them, no matter how useful or well-designed they are. Conversely, satisfied customers will repurchase products or services, spreading positive satisfaction and loyalty. Therefore, retaining existing customers and attracting potential customers requires sellers to pay more attention to satisfying customers with the quality of products, services, and websites.

Conclusion

Different strategies by recognizing the differences in the risk-taking tendencies of genders must be developed to examine the effect of marketers. Male customers are more willing to take risks and try new things on shopping websites, while female customers are less willing to do so and study online comments before purchasing products from websites. Online retailers can use these insights to improve product sales on shopping websites.

This study will help local and global marketers by providing a better understanding of the online shopping environment. E-retailers can learn about satisfaction and loyalty to take advantage of this opportunity

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