Research article

The impact of e-service quality and customer satisfaction on customer behavior in online shopping

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A B S T R A C T

The purpose of this study is to develop new knowledge to better understand the most important dimensions of e-service quality that have impact on customer satisfaction, customer trust, and customer behavior, building on existing literature on e-service quality in online shopping. This study focuses on the four-dimensions of e-service quality model that better predict customer behavior. It not only tests the impact of customer satisfaction on customer behavior such as repurchase intention, word of mouth, and site revisit, but also the impact of customer trust. The result is expected to extend the knowledge about different country culture vis-á-vis different relevance of e-service quality attributes. Data from an online survey of 355 Indonesian online consumers was used to test the research model using structural equation modelling. The analytical results showed that three dimensions of e-service quality, namely website design, security/privacy and fulfilment affect overall e-service quality. Meanwhile, customer service is not significantly related to overall e-service quality. Overall e-service quality is statistically significantly related to customer behavior. Future research should consider a variety of product segments and/or other industries to make sure that the measurement works equally well. In other industry setting, the measurement may need to be adjusted. Future research could also use different methodologies such as focus group and interviews.

1. Introduction

The Internet has been generating consumer empowerment for over a decade (Pires et al., 2006). Brick-and-mortar stores are slowly but surely closing down because of the rise of e-commerce (Quora, 2017). Compared with physical stores, online businesses offer convenience to customers (Business.com, 2017). Customers can just sit at their home, place their orders, pay via credit card, and wait until the goods are delivered to their home. E-commerce in Indonesia is growing fast due to the growth of internet penetration. In March 2017, internet penetration reached slightly over 50% with 104.96 million internet users. The number of Indonesian internet users is projected to reach 133.39 million in 2021, making Indonesia one of the biggest online markets worldwide (Statista, 2018b). According to Statista (2018a), Indonesia currently has approximately 28.2 million online shoppers and is projected to experience a 3–4% annual increase for the next years. The majority of users are in the 25-34-year old range and account for 12.8 million users who shop online in Indonesia.

The rapid development of information technology led to a cultural shift. Customers started shopping via e-commerce rather than in physical stores. Physical businesses have been attempting to gain a competitive advantage by using e-commerce to interact with customers (Lee and Lin, 2005). In online businesses, competition can easily enter the market because of low entry barriers (Wang et al., 2016). From the customer perspective, they have low switching costs to shop from one online store to another (Mutum et al., 2014). In physical businesses and online businesses, customer shopping experience influences future customer behavior, including repurchase intention, store revisit intention, and word of mouth (WOM) (Chang and Wang, 2011).

The biggest challenge for online shopping is to provide and maintain customer satisfaction. A key success factor to survive in a fierce competitive e-environment is a strategy that focuses on services. A company must deliver superior service experiences to its customers, so that they will repurchase and be loyal to the firm (Gounaris et al., 2010). In order to obtain high levels of customer satisfaction, high service quality is needed, which often leads to favorable behavioral intentions (Brady and Robertson, 2001). A website with good system quality, information quality, and electronic service quality is a key to success in

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e-commerce (Sharma and Lijuan, 2015).

Many researchers have studied the concept of e-service quality. The attributes of e-service quality have a significant association with overall e-service quality, customer satisfaction, and repurchase intentions, but not with WOM (Blut et al., 2015). Moreover, Tsao et al. (2016) studied the impact of e-service quality on online loyalty based on online shopping experience in Taiwan and showed that system quality and electronic service quality had significant effects on perceived value, that in turn had a significant influence on online loyalty. In addition, Gounaris et al. (2010) found that e-service quality had a positive impact on three consumer behavior intentions: purchase intentions, site revisit, and WOM. Blut (2016) demonstrated that e-service quality had a positive effect on customer satisfaction, repurchase intention, and WOM for online shoppers in the U.S. Thus, in general, the existing studies about e-service quality have differences in both methodology and results, with no definite conclusions (Gounaris et al., 2010).

Chang et al. (2013) stated that trust is the most important factor to attract e-commerce buyers. However, only few studies about the impact of service quality on trust, especially within the scope of online business are available. Rasheed and Abadi (2014) tested the impact of e-service quality on trust in the overall services industry and found that trust was considered to be an antecedent of service quality. Furthermore, Saleem et al. (2017) tested it on the Pakistani airline industry and determined that trust plays a vital role in driving repurchase intention for all services business.

Using an incorrectly specified e-service quality model would overestimate the importance of e-service quality attributes (Blut et al., 2015). In addition, Blut et al. (2015) developed a hierarchical model of e-service quality that was able to predict customer behavior better than other established instruments, but only Blut (2016) empirically tested the conceptual model for online shoppers in the U.S. So as to address the research gap mentioned above, this study empirically tested Blut et al. (2015) e-service quality model in order to understand the impact of e-service quality not only in customer satisfaction, purchase intention

and WOM, but also in customer trust and site revisit.

Country culture was found to affect the relevance of the e-service quality construct (Blut et al., 2015). Thus, this research empirically tested the hierarchical model of e-service quality measurement in a new cultural setting, Indonesia, to see whether it works equally well in different countries and cultures. Cultural differences in online shopping behavior may also influence the prioritization of e-service quality attributes, but this has not yet been investigated (Brusch et al., 2019).

The goals of this research are as follows: (1) to test the hierarchical model of e-service quality in a new cultural setting, and (2) to make a parallel comparison of e-service quality perception between two different cultural settings, Indonesia and the USA.

2. Background

Many researchers have proposed different attributes and dimensions to measure e-service quality. Dabholkar (1996) conducted an early study about e-service quality which examined how customers form expectations on technology based self-service quality and suggested five main attributes of e-service quality: speed of delivery, ease of use, reliability, enjoyment, and control. The result of the study shows that control and enjoyment were significant determinants of service quality, ease of use was also a key determinant in service quality, but only for high waiting time and control groups, while speed of delivery and reliability had no impact on service quality.

The most common approach to measure service quality is the SERVQUAL model (Parasuraman et al., 1985). This model is still popular and currently used in many studies (Alrubaiee & Alkaa'ida, 2011; Kansra and Jha, 2016; Kitapci et al., 2014). In the online business context, many researchers modified SERVQUAL into several models. The most well-known adapted models are WebQual developed by Barnes and Vidgen (2002) and Loiacono et al. (2002), eTailQ conceived by Wolfinbarger and Gilly (2003), E-S-Qual draughted by Parasuraman et al. (2005), and the latest hierarchical model of e-service quality proposed by
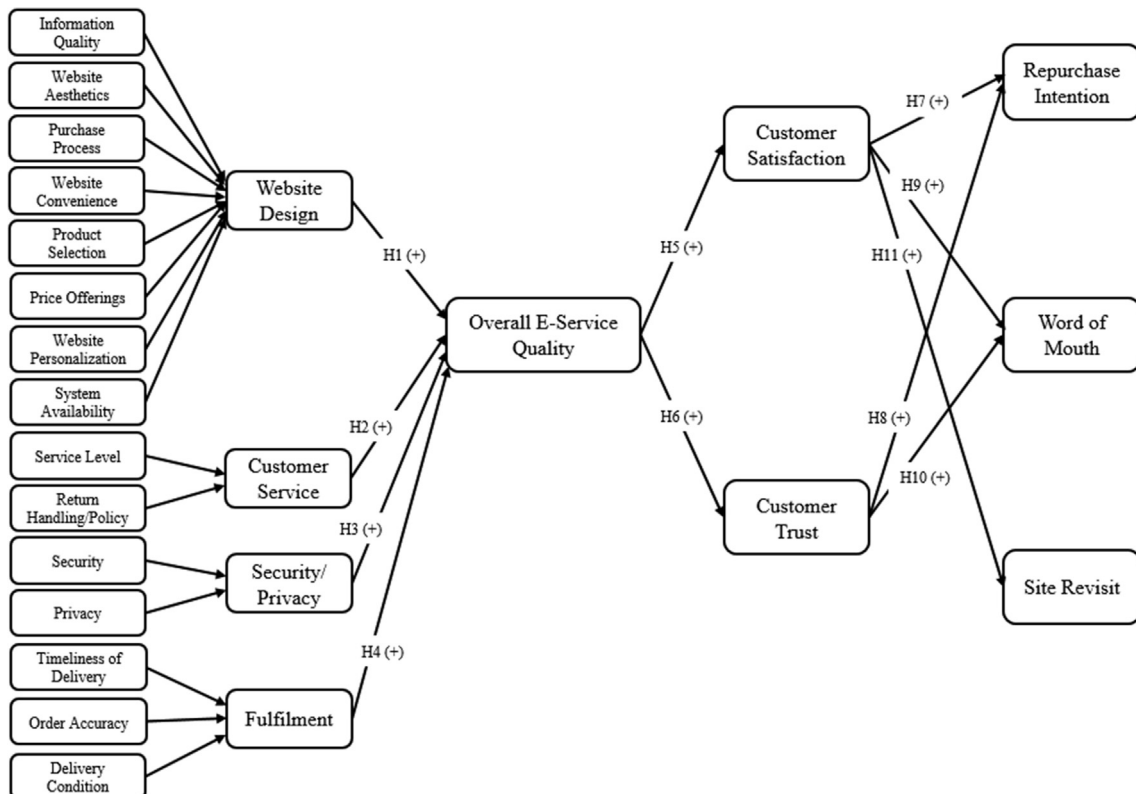

Fig. 1. Conceptual model.

Table 1
Measurement of latent constructs.

Constructs		Items	Source
Website Design	Information Quality	IQ1. The information on the website is pretty much what I need to carry out my tasks.	Blut (2016); Holloway and Beatty (2008)
		IQ2. The website adequately meets my information needs.	
		IQ3. The information on the website is effective.	
	Website Aesthetics	WA1. The website is visually pleasing.	Blut (2016); Holloway and Beatty (2008)
		WA2. The website displays a visually pleasing design.	
		WA3. The website is visually appealing.	
	Purchase Process	PP1. The website has no difficulties with making a payment online	Blut (2016); Holloway and Beatty (2008)
		PP2. The purchasing process was not difficult.	
		PP3. It is easier to use the website to complete my business with the company than it is to use a telephone or fax or mail a representative.	
	Website Convenience	WC1. The website displays a visually pleasing easy to read content.	Blut (2016); Holloway and Beatty (2008)
		WC2. The text on the website is easy to read.	
		WC3. The website labels are easy to understand.	
	Product Selection	PS1. All my business with the company can be completed via the website.	Blut (2016); Holloway and Beatty (2008)
		PS2. This website has a good selection.	
		PS3. The site has a wide variety of products that interest me.	
	Price Offerings	PO1. The website offers discounts or free shipping.	Blut (2016); Holloway and Beatty (2008)
		PO2. The website has low prices.	
		PO3. The website has lower prices than offline stores.	
	Website Personalization	WP1. The website allows me to interact with it to receive tailored information.	Blut (2016); Holloway and Beatty (2008)
		WP2. The website has interactive features, which help me accomplish my task.	
		WP3. I can interact with the website in order to get information tailored to my specific needs.	
	System Availability	SA1. When I use the website, there is very little waiting time between my actions and the website's response.	Blut (2016); Holloway and Beatty (2008)
		SA2. The website loads quickly.	
		SA3. The website takes a long time to load. (R)	
Customer Service	Service Level	SL1. The online shop provides a telephone number to reach the company.	Blut (2016); Holloway and Beatty (2008)
		SL2. The online shop has customer service representatives available online.	
		SL3. The online shop offers the ability to speak to a live person if there is a problem.	
	Return Handling/ Policies	RP1. The online shop provides me with convenient options for returning items.	Blut (2016); Holloway and Beatty (2008)
		RP2. The online shop handles product returns well.	
		RP3. The online shop offers a meaningful guarantee.	
Security/ Privacy	Security	SC1. I feel safe in my transactions with the online shop.	Blut (2016); Holloway and Beatty (2008)
		SC2. The online shop has adequate security features.	
		SC3. This site protects information about my credit card.	
	Privacy	PR1. I trust the online shop to keep my personal information safe.	Blut (2016); Holloway and Beatty (2008)
		PR2. I trust the website administrators will not misuse my personal information.	
		PR3. It protects information about my web-shopping behavior.	
Fulfillment	Timeliness of Delivery	TD1. The product is delivered by the time promised by the company.	Blut (2016); Holloway and Beatty (2008)
		TD2. This online shop website makes items available for delivery within a suitable time frame.	
		TD3. It quickly delivers what I order.	
	Order Accuracy	OA1. You get what you ordered from this website.	Blut (2016); Holloway and Beatty (2008)
		OA2. The website sends out the items ordered.	
		OA3. The website is truthful about its offerings.	
	Delivery Condition	DC1. The product was damaged during delivery. (R)	Blut (2016); Holloway and Beatty (2008)
		DC2. The ordered products arrived in good condition.	
		DC3. The products arrived with major damage. (R)	
Overall e-Service Quality		SQ1. Overall. my purchase experience with this online shop is excellent	Blut (2016)
		SQ2. The overall quality of the service provided by this online shop is excellent	
		SQ3. My overall feelings toward this online shop are very satisfied	
Customer Satisfaction		S1. I am satisfied with this online shop.	Fornell (1992)
		S2. The online shop is getting close to the ideal online retailer.	
		S3. The online shop always meets my needs.	
Customer Trust		T1. One can expect good advice from this online shop.*	Gefen (2002); Lee and Turban (2001); Urban et al. (2009)
		T2. This online shop is genuinely interested in customer's welfare.	
		T3. If problems arise, one can expect to be treated fairly by this online shop.	
		T4. I am happy with the standards by which this online shop is operating.	
		T5. This online shop operates scrupulously.	
		T6. You can believe the statements of this online shop.	
Repurchase Intention		RI1. I will make more purchases through this online shop in the future.	Zeithaml et al. (1996)
		RI2. I will increase purchases through this online shop.	
		RI3. I will intensify purchases through this online shop.	
Word of Mouth		WOM1. I say positive things about this online shop to other people.	Zeithaml et al. (1996)
		WOM2. I recommend this online shop to anyone who seeks my advice.	
		WOM3. I encourage friends and others to purchase goods from this online shop.	
Site Revisit		SR1. I will not to shop again from this online shop. (R)*	Gounaris et al. (2010)
		SR2. I will make my next purchase from this online shop.	
		SR3. I will re-visit this online shop in the future.	

Note: * items have been excluded due to low validity.

Blut et al. (2015).

Loiacono et al. (2002) developed the WebQual™ scale to analyze websites selling books, music, airline tickets, and hotel reservations. The dimensions of WebQual™ are informational fit to task, interactivity, trust, response time, ease of understanding, intuitive operations, visual appeal, innovativeness, flow (emotional appeal), consistent image, on-line completeness, and better than alternative channels. The study provides researchers with a validated, reliable measure of website quality. It also adds to the understanding of TAM by revealing the components of ease of use and usefulness.

Later, Barnes & Vidgen (2002) also pioneered a new e-service quality measurement called WebQual that focused on the importance of easy-to-use websites. The WebQual measurement consists of five attributes: user-friendliness, design, information, trust, and empathy. The measurement has metamorphosed several times up to WebQual 4.0.

Other research conducted by Wolfinbarger and Gilly (2003) used focus groups to develop eTailQ, an e-service quality model that consists of a list of attributes categorized in four dimensions: customer service, privacy/security, website design, and fulfillment/reliability. Pan, Ratchford and Shankar (2002) analyzed 105 online retailers comprising 6,739 price observations for 581 items in eight product categories and proposed five dimensions of e-service quality: reliability, shopping convenience, product information, shipping/handling, and pricing.

Zeithaml et al. (2002) assembled what is currently known about service quality delivery through websites on five main dimensions: information availability and content, ease of use, privacy/security, graphic style, and fulfillment/reliability. A study conducted by Parasuraman et al. (2005) divided e-service quality into two different scales: the e-service quality scale (E-S-QUAL) and e-service quality recovery scale (E-RecS-QUAL). Privacy/security, reliability, fulfillment, efficiency, and individualized attention are the dimensions of E-S-QUAL where the dimensions of E-RecS-QUAL are responsiveness, compensation, and contact. The results of the study show that privacy plays a significant role in customers' higher-order evaluations pertaining to websites.

Gounaris et al. (2010) examined the effect of service quality and satisfaction on WOM, site revisits, and purchase intention in the context of internet shopping. These authors used the WebQual scale (usability, information, and interaction) developed by Barnes and Vidgen (2002) and two additional parameters, aesthetics and after-sales service, developed by Lee and Lin (2005) to measure e-service quality. The study used 240 random online interviews from an Internet provider in Greece and showed that e-service quality had a positive effect on satisfaction, while it also influenced the customer behavioral intentions, namely site revisits, WOM communication and repeat purchase, both directly and indirectly through satisfaction.

Kitapci et al. (2014) investigated the effect of service quality dimensions on patient satisfaction, identified the effect of satisfaction on WOM communication and repurchase intention, and looked for a significant relationship between WOM and repurchase intention in the public healthcare industry. The framework used the SERVQUAL model developed by Parasuraman et al. (1985) to measure service quality. The study demonstrated that customer satisfaction had a significant effect on WOM and repurchase intentions which were observed as highly related.

The existing measurement of e-service quality in online business has some weaknesses. According to Blut (2016), E-S-Qual and eTailQ measurements lack criteria to assess online stores so they cannot suitably explain customer dissatisfaction and their switching to other online stores. The other weakness lies in the ability to predict customer behavior. Though it covers 13 of 16 attributes of e-service quality, eTailQ only ranks eighth in its predictive ability and does not perform well to measure customer service and security (Blut et al., 2015). WebQual might come first in the ability to predict customer behavior, but it only has a narrow focus.

Table 2
Cronbach's alpha, composite reliability (CR), AVE, and Fornell-Larcker Criterion.

	Cronbach's Alpha	CR	AVE	IQ	WA	PP	WC	PS	PO	WP	SA	SL	RP	SC	PR	TD	OA	DC	SQ	S	T	RI	WOM	SR
IQ	0.868	0.919	0.792	**0.890**																				
WA	0.887	0.930	0.815	0.615	**0.903**																			
PP	0.782	0.874	0.698	0.526	0.412	**0.836**																		
WC	0.892	0.933	0.823	0.611	0.692	0.598	**0.907**																	
PS	0.816	0.892	0.734	0.583	0.549	0.610	0.709	**0.857**																
PO	0.780	0.873	0.696	0.488	0.390	0.266	0.325	0.343	**0.834**															
WP	0.834	0.901	0.752	0.471	0.315	0.274	0.291	0.318	0.638	**0.867**														
SA	0.770	0.867	0.686	0.471	0.396	0.277	0.320	0.298	0.574	0.544	**0.828**													
SL	0.774	0.869	0.689	0.405	0.266	0.128	0.238	0.283	0.395	0.588	0.393	**0.830**												
RP	0.876	0.924	0.802	0.419	0.292	0.214	0.242	0.308	0.442	0.510	0.386	0.615	**0.895**											
SC	0.837	0.903	0.758	0.463	0.293	0.222	0.275	0.270	0.470	0.531	0.543	0.430	0.621	**0.871**										
PR	0.895	0.935	0.827	0.448	0.299	0.205	0.264	0.296	0.416	0.444	0.421	0.418	0.545	0.701	**0.910**									
TD	0.896	0.935	0.828	0.487	0.348	0.260	0.288	0.309	0.527	0.586	0.651	0.523	0.439	0.503	0.487	**0.910**								
OA	0.876	0.924	0.802	0.475	0.354	0.245	0.318	0.340	0.572	0.594	0.634	0.443	0.514	0.646	0.584	0.779	**0.896**							
DC	0.734	0.842	0.641	0.425	0.282	0.121	0.203	0.220	0.419	0.434	0.489	0.347	0.368	0.491	0.367	0.510	0.621	**0.800**						
SQ	0.915	0.946	0.855	0.554	0.398	0.294	0.355	0.374	0.561	0.609	0.595	0.385	0.507	0.655	0.516	0.677	0.750	0.555	**0.925**					
S	0.855	0.911	0.774	0.522	0.341	0.285	0.337	0.328	0.584	0.679	0.590	0.379	0.551	0.691	0.597	0.609	0.749	0.543	0.791	**0.880**				
T	0.908	0.931	0.731	0.482	0.327	0.241	0.289	0.331	0.535	0.528	0.615	0.498	0.532	0.632	0.625	0.681	0.730	0.511	0.719	0.722	**0.855**			
RI	0.914	0.946	0.853	0.384	0.287	0.219	0.241	0.258	0.473	0.528	0.534	0.350	0.420	0.457	0.375	0.501	0.579	0.419	0.619	0.795	0.696	**0.924**		
WOM	0.931	0.956	0.880	0.523	0.326	0.261	0.321	0.362	0.564	0.593	0.528	0.369	0.478	0.593	0.512	0.516	0.679	0.491	0.713	0.780	0.755	0.803	**0.938**	
SR	0.849	0.930	0.869	0.390	0.225	0.164	0.220	0.238	0.465	0.565	0.539	0.422	0.522	0.547	0.429	0.510	0.603	0.519	0.682	0.723	0.705	0.768	0.750	**0.932**

Notes: IQ: Information Quality; WA: Website Aesthetics; PP: Purchase Process; WC: Website Convenience; PS: Product Selection; PO: Price Offerings; WP: Website Personalization; SA: System Availability; SL: Service Level; RP: Returns Handling/Policies; SC: Security; PR: Privacy; TD: Timeliness of Delivery; OA: Order Accuracy; DC: Delivery Condition; SQ: Overall Service Quality; S: Customer Satisfaction; T: Customer Trust; RI: Repurchase Intention; WOM: Word of Mouth; SR: Site Revisit.
*The numbers in diagonal (in bold) are the squared root of AVEs.

Table 3
Cross-loadings.

	IQ	WA	PP	WC	PS	PO	WP	SA	SL	RP	SC	PR	TD	OA	DC	SQ	S	T	RI	WOM	SR
IQ1	**0.919**	0.546	0.489	0.596	0.554	0.501	0.536	0.462	0.471	0.421	0.468	0.495	0.496	0.503	0.442	0.593	0.542	0.526	0.380	0.565	0.436
IQ2	**0.906**	0.520	0.462	0.482	0.536	0.420	0.424	0.452	0.377	0.385	0.437	0.376	0.441	0.423	0.404	0.478	0.451	0.419	0.344	0.457	0.350
IQ3	**0.842**	0.583	0.453	0.551	0.462	0.373	0.279	0.336	0.214	0.305	0.321	0.310	0.355	0.330	0.278	0.392	0.389	0.328	0.296	0.359	0.240
WA1	0.547	**0.877**	0.410	0.661	0.545	0.328	0.266	0.333	0.235	0.258	0.222	0.255	0.304	0.332	0.270	0.341	0.301	0.278	0.260	0.298	0.208
WA2	0.522	**0.921**	0.310	0.594	0.426	0.354	0.288	0.351	0.246	0.263	0.276	0.261	0.303	0.301	0.247	0.352	0.298	0.293	0.216	0.233	0.160
WA3	0.594	**0.910**	0.391	0.618	0.512	0.375	0.299	0.388	0.238	0.270	0.294	0.292	0.335	0.324	0.248	0.384	0.325	0.315	0.299	0.347	0.238
PP1	0.411	0.302	**0.861**	0.466	0.506	0.220	0.251	0.235	0.106	0.196	0.196	0.186	0.257	0.243	0.100	0.254	0.249	0.212	0.171	0.191	0.111
PP2	0.448	0.398	**0.868**	0.519	0.510	0.215	0.205	0.255	0.083	0.182	0.178	0.164	0.214	0.184	0.102	0.234	0.232	0.197	0.209	0.200	0.145
PP3	0.458	0.327	**0.775**	0.512	0.512	0.232	0.231	0.201	0.132	0.159	0.182	0.164	0.181	0.189	0.100	0.250	0.233	0.196	0.168	0.264	0.155
WC1	0.579	0.740	0.502	**0.908**	0.597	0.355	0.297	0.294	0.189	0.246	0.283	0.266	0.281	0.299	0.181	0.373	0.353	0.286	0.249	0.313	0.210
WC2	0.535	0.593	0.590	**0.931**	0.639	0.262	0.250	0.260	0.208	0.198	0.226	0.229	0.247	0.270	0.165	0.307	0.294	0.244	0.207	0.275	0.189
WC3	0.546	0.543	0.539	**0.882**	0.695	0.263	0.244	0.319	0.251	0.212	0.238	0.220	0.254	0.295	0.207	0.282	0.268	0.253	0.198	0.285	0.200
PS1	0.417	0.461	0.438	0.522	**0.750**	0.181	0.183	0.222	0.207	0.219	0.221	0.262	0.210	0.244	0.155	0.251	0.201	0.263	0.172	0.230	0.134
PS2	0.540	0.488	0.552	0.631	**0.902**	0.347	0.286	0.263	0.259	0.306	0.237	0.262	0.297	0.314	0.213	0.366	0.332	0.277	0.250	0.332	0.209
PS3	0.532	0.467	0.567	0.659	**0.908**	0.335	0.332	0.277	0.257	0.263	0.236	0.244	0.279	0.310	0.194	0.334	0.297	0.310	0.235	0.356	0.256
PO1	0.382	0.335	0.239	0.273	0.254	**0.779**	0.436	0.455	0.324	0.311	0.316	0.240	0.419	0.422	0.330	0.335	0.402	0.364	0.340	0.333	0.301
PO2	0.406	0.315	0.220	0.290	0.284	**0.876**	0.549	0.484	0.359	0.350	0.357	0.345	0.448	0.474	0.321	0.511	0.462	0.428	0.367	0.463	0.381
PO3	0.432	0.329	0.209	0.252	0.318	**0.845**	0.603	0.497	0.308	0.439	0.495	0.446	0.452	0.531	0.396	0.545	0.589	0.539	0.471	0.602	0.475
WP1	0.433	0.308	0.239	0.235	0.294	0.581	**0.817**	0.454	0.450	0.428	0.515	0.454	0.487	0.563	0.466	0.570	0.546	0.569	0.493	0.582	0.487
WP2	0.398	0.218	0.198	0.226	0.240	0.563	**0.904**	0.476	0.516	0.425	0.422	0.332	0.533	0.497	0.378	0.478	0.522	0.613	0.437	0.483	0.488
WP3	0.394	0.290	0.272	0.295	0.290	0.515	**0.878**	0.483	0.563	0.471	0.440	0.365	0.504	0.484	0.285	0.534	0.507	0.583	0.441	0.475	0.493
SA1	0.314	0.250	0.173	0.186	0.149	0.447	0.446	**0.781**	0.350	0.365	0.432	0.311	0.487	0.488	0.233	0.428	0.454	0.497	0.424	0.362	0.409
SA2	0.415	0.331	0.256	0.287	0.268	0.536	0.511	**0.903**	0.338	0.351	0.518	0.336	0.560	0.552	0.401	0.539	0.547	0.510	0.488	0.468	0.475
SA3	0.430	0.393	0.249	0.310	0.306	0.440	0.395	**0.796**	0.294	0.252	0.396	0.395	0.564	0.531	0.554	0.502	0.460	0.524	0.414	0.470	0.451
SL1	0.330	0.247	0.039	0.175	0.273	0.251	0.435	0.286	**0.779**	0.448	0.332	0.316	0.367	0.344	0.283	0.306	0.287	0.359	0.268	0.304	0.324
SL2	0.353	0.258	0.150	0.233	0.243	0.320	0.462	0.311	**0.863**	0.496	0.368	0.380	0.496	0.379	0.338	0.320	0.314	0.441	0.268	0.285	0.379
SL3	0.328	0.163	0.122	0.183	0.194	0.403	0.561	0.375	**0.846**	0.578	0.370	0.344	0.435	0.378	0.246	0.331	0.340	0.435	0.331	0.329	0.348
RP1	0.409	0.294	0.233	0.238	0.315	0.432	0.468	0.323	0.573	**0.908**	0.514	0.466	0.376	0.449	0.337	0.421	0.506	0.471	0.379	0.422	0.447
RP2	0.358	0.259	0.209	0.189	0.257	0.389	0.465	0.302	0.551	**0.923**	0.581	0.536	0.389	0.449	0.269	0.452	0.483	0.445	0.391	0.420	0.444
RP3	0.359	0.232	0.130	0.223	0.255	0.366	0.437	0.417	0.525	**0.853**	0.576	0.461	0.416	0.483	0.387	0.491	0.491	0.516	0.359	0.444	0.517
SC1	0.418	0.246	0.175	0.244	0.230	0.401	0.513	0.548	0.405	0.502	**0.903**	0.568	0.517	0.647	0.496	0.681	0.670	0.628	0.452	0.600	0.579
SC2	0.391	0.262	0.182	0.230	0.217	0.443	0.493	0.477	0.363	0.589	**0.913**	0.587	0.469	0.594	0.443	0.636	0.630	0.584	0.409	0.544	0.493
SC3	0.399	0.255	0.223	0.244	0.256	0.381	0.377	0.390	0.354	0.529	**0.790**	0.676	0.323	0.441	0.340	0.387	0.500	0.434	0.329	0.400	0.353
PR1	0.441	0.295	0.196	0.270	0.286	0.447	0.422	0.371	0.386	0.529	0.727	**0.921**	0.443	0.533	0.357	0.502	0.574	0.581	0.339	0.483	0.405
PR2	0.422	0.280	0.195	0.271	0.284	0.375	0.388	0.411	0.375	0.511	0.637	**0.947**	0.462	0.554	0.334	0.479	0.560	0.548	0.317	0.455	0.387
PR3	0.352	0.237	0.166	0.170	0.235	0.304	0.402	0.366	0.383	0.443	0.537	**0.859**	0.423	0.508	0.307	0.424	0.491	0.580	0.372	0.460	0.380
TD1	0.448	0.300	0.239	0.288	0.300	0.473	0.503	0.513	0.501	0.322	0.326	0.367	**0.880**	0.610	0.419	0.564	0.484	0.557	0.390	0.389	0.351
TD2	0.430	0.311	0.229	0.253	0.255	0.478	0.539	0.629	0.461	0.420	0.517	0.433	**0.923**	0.758	0.483	0.622	0.591	0.632	0.482	0.519	0.512
TD3	0.454	0.339	0.242	0.249	0.290	0.489	0.556	0.628	0.469	0.448	0.517	0.521	**0.925**	0.749	0.487	0.657	0.582	0.664	0.491	0.492	0.517
OA1	0.399	0.295	0.181	0.276	0.275	0.478	0.494	0.574	0.367	0.420	0.629	0.538	0.678	**0.918**	0.616	0.670	0.681	0.603	0.463	0.552	0.557
OA2	0.449	0.354	0.228	0.305	0.345	0.540	0.565	0.579	0.406	0.508	0.589	0.505	0.744	**0.925**	0.611	0.730	0.663	0.635	0.473	0.596	0.541
OA3	0.430	0.299	0.254	0.272	0.292	0.522	0.540	0.550	0.421	0.451	0.513	0.532	0.669	**0.841**	0.428	0.610	0.671	0.734	0.635	0.688	0.524
DC1	0.338	0.222	0.099	0.182	0.175	0.204	0.250	0.326	0.195	0.260	0.299	0.191	0.278	0.349	**0.813**	0.312	0.330	0.297	0.261	0.302	0.354
DC2	0.368	0.256	0.130	0.168	0.206	0.484	0.517	0.493	0.379	0.390	0.541	0.461	0.573	0.683	**0.820**	0.586	0.591	0.594	0.492	0.549	0.541
DC3	0.303	0.185	0.042	0.138	0.134	0.237	0.181	0.301	0.204	0.180	0.257	0.135	0.285	0.356	**0.766**	0.357	0.297	0.235	0.165	0.242	0.281
SQ1	0.538	0.389	0.291	0.330	0.383	0.537	0.561	0.514	0.393	0.507	0.636	0.486	0.585	0.672	0.545	**0.928**	0.735	0.643	0.563	0.656	0.635
SQ2	0.489	0.346	0.289	0.343	0.348	0.503	0.557	0.522	0.345	0.467	0.558	0.454	0.618	0.711	0.458	**0.925**	0.709	0.660	0.570	0.673	0.626
SQ3	0.509	0.369	0.237	0.312	0.307	0.515	0.572	0.613	0.330	0.433	0.622	0.492	0.673	0.697	0.534	**0.921**	0.748	0.691	0.582	0.650	0.630
S1	0.500	0.363	0.248	0.324	0.316	0.551	0.580	0.578	0.461	0.546	0.655	0.542	0.651	0.796	0.647	0.819	**0.912**	0.750	0.701	0.751	0.747
S2	0.447	0.238	0.204	0.266	0.245	0.538	0.478	0.517	0.288	0.483	0.640	0.529	0.472	0.578	0.392	0.644	**0.880**	0.648	0.573	0.668	0.571
S3	0.425	0.287	0.303	0.297	0.300	0.445	0.536	0.453	0.224	0.415	0.520	0.506	0.462	0.574	0.357	0.599	**0.846**	0.694	0.621	0.629	0.570
T2	0.337	0.210	0.229	0.195	0.249	0.466	0.564	0.553	0.352	0.422	0.444	0.410	0.554	0.537	0.340	0.590	0.664	**0.831**	0.664	0.643	0.619
T3	0.433	0.299	0.201	0.277	0.293	0.463	0.626	0.524	0.490	0.449	0.520	0.539	0.622	0.662	0.438	0.609	0.683	**0.887**	0.560	0.621	0.559
T4	0.422	0.333	0.222	0.300	0.296	0.533	0.630	0.607	0.462	0.482	0.626	0.579	0.637	0.723	0.518	0.678	0.769	**0.899**	0.611	0.670	0.623
T5	0.453	0.277	0.234	0.228	0.291	0.418	0.565	0.421	0.488	0.508	0.502	0.522	0.516	0.546	0.465	0.553	0.614	**0.805**	0.515	0.575	0.598

Table 3 (*continued*)

	IQ	WA	PP	WC	PS	PO	WP	SA	SL	RP	SC	PR	TD	OA	DC	SQ	S	T	RI	WOM	SR
T6	0.424	0.280	0.152	0.234	0.287	0.402	0.520	0.512	0.351	0.422	0.601	0.617	0.577	0.641	0.428	0.636	0.659	**0.850**	0.613	0.707	0.611
RI1	0.379	0.270	0.200	0.221	0.262	0.457	0.458	0.439	0.247	0.368	0.451	0.419	0.439	0.558	0.414	0.611	0.685	0.645	**0.914**	0.779	0.725
RI2	0.303	0.240	0.185	0.172	0.198	0.457	0.503	0.557	0.326	0.364	0.422	0.325	0.510	0.572	0.378	0.574	0.673	0.654	**0.935**	0.705	0.730
RI3	0.385	0.287	0.224	0.277	0.257	0.393	0.501	0.484	0.399	0.435	0.390	0.292	0.439	0.471	0.367	0.527	0.641	0.629	**0.922**	0.740	0.672
WOM1	0.537	0.334	0.261	0.324	0.341	0.561	0.573	0.518	0.394	0.485	0.625	0.503	0.523	0.681	0.482	0.705	0.773	0.747	0.762	**0.951**	0.741
WOM2	0.495	0.281	0.239	0.297	0.349	0.552	0.594	0.449	0.371	0.452	0.512	0.455	0.472	0.645	0.475	0.678	0.748	0.730	0.748	**0.952**	0.714
WOM3	0.434	0.302	0.233	0.280	0.329	0.468	0.497	0.521	0.263	0.404	0.529	0.483	0.453	0.579	0.421	0.620	0.667	0.641	0.751	**0.910**	0.651
SR2	0.321	0.161	0.101	0.149	0.163	0.416	0.559	0.520	0.369	0.507	0.524	0.371	0.478	0.562	0.426	0.634	0.696	0.672	0.749	0.705	**0.937**
SR3	0.409	0.261	0.209	0.266	0.285	0.452	0.492	0.485	0.420	0.466	0.496	0.431	0.472	0.562	0.545	0.637	0.651	0.641	0.681	0.694	**0.927**

Notes: IQ: Information Quality; WA: Website Aesthetics; PP: Purchase Process; WC: Website Convenience; PS: Product Selection; PO: Price Offerings; WP: Website Personalization; SA: System Availability; SL: Service Level; RP: Returns Handling/Policies; SC: Security; PR: Privacy; TD: Timeliness of Delivery; OA: Order Accuracy; DC: Delivery Condition; SQ: Overall Service Quality; S: Customer Satisfaction; T: Customer Trust; RI: Repurchase Intention; WOM: Word of Mouth; SR: Site Revisit. Bold value signifies above 0.7.

Looking at the weaknesses of current e-service quality measurements, Blut et al. (2015) developed a hierarchical model using meta-analysis. The hierarchical model offers a more comprehensive model to capture attributes of online stores. Results show that e-service quality is a four-dimensional construct: website design, customer service, security/privacy, and fulfillment. The hierarchical model also has a higher predictive ability of consumer behavior than other existing measurements.

Later, Blut (2016) empirically tested the Blut et al. (2015) model using 358 U.S. online customers. The study showed that the e-service quality construct conformed to the structure of a higher-order factor model that links online service quality perceptions to distinct and actionable dimensions, including website design, fulfillment, customer service, and security/privacy. The results of this study also demonstrated that overall quality fully mediated the relationship between dimensions and outcomes for fulfillment and security, and partially mediated the relationships for customer service and website design.

From the above literature review, the authors decided that this research should use the hierarchical model to examine the e-service quality of online business. In addition, this research also investigates the outcome of e-service quality to achieve positive consumer behavior such as repurchase intention, WOM, and site revisit intention. As the literature shows, these aspects are influenced by satisfaction, trust, and several quality factors toward online store websites.

Fig. 1 illustrates the conceptual model for e-service quality in an online shopping context. We adapted the models from Gounaris et al. (2010), Blut (2016), Rasheed and Abadi (2014) and Kitapci et al. (2014) to examine the relationship among customer satisfaction, customer trust, repurchase intention, WOM, and site revisit.

According to Blut (2016), e-service quality measurements contain four dimensions: website design, customer service, security/privacy, and fulfillment. Website design refers to all elements of the customer experience related to the website, including information quality, website aesthetics, purchase process, website convenience, product selection, price offerings, website personalization, and system availability. An efficient website should contain three main content categories: information-oriented, transaction-oriented, and customer-oriented (Cox and Koelzer, 2004). A good website design should emphasize usability by providing the aesthetics of the design, reflecting a strong and associative image to the brand, and being able to attract customers to visit it (Díaz and Koutra, 2013). Customers assess their experience of using a website to assess an online store's overall service quality. Hence we posit.

H1. Website design has a positive association with overall e-service quality

Customer service refers to service level and returns handling/return policies during and after the sale (Blut, 2016). Offline businesses always have service staff that help customers during the purchasing process. In online businesses, customers sometimes do the entire purchasing process by themselves without customer service assistance (McLean and Wilson, 2016). Some online businesses provide customer service that allows customers to ask for more detailed information regarding the product they want to buy. Companies usually use web-based synchronous media such as live chat facilities, an online help desk, and social network websites (Turel and Connelly, 2013). According to Blut (2016), customer service might contribute to e-service quality. Hence.

H2. Customer service has a positive association with overall e-service quality

Security/privacy refers to the security of credit card payments and privacy of shared information (Blut, 2016). The website must emphasize assurance and security to increase the website credibility and service quality (Wang et al., 2015). Schmidt et al. (2008) showed that an effective website must feature privacy and security (see also: Fortes and Rita, 2016). When a customer purchases goods from an online website, this requires entering private information such as name, address, and

Table 4

Heterotrait-monotrait (HTMT) ratio.

	IQ	WA	PP	WC	PS	PO	WP	SA	SL	RP	SC	PR	TD	OA	DC	SQ	S	T	RI	WOM
IQ																				
WA	0.703																			
PP	0.639	0.491																		
WC	0.693	0.774	0.717																	
PS	0.688	0.648	0.760	0.830																
PO	0.589	0.470	0.342	0.389	0.420															
WP	0.545	0.365	0.339	0.336	0.378	0.787														
SA	0.568	0.474	0.351	0.381	0.367	0.740	0.679													
SL	0.487	0.324	0.170	0.287	0.359	0.504	0.596	0.510												
RP	0.478	0.331	0.258	0.273	0.363	0.532	0.634	0.478	0.743											
SC	0.539	0.340	0.275	0.318	0.328	0.578	0.596	0.675	0.535	0.727										
PR	0.500	0.333	0.244	0.291	0.349	0.489	0.513	0.506	0.503	0.614	0.807									
TD	0.550	0.390	0.311	0.323	0.360	0.631	0.677	0.778	0.628	0.493	0.574	0.540								
OA	0.541	0.400	0.299	0.359	0.400	0.692	0.696	0.772	0.540	0.588	0.752	0.662	0.875							
DC	0.517	0.339	0.148	0.249	0.274	0.504	0.501	0.602	0.428	0.430	0.577	0.399	0.576	0.709						
SQ	0.615	0.441	0.348	0.392	0.430	0.658	0.696	0.704	0.457	0.568	0.746	0.569	0.745	0.836	0.632					
S	0.599	0.386	0.350	0.383	0.385	0.708	0.715	0.721	0.452	0.633	0.813	0.681	0.683	0.855	0.617	0.883				
T	0.539	0.365	0.288	0.320	0.386	0.631	0.781	0.734	0.596	0.601	0.722	0.694	0.752	0.822	0.571	0.787	0.898			
RI	0.430	0.318	0.259	0.267	0.297	0.557	0.604	0.637	0.416	0.471	0.521	0.416	0.551	0.653	0.462	0.676	0.812	0.761		
WOM	0.573	0.357	0.306	0.351	0.411	0.653	0.670	0.620	0.430	0.529	0.670	0.561	0.560	0.755	0.544	0.771	0.867	0.816	0.871	
SR	0.450	0.260	0.204	0.255	0.284	0.569	0.670	0.665	0.522	0.607	0.648	0.494	0.580	0.700	0.618	0.774	0.838	0.802	0.870	0.842

Notes: IQ: Information Quality; WA: Website Aesthetics; PP: Purchase Process; WC: Website Convenience; PS: Product Selection; PO: Price Offerings; WP: Website Personalization; SA: System Availability; SL: Service Level; RP: Returns Handling/Policies; SC: Security; PR: Privacy; TD: Timeliness of Delivery; OA: Order Accuracy; DC: Delivery Condition; SQ: Overall Service Quality; S: Customer Satisfaction; T: Customer Trust; RI: Repurchase Intention; WOM: Word of Mouth; SR: Site Revisit.

contact number, including credit card information (Holloway and Beatty, 2008). Customers are always concerned whether the website would protect them against fraud after a transaction. Website security and privacy are important to assess the service quality of online stores. Hence.

H3. Security/privacy has a positive association with overall e-service quality

Fulfillment refers to activities that ensure customers receive what they ordered, including the time of delivery, order accuracy, and delivery condition (Blut, 2016). This attribute can only be assessed after the payment is made. According to Liao and Keng (2013), customer post-payment dissonance is more likely to occur in online shopping rather than in an offline shopping environment because customers cannot see the product directly before they purchase it. Companies must ensure delivery timeliness, order accuracy, and delivery conditions to provide superior service quality for customers. Order fulfillment represents one of the determinants of e-service quality. Hence.

H4. Fulfillment has a positive association with overall e-service quality

Customer satisfaction is an indication of the customer's belief of the probability of a service leading to a positive feeling (Udo et al., 2010). According to Kotler and Keller (2006), customer satisfaction is the consequence of customer experiences during the buying process, and it plays a crucial role in affecting customers' future behavior, such as online repurchase and loyalty (Pereira et al., 2016). Satisfaction is one of the most important success measures in the business to consumer (B2C) online environment (Shin et al., 2013). A satisfied online customer would likely shop again and recommend online retailers to others (e.g., Pereira et al., 2017), while a dissatisfied customer would leave his/her online retailer with or without any complaint.

Satisfaction is closely related to customer attitudes and intentions, which are part of customer behavior (Holloway et al., 2005) and directly influence customers' positive behavioral intentions. Prior literature has confirmed a significant relationship between e-service quality and customer satisfaction (Blut et al., 2015; Gounaris et al., 2010; Kitapci et al., 2014; Udo et al., 2010). Gounaris et al. (2010) argue that e-service quality has a positive effect on satisfaction. E-service quality also has a positive influence, directly and indirectly, on satisfaction as well as on three behavior intentions, namely repurchase intention, WOM, and site revisit. Thus, the following hypothesis is provided to investigate the effect of service quality on customer satisfaction in online shopping.

H5. Overall e-service quality has a positive association with customer satisfaction

Trust is a major factor for customers to decide whether to buy products from online stores or not (Fortes et al., 2017). According to Wu et al. (2018), trust can be seen as a belief, confidence, sentiment, or expectation about buyer intention or likely behavior. According to Chang et al. (2013), lack of trust is a major barrier in the adoption of e-commerce. Oliveira et al. (2017) measured three dimensions of customer trust (competence, integrity, and benevolence) and found that customers with high overall trust demonstrated a higher intention to e-commerce. Previous studies show that e-service quality positively influences trust (Chiou and Droge, 2006; Cho and Hu, 2009; Rasheed and Abadi, 2014; Wu et al., 2010, 2018). Alrubaiee & Alkaa'ida (2011) observed that service quality in the healthcare industry has a direct positive effect on customer trust and has an indirect positive effect on trust mediated by customer satisfaction. Shopping through the internet involves trust not only between internet merchant and customer but also between customer and the computer system where the transaction is executed (Lee and Turban, 2001). Trust helps reduce uncertainty when the degree of familiarity between the customer and transaction security mechanism is insufficient (Wu et al., 2018). Based on these findings, we hypothesize that in online businesses:

H6. Overall e-service quality has a positive association with customer trust

Customer satisfaction is a critical factor to generate customer loyalty (Pham and Ahammad, 2017). Kotler and Armstrong (2012) stated that customer satisfaction is the key to the buying behavior of the future. Repurchase intention indicates an individual's willingness to make another purchase from the same company, based on his/her previous experiences (Filieri & Lin, 2017; Hellier et al., 2003). Customers who are satisfied with the service provided by a service provider would increase the usage level and future usage intentions (Henkel et al., 2006). Customer satisfaction and repurchase intentions can be increased by offering superior service quality (Cronin et al., 2000). When customers are satisfied with the product or service they buy, they tend to purchase again from the same supplier. Several studies have found evidence for a positive relationship between customer satisfaction and repurchase intentions (Blut et al., 2015; Kitapci et al., 2014; Pham and Ahammad, 2017; Wolfinbarger and Gilly, 2003).

If customers have a high level of trust toward the website, it is more likely for them to have intention to purchase (Gao, 2011). Moreover, if customers have already experienced purchases from a website and they had a good purchase experience from it, then they would likely repurchase from the same website. Chek and Ho (2016) found evidence of a positive relationship between customer service, trust and purchase intention. Based on this evidence, we propose that:

H7.   Customer satisfaction has a positive association with repurchase intention.

H8.   Customer trust has a positive association with repurchase intention

Word of mouth (WOM) is product information that individuals transmit to other individuals (Solomon, 2015). WOM tends to be more reliable and trustworthy than other messages from formal marketing channels because customers get the word from people they know (Hwang & Zhang, 2018; Tuten and Solomon, 2015). WOM communication is an effective and powerful method to influence purchase decisions, particularly when important information is communicated by reliable and credible sources (Ennew et al., 2000).

According to Brown et al. (2007), the emergence of the internet has allowed customers to interact with each other quickly and has easily established a phenomenon known as interpersonal online influence or electronic WOM. Customers often use WOM when they are looking for information about brands, products, services, and organizations. WOM continues to be recognized as an important source of information affecting customer product choices (Smith et al., 2005). Unlike offline customers in physical stores, online customers are more likely to rely on recommendations from experienced customers before they purchase because online services are more intangible and harder to evaluate (Wu et al., 2018).

Companies must be aware of both positive and negative WOM communication since it is highly related to customer behavioral intentions and affects corporate sales and profits (Jung and Seock, 2017). If customers trust online retailers, they tend to recommend the online retailer to friends (Wu et al., 2018), implying that customer trust has been shifted to the online retailer. According to Wang (2011), not all satisfied customers result in positive WOM about services, whereas dissatisfied customers have a strong tendency to share their bad experience with others.

Customers who experience good service quality provided by an e-commerce site tend to engage in positive WOM communication, with positive WOM being an outcome of customer satisfaction (Kau and Loh, 2006). Kitapci et al. (2014) found that satisfied customers positively influence their WOM intentions. Kim and Stoel (2004) also showed the important role of online trust in order for customers to recommend a brand or website. Customers need to be satisfied with their experience and trust the information provided by the website before they give a recommendation to others (Loureiro et al., 2018). Therefore, this research leads to the following hypotheses:

H9.   Customer satisfaction has a positive association with WOM.

H10.   Customer trust has a positive association with WOM

Site visitors' perceived service quality is a significant indicator of satisfaction as well as post-visit behavioral intentions such as site revisits (Leung et al., 2011). The more positive the customer feels about a particular site after an interaction, the more likely the customer is to return to that site (Gounaris et al., 2010). Another key issue for online service companies is a customer's decision to return or not to an internet site. The decision to revisit a site resembles customer service switching behavior (Keaveney, 1995), where a customer keeps on using the online service category but switches from one service provider to another.

Taylor and Strutton (2010) predicted intentions to return to a website. Gounaris et al. (2010) confirmed that the relationship between customer satisfaction and site revisit was significantly positive. In general, customers tend to use their past retail service experience for decision making in order to formulate strategies for repeat behavior. Therefore, the following hypothesis is proposed:

H11.   Customer satisfaction has a positive association with site revisit

3. Methodology

The research was targeted for specific groups as respondents that would provide the information necessary for this research and who matched some set criteria. The respondents were screened to ensure that they remembered the last experience of using an online retailer website. The criteria for respondent selection were Indonesian internet users, who had visited, bought, or used the service offered by online retailers, at least once during the previous six months. The target population in this study was comprised of all male and female Indonesian adult individuals over the age of 17 years old.

In order to test the proposed model, a questionnaire was developed. Data collection was conducted through an online questionnaire using Google Docs, and the link shared on social media such as Facebook, LINE, and WhatsApp. Respondents were directed to a website containing the questionnaire via the shared link, for its self-administration. Respondents were instructed to respond based on the last online store that they used during the last six months.

Overall e-service quality was defined as the overall excellence or superiority of the service (Zeithaml, 1988). The three items of overall e-service quality were adapted from Blut (2016). The model constructs were measured by combining items from WebQual, E-S-Qual, and eTailQ (Holloway and Beatty, 2008; Parasuraman et al., 2005; Wolfinbarger and Gilly, 2003). The measurement of e-service quality was assigned to four dimensions: website design, customer service, security/privacy, and fulfillment. Based on Blut (2016), e-service quality dimensions were operationalized as a reflective-formative type (Ringle et al., 2012). The first-order dimensions of website design consisted of eight attributes: information quality, website aesthetics, purchase process, website convenience, product selection, price offerings, website personalization, and system availability. The first-order dimensions of customer service consisted of two attributes: service level and return handling/policies. The first-order dimension of security/privacy consisted of two attributes: security and privacy. Lastly, the first-order dimension of fulfillment consisted of three attributes: timeliness of delivery, order accuracy, and delivery condition.

The customer satisfaction scale was adapted from Fornell (1992) and customer trust was measured by six items adopted from Gefen (2002), Lee and Turban (2001) and Urban et al. (2009). Repurchase intention and WOM was measured with items adopted from Zeithaml et al. (1996). Site revisit was developed from Gounaris et al. (2010). All of the constructs and reflective items were measured using a seven-point scale ranging from 1 strongly disagree to 7 strongly agree (Table 1).

This research used partial least square (PLS) path modeling as implemented in Smart PLS software to assess the validity and reliability of the measurement. Composite reliability (CR), factor loading, and average variance extracted (AVE) were used to test the convergent

Table 5
Formative measurement model evaluation.

Formative construct (second-order construct)	Reflective constructs (first order construct)	Weights	VIF
Website Design	Information Quality	0.208***	2.328
	Website Aesthetics	0.184***	2.265
	Purchase Process	0.131***	1.833
	Website Convenience	0.184***	2.999
	Product Selection	0.162***	2.375
	Price Offerings	0.162***	2.025
	Website Personalization	0.177***	1.904
	System Availability	0.158***	1.730
Customer Service	Service Level	0.486***	1.607
	Return Handing/Policies	0.626***	1.607
Security/Privacy	Security	0.543***	1.968
	Privacy	0.541***	1.968
Fulfillment	Timeliness of Delivery	0.429***	2.548
	Order Accuracy	0.442***	3.065
	Delivery Condition	0.261***	1.631

Notes: *$p < 0.10$; **$p < 0.05$; ***$p > 0.01$.

validity. It is acceptable if an individual item factor loading is greater than 0.70, composite reliability exceeds 0.70, and AVE exceed 0.50 (Gefen et al., 2000). Factor loading exceeding 0.50 is acceptable, while a value exceeding 0.70 shows strong evidence of convergent validity (Bagozzi and Yi, 1988). All the factor loading estimates exceeded 0.70, except T1 and SR1 (therefore these were eliminated), and Bootstrap t-statistics showed strong evidence of convergent validity. AVE of each reflective construct in this research also exceeded 0.50 (ranging from 0.641 to 0.880) as shown in Table 2. The AVE indicated that most of the variance of each indicator was explained by its own construct. Thus, convergent validity was confirmed.

This research used three measures to assess the discriminant validity: Fornell-Lacker criterion, cross-loadings, and heterotrait-monotrait (HTMT) ratio of correlations criterion. According to Hair et al. (2010), discriminant validity ensures that a construct measure is empirically unique and represents phenomena of interest that other measures in a structural equation model do not capture. Discriminant validity is established if a latent variable accounts for more variance in its associated indicator variables than it shares with other constructs in the same model (Fornell and Larcker, 1981). Table 2 shows the square root of AVEs (in bold) compared with the correlation of other constructs. Since the square roots of AVEs were higher than the correlation between other constructs, it met the acceptable discrimination. A second approach for establishing discriminant validity is cross-loadings. According to Chin (1998), each indicator loading should be greater than all cross-loadings. Table 3 shows that each indicator loading (in bold) is greater than all of its cross-loadings. The third approach is the heterotrait-monotrait (HTMT) ratio of correlations. If the HTMT value is below 0.90, discriminant validity has been established between two reflective constructs (Henseler et al., 2014). all construct had HTMT value below 0.90 as shown in Table 4. Thus, the discriminant validity of the measurement model was also established.

Cronbach's alpha can assess the internal consistency reliability of the instruments. Cronbach's alpha should be 0.7 or higher, for exploratory purposes, but 0.6 or higher is also acceptable (Hair et al., 2011). All

reflective constructs proved to be reliable since all Cronbach's alpha were greater than 0.7 (ranging from 0.770 to 0.931) as illustrated in Table 2.

In this study, e-service quality dimensions: website design, customer service, security/privacy, and fulfillment were second-order constructs with a reflective-formative type (Ringle et al., 2012). Each of their first-order constructs was reflective, and the relationships between e-service quality attributes (first-order constructs) and the e-service quality dimensions (second-order constructs) were formative. Hence, the multi-collinearity test, as well as the significance and the sign of weights test, were computed. Based on the test of significance and the sign of weights, all four e-service quality dimensions were statistically significant ($p < 0.01$), and all of them had positive signs. Table 5 shows that all VIF values of first-order constructs (ranging from 1.607 to 3.065) were below the threshold of 3.3 (Lee and Xia, 2010), the extent of multi-collinearity was concluded to be non-problematic. Thus, the formative constructs could be used to test the structural model.

4. Results

In the hypotheses testing, eleven paths were examined in the structural model. Here are the paths that were examined in this study:

- $SQ = \beta_0 + \beta_1 WD + \beta_2 CS + \beta_3 SP + \beta_4 FF + u$

where SQ (overall e-service quality) is the dependent variable; WD (website design), CS (customer service), SP (security/privacy), and FF (fulfillment) are independent variables; β_0 is the intercept parameter; β_1, β_2, β_3, and β_4 are slope parameters in the relationship between the dependent variable and the independent variables, and u is the error term for observation.

- $S = \beta_0 + \beta_1 SQ + u$

where S (customer satisfaction) is the dependent variable; SQ (overall e-service quality) is the independent variable; β_0 is the intercept parameter; β_1 is the slope parameter in the relationship between the dependent variable and the independent variable, and u is the error term for observation.

- $T = \beta_0 + \beta_1 SQ + u$

where T (customer trust) is the dependent variable; SQ (overall e-service quality) is the independent variable; β_0 is the intercept parameter; β_1 is the slope parameter in the relationship between the dependent variable and the independent variable, and u is the error term for observation.

- $RI = \beta_0 + \beta_1 S + \beta_2 T + u$

where RI (repurchase intention) is the dependent variable; S (customer satisfaction) and T (customer trust) are the independent variables; β_0 is the intercept parameter; β_1 and β_2 are the slope parameters in the relationship between the dependent variable and the independent variables, and u is the error term for observation.

Table 6
Construct collinearity assessment (VIF).

Construct	e-Service Quality	Customer Satisfaction	Customer Trust	Repurchase Intention	Word of Mouth	Site Revisit
Website Design	1.862					
Customer Service	1.827					
Security/Privacy	2.099					
Fulfilment	2.226					
e-Service Quality		1.000	1.000			
Customer Satisfaction				2.717	2.717	1.000
Customer Trust				2.717	2.717	

- $WOM = \beta_0 + \beta_1 S + \beta_2 T + u$

where *WOM* (word-of-mouth) is the dependent variable; *S* (customer satisfaction) and *T* (customer trust) are the independent variables; β_0 is the intercept parameter; β_1 and β_2 are the slope parameters in the relationship between the dependent variable and the independent variables, and *u* is the error term for observation.

- $SR = \beta_0 + \beta_1 S + u$

where *SR* (site revisit) is the dependent variable; *S* (customer satisfaction) is the independent variable; β_0 is the intercept parameter; β_1 is the slope parameter in the relationship between the dependent variable and the independent variable, and *u* the is error term for observation.

To test all the paths above, first, we determined the presence of construct multi-collinearity using the variance inflation factor (VIF) assessment. Small VIF values indicate low correlation among constructs. According to Lee and Xia (2010), if the VIF values are below the threshold of 3.3, then there is no problem with multi-collinearity. Table 6 shows that all VIF values (ranging from 1.000 to 2.717) were below the threshold of 3.3, so the extent of multi-collinearity was concluded to be non-problematic.

Hypotheses were tested based on the level of significance in the path coefficient using the bootstrapping technique (Hair et al., 2011) with 5000 iterations of re-sampling, and each bootstrap sample constituted by the number of observations (in this instance 355 cases). The test showed that of the eleven path coefficients, ten hypotheses were supported, while one hypothesis failed to be confirmed. The result of hypotheses testing is shown in Fig. 2.

The conceptual model explained 64.6% of the variation in overall service quality with predictive relevance Q^2 of 0.522, which suggest that the model has predictive relevance. The hypothesis of web design ($\hat{\beta} = 0.225$; p < 0.01), security/privacy ($\hat{\beta} = 0.205$; p < 0.01), and fulfillment ($\hat{\beta} = 0.507$; p < 0.01) are statistically significant. Nevertheless, customer service ($\hat{\beta} = -0.001$; p > 0.10) is not statistically significant. Therefore,

hypotheses H1, H3, and H4 are supported, however H2 is not supported to explain overall e-service quality.

The conceptual model explained 62.4% of the variation in customer satisfaction and also explained 51.6% of the variation in customer trust with predictive relevance Q^2 of 0.453 and 0.354, respectively. The hypothesis of overall service quality influence on customer satisfaction ($\hat{\beta} = 0.791$; p < 0.01) and the hypothesis of overall service quality influence on customer trust ($\hat{\beta} = 0.719$; p < 0.01) are statistically significant. Therefore, hypotheses H5 and H6 are supported.

The conceptual model explained 55.9% of the variation in repurchase intention with predictive relevance Q^2 of 0.451. The hypothesis of customer satisfaction impact on repurchase intention ($\hat{\beta} = 0.459$; p < 0.01) and the hypothesis of customer trust impact on repurchase intention ($\hat{\beta} = 0.331$; p < 0.01) are statistically significant. Therefore, hypotheses H7 and H8 are supported to explain repurchase intention.

The conceptual model explained 65.6% of the variation in WOM with predictive relevance Q^2 of 0.545. The hypothesis of customer satisfaction influence on WOM ($\hat{\beta} = 0.488$; p < 0.01), and customer trust influence on WOM ($\hat{\beta} = 0.367$; p < 0.01) are statistically significant. Therefore, hypotheses H9 and H10 are supported to explain WOM.

The conceptual model explained 52.2% of the variation in site revisit with predictive relevance Q^2 of 0.434. The hypothesis of customer satisfaction impact on site revisit ($\hat{\beta} = 0.723$; p < 0.01) is statistically significant. Therefore, hypotheses H11 is supported to explain site revisit.

The strength of the relationship between constructs on each hypothesis is shown by Cohen's f^2 value. Cohen (1988) defined values near 0.02 as small, near 0.15 as medium, and above 0.35 as large. Thus, overall e-service quality had a large impact on both customer satisfaction and customer trust. Customer satisfaction had a large impact on site revisit, and a medium impact on repurchase intention and WOM. Customer trust had a medium impact on repurchase intention and site revisit. Fulfillment had a medium impact on e-service quality, while security/privacy and website design had a small impact on overall e-service quality.
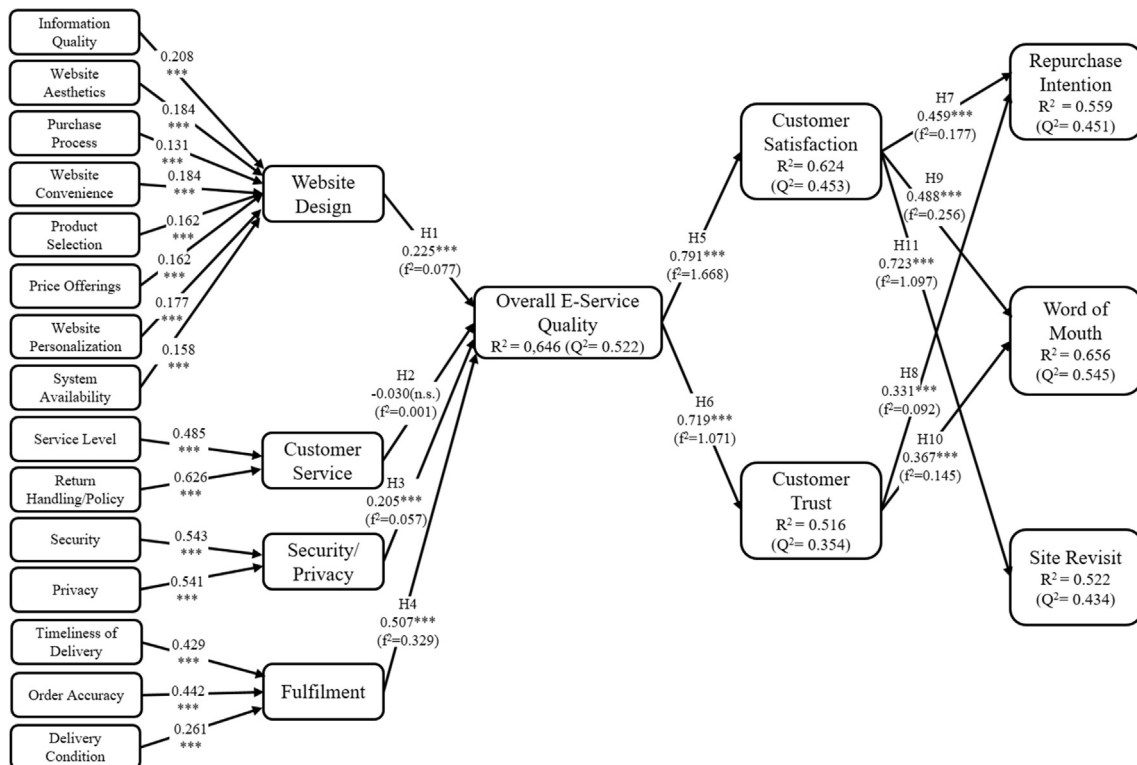

Fig. 2. Estimated model. Notes: (n.s.) = not significant; * p <0.10; ** p<0.05; *** p>0.01.

5. Discussion

This study was designed to investigate e-service quality in online businesses and develop new knowledge to understand the most important dimensions of e-service quality. The study also aimed to enhance prior understanding of how e-service quality affected customer satisfaction, customer trust, and customer behavior, i.e., repurchase intention, WOM, and site revisit. Table 7 summarizes the results of hypotheses test of this study.

Previous studies suggested applying the e-service quality measurement to other countries to test whether the measurement worked equally well in a different country and cultural setting (Blut, 2016; Gounaris et al., 2010). Through the conducted study, it was found that three out of four dimensions of e-service quality (website design, security/privacy, and fulfillment) had a positive impact on e-service quality, whereas the customer service dimension did not have impact on e-service quality. Thus, a company needs to pay attention to these dimensions more specifically and seek breakthroughs that can improve its performance and e-service quality. The literature emphasizes the strong relation of e-service quality dimensions to build the perception of overall e-service quality. Website design has the highest impact on e-service quality, while customer service has the lowest impact (Blut, 2016). In this study, fulfillment had the highest impact on e-service quality. Website design

Table 7
Structural relationship test results.

Hypothesis	Hypothesis Statement	Path coefficient (Sig. value)	Effect size (f^2)	Conclusion
H1	Website design has a positive association with overall e-service quality	0.225*** (0.000)	0.077	H1 supported
H2	Customer service has a positive association with overall e-service quality	-0.030 (0.494)	0.001	H2 not supported
H3	Security/privacy has a positive association with overall e-service quality	0.205*** (0.001)	0.057	H3 supported
H4	Fulfilment has a positive association with overall e-service quality	0.507*** (0.000)	0.329	H4 supported
H5	Overall e-service quality has a positive association with customer satisfaction	0.791*** (0.000)	1.668	H5 supported
H6	Overall e-service quality has a positive association with customer trust	0.516*** (0.000)	1.071	H6 supported
H7	Customer satisfaction has a positive association with repurchase intention	0.459*** (0.000)	0.177	H7 supported
H8	Customer trust has a positive association with repurchase intention	0.331*** (0.000)	0.092	H8 supported
H9	Customer satisfaction has a positive association with WOM	0.488*** (0.000)	0.256	H9 supported
H10	Customer trust has a positive association with WOM	0.367*** (0.000)	0.145	H10 supported
H11	Customer satisfaction has a positive association with site revisit	0.723*** (0.000)	1.097	H11 supported

Statistical significance p < 0.001.

and security/privacy had almost the same impact on e-service quality. Surprisingly, in the Indonesian context, customer service was not relevant to build the perception of overall e-service quality of an online store. According to Wolfinbarger and Gilly (2003), not all customers need customer service in each transaction, so customer service is only scantily related to quality. Contrarily, in the Blut et al. (2015) study, security was not relevant to overall e-service quality in the four-dimension e-service quality model. Meanwhile, Wolfinbarger & Gilly (2003) found that customer service and security were not significant to e-service quality.

Different countries culture may give varied outcomes on which attributes and dimension of e-service quality matters to create the perception of overall e-service quality. Thus, the result of this study compared with a previous study that used same e-service quality measurements. The previous study done by Blut (2016) examined online shoppers is the U.S. Fig. 3 shows that Indonesia and the U.S. have different country cultures in terms of power distance, individualism, and long term orientation. Blut et al. (2015) found that collectivism strengthens the association between fulfillment and overall e-service quality. In line with this study, fulfillment proved to have the highest impact on overall e-service quality rather than three other service quality dimensions.

From the power distance side, customers in a high power distance culture expect companies providing e-service quality to provide more security (Hofstede, 1984). High power distance will strengthen the effect of security on overall e-service quality (Blut et al., 2015). In this study, although security had a low impact on overall service quality, it was significant. Although security/privacy had low impact in this study, it should not be underestimated. Online stores, particularly, must keep customers' private information to make customers convinced to purchase goods in the online store.

From the standpoint of long-term orientation (LTO), Indonesia's high score indicates that it has a pragmatic culture while the US has a normative culture. According to Hofstede (1984), normative cultures tend to analyze new information to check whether it is true. For a country with low LTO, information is important, so, low LTO strengthens the association between website design and overall service quality. Thus in the Blut (2016) study, website design had the highest impact on overall service quality than three other service quality dimensions. As a country with a pragmatic culture, website design only had a low impact on overall e-service quality, but the importance should not be underestimated. An online store's website design should at least be visually appealing, easy to read, and provide enough information regarding the product they sell.

Customer satisfaction and customer trust appeared as the outcomes of overall e-service quality in the model. The results of this study showed that e-service quality had a positive impact on customer satisfaction. The majority of research done about e-service quality states that customer satisfaction is the main determinant impacting on e-service quality. It supports the idea that there is a significant relationship between e-service quality and customer satisfaction (Kitapci et al., 2014). E-service quality also had a positive impact on customer trust. The better the e-service quality of a company, the higher the customer trust. Providing good service quality enhances customer satisfaction and customer trust. This result is aligned with previous studies conducted by Wu et al. (2010) and Wu et al. (2018).

The investigation found that customer satisfaction had a positive impact on repurchase intention, word-of-mouth, and site revisit. According to Wolfinbarger and Gilly (2003), when customers are satisfied with a product or service they buy, they will purchase it again from the same provider in the future. Gounaris et al. (2010) examined the relationship of satisfaction to customer behavioral intention: purchase intention, site-revisit, and WOM in the context of internet shopping. In line with the Gounaris et al. (2010) study, the findings of this study showed that customer satisfaction had the highest impact on site revisit rather than repurchase intention and WOM.

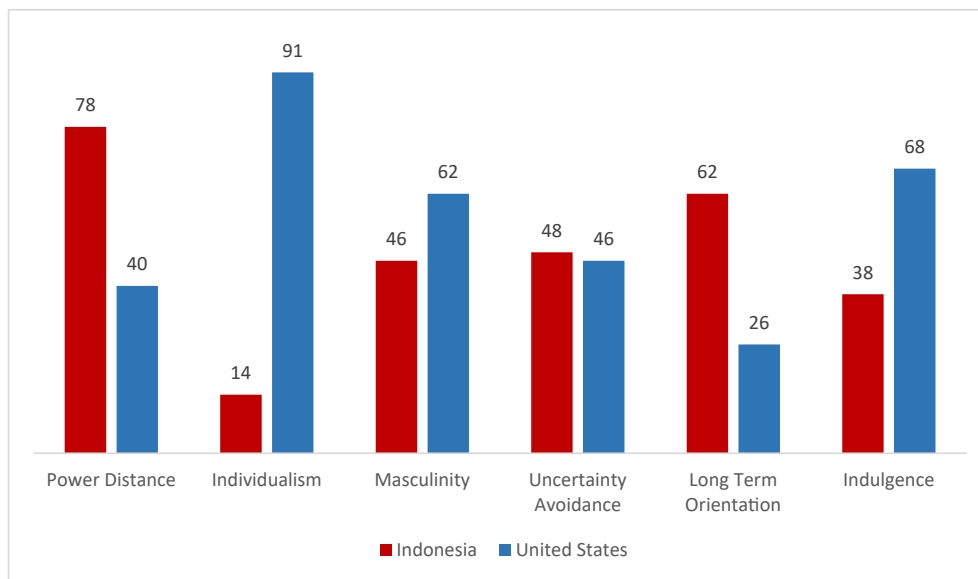Customer trust had a positive impact on repurchase intention and

Fig. 3. Hofstede country comparison: Indonesia and the United States. Source: Hofstede Insight Website (n.d.)

word-of-mouth. The more a customer trusts a company, the more likely (s)he is to recommend the company to others. Gremler et al. (2001) proved that trust exhibits a positive effect on making a recommendation. Because of the difficulty to evaluate online services, customers are likely to rely on recommendations from experienced customers. In line with the results of this study, customer trust had a higher impact on WOM than on repurchase intention.

6. Conclusion

This study is an extensive inquiry related to e-service quality in online business. This analysis is exploratory research to identify which e-service quality attributes were available in Indonesian based online stores using the four dimension of e-service quality model suggested by Blut et al. (2015) and measures the impact of e-service quality on customer satisfaction and customer trust which later have impact on repurchase intention, word of mouth and site revisit using the model developed by Blut (2016), Gounaris et al. (2010), Kitapci et al. (2014), and Rasheed and Abadi (2014). This research adopted one of the most comprehensive models of e-service quality that is able to predict customer behavior better than other widely used scales and not overestimate the importance of e-service quality attributes. The results are expected to extend the knowledge about different country cultures vis-á-vis the diverse relevance of e-service quality attributes. The findings show that website design, security/privacy, and fulfillment are essential to building superior service quality of an online store, while customer service is not an important dimension of e-service quality in the Indonesian context.

The conceptualization of e-service quality used in this study proved to have a better ability to predict customer behavior than other commonly used measurements such as WebQual and E-S-Qual (Blut et al., 2015). Based on the literature review, the hierarchical model of e-service quality is the best model available to determine e-service quality in terms of predictive consumer behavior ability, and it is more comprehensive to capture online store attributes. However, only Blut's (2016) study found using the measurement developed by Blut et al. (2015). Many studies still adopt WebQual, SERVQUAL and E-S-QUAL measurement to measure e-service quality. Thus, this research combined the hierarchical model of e-service quality with trust, which is important as it reinforces the adoption of e-commerce. Previous studies only examined the hierarchical model with satisfaction, repurchase intention, and WOM in a single country. To the best of our knowledge, this is the first time that the

hierarchical model is combined with trust.

By adopting a model which is not widely used yet, this study presents a new understanding of e-service quality of online business, especially how country culture matters, and which dimensions of service quality had the most impact to build the perception of overall service quality. This research contributed to wider scientific knowledge by comparing the implementation of two hierarchical models of e-service quality in two different country cultural settings, using the outcomes of this study and the results of a previous study by Blut (2016), that had not been investigated before.

The findings give insight for managers to better understand how e-service quality is formed and how important each attribute and dimension of e-service quality is to ensure customer satisfaction and trust, which in the end can help to retain online customers. Managers can improve the service quality of online stores based on the results of this research and combine it with the recent market trends. For example, from the aspect of security/privacy that mostly related to credit card information safety. In Indonesia, 52 percent of payment methods are cash on delivery, followed by ATM/bank transfer (45 percent) and credit card (2 percent) (ecommerceIQ, 2018). By using cash on delivery and bank transfer payment methods, customers do not need to worry about their payment card data security.

Managers should carefully consider the attributes of e-service quality to develop their online stores. To provide superior service quality, companies should provide an excellent website design that consists of sufficient information, visually appealing content, easy to make payments, easy to read text, offer some discounts and/or promotions, and quick loading capacity. Beyond that, companies must ensure the timeliness of delivery and ensure the customers' data security and privacy. In the Indonesian context, customer service was not found as significant to overall service quality. Managers should focus on website design, security/privacy, and fulfillment. Managers can hire a website designer to create attractive websites. Since fulfillment had the highest impact on overall service quality, managers must make sure that the product is delivered in good condition and within the promised time. Having partnerships with several delivery courier services and letting customers choose which one they want might be a good idea. Managers should enter into agreements with delivery services if products are broken during the delivery, decide which party should be responsible for damage, so it does not harm customer satisfaction and trust.

Since customer satisfaction and customer trust significantly affect

customer behavior, managers should incorporate it into their marketing strategy. Online stores usually have feedback features on their websites. A company can reinforce WOM action by providing "share feedback to friends" features. After customers receive the good they ordered, they can write feedback on the online store website. Customers have the option to share their experience with their friends as WOM action. Small rewards like special discounts in the next purchase will encourage customers to spread their buying experience to others, which can bring more potential customers to visit a company's online store.

The huge number of smartphone users in Indonesia is a major opportunity to develop mobile online store applications. Investing more in the development of mobile access and giving priority to the development of features in mobile applications might help to increase the e-service quality of online stores. Managers could also make mobile-friendly websites.

This study has several limitations that could be addressed in future research. First, this study used a non-probability sampling method. The sample of this study was also limited to customers who had experience using online retailer websites in Indonesia. The research outcomes may lack generalizability.

Second, this study analyzed the e-service quality of online stores in general, not based on the product segments sold in the online store. The measurement used in this study may not be applicable to assess some product segments. Future research should consider a variety of product segments and/or other industries to make sure that the measurement works equally well for specific product categories. In other industry settings, the measurement may need to be adjusted.

Finally, this research only tests the direct effect of each variable without considering the potential moderating effect among variables. Future research should probe more on the moderating effect side of each variable. Future research could also replicate this study in other cultural contexts and other industries in order to be able to generalize the results.

Declarations

Author contribution statement

Paulo Rita, Tiago Oliveira, Almira Farisa: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

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The authors declare no conflict of interest.

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No additional information is available for this paper.

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