

## **Online Apparel Retailing: E-Service Attributes Influencing Purchase Intention**

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### **Abstract**

Numerous academic works have demonstrated the importance of service quality as a tool for measuring corporate performance. Its effects are visible in its direct impact on online clothing shoppers' contentment. This paper investigates consumer impressions of the service level provided by online clothes retailers. To accomplish this, a quantitative study is conducted. In this work, four dimensions are quantified using multi-item scales, and the convergent, discriminant, and nomological validity of these dimensions are evaluated through a survey. Security, information, personalization, and aesthetics are key dimensions in this study. Implication of the findings are discussed.

**Keywords:** Service quality, Online shopping, Apparel, Customer satisfaction, Purchasing, Structural analysis

### **Introduction**

Online retail sales in China are currently higher than in the US and are increasing more rapidly. Approximately \$1.33 trillion (just over 9.00 trillion yuan) in online retail purchases were made in China in 2018, up 23.90% over the previous year, according to the National Bureau of Statistics of China. Out of that sum, sales of tangible items increased by 25.40% to \$1.03 trillion (7.00 trillion yuan). Online sales of physical goods accounted for 18.40% of the total retail sales of consumer products, up by 3.4 percentage points, the agency reported (Tong, 2018).

According to [Rahman et al. \(2018\)](#), selling the products through internet is considered one of the most popular medium nowadays. 36% online purchases were incurred by 60% of the web users and those considered provider of critical information source (Internet Retailer, 2008a), 85% of whom showed their intention to purchase online before the holiday season. Although the growth rate of online retailers is slowing down due to the current economic recession, the prospect is better compared to other retail channels (Internet Retailer, 2009b).

Recent studies in the apparel industry have initiated research to investigate key factors which motivate online apparel shopping ([Park & Stoel, 2002](#)), and service quality has been found to be a key differentiator. Service quality leads to higher profitability and customer satisfaction. Delivering service quality is considered to be a vital strategy for survival and success in today's competitive environment. As the techniques differ in measuring traditional service quality compared to e-commerce much attention is required by the service researchers towards customer evaluations of the latter. The current study of e-service quality is a real need of time in order to become successful in the online apparel retailing. The findings of this study will generate fruitful information on how the evaluation can be done by the online retailers for their current service performance.

This study intends to modify the SERVQUAL model through reformulating this instrument for e-service quality. The model is developed in an online shopping context to observe in which manner the quality dimensions of e-service impact the overall quality of service, customer satisfaction and purchase intentions. 'Structural Equation Modeling' (SEM) method was utilized to analysis the responses from 115 online purchasers to examine the effectiveness of the proposal model. The final model is expected to become a useful benchmark for online store managers and for the future e-marketing researchers as well.

With the aforementioned view, the study aims to (a) develop an empirical model of e-service quality in apparel sales, (b) identify key dimension for e-service quality in the apparel industry, and (c) examine the moderating effects of gender upon overall service quality with customer satisfaction and purchase intentions within the context of online apparel retailing. The paper discusses relevant literature, research model and hypotheses, research method, analyses and results, followed by discussion, conclusions, and limitations.

## Literature Review

### *E-service quality*

E-service quality refers to general perceptions of the customer and their thoughts concerning the level of excellence in the delivery and other services of the online marketplace ([Jiayuan et al., 2018](#)). The e-service quality "is one of the key determinants of the success of online retailers" (Jun, et al., 2004). According to [Zeithaml \(2002\)](#), online retailers fail mainly due to the poor-quality services provided to customers.

Online shopping is an intricate process whose complexities can affect customers' evaluation. These intricate processes can have a profound and magnifying effect in an online environment ([Yixin et al, 2018](#)). Online customers expect an effective and efficient product quality and delivery services ([Siang, 2018](#)). Actually, "the seller should communicate with the buyer, deliver the bidding items, and provide after-sales service" ([Yen & Lu, 2008](#)). Online service quality is very important as customers can easily compare price and features with that from the other competitors ([Santos, 2003](#)). E-platform customers always expect better service quality compared to regular channel purchasers.

**Quality dimensions of service**

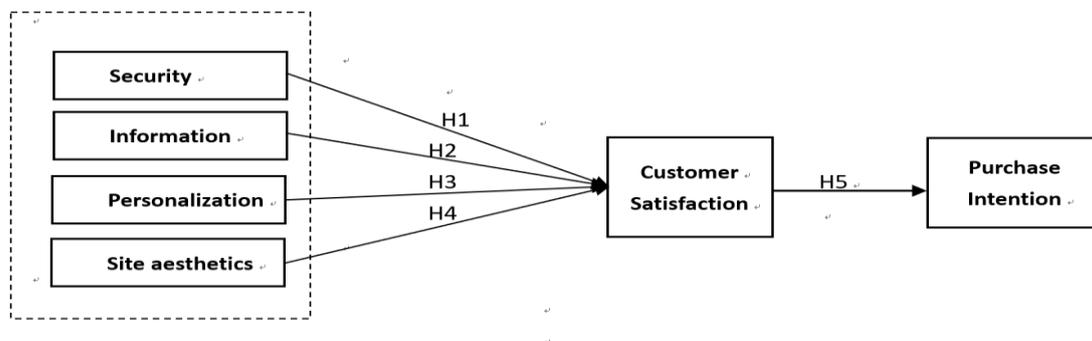
Service quality researchers used SERVQUAL model comprising five dimensions namely “tangibility, reliability, responsiveness, assurance and empathy” (Parasuraman et al.1985). According to Jiang et al (2002), the SERVQUAL scale is employed to measure service quality of not merely information system but more precisely of the e-commerce system involved (Kassim & Abdullah, 2010). The SERVQUAL scale was used by several researchers to measure web-based service (Van Iwaarden et al., 2003) including e-banking (Zhu et al., 2002) by rewording the items of the scale.

Because of the variances between online and traditional service methods for customers, challenges occur in determining online service quality (Li et al., 2002). Several researchers have proposed that it is important to contextualize the items of SERVQUAL scale so that they can be effectivity used in an online shopping environment (Santos, 2003). Hence the current study partly reformulated the SERVQUAL model to well fit into the online shopping context. Furthermore, Khudri & Sultana (2015) have mentioned a positive correlation between the quality of service, satisfaction of customers and purchase intentions. Besides, there is lack of studies focusing on the efficacy of relative service quality dimensions in forecasting general quality of service, satisfaction of customers and purchase intentions (Ma, 2017). The current study’s objective is to

- a) derive and modify the e-service quality dimensions based on the SERVQUAL model with the support of relevant literature in the online shopping context, and
- b) determine the impact of e-service quality towards the ‘overall service quality, customer satisfaction and purchase intentions.

**Research Model and Hypotheses**

The current literature in the apparel e-service quality industry is not sufficient to meet the growth in the apparel industry. More quantitative research papers are required to confirm models of e-service quality (Lee & Lin, 2005). This study proposed that e-service quality dimensions include security, information, personalization and site aesthetics dimension. As the model (Figure 1) demonstrates, in the apparel industry, e-service quality dimensions are directly linked to the customer satisfaction and indirectly related to customer purchase intentions. The means-end model (Gutman, 1981) has been the underlying theory in use to support the proposed study as it provides a laddering process beginning from the attributes of the website and cascades to the customer behavioral intentions.



(Figure 1)Conceptual Research Model

## *Dimensions of E-service quality*

### **Security.**

Yang (2001) described security as "an online service-quality determinant" and as "a major aspect impacting e-satisfaction" in online commerce literature (Szymanski & Hise, 2000). Since the advent of online purchasing, online security has always been the main worry (Kwon & Lee, 2003). According to recent studies, consumers' financial security is a crucial factor that affects how they would behave toward a website. According to Wang and Lim (2019), privacy and security are among the most fundamental demands of all people, not just those who shop online. Meanwhile, it is the fundamental form of online transaction insurance.

H1. Security positively influences customer satisfaction in online stores.

### **Information.**

Consumers "assess their views of the product information in their online buying experiences" (Tonita, 2002). Risk theory implies that "having more information available to consumers minimizes the perceived risk associated with buying" (Chen & He, 2003). It can be shown that as product information levels rise, consumer desire to purchase online rises.

H2. Information positively influences customer satisfaction in online stores.

### **Personalization.**

Personalization entails giving each specialized consumer attention based on their demands (Yang, 2001). In the world of internet services, personalization is becoming increasingly important. Personalization and the SERVQUAL model's "empathy dimension" strongly correlate (Zeithaml et al., 2002). Online shops strive to comprehend critical website characteristics to preserve their competitive edge (Internet Retailer, 2006b). In an online context, personalization is related to behavioral intentions (Srinivasan et al., 2002). These studies stress the importance of personalization as a competitive advantage for online retailers.

H3 Personalization positively influences customer satisfaction in online stores.

### **Website design.**

The excellence of the website design is a major factor in an online environment (Than and Grandon, 2002. Wolfenbarger and Gilly (2003) have argued on the role of the website design dimension as it is related to e-satisfaction. Kassim and Abdullah (2010) stated that "the graphic elements of usability or content design were most likely to communicate trust in an e-commerce setting". Therefore, websites need to be mindful of the color setting, navigation properties, page layout as it plays a key role affecting customer satisfaction.

H4. Web site design positively influences customer satisfaction in online stores.

### **Customer Satisfaction**

Customer satisfaction is a general emotional response to an apparent discrepancy between before-consuming expectations and after-consumption performance (Oliver, 1980). The two conceptualizations of overall satisfaction studied in the literature are individual-level satisfaction unique to the transaction and cumulative satisfaction specific to the complete consumer experience (Johnson et al., 1995). Customers' cognitive or emotional response to their most recent experience with a company is defined as transactional satisfaction, also known as service encounter satisfaction. The customer's

expectations, the product, the experience, or any other relevant issue may be the point of focus. This response happens immediately following the point of purchase after deciding to acquire a product.

The current research is primarily concerned with the customers' satisfaction of their virtual shopping experience based upon the research of [Zeithaml et al.'s \(2002\)](#). The study is viable and important because the theory of "expectation inconformity" was believed to be inappropriate to clarify the satisfaction of customers regarding their online purchase, as before performing the online purchase there was no expectation standard present which allows researchers to further support the idea that quality of online service itself is a significant motivation of customers' satisfaction. In the case of traditional areas (buying from shopping malls), the study indicates that purchase decision satisfaction relates to the attitude of customers and their behavior.

### ***Purchase Intention.***

Customers in this stage of customer loyalty are eager to reorder goods and services ([Oliver, 1999](#)). Inconsistent quality has various effects on the correlation between the quality of e-services and customer relationships across the three groups, according to a study by [Liao, Yen, and Li in 2011](#). As a result, businesses that offer through multiple channels must standardize their service quality to increase their buying intentions.

[Shankar et al. \(2003\)](#) found that consumers' attitude towards a website affects their purchase intention with that e-retailer. [Ranaweera, Bansal and McDougall's \(2008\)](#) research on online consumers imply that "to be successful, relatively unknown web-based service providers need to go beyond matching their large competitor and need to offer unique web sites to browsers".

H5. Customer satisfaction positively influences purchase intentions in online stores.

## **Research methodology**

### ***Measures***

The metrics from established prior studies have been modified for this investigation. Some significant phrasing adjustments were made to tie the questionnaires to an online buying scenario. Several SERVQUAL model elements were reformulated and utilized to measure the SERVQUAL model's efficiency, trust, reliability, and privacy dimensions ([Wolfenbarger & Gilly, 2003](#)). Items to gauge "overall service quality, customer contentment, and purchase intents" were changed from various sources, while the items to gauge "trust" were retooled. All the items were scored on a 5-point Likert scale, from 1 for strongly disagreeing to 5 for strongly agreeing. To ensure content validity, the questionnaire underwent pretesting for question-wording, instrument clarity, and validity. During the pretesting, 25 regular internet shoppers were chosen as participants and asked to complete the questionnaire. Based on the information provided by the participants, some items have been removed from the instrument, and the measurement of the constructs has been updated.

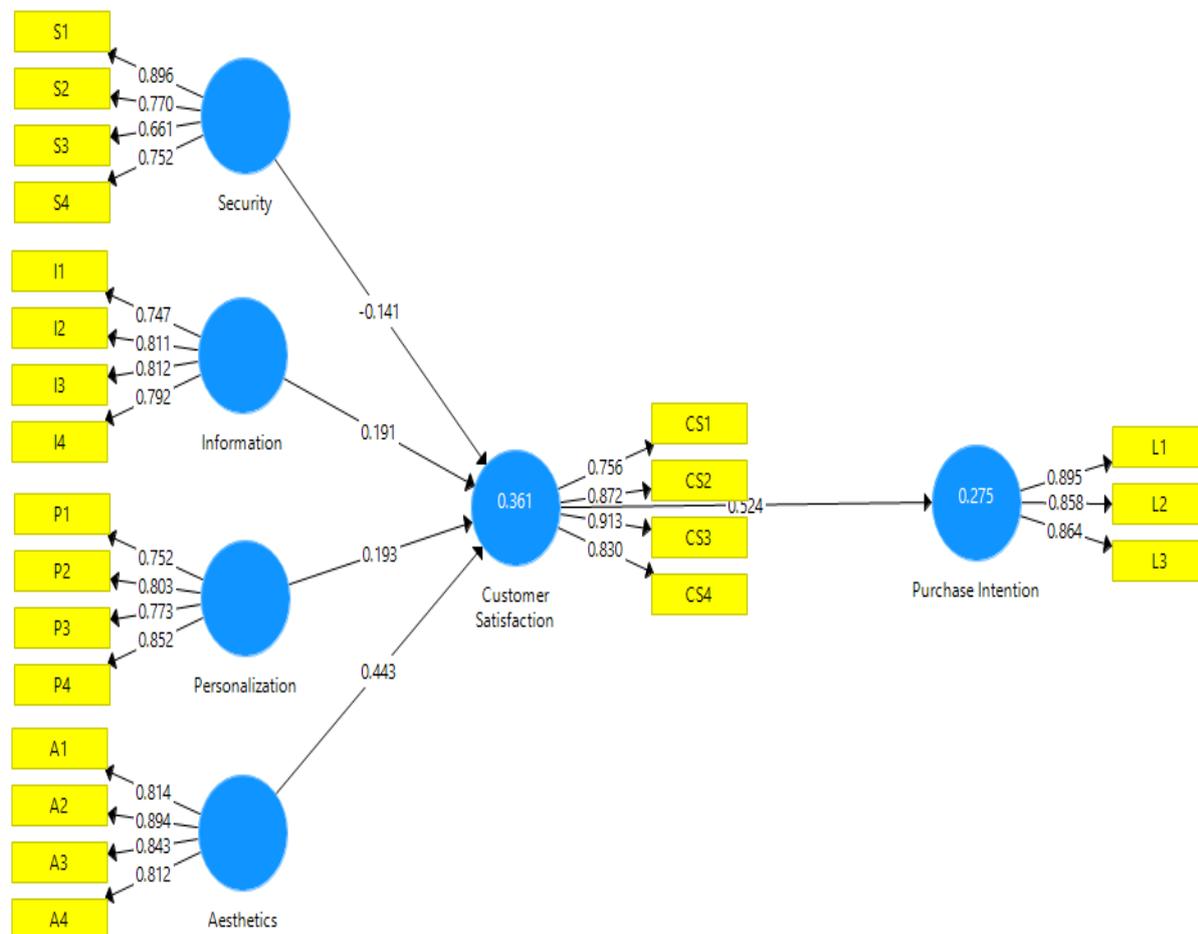
**Subjects and procedure**

In April 2019, 115 undergraduate students in China were given questionnaires. The decision to use students as the study's subjects was made for three reasons. Firstly, nearly 70% of college students believe the Internet is essential in their daily lives, according to the 2018 China Teenage Internet Users Report (CYOL, 2018). Secondly, the largest segment of Internet users is college students. Additionally, compared to other customers, online shoppers are typically "younger and better educated." Finally, since students are the likely future big online buyers, employing them as subjects enable us to project a more realistic finding.

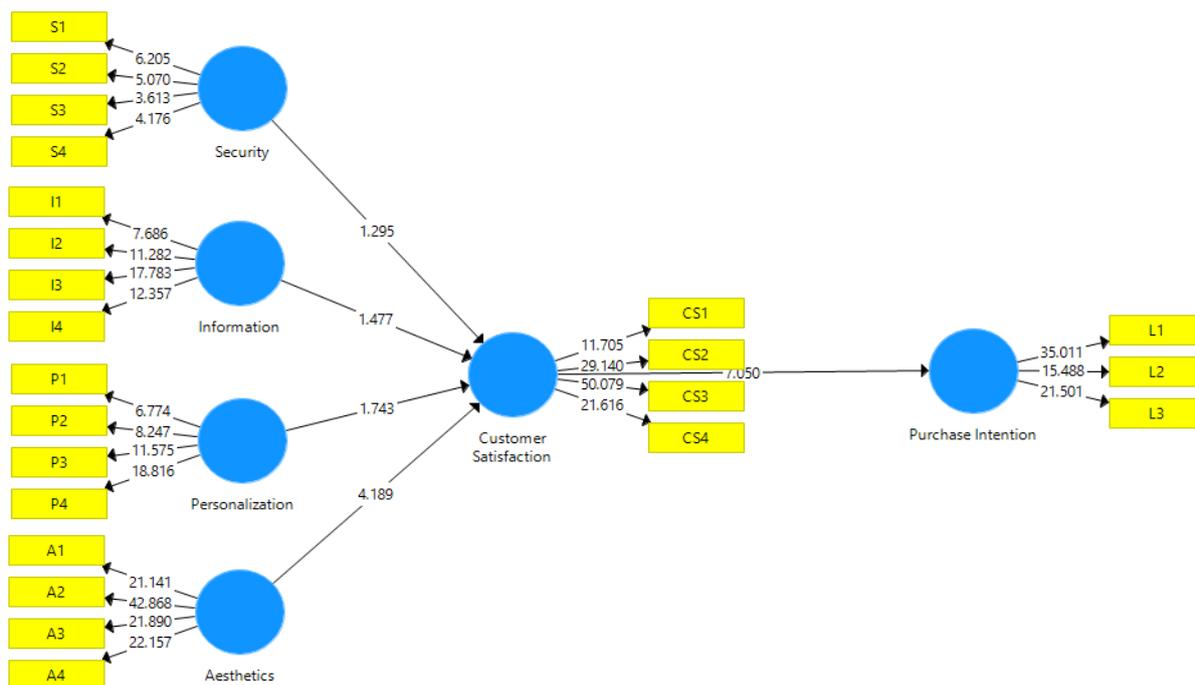
The participants were told to look through Chinese clothing retailers like Pinduoduo.com, Suning.com, and Buytome.com. The individuals were then asked to choose which fashion items they wanted to buy from the online store. There is a one-month time limit for completion (30 days). The subjects were given two tasks. Initially, the participants enrolled in an online clothing store to quickly look up the items they had selected. The second involved giving payment and shipping information. The 115 pupils all finished the assignments satisfactorily. The surveys were handed out at various Chinese universities. Everyone who was contacted gave an immediate response of 100. The effective response rate for this study was approximately 95% after five questionnaires were discarded due to data error.

**DATA ANALYSIS AND RESULTS**

**Direct Model**



**Figure 1: Direct Model 1**



**Figure 2:** Direct Model 2

The study's model is depicted in Figures 1 and 2. The model's satisfactory R2 values and high construct dependability show that it fits the data well (Gefen et al., 2000). This model's R2 value illustrates its capacity for prediction (Chin, 1998; Komiak and Benbasat, 2004). The information for the relevant reliability, composite reliability, and average variance extracted (AVE) tests are provided in Table 1. The Composite Reliability (CR) test attests that composite reliability is a more appropriate assessment to gauge the model's reliability because it assumes that all indications are not weighted equally (Chin, 1998). The cutoff value for composite reliability is recommended to be more than 0.7. (Barclay et al., 1995; Fornell and Larcker, 1981). On the other hand, the AVE values show how much a construct's variation differs from the measurement error (Chin, 1998). First-order factor modeling describes the suggested model. Consequently, 0.5 is the minimal essential AVE value (Hu et al., 2004). Table 1 shows composite reliability and AVE values that meet these conditions.

**Table 1:** Constructs Validity & Reliability

	<b>Cronbach's Alpha</b>	<b>Rho A</b>	<b>Composite Reliability</b>	<b>Average Variance Extracted (AVE)</b>
Aesthetics	0.862	0.862	0.906	0.708
Customer Satisfaction	0.865	0.879	0.908	0.713
Information	0.803	0.815	0.87	0.626
Personalization	0.812	0.843	0.873	0.634
Purchase Intention	0.845	0.868	0.905	0.761
Security	0.789	0.863	0.855	0.6

The elements in the questionnaire are referred to as a single construct in a convergent validity examination. This assessment is evaluated by examining the resulting loading for each set of indications indicating a specific dimension. It is advised that the values for the standardized loading exceed 0.7. This indicates that the corresponding indicator's latent variable variance is more significant than its error variance. Chin (1998) uses a 0.5 cutoff threshold, which is less strict. In this model, each path coefficient is statistically significant. A measure of discriminant validity examines how each item loads on its construct concerning other constructs (Kerlinger, 1973; Swafford et al., 2006). As a result of cross-loadings, the square root of AVE, and the correlation between first-order constructs, this value can be accessed (Chin, 1998; Fornell and Larcker, 1981). These values are shown in Table 2.

**Table 2:** Variable Correlation Matrix against AVR Square Root

	<b>Aesthetics</b>	<b>Customer Satisfaction</b>	<b>Information</b>	<b>Personalization</b>	<b>Purchase Intention</b>	<b>Security</b>
Aesthetics	0.841					
Customer Satisfaction	0.536	0.845				
Information	0.476	0.427	0.791			
Personalization	0.337	0.405	0.606	0.796		
Purchase Intention	0.337	0.524	0.442	0.538	0.873	
Security	0.446	0.254	0.652	0.377	0.221	0.774

Table 3 displays the cross-loading values. In terms of discriminant validity, values exhibit sufficient levels. The bold values in Table 3 indicate lower loading values for other constructs and greater loading values for the corresponding construct. The correlations between the first-order latent constructs and the AVE square root values show a similar pattern of results. Table 2's data demonstrate unequivocally that the square root of AVE (bold numbers in diagonal) is greater than the correlations between the components (off-diagonal values).

**Table 3:** Cross-Loading

	<b>Aesthetics</b>	<b>Customer Satisfaction</b>	<b>Information</b>	<b>Personalization</b>	<b>Purchase Intention</b>	<b>Security</b>
A1	0.814	0.475	0.464	0.385	0.321	0.434
A2	0.894	0.415	0.39	0.233	0.237	0.415
A3	0.843	0.462	0.368	0.196	0.307	0.327
A4	0.812	0.441	0.37	0.309	0.258	0.322
CS1	0.627	0.756	0.287	0.25	0.247	0.3
CS2	0.401	0.872	0.421	0.373	0.459	0.212
CS3	0.485	0.913	0.376	0.396	0.533	0.16
CS4	0.315	0.83	0.35	0.334	0.505	0.207
I1	0.414	0.259	0.747	0.38	0.251	0.585
I2	0.365	0.323	0.811	0.453	0.278	0.625

I3	0.301	0.397	0.812	0.547	0.491	0.451
I4	0.45	0.346	0.792	0.506	0.333	0.444
L1	0.368	0.536	0.421	0.445	0.895	0.215
L2	0.247	0.408	0.445	0.446	0.858	0.226
L3	0.245	0.407	0.283	0.53	0.864	0.132
P1	0.241	0.245	0.569	0.752	0.502	0.298
P2	0.246	0.252	0.59	0.803	0.447	0.368
P3	0.277	0.332	0.413	0.773	0.383	0.253
P4	0.296	0.41	0.43	0.852	0.419	0.304
S1	0.334	0.268	0.593	0.33	0.244	0.896
S2	0.352	0.207	0.549	0.311	0.132	0.77
S3	0.373	0.136	0.383	0.291	0.198	0.661
S4	0.385	0.105	0.438	0.21	0.057	0.752

## Discussion

The present study has developed an instrument of e-service quality through transforming the SERVQUAL model in the context of online shopping. The dimensions of e-service quality involved security, information, personalization, and website design. Moreover, a research model has been developed to observe how the e-service quality dimensions affect general quality of service, customers' satisfaction, and purchase intentions. The methodical findings are elaborated below.

First, the inferential analysis results showed that security affects online store quality. This finding correlates with earlier studies by [Szymanski and Hise \(2000\)](#) who found the importance of the security dimension. A review of literature by [Xu and Paulins \(2005\)](#) highlight the security of information as the “key reason for the increase in online shopping”. Besides that, [Garbino and Strahilevitz \(2004\)](#) found that the security dimension on an e-retailers' website is “expected to improve consumers' confidence in securing their information”. A study shows that customer reluctance to buy clothes online was due to security concerns and can be overcome by inclusion of security enhanced measures ([Jang and Burns, 2004](#)). Therefore, online stores must understand the importance of trust and manage it effectively.

Second, the analysis revealed that for online shopping, customer satisfaction was most intensely affected by information. Customers are “in different moods or mind frames and require different informational needs” when online shopping or in shopping centers ([Burke, 2002](#)). Currently, due to technology with a click of a button, it is possible to access a vast selection of products and detailed information. This possibility tends to make shoppers online further sensitive to “evaluation convenience”. Online customers require access to product information to enjoy a variety of picks in “selecting products and services with competitive prices”. Therefore, in order to increase customer loyalty, maintaining the convenience aspect of shopping online and competitive prices has gradually become a fundamental “driving force for stores online”. ([Jiang, Yang & Jun, 2013](#))

Nevertheless, in the context of e-commerce, personalization is found to be the “key predictor of overall service quality and customer satisfaction” ([Gurau et al., 2003](#)). Due to the rapid advancement of technologies, internet websites are expected to become more efficient of delivering customized services to individual customers. One of the requirements of personalization in e-service is interactivity. Customers are really concerned about “the misuse of their personal information” by the e-retailers that hamper their privacy as well ([Than & Grandon, 2002](#)). Thus, personalization should be addressed with privacy concerns simultaneously

Fourthly, website design has a strong impact upon “overall service quality, customer satisfaction and purchase intentions” in e-commerce which is also consistent with the result of [Than and Grandon \(2002\)](#). Online shopping sites should be user-friendly and eye-soothing as well ([Wolfenbarger & Gilly, 2003](#)) as it is seen as an important quality aspect. Improving the website design can help to enhance online customers’ satisfaction and purchase intentions ([Kassim & Abdullah, 2010](#)).

Additionally, consistent with [Zhu et al.’s \(2002\)](#) study, this research has discovered a constructive link among dimensions of “overall service quality, customer satisfaction and purchase intentions” in an online shopping context. This research works addressed the connection between customers anticipated or expected quality of service and their satisfaction. The current research discovery proved a statistically viable relationship between the mentioned factors. This finding falls in line with that of prior studies (e.g. [Lee & Lin, 2005](#); [Santos, 2003](#)) in which the satisfaction of customers is much affected by the provided overall service quality.

## Implication

The practical consequences of this study can be divided into three categories. Firstly, by updating the SERVQUAL model, this study created a tool to assess the quality of electronic services. It highlights the features of electronic services that impact "total service quality and customer satisfaction," affecting customers' purchasing intentions.

### *Implications for practitioners*

This work makes several valuable contributions. First off, Security has become a crucial factor in this study. Web site transactions must therefore receive much attention. For instance, "service providers must notify consumers as soon as a web transaction is incomplete owing to a technical fault, system failure, or other circumstance. Email or another form of contact should be used to inform users to prevent fraudulent conduct ([Bhattacharya et al., 2012](#)). Online retailers should provide comprehensive information about their company as well as elaborated details of their security policies “to avoid cyber scam”. For instance, Zalora, a leading online fashion outlet in Malaysia, recognizes the possible safety threats that may occur for transactions online. These security threats may discourage possible clients to perform purchase transactions online. In regard to protecting customers’ purchase account, Zalora’s website mentions a number of security measures that are being utilized, such as “PCI Safety Standard, cardholder safety and network encryption” ([Ariffin et al., 2018](#))

E-retailers information about their companies can facilitate their relationships with their customers through reducing the perceived online purchase risks. For brick-and-click companies in case of cross shoppers, it is necessary to put store information on their web site. Due to the intangibility of online shopping, the details of the products such as color, size, and product materials should be available for the online apparel customers so that they have adequate information while making their purchase decision ([Kim & Lennon, 2006](#)).

The role of personalization in order to ensure the online customer privacy is an important implication of this study. Due to the technological innovations, today websites can provide more specific contents ([Gurau et al., 2003](#)), such as “giving suggestions for items (alternative or matching products), options of free shipping based on selective locations” etc. Through these kinds of offerings, potential clients' attention might be easily attracted. According to a study on personalization, an online store should cater to each customer's

particular wants. Additionally, management needs to understand their clients by giving them individualized service, acknowledging them personally when they shop online, and letting them know that there are message sections available for them to leave feedback.

Designers of the shopping websites need to be mindful of the visual standards as it will be reflected in the look and feel of the site. For physical stores “the interior and exterior design not only requires being modern, neat and eye-catching but also needs to have a complete layout that enables the customers to search for what they need and go around the shop comfortably”. Similarly, the website aesthetics which can enhance customers’ visual experience while browsing also needs to be focused on (Khudri & Sultana, 2015)

### ***Limitations and Future Researches***

The study has certain limitations. First, it is not possible to generalize the overall online shoppers’ population based on the student respondents used as sample in this study. Besides, the use of random sampling also made it more restrictive to ensure the true representation of the online shoppers. Due to the difficulties of measuring the store ambience in the context of online shopping, this study only focused on functional qualities instead of emotional and relationship building attributes that are also important (Jang & Burns, 2004). The current study did not consider the impact of moderating and mediating impact of dimensions and consumer purchase intentions. The mediating and moderating effects of age, frequency of purchasers or past experiences can be incorporated in the future research studies.

In addition to using qualitative methodologies like grounded theory application, longitudinal research can also be employed to investigate the link between online service quality and consumer purchasing behavior. In addition, rather than just concentrating on their purchase intentions, the actual purchase behavior of online customers can be studied in the future due to the rise of Internet technologies. Big data and blockchain technology can also be utilized as additional technical tools to efficiently track online buyers' happiness as well as their buying platforms and objectives.

The future of consumer behavior research can also include nations other than China to create cross-cultural comparisons based on cultural differences. According to Suh, Janda, and Seo (2006), marketers must start building relationships by understanding how people from different cultures develop trust and commitment.

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