THE IMPACT OF E-SERVICE QUALITY ON E-LOYALTY THROUGH THE MEDIATING EFFECTS OF E-SATISFACTION AND E-TRUST IN LEBANON

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ABSTRACT

Purpose: This study seeks to explore the relationships between e-service quality, e-satisfaction, e-trust, and e-loyalty within the context of Lebanon's digital landscape. By investigating the mediating effects of e-satisfaction and e-trust, the research aims to provide nuanced insights into the intricate dynamics shaping e-loyalty in the Lebanese online environment. The findings are anticipated to contribute valuable knowledge for businesses and policymakers seeking to enhance electronic service offerings and foster customer loyalty in the digital realm.

Design/methodology/data analysis: In this comprehensive quantitative study, a validated questionnaire was deployed to survey Lebanon's diverse online shopper demographic. The participation of 2378 individuals from varied backgrounds added depth and representativeness to the data. The analytical phase employed T-test, ANOVA, and Structural Equation Modeling (SEM) techniques, leveraging SPSS software for robust statistical analysis and interpretation. This methodological approach ensures a thorough examination of the dynamics influencing online shopping behavior in the Lebanese context.

Findings: Highlighting critical insights for E-commerce and e-retail, this study emphasizes the pivotal role of website efficiency and information quality. The findings underscore that a streamlined website contributes significantly to fostering customer trust, satisfaction, and loyalty. These essential factors identified in the study illuminate the pathway for businesses to enhance their online platforms, ultimately strengthening the bonds with customers and cultivating sustained loyalty in the digital realm.

Originality/value: This study is important because the pandemic and lockdowns have changed consumer purchasing behaviour. Customers are more critical of e-commerce platforms and more comfortable using multiple devices to access online stores and apps as they shop more online.

Practical implications: This study is timely and relevant for businesses trying to stay competitive in the changing e-commerce landscape due to consumer behaviour changes.

Keywords: online shopping, e-commerce, website efficiency, information quality, e-trust, e-satisfaction, e-loyalty, covid-19, pandemic, economic crisis, Lebanon.

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O IMPACTO DA QUALIDADE DOS SERVIÇOS ELETRÔNICOS NA LEALDADE ELETRÔNICA ATRAVÉS DOS EFEITOS DE MEDIACÃO DA SATISFAÇÃO ELETRÔNICA E DA CONFIANÇA ELETRÔNICA NO LÍBANO

RESUMO

Finalidade: Este estudo busca explorar as relações entre qualidade de e-service, e-satisfação, e-confiança, e-lealdade dentro do contexto digital do Líbano. Investigando os efeitos mediadores da e-satisfação e e-confiança, a pesquisa tem como objetivo fornecer insights diferenciados sobre a complexa dinâmica que molda a e-lealdade no ambiente online libanês. As descobertas são antecipadas para contribuir com conhecimento valioso para as empresas e os governantes que buscam melhorar as ofertas de serviços eletrônicos e promover a lealdade do cliente no meio digital.

Design/metodologia/análise de dados: Neste estudo quantitativo abrangente, um questionário validado foi implantado para examinar o diversificado consumidor on-line do Líbano demográfico. A participação de 2378 indivíduos de diferentes origens adicionou profundidade e representatividade aos dados. A fase analítica empregou técnicas de T-test, ANOVA e Modelo de Equação Estrutural (SEM), aproveitando o software SPSS para análise e interpretação estatística robusta. Esta abordagem metodológica garante uma análise completa da dinâmica que influencia o comportamento de compras on-line no contexto libanês.

Conclusões: Destacando insights críticos para o comércio eletrônico e o varejo eletrônico, este estudo enfatiza o papel fundamental da eficiência do site e da qualidade da informação. As conclusões ressaltam que um site otimizado contribui significativamente para promover a confiança, satisfação e lealdade do cliente. Estes fatores essenciais identificados no estudo iluminam o caminho para as empresas melhorarem as suas plataformas online, reforçando em última análise os laços com os clientes e cultivando uma lealdade sustentada no mundo digital.

Originalidade/valor: Este estudo é importante porque a pandemia e os bloqueios mudaram o comportamento de compra do consumidor. Os clientes são mais críticos em relação às plataformas de comércio eletrônico e mais confortáveis na utilização de vários dispositivos para acessar lojas e aplicações online à medida que fazem compras online.

Implicações práticas: Este estudo é oportuno e relevante para as empresas que tentam se manter competitivas no cenário de comércio eletrônico em mudança devido a mudanças no comportamento do consumidor.

EL IMPACTO DE LA CALIDAD DEL SERVICIO ELECTRÓNICO EN LA LEALTAD ELECTRÓNICA A TRAVÉS DE LOS EFECTOS MEDIADORES DE LA SATISFACCIÓN ELECTRÓNICA Y LA CONFIANZA ELECTRÓNICA EN EL LÍBANO

RESUMEN

Propósito: Este estudio busca explorar las relaciones entre la calidad del servicio electrónico, la satisfacción electrónica, la confianza electrónica y la lealtad electrónica en el contexto del panorama digital del Líbano. Al investigar los efectos mediadores de la satisfacción y la confianza electrónicas, la investigación pretende ofrecer una visión matizada de la intrincada dinámica que forma la lealtad electrónica en el entorno en línea libanés. Se prevé que los resultados aporten conocimientos valiosos a las empresas y a los responsables de la formulación de políticas que deseen mejorar la oferta de servicios electrónicos y fomentar la lealtad de los clientes en el ámbito digital.

Diseño/metodología/análisis de datos: En este estudio cuantitativo integral, se implementó un cuestionario validado para encuestar a los diversos compradores en línea del Líbano. La participación de 2378 individuos de diversos orígenes añadió profundidad y representatividad a los datos. La fase analítica empleó técnicas de prueba T, ANOVA y modelado de ecuaciones estructurales (SEM), aprovechando el software SPSS para análisis e interpretación estadística robusta. Este enfoque metodológico garantiza un examen exhaustivo de la dinámica que influye en el comportamiento de las compras en línea en el contexto libanés.

Hallazgos: Este estudio destaca los puntos de vista críticos para el comercio electrónico y el comercio minorista electrónico, y enfatiza el papel fundamental de la eficiencia del sitio web y la calidad de la información. Las conclusiones subrayan que un sitio web racionalizado contribuye significativamente a fomentar la confianza, la satisfacción y la lealtad de los clientes. Estos factores esenciales identificados en el estudio iluminan el camino para que las empresas mejoren sus plataformas en línea, fortaleciendo en última instancia los vínculos con los clientes y cultivando la lealtad sostenida en el ámbito digital.

Originalidad/valor: Este estudio es importante porque la pandemia y los encierros han cambiado el comportamiento de compra de los consumidores. Los clientes son más críticos con las plataformas de comercio electrónico y se sienten más cómodos usando múltiples dispositivos para acceder a tiendas y aplicaciones en línea a medida que compran más en línea.

Implicaciones prácticas: Este estudio es oportuno y relevante para las empresas que intentan mantenerse competitivas en el cambiante panorama del comercio electrónico debido a los cambios en el comportamiento de los consumidores.

Palabras clave: compras en línea, comercio electrónico, eficiencia del sitio web, calidad de la información, confianza electrónica, satisfacción electrónica, lealtad electrónica, covid-19, pandemia, crisis económica, Líbano.

1 INTRODUCTION

In the previous decade, several companies ran their businesses offline and online, generating cash from both sources. Businesses now use technology to reach and service customers. Businesses could not thrive without online client engagement or a presence. Many people prefer to purchase online at their convenience rather than in stores since
they think it takes more time and effort. Internet, technical advancement, and the availability of many tools throughout the day helped customers shop online. Since smartphones can reach clients anytime, e-commerce has grown rapidly. Many studies examined how dimensions and characteristics affect e-loyalty. E-commerce is an important business model in today's business environment, so it's crucial to understand customers' online behaviour to create a successful online shop that meets customers' needs and keeps them coming back. Literature reveals that website convenience and efficiency and information quality are the major characteristics of e-service quality, which directly or indirectly affect loyalty through two verified indicators, trust, and satisfaction. This study examined how e-service quality affects online shoppers in Lebanon's trust and satisfaction, as well as loyalty. Businesses have moved toward multi-channel customer service in the past decade. Online platforms and e-commerce tools have caused this change. Due to the convenience and accessibility of Internet shopping, businesses cannot exist without an online presence. Businesses must therefore understand online client behavior and preferences. Smartphones and internet connectivity have accelerated e-commerce growth. Online purchasing has grown in recent years and is projected to continue. Thus, firms must grasp the elements that affect e-loyalty and create customer-focused initiatives. E-loyalty dimensions and variables have been studied extensively. However, knowing e-service quality criteria is crucial to creating a successful online business model. E-service quality depends on website convenience, efficiency, and information quality, according to research. Trust and satisfaction affect loyalty directly or indirectly. This study examines Lebanon's online shoppers' trust and satisfaction with e-service quality parameters. Trust and satisfaction are also investigated as mediating elements in e-loyalty. This study will help Lebanon-based businesses establish customer-focused strategies. This research aims to create an e-commerce business model that builds client loyalty and repeat business.

Customers are purchasing online more after the COVID-19 pandemic and lockdowns. Online buying is new to many Lebanese, especially since trust has long been a barrier. After COVID-19, people became familiar with online shopping, but some businesses that established an online presence and delivery system did not fully understand the main factors that would make their online business more profitable or the perceptions of customers about their online shopping experience. As online shopping grows in Lebanon, there are numerous options and competitors in the same field and
industry, and many firms are unable to identify the aspects that will help them retain and avoid customer switching. Many researchers have evaluated customer trust and loyalty in online buying before COVID-19. This study sheds light on online customers' behavior after COVID-19 and throughout the worst economic crisis, which altered their purchase patterns and planning. Understanding the characteristics and views of Lebanese online consumers may assist online businesses attract and keep customers by altering marketing techniques and improving the buying experience. This study examined how personal and demographic variables of online consumers in Lebanon affected their perceived trust and happiness, emphasizing that the latter are determinants of loyalty to provide insights into how to retain customers. This study also sheds light on online shopping during an economic downturn.


This research adds to the literature by examining the dimensions of e-service and its effect on e-loyalty in Lebanon through mediating factors like e-trust and e-satisfaction. The study also examines these linkages and relationships with online shoppers during a terrible economic crisis and after COVID-19 lockdowns, when many firms created e-commerce or apps. As many Lebanese buyers are new to online buying, it is crucial to investigate their attitudes and perspectives about using this new channel to meet their needs. This study identifies the characteristics of online shoppers and examines trust and satisfaction because most Lebanese businesses are still based in physical locations. This study examined the effects of trust and satisfaction on e-loyalty and the characteristics of Lebanon's online shoppers, confirming theoretically and practically the importance of customer satisfaction and trust in online shopping. This study compares the effects of website efficiency and information quality on e-loyalty in Lebanon to prior studies.

The section theoretically reviews the research issue by discussing pertinent theories and variable relationships. It also reviews empirical studies and their findings to identify different perspectives on the research topic, which helped build a solid
understanding of the topic and the gap that helped form this study's conceptual framework.

1.1 ONLINE SHOPPING AND E-COMMERCE

Rapid technology advancement and the ongoing innovation of new ways to perform business processes and daily activities pushed firms to find new ways to expand and improve their enterprises efficiently and cheaply. Online shopping, which was easy for both businesses and consumers, rose after the COVID-19 epidemic and lockdowns (Dianda, A., Pandin, M.G.R, 2021). Online shopping is using a computer, tablet, smartphone, or other device to buy something. E-commerce platforms like websites or mobile apps enable buyers and sellers to deal online (Dianda, A., Pandin, M.G.R, 2021). Online purchasing helped consumers meet their needs independent of location and time while minimizing their search expenses (Laudon, K., & Trevor, C., 2018). This and other benefits of shopping online have encouraged people to use E-commerce and businesses to consider building an online presence as a key business model that will increase sales and customer base without increasing production or expansion costs (Kutz, M., 2016). Online shopping includes limitations, such as the inability to personally inspect or try on things before buying and potential quality and delivery concerns (Kang, H., & Lee, J., 2010). Online shoppers may worry about their personal and financial data (Gefen, D., & Straub, D. W., 2004). Many factors affect internet shopping behavior. Website design, usability, pricing and value perception, trust and credibility, and social influence (Gefen, D., & Straub, D. W., 2004). Online shoppers look for trustworthy payment methods, privacy policies, and customer service. Word-of-mouth recommendations and internet reviews can also influence online purchase behavior (Jia, N. Z. et al., 2023). As businesses saw the rapid growth of online shopping, especially in developed countries where almost all stores have websites and social media (Kim, J., & Forsythe, S., 2008), they focused more on ways to attract and retain customers. Merchants first want to convert consumers into leads by offering discounts, notifications, and emails, then improve customer experience and satisfaction by improving efficiency (Kutz, M., 2016). Online shopping is easier than in-store sales (Kim, J., & Forsythe, S., 2008).

In 1995, Netscape.com pioneered the idea of using the web for sales and advertising, which tripled sales (Harun, A., & Ayu Salmah, N. N, 2020). E-commerce is a marketplace where vendors display their goods and services to customers who utilize
electronic media to acquire or learn about products and services (Dianda, A., Pandin, M.G.R, 2021). E-commerce is a platform for online transactions between customers and sellers. E-commerce is a combination of applications, business processes, and technology that allows other businesses and consumers to connect and access displayed goods, proposed services, and provided information (Reimon Batmetan, J. et al., 2023), resulting in online commercial transactions that create value for both sellers and buyers (Harun, A., & Ayu Salmah, N. N, 2020). The internet and technological advancements have helped E-commerce grow quickly. Technology made E-commerce a key business model (Dianda, A., Pandin, M.G.R, 2021). E-commerce allows consumers to shop at their own pace and from anywhere at any time. The eight E-commerce traits include universality (Laudon, K., & Trevor, C., 2018). E-commerce variables include multiple. Web design is one. Website design can influence client behavior like purchasing (Monoarfa, V., et al. 2021). Easy-to-navigate, visually appealing websites with clear product and service information are more likely to attract and retain clients. Brand trust also affects e-commerce. Product quality, customer service, and brand reputation can build customer trust, which increases the likelihood of a purchase (Zhang, Y. Et al. 2023). E-commerce and social media are linked. Social media can influence customer behavior, including purchase likelihood (Bart, Y., & Shankar, V.. 2007). Social media lets customers share their thoughts and experiences, which can impact their purchases. E-commerce has increased business reach, customer happiness, and cost reduction. Website design, brand trust, and social media all affect e-commerce. Understanding these linkages can help organizations create effective e-commerce strategies that match client expectations and boost competitiveness.

1.2 E-SHOPPING IN LEBANON

Some of the few research on Lebanon's online purchasing status provide insight into how Lebanese shoppers behaved before and during the COVID-19 outbreak. Hamade, L. (2021) examined companies' early online shopping experiences in Lebanon. Lebanese enterprises were interested in internet selling, but more for product promotion and advertising. Low online shoppers, inadequate delivery methods, poor online payment alternatives, and insufficient internet infrastructure are to blame. After the COVID-19 outbreak and government lockdowns, Lebanon's companies needed new ways to reach customers, especially during an economic and gasoline crisis, thus they went online.
Despite preferring to purchase in stores, Lebanese buyers ordered food online to stay healthy (Li, N., & Zhang, P., 2002). Another study identified the primary elements affecting client trust in the Lebanese business-to-consumer industry (Bojang, I., 2002). The study found three elements that directly boost trust and indirectly decrease perceived risk. Customized products and services, website repute, and perceived technical security. Zaiter et al. (2021) explored how demographic groups view internet delivery applications. Due to internet infrastructure upgrades, Lebanese online customers increased from 1.3 million to 2.1 million from 2014 to 2015. E-commerce is helping many enterprises flourish, which boosts Lebanon's economy. The study found that respondents utilize mobile apps to learn about new arrivals and trends tailored to their buying habits. The study found no correlation between delivery convenience, monthly income, number of family members, or educational degrees. Demographic characteristics do not affect delivery convenience. The relevance of mobile application delivery services is unrelated to these demographic characteristics, indicating that all respondents value them and use them to manage their spending. The study also found no significant association between demographic factors and delivery satisfaction, suggesting that mobile applications satisfy all populations.

2 THEORETICAL FRAMEWORK

The theoretical framework reviews studies on customer loyalty and satisfaction/trust interactions. The theoretical review covers satisfaction, trust, and loyalty ideas and their relationships. This survey only examines customer happiness, primarily online consumer satisfaction. E-commerce has become increasingly important to the global economy. Thus, interest in e-commerce website performance factors is rising. E-commerce websites need efficiency and reliable information. Website efficiency is the ease with which users can navigate and use a website, whereas information quality is the accuracy and relevance of the material. In this section, website efficiency, information quality, e-trust, and e-satisfaction are linked. E-trust, contentment, and loyalty are examined. Efficiency and information quality are the most important aspects of E-commerce, according to previously studied studies and research. Many internet buying influences fall into these two groups, according to the literature. Website design, performance, and convenience—which combine simplicity of use and time-saving—make up efficiency. E-commerce website quality variables include product and website
information quality. Other elements affecting e-shopping are customers' opinions and feelings about the quality of E-commerce or shopping website features. Customer pleasure comes from the perception of E-commerce's usefulness and efficiency, while trust comes from consumers' concerns about privacy and security. Customers' loyalty to an E-commerce or e-shop makes them return to buy more. This section analyzes loyalty as a reaction to other circumstances. This part analyzed factor and effect relationships and associations to create this research's conceptual model.

Website efficiency and information quality predict e-trust. Information quality—including the seller, brand, and policy information—affects trust. Information quality improves e-trust (Li, N., & Zhang, P., 2002). Kuo et al. (2009) found that information quality increased consumer trust in online travel websites. They also found that information quality strongly predicted e-trust in online commerce. Information quality and e-trust were positively correlated (Kuo et al., 2009). High-quality information reduces uncertainty and increases perceived control, which increases e-trust (Yousafzai, S.Y., et al. 2005). Website efficiency strongly predicted online buying pleasure, according to Mustafa et al. (2011). Website efficiency increases e-satisfaction through perceived ease of use and utility, according to Lu et al. (2011). Website efficiency increases e-satisfaction for various reasons. Website efficiency can improve user satisfaction. Users are more likely to do their jobs quickly and without errors on an efficient and simple website. This improves website and e-commerce satisfaction. Website efficiency can also show consumers that the firm behind the website values their time and effort, increasing e-satisfaction (Kuo et al., 2009).

Information quality also predicts e-satisfaction. Information quality improves e-satisfaction (Lu, D., 2011). Kim and Moon (2009) found that information quality strongly predicted e-commerce website user pleasure. Information quality increased e-satisfaction, which Lu et al. (2011) believed was mediated through perceived usefulness. Information quality may increase e-satisfaction by improving user experience and enjoyment (Lu, D., 2011). Customers are happier with the website and e-commerce experience if they can find the information they need promptly. High-quality information can enhance e-satisfaction by increasing the company's knowledge and reputation (Lu, D., 2011). Mustafa et al. (2011) noted that website efficiency and information quality affect consumer e-satisfaction.
E-satisfaction and e-loyalty have been extensively studied. E-satisfaction is customers' contentment with their online shopping experience, while e-loyalty is their inclination to shop with a single merchant online. Online merchants need e-loyalty to forecast client behavior and profitability. E-satisfaction and e-loyalty are generally linked, but some studies contradict this. Cultural, demographic, and other factors may influence customer behavior and preferences. Abu-Alhaija et al. (2018), divide loyalty determinants into behavioral and perceptual. Perceptual elements affect trust and satisfaction, while behavioral factors affect product quantity.

Reviewing the literature helps investigate how merchants' website efficiency and information quality affect customer trust and happiness. Customer loyalty is linked to trust and satisfaction. Since the study is in Lebanon, it is crucial to examine whether Lebanese internet stores were able to deliver website efficiency and information quality. This study is important because it examines customer loyalty, which business owners value for business survival and growth. A recent study on Lebanese internet customers' motivations and faith in e-commerce businesses, especially following the COVID-19 epidemic, is lacking. The study also investigates if Lebanese online shopping is a profitable area that should be invested in, particularly in consumer satisfaction and trust to encourage more online purchasing. This study also illuminates an alternative business model that Lebanese merchants could use during a severe economic crisis, stagflation, corona pandemic, fuel crisis, and poor electricity and internet services. This study investigates Lebanese retailers' ability to satisfy and trust their clients during internet shopping. Thus, the study examines how two e-commerce characteristics affect customer response in light of several external elements and unique situations in Lebanon that were not before investigated.

3 HYPOTHESES AND RESEARCH CONCEPTUAL MODEL

Hypotheses are derived from the study's objectives, literature analysis, and research conceptual model.

*Hypothesis Null (H0)*: There is no relationship between e-service quality dimensions and e-loyalty in the online shopping industry in Lebanon.
**Hypothesis 1 (H1):** Greater perceived website efficiency leads to greater customer satisfaction with online shopping services.

**Hypothesis 2 (H2):** A better-perceived quality of website information does not lead to higher customer satisfaction with online buying services.

**Hypothesis 3 (H3):** Increased perceived website effectiveness does not lead to increased client trust in online commerce services.

**Hypothesis 4 (H4):** A better-perceived degree of website information quality does not lead to increased client trust in online shopping services.

**Hypothesis 5 (H5):** Increased consumer satisfaction with an online shopping service does not lead to increased customer loyalty to that online shopping service.

**Hypothesis 6 (H6):** Consumer trust in an online shopping service is not positively associated with stronger consumer loyalty to that online shopping service.

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4 METHODOLOGY

This study used a quantitative data approach built on a questionnaire. The purpose of employing survey data is to make quantitative analysis easier and enable the generalization of the findings to the full population under study. Additionally, applying a quantitative methodology aided in determining the cause-and-effect linkages between the variables that were being examined, and the quantitative data that was produced was then used to explain the relationships between the research hypotheses and provide answers to the study's research questions. This study used positivism. Objective data, statistical
methodologies, and hypothesis testing confirm theories and explanations in this approach. It implies a single reality that can be researched objectively and that research should be free of bias and subjectivity. This study investigated variables' impacts on each other and their relationships. The researcher used positivist data analysis methods to test hypotheses. This study is deductive. Empirical research tests hypotheses or theories. This study used a theoretical framework and assumptions to test variable connections. The researcher used empirical data to test theories deductively. This study used a correlational technique and survey research to determine correlations between variables. The research strategy included phenomenology. Qualitative research method phenomenology tries to comprehend and characterize participant experiences. This study used quantitative research and statistical analysis to examine our hypotheses. The researcher employed phenomenology as a theoretical framework to construct study questions and hypotheses. We developed more sophisticated hypotheses by employing phenomenology to explore variables and their interactions. This study uses cross-sectional time. Cross-sectional studies do not track participants over time. A representative sample of the population was studied in this study. The researcher could detect variable linkages at that time. Due to time constraints, cross-sectional investigations are preferred over longitudinal ones. This study targets all Lebanon online shoppers. In 2016, 2.3 million people shopped online out of 5.593 million persons. There are no recent government statistics, but lockdowns and street protests during the COVID-19 pandemic forced people to satisfy their necessities online. A 95% confidence level and a 2-confidence interval were used to determine the sample size. This research requires 385 samples. 2378 questionnaires were accepted. Data was acquired from Lebanon's districts from internet shoppers. The poll was conducted online using Google Forms and delivered to people without specified characteristics, however, the response rate was low due to the country's crisis and internet issues. Based on it, the survey continued on the ground with paper or face-to-face surveys in several Lebanon locations. SPSS software analyzes data to test the given model and variable relationships. Descriptive statistics explained the data, while inferential statistics showed how demographic features affected the e-service dimensions and the examined variables, e-satisfaction, e-trust, and e-loyalty. T-test compares two means and ANOVA compares more than two means to determine if participant characteristics and replies are affecting the analyzed variables. SEM examines construct-variable connections and significance. SmartPLS version 4 performed SEM.
5 RESULTS AND DISCUSSION
5.1 VALIDITY AND RELIABILITY

For the results of this part, SEM was applied to study the relationships between the latent variables in our model. Therefore, SmartPLS was used in order to validate the hypotheses.

Reliability and validity: The conceptual model include 5 latent variables with manifested items. The applied tests to study the reliability and validity demonstrated acceptable values as presented in the below table. The table indicates that the Cronbach’s alpha values ranging between 0.807 for E-satisfaction and 0.891 for E-trust. As for composite reliability, the values ranging between 0.809 for E-satisfaction and 0.892 for E-trust. All the values were above the recommended cutoff. The average variances extracted were also acceptable with values ranging between 0.738 for Information quality and 0.859 for E-loyalty, which exceeded the required minimum value of 0.5.

Regarding the discriminant validity at the item level, the results of Fornell-Larcker criterion demonstrate that the values range between 0.616 and 0.927, which exceeded the required minimum threshold 0.5, this implies that the items related to each construct converged and measured the same construct. Moreover, the discriminant validity at the construct level determined by using Fornell-Larcker criterion confirmed that the square roots of each of the 5 constructs were above the correlation values of each construct and the others, thus indicating the adequate discriminant validity at the construct level.

Table 1 Validity and Reliability for the constructs using SmartPLS

<table>
<thead>
<tr>
<th></th>
<th>Cronbach's alpha</th>
<th>Composite reliability</th>
<th>Average variance extracted (AVE)</th>
<th>E-loyalty</th>
<th>E-satisfaction</th>
<th>E-trust</th>
<th>Information Quality</th>
<th>Website Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-loyalty</td>
<td>0.836</td>
<td>0.838</td>
<td>0.859</td>
<td>0.927</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-satisfaction</td>
<td>0.807</td>
<td>0.809</td>
<td>0.838</td>
<td>0.813</td>
<td>0.915</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-trust</td>
<td>0.891</td>
<td>0.892</td>
<td>0.821</td>
<td>0.736</td>
<td>0.731</td>
<td>0.906</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information Quality</td>
<td>0.882</td>
<td>0.882</td>
<td>0.738</td>
<td>0.702</td>
<td>0.722</td>
<td>0.703</td>
<td>0.859</td>
<td></td>
</tr>
<tr>
<td>Website Efficiency</td>
<td>0.875</td>
<td>0.881</td>
<td>0.800</td>
<td>0.693</td>
<td>0.696</td>
<td>0.616</td>
<td>0.766</td>
<td>0.894</td>
</tr>
</tbody>
</table>

Source: Prepared by the Author
Figure 2 Path analysis model using SmartPLS

5.2 HYPOTHESIS TESTING

For the model fit, the standardized root mean square residual was used as indicator for goodness-of-fit. This value was equal to 0.070 below the recommended 0.08 cutoff, implying adequate overall model fit. The PLS model: To study the relationships between the constructs, the researcher applied path analysis with standardized bootstrapping using 5000 samples to extract reliable estimate for each path in the model.

For the first hypothesis, the path analysis reveals that there was positive and significant relationship between Website efficiency and Customer E-satisfaction ($B = 0.345, p < 1\%$). This result confirms the first hypothesis. Concerning the second hypothesis, the results show that there was positive and significant relationship between Website information quality and Customer E-satisfaction ($B = 0.458, p < 1\%$). This result confirms the second hypothesis. As for the relationship between Website efficiency and Customer E-trust, the results show that there was positive and significant relationship between these two constructs ($B = 0.188, p < 1\%$). This result confirms the third hypothesis.

Regarding the fourth hypothesis, the results show that there was positive and significant relationship between Website information quality and Customer E-trust ($B = 0.559, p < 1\%$). This result confirms the fourth hypothesis. For the relationship between Customer E-satisfaction and Customer E-loyalty, the results show that there was positive and significant relationship ($B = 0.590, p < 1\%$). This result confirms the fifth hypothesis.
Finally, for the sixth hypothesis, the results show that there was positive and significant relationship between Customer E-trust and Customer E-loyalty ($B = 0.305, p < 1\%$). This result confirms the sixth hypothesis.

| Hypothesis                          | Original sample (O) | Sample mean (M) | Standard deviation (STDEV) | T statistics ($|O/\text{STDEV}|$) | P values |
|-------------------------------------|---------------------|----------------|----------------------------|----------------------------|----------|
| E-satisfaction -> E-loyalty         | 0.590               | 0.590          | 0.022                      | 27.212                     | 0.000    |
| E-trust -> E-loyalty                | 0.305               | 0.305          | 0.021                      | 14.302                     | 0.000    |
| Information Quality -> E-satisfaction | 0.458             | 0.457          | 0.026                      | 17.331                     | 0.000    |
| Information Quality -> E-trust      | 0.559               | 0.559          | 0.024                      | 23.249                     | 0.000    |
| Website Efficiency -> E-satisfaction | 0.345             | 0.345          | 0.025                      | 13.823                     | 0.000    |
| Website Efficiency -> E-trust       | 0.188               | 0.188          | 0.024                      | 7.683                      | 0.000    |

Source: Prepared by the Author

6 DISCUSSION

The data's results are analyzed and compared to previous findings and theories mentioned in the literature. The research results were used to validate the hypothesis and model. Survey results are compared to previous research to determine the assessment. Six hypotheses were developed after researching the literature and studying prior studies' relationships. These associations helped identify hypotheses in purpose the validate the suggested research model.

Hypothesis examination revealed links between factors and effects. The research found that website efficiency and website information quality both positively affect e-trust and e-satisfaction. E-satisfaction and trust increase with perceived information quality. E-trust and e-satisfaction positively affect e-loyalty, according to the study. These findings suggest that e-service quality aspects indirectly affect e-loyalty through e-trust and e-satisfaction. This research's path model indicated that information quality affects customers' e-satisfaction and e-trust more than website efficiency. Contrary to prior studies, e-satisfaction had a greater impact on e-loyalty than e-trust.

The investigation also looked at client attributes and backgrounds. Appendix B displays the variables' influences where it shows that age affects website efficiency, information quality, e-trust, and e-loyalty, but gender merely affects e-satisfaction. Occupation, monthly income, and online sector affected website efficiency, information quality, e-satisfaction, e-trust, and e-loyalty. Marital status, living situation, education level, location, and kind of area did not affect the factors.
7 CONCLUSION

This study aimed to examine the relationships between the e-service quality dimensions and e-loyalty intermediated by e-satisfaction and e-trust in the online shopping industry in Lebanon. The e-service quality dimensions comprised website efficiency and website information quality, whereby the impact of these dimensions is studied on e-loyalty through e-trust and e-satisfaction.

Reviewing the literature, e-service quality determinants include website efficiency and information quality, which online shoppers value. The customer’s view of the website's ease of use and navigation determines its efficiency. Well-organized information ensures that consumers can easily find the things they want. Information quality is based on perceived accuracy, clarity, relevance, and quantity. Website efficiency and information quality affect e-satisfaction and trust. The literature reviews also found a well-established relationship between trust and customer loyalty, where trust significantly affects customers’ loyalty. Satisfaction also affects loyalty, with higher satisfaction being associated with higher loyalty, but studies found that trust has a greater impact on loyalty than satisfaction. Based on these findings, a model was created and hypotheses were drawn from associations. Website efficiency and information quality positively correlate with e-trust, e-satisfaction, and e-loyalty. The investigation confirmed the research model and hypothesis.
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