

The influence of electronic service quality on relationship quality: Evidence from tourism industry

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ABSTRACT

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The purpose of this study is to offer better understanding to the dimensions of e-service quality and relationship quality by building on previous literature on e-service quality of tourism sector in Jordan. Moreover, the study also aimed to study the influence of Electronic Service Quality on relationship quality within the tourism sector in Jordan from the customer's perspective. The Electronic Service Quality is represented by information quality, ease of use, reliability, privacy and responsiveness. The population of the study consisted international tourists, who visited (Dead Sea) Jordan during summer 2019. A convenient random sample was taken amounted (400) participants and PLS was used to examine the study hypotheses. The researchers found that there was statistically significant influence of the Electronic Service Quality on relationship quality. The study also indicates that ease of use, privacy and responsiveness had significant positive influence on relationship quality. The researchers recommended the use of electronic services and focus on the dimensions of e-service quality on tourism electronic services especially in Jordan.

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1. Introduction

As a result of living in the information technology age, and with massive growth of electronic commerce, the necessity of using electronic services is established especially in the tourism sector (Mahadin et al., 2020). Lake and Hickey (2002) ensured that electronic service help organizations exceed customer expectations and to get a level exceeds the ordinary customer service; which supports the organizations to invest longer through supporting their penetration and increasing the base of their loyal customers. Tourism industry is becoming global. It's growing massively and becoming one of the biggest industries in the world (Hui et al., 2007). Jordan is considered as one of the iconic tourist destination from all over the globe, the most well-known tourism sites in Jordan are (Petra and the Dead Sea). Nevertheless, tourism sector performance is considered lower than what it should be in Jordan (Othman, 2010). The importance of the study stems from being a vital and important topic to tourism, since there has been minor effort to measure relationship quality in tourism sector especially within the Middle East context mainly in Jordan. This study attempts to help tourism companies by having their customer attention and attract them in order to achieve better relationship quality in terms of trust, satisfaction and commitment and also to improve their competitiveness, profitability within the Middle East. As well this research contributes to provide data base of customer evaluation for electronic service quality provided tourism companies in order to enhance the level of services provided in addition (Mahadin et al., 2020) in their study recommended further research of e-service quality on tourism industry specially from international tourists point of view. Therefore, this study aims to classify the influence of electronic service quality, information quality, ease of use, reliability, privacy and responsiveness on Relationship quality.

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2. Literature review

2.1 Electronic service quality

The significance of technological development mainly in the travel and tourism industry is increasing tremendously, as the tourism sector is gaining massive interaction resulting from using internet (Gratzer et al., 2004). Meanwhile service quality is not considered as new topic; it is still essential factor for maintaining competitive advantage and gaining long term profits in addition to attract potential customers (Zeithaml et al., 2000). The importance of electronic service relies on its importance as the main source of competitive advantage, through covering all the customers' suggestions in developing the products, through high coverage of feedback, and improving customer relations. Moreover, electronic services help in having better services with lower cost and most important it is a reason of excellence in service quality (Al-Hawary & Al-Smeran, 2016). Electronic service is considered a self-service (Surjadaja et al., 2003; Gera, 2011); instead of getting service through the call center, or going to see the customer service office, the service can be provided electronically (AlHawari et al., 2012). The electronic service is defined as the delivery of all interaction services using the internet, and using advanced information and communication multimedia (Boyer et al., 2002). Rust and Lemon (2001) also defined electronic service quality as the information service; as well it's been defined as the set of process done by information communication technology (Rowley, 2006). Electronic service quality can be defined as the assessment of efficiency and effectiveness of electronic commerce, procurements and delivering product or service to the customer. To present excellent service, organizations managers should know how the customer asses and perceive electronic service (Parasuraman et al., 2005), these services are provided recently by mobile phone and using the internet connection in addition the self service centers, it contains many elements, including electronic retail, customer support, the main service and delivering the service (Akinyele & Olorunleke, 2010; Grönroos, 2000). It can also help organizations accomplish high strategic revenue through sustaining customer base for long time (Zeithaml, 2000). Furthermore, it is considered the main reason to achieve electronic customer satisfaction (Wang & Wang, 2006). Consequently, using technology to provide customer services is very important lately, to achieve some of the major goals of organizations presence (Ernest et al., 2004; Mahmood, 2013; Hassan et al., 2013). Electronic service quality is used in the case of problems in the core service; it is considered a Therapeutic service, which fix problems in the need for it. In spite of the several dimensions published in researches, electronic service quality is considered one –dimensional. Technology readiness influences on perceiving electronic service quality in addition to customer satisfaction also procurement and decision-making processes (Zeithaml et al., 2002). In spite of all the benefit related to electronic services it presents a challenge to service provider, as the customer expectation level is high; therefore, the electronic service should satisfy customer needs and exceed customer expectations (Fadeleh, 2010; Al-Alaq, 2004). Many models been used to measure electronic service quality such as following:

- 1- Web Qual model: it is a model presented by Barnes and Vidgen (2000) and it contains three main dimensions which are; service interaction quality, usability, and information quality and in 2002 Barnes and Vidgen developed another dimensions to include five dimensions of electronic service quality which are usability, knowledge, trust, empathy and designing dimensions).
- 2- (E-S-Qual) model is designed by Parasuraman et al. (2005) who transformed traditional service quality model to the electronic service quality and it includes seven dimensions: efficiency, privacy, system availability, responsiveness, loyalty, compensation and communications. Furthermore, this model focuses on evaluating buying.
- 3- E-Squall: this model is developed by Zeithaml (2000) by providing eleven measures of electronic service quality; and they are reliability, responsiveness, reach ability, flexibility, privacy, security, knowledge, graphic style, and customization. This model is used to measure internet quality or electronic service quality.
- 4- Site Qual: this model is presented by Yoo and Donthu (2001) which contains the following: ease of use, processing speed, total design, security and safety.
- 5- E Tail Q: this model is accomplished by Wolfnberger and Gilly (2002), which contains four main dimensions; (website design, reliability, privacy/safety, and customer service), and they suggested that the main building block of electronic service quality is reliability and website design.

There are many dimensions of electronic service quality mentioned in literature and the following table presents definitions and references of previous study which encountered them as dimensions of e-service quality.

Table 1
Dimensions of electronic service quality adopted in this study

Dimension	Resources	Definition
Reliability	Gerrard and Barton, (2005)Sung et al., (2009), Yang et al., (2004), Zeithaml et al., (2000), Parasuraman et al., (2005).	The ability to provide an accurate information also provide the expected service, it is evaluated through website Permanente availability and doing the job correctly
Responsiveness	Iliachenko, (2006), Al-Hawary and Al-Smeran, (2016), Praeg, 2010.	To afford service to customer in a very quick way, and its measured through response rate of answering questions and solving customers problems immediately
Ease of use	Bressolles et al., 2008, Fassnacht and Koese (2006), Zeithaml et al., (2002), Yang et al., (2004), Davis (1989), Al-Hawary and Al-Smeran, (2016)	the extent of interaction and smoothly of processes in the website
Privacy	Iliachenko, (2006), Sheng and liu (2010), Parasuraman et al., (2005), Javadi (2012), Al-Hawary and Al-Smeran, (2016).	The ability to protect private information's of users in addition to protect users from electronic deception and money loss
Information quality	Barnes and Vidgen,(2002), Berezan, and Christodoulidou, (2016). Liang, and Chen (2009), Sari, N. (2018).	Accuracy, infancy, connectivity, easy of understanding from users perspective

2.2 Relationship quality

Maintaining the quality of relationship between service providers and customers must include trust, satisfaction and emotional commitment (Brodie, 2003; Palmer, 2005). Also, relationship quality according to Smith's method (1998), contained satisfaction, trust and commitment dimensions. According to Hennig-Thurau et al. (2002) the main challenge for researchers is to identify and understand how administrative important outcomes of relationship with customers. As well Al-Alak (2014) claimed that relationship quality consists of two dimensions trust and satisfaction. Trust is considered as one of the main dimensions of relationship quality (Ray et al., 1994; Bejou et al., 1996; S.Al-Nsour, 2020). It is also considered as a major factor for customers to decide whether to interact online or not (Fortes et al., 2017). According to Oliveira et al. (2017) customer trust has several dimensions (competence, integrity, and benevolence) and they stated also that customers with high trust have more intention to e-commerce. Several studies show that e-service quality have a positive influence on trust (Firend & Abadi, 2014; Wu et al., 2010, 2018; Rita et al., 2019). Satisfaction is considered as one of the main dimensions of relationship quality (Ray et al., 1994; Bejou et al., 1996). It is also considered as the result of customer assessment of brand features, and main factor of customer loyalty (Krystallis & Chrysochou, 2014). Customer satisfaction enhances organizations revenues and competitive advantage (Lewin, 2009). Customer satisfaction is considered a vital factor for success of business strategies (Gil and Cervera, 2008, Al-Nsour, 2020). Commitment is considered as a one of the main dimensions of relationship quality (Smith, 1998), which can be defined as a customer's long-term coordination to achieve relationship that initiate good bonds with customers (Geyskens et al., 1996; Moorman et al., 1992). Henning et al. (2002) describe that relationship benefits are directly and positively linked to commitment level that the customer may experience with the service provider. In most of the service firms, customers pay is before acquiring the service. In this study the researchers adopted satisfaction, commitment and trust as components of relationship quality.

2.3 Electronic service quality and relationship quality

Long time ago Crosby et al. (1990) stated that the professionalism of the service provider positively affects the relationship quality. Services provided to customer professionally will lead to higher customer acceptance and mainly the customer's perception of service quality assurance will influence the relationship quality as well, Blut (2016) stated that e-service quality may also have positive effect on repurchase intention, customer satisfaction, and WOM. Moreover, high level of service quality can affect positively influence on customer satisfaction, trust, and loyalty (Huang & Liu, 2010; Kim et al., 1978; Kim, 2010). According of Oraedu (2019) explanation of exact relationship between service quality and relationship quality is lacking in previous studies. The study tests the influence of e-service quality on relationship quality in tourism sector in Jordan, to give contribution to the academic and marketers in tourism area. Therefore, five hypotheses are developed as follow:

H01: There is no influence of information quality on the relationship quality in the tourism sector in Jordan.

H02: There is no influence from ease of use on relationship quality in the tourism sector in Jordan.

H03: There is no influence from reliability on relationship quality in the tourism sector in Jordan.

H04: There is no influence from privacy on relationship quality in the tourism sector in Jordan.

H05: There is no influence from responsiveness on relationship quality in the tourism sector in Jordan.

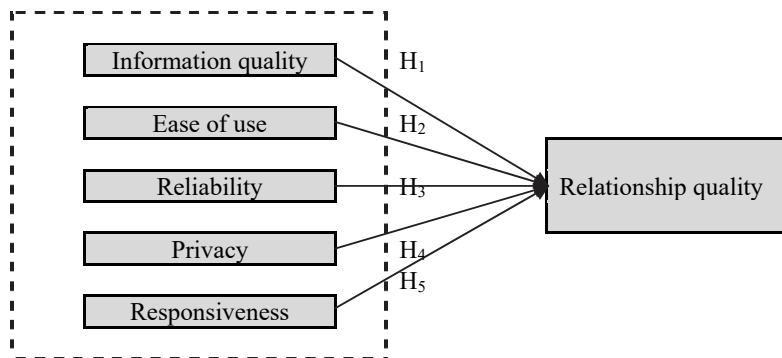


Fig. 1. The proposed research

3. Methodology

In this study, 25 items are divided equally form the independent variable dimensions of electronic service quality: information quality, ease of use, reliability, privacy and responsiveness. And the relationship quality includes 9 items from the dependent variable. The questionnaire was structured by looking over the literature to determine suitable scale, in order to ensure high reliability and validity. This research used 5-point Likert scale of agree and disagree levels. Smart PLS technique was assumed to measure the structural. To investigate the relationships among the variables model (Ali et al., 2018), missing values and common statistics preparation problems were processed by sample average to ensure validity, reliability and statistical control. Two stages to approve the hypothesis was assessed: Pls algorithms and bootstrapping technique were used.

3.1 Sample

This study chose convenient random sample in which 400 respondents were identified from Dead Sea in the middle region of Jordan. The sampling frame for this study consisted of international tourists, who visit (Dead Sea) in Jordan from different nationalities during their visit to Jordan in the period from May, 2019 and until September 2019. Out of 400 questionnaires distributed, 120 were undelivered, and 38 questionnaires were incomplete (missing responses). Thus, a total of 230 responses were usable and used for subsequent analysis, giving a response rate of 57.5%, which is acceptable according to Baruch and Holtom (2008). Therefore, the response rate is adequate for analysis of Smart PLS.

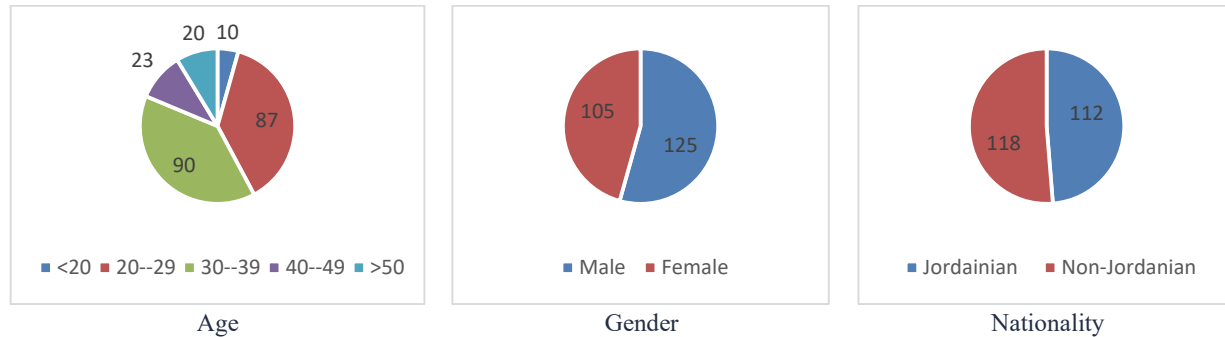


Fig. 2. Personal characteristics of the participants

3.2 Measures

The research items were developed by measurement was based on the previous studies to fit the purpose of current study. The questionnaire contained three parts; part one contained 3 items of demographic questions, the second part included 25 items related to e-service quality, and the third part demonstrated the relationship quality with 9 items, questionnaire items were adopted from related studies as following.

A. E-service quality

- 1- Information Quality: This measure is accepted by Swaid and Wigand (2009) to fit the purpose of current study.
- 2- Ease of Use: This measure is accepted by Al-Hawary and Al-Smeran (2016) to fit the purpose of current study.
- 3- Reliability: This measure is accepted by Swaid and Wigand (2009) to fit the purpose of current study.
- 4- Privacy: This measure is accepted by Al-Hawary and Al-Smeran (2016) to fit the purpose of current study.
- 5- Responsiveness: This measure is accepted by Swaid and Wigand (2009) to fit the purpose of current study.

- B. Relationship quality: This measure is accepted by Hennig-Thurau et al. (2002); Al-alak (2014) to fit the purpose of current study.

3.3 Data Analysis

In the following sections, evaluation of the measurement model was estimated and evaluation of the model fitness was checked to ensure the appropriateness of scale, and the validity and reliability of the survey and finally evaluation of the structural model was verified.

3.3.1 Evaluation of the Measurement models

In this section the researchers focus on PLS-SEM algorithm and its statistical properties using formative measures for both e-service and relationship quality; that are not expected to correlate (Hoyle et al., 2012). The preconditions (items of questioners) have not to be causally related, such that we would not expect a strong correlation between them (Christophersen & Konradt, 2012). For formative models, first we need to examine whether the formative constructs exhibit convergent validity and to do so we carry out separate redundancy analysis for each constructs through Fornell –Larcker criterion as given in Table 1.

Table 1

Results summary for Discriminant Validity (Fornell –Larcker criterion):

	Ease of use	Information quality	Privacy	Relationship Quality	Reliability	Responsiveness
Ease of use	0.855					
Information quality	0.869	0.852				
Privacy	0.810	0.758	0.864			
Relationship Quality	0.913	0.843	0.853	0.813		
Reliability	0.860	0.800	0.868	0.878	0.816	
Responsiveness	0.811	0.760	0.806	0.871	0.841	0.829

Average variance extracted AVE has frequently been applied to assess discriminant validity, the rule simply is: AVE of each of the sub variables should be higher than the highest squared correlation with any other sub variables and the discriminant validity is established on the variable at all. This imperative is acknowledged as Fornell–Larcker criterion. Additionally, co linearity for indicators were checked for the formative measurement models through VIF statistics, the variance inflation factor (VIF) is the proportion of the variance in a model with multiple terms by the variance of a model with one term alone. The square root of the variance inflation factor indicates how larger the standard error increases compared (James et al., 2017). VIF less than 10 is acceptable (Hair et al., 1995).

Table 2

Results summary for Measurement model (outer model) Convergent & Discriminant validity Internal consistency reliability:

Variables	indicators	Convergent validity			Internal consistency reliability		Discriminant validity
		Loading greater than 0.4 (Hulland & Business, 1999)	VIF less than 10 is acceptable, (Hair et al., 1995)	AVE proper value of AVE is 0.4 (Magner, Welker, & Campbell, 1996)	Composite reliability composite reliability is 0.7 (Nunnally, 1978) 0.6-0.9	Cronbach's Alpha 0.6-0.9 (Henseler et al., 2015)	Fornell–Larcker criterion (AVE of each of the sub variables should be higher than the highest squared correlation with any other sub variables.) (Henseler et al., 2015)
Information quality	Q1	0.877	2.916	0.726	0.726	0.906	Yes
	Q2	0.840	2.385				
	Q3	0.824	2.246				
	Q4	0.869	2.752				
	Q5	0.851	2.291				
Ease of use	Q6	0.847	2.616	0.731	0.731	0.908	Yes
	Q7	0.838	2.635				
	Q8	0.829	2.368				
	Q9	0.900	3.368				
	Q10	0.860	2.583				
Reliability	Q11	0.769	1.819	0.666	0.666	0.874	Yes
	Q12	0.849	2.478				
	Q13	0.830	2.279				
	Q14	0.803	2.913				
	Q15	0.828	2.992				
Privacy	Q16	0.893	3.624	0.747	0.747	0.913	yes
	Q17	0.909	4.262				
	Q18	0.898	3.424				
	Q19	0.870	2.779				
	Q20	0.738	1.596				
Responsiveness	Q21	0.833	2.227	0.688	0.688	0.887	yes
	Q22	0.844	2.203				
	Q23	0.806	2.117				
	Q24	0.812	2.328				
	Q25	0.852	2.726				
Relationship quality	Q26	0.834	2.651	0.661	0.661	0.936	yes
	Q27	0.810	3.107				
	Q28	0.887	4.787				
	Q29	0.817	2.686				
	Q30	0.799	2.678				
	Q31	0.778	2.218				
	Q32	0.801	2.332				
	Q33	0.826	2.911				
	Q34	0.760	2.014				

Ringle, C. M., Wende, S., and Becker, J.-M. 2015. "SmartPLS 3." Boenningstedt: SmartPLS GmbH, <http://www.smartpls.com>.

3.3.2 R Square measurement

R-Square measurement gives an important enlightenment in the impact researches, mainly in dependent variable change explanation. Fig. 3 represents the R-Square test for e-service quality –relationship quality research model. The R Square measurement with a score of 0.898 has been restrained, consequently, concludes perceived interpretation and surly exceeds the lower limit 25% (Sotirchos et al., 2019).

Model Fit Measures verified some characteristics for sample and model:

1. Model misspecification through Standardized Root Mean Square Residual (SRMR); which defined as the difference between the observed correlation and the model implied correlation matrix, SRMR presents the goodness of fit measure for PLS-SEM which can be used to avoid model misspecification. A value less than 0.10 or of 0.08 is considered as a good fit (Hu & Bentler, 1999; Baker, 1999; Deraz, 2019; Moreira & Silva, 2015; Oliver, 1999).

2. Sampling distribution through squared Euclidean distance and geodesic distance (d_{LS} and d_G) represent two different ways to compute divergence, goodness of fit is to choose the confidence interval in a way that the upper bound is at the 95% or 99% point, (Dijkstra & Henseler (2015)).
3. Model complexity through Normed Fit Index (NFI): NFI is defined as one minus the Chi- Square value, it is represented the Chi-Square value of the proposed model and compares it against a meaningful benchmark penalizes the Chi-Square values by the degrees of freedom (df). The closer the NFI to 1, the better the fit. NFI values above 0.9 usually represent acceptable fit (Lohmöller, 1989).
4. Multi-normal distribution model through Chi-Square and Degrees of Freedom, the Chi-Square value of a PLS path model with degrees of freedom approximately is $(N-1) \times L$, whereby N is the number of observations and L the maximum likelihood function as defined by Lohmöller (1989).
5. Covariance matrix of the outer model through RMS_theta, the values below 0.12 indicate a well-fitting model, whereas higher values indicate a lack of fit (Henseler et al., 2014), but for the formative measurement model; the present research the value is not meaningful (Lohmöller, 1989).
6. The saturated model versus Estimated Mode, the saturated model data will be chosen, which is fitness to formative model the researchers have been used recently (Henseler et al., 2014), see Table 3.

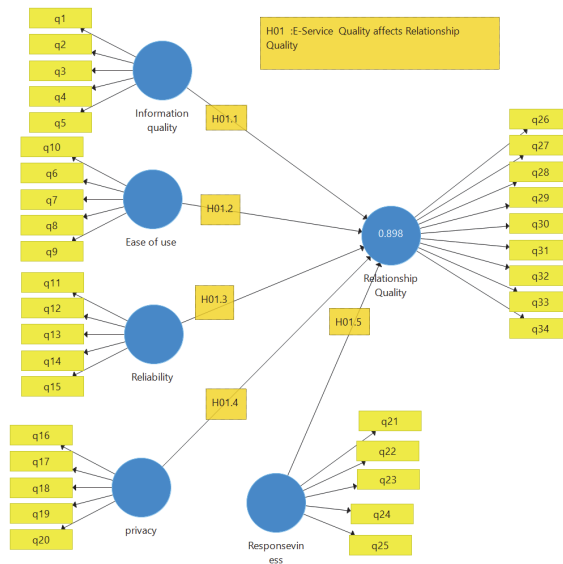


Fig. 3. R Square measurement e-service quality –relationship quality research model

Table 3
Results Summary for (E-Service, Relationship Quality)Model fitness

	Saturated Model	Fitness
SRMR	0.071	less than 0.10, (Hu and Bentler, 1999
d_ULS	3.023	All those measures assessed by NFI value---- NFI above 0.9 (Lohmöller (1989)).
d_G	7.279	
Chi-Square	5,354.326	
NFI	0.94	
rms Theta	0.161	Not meaningful for formative models

F. Hair Jr, J., Sarstedt, M., Hopkins, L., & G. Kuppelwieser, V. (2014). Partial least squares structural equation modeling (PLS-SEM) An emerging tool in business research. *European Business Review*, 26(2), 106-121.

3.4 Testing Hypotheses

In the structural model of PLS, the bootstrapping SEM method were used, the researchers test the hypotheses; Following the path coefficient, t statistics, Table 4 shows the structural model for hypothesis testing. Fig. 4 also shows the PLS structural model output.

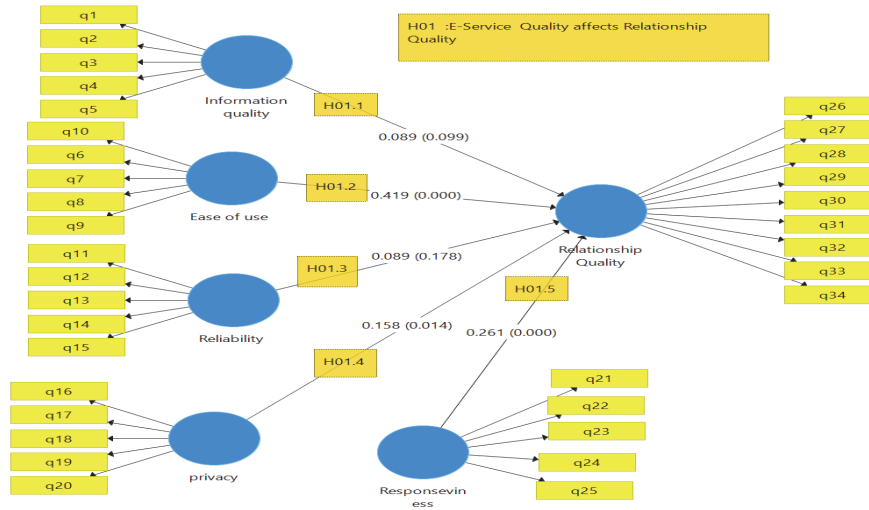


Fig. 4. PLS Structural Model

Table 4
PLS Structural Model

hypotheses	Results			Hypotheses (null/alternative)
	B	p	T	
1. There is no Influence from information quality on relationship quality in the tourism sector in Jordan	0.089	0.099	1.653	Null
2. There is no Influence from Ease of use on relationship quality in the tourism sector in Jordan	0.419	0.000	6.887	alternative
3. There is no Influence from reliability on relationship quality in the tourism sector in Jordan	0.089	0.178	1.348	Null
4. There is no Influence from privacy on relationship quality in the tourism sector in Jordan	0.158	0.014	2.461	alternative
5. There is no Influence from responsiveness on relationship quality in the tourism sector in Jordan	0.261	0.000	4.576	alternative

4. Discussion

The current study has tried to contribute to the existing literature through investigating e-service quality and relationship quality in tourism sector in Jordan from Dead Sea tourist’s point of view. The study importance stems from tourism which is considered a major resource for accompany with limited resources, and since 2018 the tourist industry is performing better since the political circumstances is improving (Qewar,2019), and there has been minor effort to investigate electronic services in this sector, in addition to measuring relationship quality in tourism sector mainly within the Middle East context essentially in Jordan. This study attempts to help tourism companies by having their customer point of view in order to achieve better relationship quality in terms of trust, satisfaction and commitment. The central research question for this study was whether or not e-service quality impacts relationship quality? The analysis result indicated that privacy, as dimension of e-service quality, had a significant influence on relationship quality and the finding is supporting previous studies (Iliachenko, 2006; Sheng & liu, 2010; Parasuraman et al., 2005; Javadi, 2012: Al-Hawary & Al-Smeran, 2016). Tourists need to feel safe while dealing with tourist companies electronically weather using websites, applications or social media. Since they share their private information and financial ones, therefore the channels with their service providers need to be safe (Mahadin et al., 2020). The analysis result indicated that responsiveness, as a dimension of e-service quality, had a significant influence on relationship quality and the finding is supporting previous studies (Canevello & Crocker, 2010; Munusamy et al., 2010). Tourists expect from service provider the ability to help customers and afford quick services. Tourists also expect to be responded to their investigations promptly, quickly, and accurately. The analysis result indicated that ease of use, as dimension of e-service quality, had a significant influence on relationship quality and this finding is supporting previous studies (Zhang et al., 2011; Al-Momani & Azila, 2009). Tourists like to interact with service providers who provide services easily for their customers with international languages availability, as firms should aim to meet tourism expectations by providing ease of use and features in their e-services to generate positive relationship in online consumption. This signifies that good tourism services are more than communication channels (Mahadin et al., 2020). The analysis result have indicated that reliability, as dimension of e-service quality, did not have significant influence on relationship quality; this result is not coincident with the literature of Akbar and Parvez (2009) which stated that the reliability is one of the things that influence at least one of relationship quality (satisfaction) using e-services. Finally, the impact of information quality on relationship quality is not significant and this result is not consistent with Gorla et al. (2010) and Iivari (2005) who considered information quality impact on satisfaction. Furthermore, Iivari (2005) concluded that information quality did not predict predicts actual use for customers which support the current result.

5. Conclusion and recommendation

This study was set to examine the effect of e-service quality represented by information quality, ease of use, reliability, privacy and responsiveness on relationship quality. The analysis results indicated that ease of use influenced overall relationship

quality. Responsiveness is influencing overall relationship quality and privacy is influencing overall relationship quality. Information quality is not significantly influencing relationship quality. Also, reliability is not significantly influencing relationship quality.

Tourist companies in Jordan should take into consideration improving in their electronic services specially. Tourism companies in Jordan should focus in e-service quality to achieve better relationship with customers, using different electronic channels including website, social media or their own applications. Their e-services must be easy to use, private and secure and highly responsive. Moreover, this research achieved its objectives nevertheless, the researchers suggest further dimensions of e-service quality. As future studies, further dimensions of e-service quality and relationship quality should be taken into consideration and different types of tourism should be investigated such as educational tourism and medical tourism.

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