Integration of standardization and customization: Impact on service quality, customer satisfaction, and loyalty

CrossMark

Leila Agha Kasiri[a], Kenny Teoh Guan Cheng[b], Murali Sambasivan[c,*], Samsinar Md. Sidin[d]

[a] *Putra Business School, Universiti Putra Malaysia, Serdang, Malaysia*
[b] *Faculty of Economics and Managemnt, Universiti Putra Malaysia, Serdang, Malaysia*
[c] *Taylor's Business School, Taylor's University Lakeside Campus, Malaysia*
[d] *Universiti Tun Abdul Razak, Malaysia*

ARTICLE INFO

ABSTRACT

The basic objective of this study is to analyse the direct and indirect impacts of standardization and customization on customer satisfaction and loyalty through service quality. The service quality has two dimensions: technical quality and functional quality. A framework is developed by extending Grönroos' model of service quality by including the antecedents of service quality. A questionnaire-based survey collected data from 315 customers of three service industries: healthcare, hospitality, and education. The data was analysed and the model validated using PLS-SEM. The findings show that: (1) integration of standardization and customization of service offerings is critical for improved service quality; (2) standardization has higher impact on service quality when compared to customization; (3) functional quality has higher impact on customer satisfaction when compared to technical quality; and (4) customer satisfaction has a significant effect on customer loyalty. The contribution of this study is the development of an integrated framework to analyse the roles of standardization and customization on service quality.

1. Introduction

Effectively managing customer service satisfaction and enhancing customer loyalty have been addressed by marketing practitioners and researchers (Blut et al., 2015; Rust and Chung, 2006; Zeithaml et al., 1996). Various studies have found that higher level of customer satisfaction ultimately leads to a greater customer loyalty and word of mouth recommendations (Yoo et al., 2015; Guo et al., 2009; Lai et al., 2009). The increase in competition in the marketing of products has forced companies to think about differentiating strategies for the purpose of attracting and retaining customers. Among the differentiation strategies that have been used by companies is the personalization of products to meet customer needs (Beatty et al., 2015; Tam and Ho, 2005). Customization, in particular, has become increasingly popular in comparison to standardization because customization allows consumers to specify the products that are suited to their desires (Jin et al., 2012). For example, Jin et al. (2012) demonstrate in their study how package-tour operators often tailor trips to fit travellers' personal requirements. Standardization has been used to increase the comparability and credibility of economic evaluations and as a means of decreasing costs and increasing productivity (Krol et al., 2013).

Traditionally, it has been viewed that standardizing a service while at the same time customizing it is somehow simply impractical (Almodóvar, 2012). This is because customization attempts to meet the needs and preferences of the individuals while standardization attempts to meet the needs and preferences of the masses (bus and transportation services). The traditional strategic options of service design view standardization to be suitable for focusing on many customers with low or no contact and customers are faced with one-size-fits-all services. At the same time, this traditional strategic option views customization to be suitable for focusing on specific customer characteristics and intensive customer contact with information from specific customers for one-of-a-kind service. This dichotomy has led many researchers to believe that any attempt to improve service quality by merging customization and standardization is impossible. However, this dichotomy is believed to be reconcilable based on Grönroos' (1984) Service Quality model, where a possible window to integrate customization and standardization into a single framework exists. The degree of product customization has become higher in recent years and is likely to continue in the future. Some examples of services that merge customization and standardization are: automobile after-sale service (Wang et al., 2010), hotel industry (Sandoff, 2005), and Dell

---

Computers. For example, in hotel industry, 'standardization' helps employees to avoid mistakes and deviations in the process of providing 'customized' service.

According to Grönroos' (1984) model of service quality, there are two dimensions of service quality: technical quality and functional quality. Service customers are interested not only in what (technical quality) they get as service but also how (functional quality) they get it. Many studies have used this model to analyse service quality in different contexts. They have investigated the effect of two dimensions of service on satisfaction, trust, and loyalty (De Keyser and Larivier, 2014; Park et al., 2013; Sadeghi et al., 2014). The Technical Service Quality dimension of Grönroos' (1988) model refers to the outcome of the service production process and it answers the question of what the customer acquires from the service transaction. The Functional Service Quality part of Grönroos' (1988) model refers to the quality of the service process and it answers the question of how the customer gets the technical outcome of the service production process (Grönroos, 1988; p. 12). Many researchers have established the link between quality of service and customer satisfaction (Cronin et al., 2000; Park et al., 2013). However, not much work has been done to determine if customization and standardization have a direct impact on service quality and an indirect impact on customer satisfaction through service quality. The current study addresses this gap. The key to gaining customer satisfaction and loyalty is to develop customer-oriented strategies (customization) that provide superior service to customers and to ensure that operations run smoothly and efficiently (standardization).

The contributions of this study are the development and validation of a framework that has effectively integrated standardization and customization with dimensions of service quality (technical quality and functional quality). The framework used in this study is drawn from Grönroos' (1984) service quality model and model by Coelho and Henseler (2012). The dilemma of whether customization and standardization of services can be integrated has not yet been fully explored and no conclusive research has been done in this area. This justifies the need to conduct a comprehensive research by examining the effects of integrating the customization/standardization on service quality— this is the primary motivation that drives this study. In service quality, the dilemma of having to sacrifice customer satisfaction because of the customization−standardization trade-off has always been challenging. This trade-off is the dilemma that this research attempts to resolve. So far researchers have paid attention to customization and standardization but only to the extent that they are anti–thematic (Almodóvar, 2012). This research however, attempts to focus attention on how customization and standardization are two complementary phenomena on the same continuum. The study setting includes hotels, hospitals, and universities in Malaysia.

Malaysia was chosen based on the fact that it is a fast growing country in South-East Asia with more than 55% of the GDP coming from the service sector. Malaysia with its good infrastructure has been able to attract leisure/shopping tourists (hotels), medical tourists (hospitals), and knowledge tourists (universities). Simultaneous implementation of standardization and customization in the services offered to the customers has been widely practiced across these sectors in different parts of the world (Minvielle et al., 2014; Sandoff, 2005; Schuwer and Custer, 2014). Hence, there is a strong economic reason to focus on these three industries in Malaysia.

2. Background and hypotheses

2.1. Customer satisfaction and customer loyalty

Customer satisfaction is defined as "a person's feelings of pleasure or disappointment that results from comparing a product's perceived performance or outcome with his/her expectations" (Kotler and Keller, 2009, p. 789). Customer loyalty is defined as "a deeply held commit-

ment to rebuy or re-patronize a preferred product or service consistently in the future, despite situational influences and marketing efforts having the potential to cause switching behaviour" (Oliver, 1997: p. 392). A considerable amount of service management literature has shown the link between customer satisfaction and customer loyalty (Chen, 2012; Kumar et al., 2013; Suh and Yi, 2006). A study by Lee et al. (2012) indicates that hospitals can improve customer satisfaction and loyalty through efficient operations, employee engagement, and service quality. They also found out that this high performance work system in health-care organizations stimulate employee reaction and service quality. Therefore, a customer may continue to or increase the scope and frequency of relationship with service provider or may recommend the service provider to other potential customers. Bowen and Chen (2015) and Lee (2013) suggest that customer satisfaction is linked to loyalty and loyalty, in turn, is linked to the performance of service organizations.

2.2. Service quality

Grönroos' (1984, 1988, 1990) model of service quality incorporates both technical and functional aspects. The model describes how the quality of service will be perceived by customers and in what way service quality will be influenced. He emphasizes the interactive service nature and posits that service quality should be a two-prong conceptualization, namely, the process/functional dimension (i.e., how the service is delivered) and the outcome/technical dimension (i.e., what is delivered). In his model, Grönroos (1984) has depicted three variables, namely, technical quality, functional quality and image. In our research, image dimension is not considered. Image dimension is excluded as it has been shown to be influenced by the two quality dimensions (technical and functional) (Bozorgi, 2006; Grönroos, 1984; Lassar et al., 2000).

Lundahl et al. (2009) investigate the influence of technical and functional dimensions of service management on customer satisfaction in the bank-SME relationship. The study has found that both the technical and functional dimensions of service management correlate significantly with customer satisfaction. De Keyser and Lariviere (2014) argue that both technical and functional service quality have positive impacts on consumer happiness. These recent studies underline the fact that both functional and technical qualities have vital effect on satisfaction of the customer in delivering high quality service. Therefore, to employ different strategies in order to boost service quality, it is desirable to evaluate the effect of each strategy on different aspect of service quality.

2.3. Standardization and customization

Standardization is defined as the process of setting generally uniform characteristics for a particular good or service. Standardization is used in order to help the management control, predict and minimize mistakes, and reduce deviation among employees (Jones et al., 1994). Standardization also provides a means to maintain reliability and be free of defects. Other benefits associated with standardization include facilitation of contracting, monitoring execution and pricing in services provision, increasing protection of consumers, and raising confidence and satisfaction of consumers. On the contrary, the customized product or service is defined in the context where a new product is rendered with variations on existing configurations. Thus, customers express their needs in consonance with their specific requirements and this can help marketers to exactly meet customers' specific needs (Wind and Rangaswamy, 2001). In summary, a service offered by firms can range from one-size-fits-all which is full standardization, to a fully personalized one, which is customization.

Researchers in service quality tend to treat customization and standardization separately, based on the argument that the two cannot coexist concurrently (Almodóvar, 2012). However, when investigating
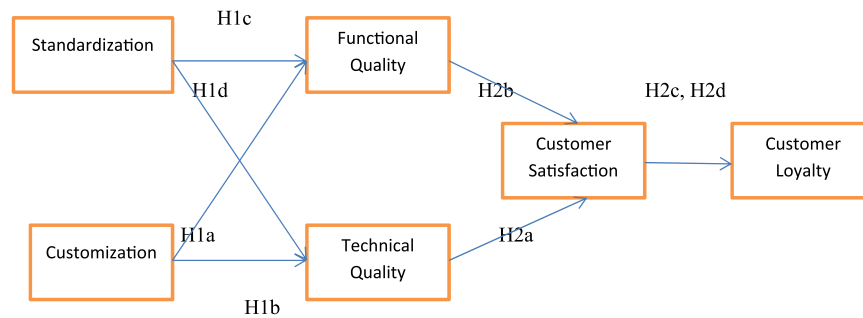
Fig. 1. Conceptual framework of research.

today's marketing activities, for example, international hotel practice, it is hard to find support for the practice of full customization for long-term profits. Instead, it can be observed that there is a clear and obvious standardization being practiced for local operations and external operations. For example, the levels of standardization and customization can be different for the home and international markets (Almodóvar, 2012). Ding and Keh (2016) investigate the pros and cons of service standardization (vs. customization) from the consumer's perspective. They have found that the advantages of service customization include greater perceived control and higher consumer satisfaction. The drawbacks of service customization include greater perceived risk. These findings suggest that consumers' preference for standardized (vs. customized) service depends on their consumption goal. Specifically, consumers with a hedonic goal (goal with pleasure focus) tend to prefer customized services, while those with a utilitarian goal (goal with functional focus) tend to prefer standardized services (Ding and Keh, 2016). The conceptual framework used in the study is given in Fig. 1.

2.4. Hypotheses development

This section develops the hypotheses linking (1) customization and standardization with technical and functional dimensions of service quality and (2) dimensions of service quality with customer satisfaction and loyalty. Testing of these hypotheses in a service setting can help the researchers and practitioners understand the routes (technical quality and functional quality) through which levels of standardization and customization translate into customer satisfaction and loyalty.

2.4.1. Customization and standardization vs service quality dimensions

Empirical evidence by researchers has proven that customization has a positive effect on service quality (Brady and Cronin, 2001; Coelho and Henseler, 2012). Drawing from the relationship marketing and exchange theory, Coelho and Hensler (2012) have established the link between customization and service quality. They have argued that service customization plays the roles as a quality endorser and a quality driver. A study by Vasile and Laurentiu (2008) suggests that standardization can enhance service quality. Hsieh et al. (2002) and Tsaur et al. (2014) have shown a strong relationship between service standardization and service quality in hospitality and tourism and public sectors. According to Tsaur et al. (2014), even though standardization hinders innovation it increases efficiency, improves smooth functioning of the processes and helps in reducing the costs. According to R-A (resource advantage) theory, superior customer value and reduced resource costs can be achieved through 'bundling of relevant resources' for customization and standardization. It becomes necessary to investigate whether functional quality can be standardized to maintain a consistent high quality level of interaction with the customer (service delivery); that is, even as customization is implemented to ensure maximum customer satisfaction, it becomes equally important to ensure that there is a concurrent high level of standardi-

zation too. Taking this idea a step further, it would also mean examining the possibility of standardizing and customizing the technical quality (deliverables) too.

Previous studies have considered customization and standardization separately and not all have looked at the possibility of combining these two marketing components. Nevertheless, careful examination of the Grönroos (1984) model demonstrates that, it has both technical and functional parts that can complement each other; and that both functional quality and technical quality are open to customization and standardization. According to Wang et al. (2010), researchers have established the link between quality of service and customer satisfaction. However, not much work has been done to determine if customization and standardization have a direct impact on the service quality and an indirect impact on customer satisfaction through service quality. The current study addresses this gap. Based on the above arguments, we hypothesize as follows:

H1a. There is a positive relationship between customization and functional quality.

H1b. There is a positive relationship between customization and technical quality.

H1c. There is a positive relationship between standardization and functional quality.

H1d. There is a positive relationship between standardization and technical quality.

2.4.2. Service quality dimensions vs customer satisfaction and customer loyalty

There is ample evidence in the literature to support links between service quality, customer satisfaction and customer loyalty (Olsen, 2002; Kang et al., 2004; Kumar et al., 2013; Söderlund and Öhman, 2005). The framework of this study works out the transitive relationship between service quality, customer satisfaction and customer loyalty. Although there are ample studies on service quality as a major construct and its relationship with customer satisfaction and loyalty (Söderlund and Öhman, 2005; Kumar et al., 2013), there are only a few studies that examine the relationship between technical quality, functional quality and customer satisfaction (De Keyser and Lariviere, 2014; Lien and Kao, 2008). Most of the studies use SERVQUAL as a measure of service quality (Tsaur et al., 2014; Zeithaml et al., 1996). Since functional quality and technical quality are two components of service quality, accordingly, this study posits the following hypotheses:

H2a. There is a positive relationship between technical quality and customer satisfaction.

H2b. There is a positive relationship between functional quality and customer satisfaction.

H2c. Customer satisfaction mediates the relationship between technical quality and customer loyalty.

H2d. Customer satisfaction mediates the relationship between functional quality and customer loyalty.

The hypotheses tested in this research have been developed based on the framework drawn from Grönroos' (1984) service quality model and model by Coelho and Henseler (2012). The hypotheses were validated in a service setting in Malaysia which is explained in detail in the Methods section.

3. Methods

3.1. Study setting and sample

The study was carried out in Malaysia and three service sectors were chosen for the study: hospitality (hotels), healthcare (hospitals), and education (universities). It is a common knowledge that hospitality industry belongs to the service sector. According to United States Department of Labour (http://dpeaflcio.org/programs-publications/issue-fact-sheets/the-service-sector-projections-and-current-stats/), healthcare and education are considered to be a part of service sector. Standardization and customization in the services offered to the customers has been widely practiced across these sectors (Minvielle et al., 2014; Schuwer and Kusters, 2014). The sample elements were individuals who have experienced services from at least one of the sectors in the last six months. The data was collected using a questionnaire. The sampling technique used was purposive sampling. A sample size of 400 was chosen based on the guidelines suggested by Malhotra (2007). Malaysia has been able to attract knowledge tourists (universities), leisure/shopping tourists (hotels), and medical tourists (hospitals). The questionnaires were distributed at different places such as hospitals, universities, and hotels. Out of 400 questionnaires, 200 (50%) were distributed at universities, 120 (30%) at hotels, and 80 (20%) at hospitals. These places are located in and around Kuala Lumpur (capital city of Malaysia).

3.2. Measures

Service quality, in this study, as proposed by Grönroos (1988) consists of two dimensions with 21 items: functional quality and technical quality. The functional quality has 16 items and technical quality has five items. The measures for standardization (28 items) and customization (21 items) were taken from the studies by Grönroos (1988) and Chen (2008). Customer satisfaction was measured by 17 items based on the study by Kang and James (2004). Customer Loyalty was measured by eight items based on the scale developed by Coelho and Hensler (2012). All scales were measured using a 5-point Likert scale from "Strongly Disagree" (1-point) to "Strongly Agree" (5-point). These scales have been used by other researchers. For example, functional quality and technical quality scales have been used by De Keyser and Lariviere (2014) in the context of mail order services; Jin et al. (2012) have used the customization scale in the context of package-tour services; and Tsaur et al. (2014) have used the standardization scale in hospitality sector. A pilot test was conducted with 100 respondents. According to Connelly (2008), extant literature suggests that the sample for the pilot study should be 10% of the sample projected for the large study and our study used a sample size of 400. There were 98 usable questionnaires for the pilot test. Two questionnaires were excluded because of a high number of missing data. The reliability scale for all the constructs ranged between 0.75 and 0.95 (threshold value > 0.70; Hair et al., 2014). A copy of the questionnaire is given in the Appendix.

3.3. Reliability and validity – measurement model

The composite reliability (CR) and average variance extracted (AVE) were obtained after running the measurement model using PLS-SEM. The results are given in Table 1. Based on the results, it can be seen that CR of all constructs is above 0.7 and AVE above 0.5 (Hair et al., 2014). The loading of each item on its construct is greater than 0.5. The AVE of each construct was compared with the squared correlation of that construct with other constructs and AVE was found to be greater. The correlations and the squared correlations are given in Table 1. Overall, the measurement model results indicate the compliance with the requirements for convergent and discriminant validities (Hair et al., 2014).

4. Results

4.1. Demographic profile of the respondents

Only 322 respondents returned the questionnaire. Out of 322, seven could not be used because of missing information. Therefore, the number of respondents for the research was 315, consisting of 51.9% female and 43.8% male respondents. About 65.7% of the respondents were single and 34.1% were married respondents. Majority of respondents were Malaysians (63%), and the remaining 37% were foreigners. About 76% of the respondents were less than 35 years of age. Among the respondents, 33% (106) responded based on their experiences with hotels (hospitality), 17% (53) with hospitals (healthcare), and 49% (156) with universities (education).

4.2. Evaluation of the structural model

The structural model was tested using PLS-SEM software, SmartPLS 2.0 (Hair et al., 2014). The structural model (final framework with significant coefficients) is given in Fig. 2. A five-step procedure suggested by Hair et al. (2014) was followed. First, the VIF (variance inflation factor) for each construct must be less than the offending estimate of 3.3. The VIF for each construct are: Customization – 2.79, Standardization – 1.80, Functional quality – 1.80, Technical quality – 1.80, and Satisfaction – 1.00. Second, the significance of relationships was assessed based on the path coefficients. The significant results are: (i) the hypothesis (H1a) that links customization and functional quality is supported (β=0.22, p-value=0.000); (ii) the hypothesis (H1b) that establishes the relationship between customization and technical quality is supported (β=0.23, p-value=0.000); (iii) the hypothesis (H1c) that links standardization and functional quality is supported (β=0.62, p-value=0.000); (iv) the hypothesis (H1d) that establishes the relationship between standardization and technical quality is supported (β=0.44, p-value=0.000); (v) the hypothesis (H2a) that links technical quality and satisfaction is supported (β=0.13, p-value=0.010); (vi) the hypothesis (H2b) that links functional quality and satisfaction is supported (β=0.69, p-value=0.000); and (vii) the hypotheses (H2c, H2d) that establish the relationship between satisfaction and loyalty are supported (β=0.70, p-value=0.000). Third, assessment of R^2 (coefficient of determination) values on endogenous constructs is given in Table 2. According to Hair et al. (2014), a value between 0.25 and 0.50 is considered to be weak, between 0.50 and 0.75 is considered to be moderate, and above 0.75 is considered to be substantial. Fourth, the assessment of effect size of relationships, f^2, between constructs is given in Table 3. According to Cohen (1988), effect size between 0.02 and 0.15 is considered to be small, between 0.15 and 0.30 is considered to be medium, and above 0.30 is considered to be high. Fifth, the assessment of predictive relevance, Q^2, is given in Table 3. The predictive relevance (value > 0) indicates that the exogenous constructs have a predictive power/relevance over the endogenous constructs (Hair et al., 2014).

4.2.1. Assessment of mediating effect of customer satisfaction

In order to investigate if customer satisfaction had a mediating effect, the PLS-SEM bootstrapping procedure was employed. The results indicate that customer satisfaction mediated (1) the relationship between functional quality and customer loyalty (t-value=11.55,

Table 1
Validity of the constructs.

	Cust	FQ	Lo	Sat	Stand	TQ	CR	AVE
Customization	**HOFC**[a]						0.96	0.56
Functional Quality	0.66	**0.80**					0.90	0.63
Loyalty	0.69	0.47	**0.85**				0.94	0.72
Satisfaction	0.71	0.70	0.58	**0.78**			0.93	0.58
Standardization	0.79	0.73	0.62	0.76	**HOFC**[a]		0.95	0.56
Technical Quality	0.50	0.51	0.36	0.50	0.51	**0.85**	0.89	0.73

Note: diagonals are square root of AVE and off-diagonals are correlations of the construct.
Legend: Cust – Customization, FQ – Functional quality, Lo – Loyalty, Sat – Customer satisfaction, Stand – Standardization, TQ – Technical quality, CR – Composite reliability, AVE – Average variance extracted.
[a] Higher Order Formative Construct (HOFC): because it is formative it cannot be used to examine collinearity between the constructs (Hair et al., 2014).

p-value=0.000) (H2c) and (2) the relationship between technical quality and customer loyalty (t-value=2.30, p-value=0.022) (H2d). This result is not surprising as there are ample evidences in the literature to support links between service quality, customer satisfaction and customer loyalty (Olsen, 2002; Kang et al., 2004; Söderlund and Öhman, 2005). What is interesting in the study is the higher strength of functional quality – satisfaction – loyalty relationship when compared to technical quality – satisfaction – loyalty relationship. In the three service sectors (hotel, hospital, and education) that have been chosen for this study, 'how the service is delivered?' has more impact on customer satisfaction and loyalty compared to 'what is being delivered?'.

5. Discussion

5.1. Theoretical implications

The framework used in this study is drawn from service quality model by Grönroos' (1984) and a model by Coelho and Henseler (2012). Our study has integrated these models with customization and standardization. The dilemma of whether customization and standardization of services can be integrated has not yet been fully explored and no conclusive research has been done in this area. This justified the need to conduct a comprehensive research by examining the effects of integrating the customization/standardization on service quality (Almodóvar, 2012) — the primary motivation that drove this study. Furthermore, studies by Sandoff (2005), Sundbo (2002) and Wang et al. (2010) have to a large extent been the secondary motivating factors. In particular, Wang et al. (2010) have posited that the routes by which standardization and customization can lead to customer satisfaction are different. The main contribution of current study is in demonstrating the roles of customization and standardization in service industries on customer satisfaction and loyalty through functional and technical dimensions of service quality.

The research started with the following two questions: Can standardization and customization co-exist in a service offering? If they can, then what are their impacts on service quality, customer satisfaction, and customer loyalty? Our review and analysis answer the first

Table 2
Values of R^2 and Q^2 of endogenous constructs.

Endogenous constructs	R^2	Q^2
Functional quality	0.66	0.66
Loyalty	0.49	0.48
Customer satisfaction	0.61	0.61
Technical quality	0.41	0.41

Table 3
Effect sizes of constructs.

Constructs	Functional quality	Loyalty	Satisfaction	Technical quality
Customization	0.10			0.05
Functional quality			0.82	
Satisfaction		0.99		
Standardization	0.44			0.06
Technical quality			0.03	

Cohen (1988), 0.02 small effect size, 0.15 medium effect size, 0.3 large effect size.

question with an emphatic 'yes'. As indicated in Table 1, the correlation between standardization and customization is high (r=0.79, p=0.000). Our study in the three service industries (hospitality, healthcare, and education) indicates the simultaneous presence of standardization and customization, although the level may vary. The results suggest that between standardization and customization, standardization has a stronger impact on technical and functional quality dimensions of service quality. The results also show that the impact of customization on service quality dimensions is similar (β=0.22 on functional quality and β=0.23 on technical quality) whereas the impact of standardization is different (β=0.62 on functional quality and β=0.44 on technical quality). These imply that efficiency and effective management of services lead to perception of better service quality in the three service industries studied in Malaysia.

An interesting result in our study is the stronger impact of functional quality (how is the service delivered?) on customer satisfaction when compared to technical quality (what is being delivered?). A
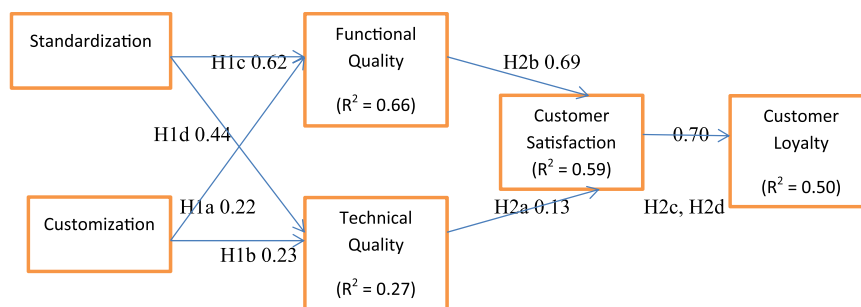

Fig. 2. Final framework with significant coefficients.

study by Lien and Kao (2008) has compared the relationships between service quality dimensions and customer satisfaction. In retail banking service, the results show that technical quality is dominant while in hospitality service (all-you-can-eat buffet), the technical and functional quality has equal significance. Lundahl et al. (2009) have studied the influence of technical and functional quality dimensions on customer satisfaction in the bank-SME service relationship. The results show that technical quality has stronger influence which is understandable given the nature of banking services. De Keyser and Lariviere (2014) have studied the impact of technical and functional quality on customer satisfaction for five groups of customers using the services of medium-sized Belgian mail-order firm. In general, it is observed that the effect of technical quality dominated functional quality for four groups of customers. Our study is one of the few studies that has shown significant influence of functional quality on customer satisfaction when compared to technical quality. This result is not surprising since the Malaysian consumers, in general, favour 'form' over 'substance' (Baker, 2008). Therefore, 'how the service is delivered? ' is more important than 'what is being delivered? ' This observation is critical for the managers of service organizations in a country like Malaysia. Generally, in many of the South-East Asian countries like Brunei and Indonesia, this feature of form over substance can be witnessed (Beeson, 2009). The idea of form over substance has been discussed in the literature related to legal, financial, and software engineering services from different parts of the world (US, UK, and Canada). However, there is a dearth of studies discussing form over substance in other service industries.

The link between satisfaction and loyalty has been addressed by many researchers and the result of our study vindicates their stand. Among the various relationships, this relationship is the strongest (β=0.70, *p-value*=0.000). In a service setting, this relationship is vital for the survival of the firm. The mediating role of satisfaction between service quality dimensions and customer loyalty has been found to be significant. Between the two dimensions, the strength of relationship between functional quality and loyalty through satisfaction is the strongest.

5.2. Practical implications

This study has interesting practical implications. First, the study has shown that managers need to consider two factors to enhance service quality in the design of services in hotels, hospitals, and universities: level of standardization and level of customization. Second, the study has shown that among Malaysian consumers, standardization plays a greater role in increasing service quality (technical and functional). The managers must encourage their employees to emphasize on the process of the service delivery. For example, in the hospitality industry the service delivered to the customer can be customized and specific to customer needs; however, the process of delivering the service can be standardized so that the customers making similar requests are handled in a standardized manner. According to Tsaur et al. (2014), standardization of services is more than prevalent in the hospitality industry. Third, the study has shown the managers the dominant role of functional quality over technical quality in contributing to customer satisfaction.

6. Conclusions and limitations

This research has answered the following two questions: Can standardization and customization co-exist in a service offering? If they can, then what are their impacts on service quality (technical and functional), customer satisfaction, and customer loyalty? The questions were answered by building and testing an extended Grönroos (1984) model of service quality. Two constructs were added to the original Grönroos (1984) model: standardization and customization. The study was conducted in Malaysia by analysing the experiences and percep-

tions of consumers in three service industries: hospitality (hotel), healthcare (hospital) and education (university). The findings show that: (1) integration of standardization and customization of service offerings is critical for improved service quality; (2) standardization has higher impact on service quality when compared to customization; (3) functional quality has higher impact on customer satisfaction when compared to technical quality; and (4) customer satisfaction has a significant effect on customer loyalty.

This study is not without limitations. First, the sample sizes of customers in each industry are not high. Second, only three service industries (hotels, hospitals, and universities) were chosen for the study. Choice of more industries is needed to generalize the findings across the service sector. Third, the current study is a cross-sectional study. A longitudinal study is required to conclude causal relationship between the variables. Fourth, majority of respondents (76%) were less than 35 years of age. A more balanced sample (in terms of age distribution) can lead to more realistic results. Fifth, this study showed that in Malaysia form is preferred over substance. The generalizability of the results in other countries (where, substance is preferred over form) must be done with caution.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.jretconser.2016.11.007.

References

Almodóvar, P., 2012. The international performance of standardizing and customizing Spanish firms: the M curve relationships. Multinatl. Bus. Rev. 20 (4), 306–330.

Baker, J., 2008. Crossroads: a Popular History of Malaysia and Singapore 2nd ed.. Marshall Cavendish International Asia Pte Ltd, Singapore.

Beatty, S.E., Ogilvie, J., Northington, W.M., Harrison, M.P., Holloway, B.B., Wang, S., 2015. Frontline service employee compliance with Customer Special Requests. J. Serv. Res., (1094670515624978).

Beeson, M., 2009. Contemporary Southeast Asia. Palmgrave Macmillan, NY, USA.

Blut, M., Frennea, C.M., Mittal, V., Mothersbaugh, D.L., 2015. How procedural, financial and relational switching costs affect customer satisfaction, repurchase intentions, and repurchase behavior: a meta-analysis. Int. J. Res. Mark. 32 (2), 226–229.

Bowen, J.T., Chen McCain, S.L., 2015. Transitioning loyalty programs: a commentary on "the relationship between customer loyalty and customer satisfaction". Int. J. Contemp. Hosp. Manag. 27 (3), 415–430.

Bozorgi, M.M., 2006. Measuring Service Quality of airline using SERQUAL model (case of IAA) (Master thesis). Tarbiat Modares University, Faculty of Engineering, Lulea Institute of Technology, Sweden.

Brady, M.K., Cronin, J.J., Jr, 2001. Some new thoughts on conceptualizing perceived service quality: a hierarchical approach. J. Mark. 65, 34–49.

Chen, F., 2008. Study on the service quality evaluation and improvement for medium and small sized hotels. Mod. Appl. Sci. 2 (5), 145.

Chen, S.C., 2012. The customer satisfaction–loyalty relation in an interactive e-service setting: the mediators. J. Retail. Consum. Serv. 19 (2), 202–210.

Coelho, P.S., Henseler, J., 2012. Creating customer loyalty through service customization. Eur. J. Mark. 46 (3/4), 331–356.

Cohen, J., 1988. Statistical Power Analysis for the Behavioral Sciences. Lawrence Erlbaum, NJ.

Connelly, L.M., 2008. Pilot studies. Medsurg Nurs. 17 (6), 411–412.

Cronin, J.J., Brady, M.K., Hult, G., 2000. Assessing the effects of quality, value, and customer satisfaction on consumer behavioural intentions in service environments. J. Retail. 76 (2), 193–218.

De Keyser, A., Lariviere, B., 2014. How technical and functional service quality drive consumer happiness: moderating influences of channel usage. J. Serv. Manag. 25 (1), 30–48.

Ding, Y., Keh, H.T., 2016. A re-examination of service standardization versus customization from the consumer's perspective. J. Serv. Mark. 30 (1), 16–28.

Grönroos, C., 1984. A service quality model and its marketing implications. Eur. J. Mark. 18 (4), 36–44.

Grönroos, C., 1988. The six criteria of good perceived service. Rev. Bus. 9 (3), 10.

Grönroos, C., 1990. Relationship approach to marketing in service contexts: the marketing and organizational behavior interface. J. Bus. Res. 20, 3–11.

Guo, L., Xiao, J.J., Tang, C., 2009. Understanding the psychological process underlying customer satisfaction and retention in a relational service. J. Bus. Res. 62 (11), 1152–1159.

Hair, J.F., Hult, G.T.M., Ringle, C.M., Sarstedt, M., 2014. A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM). Sage, Thousand Oaks.

Hsieh, A.T., Chou, C.H., Chen, C.M., 2002. Job standardization and service quality: a closer look at the application of total quality management to the public sector. Total Qual. Manag. 13 (7), 899–912.

Jin, L., He, Y., Song, H., 2012. Service customization: to upgrade or to downgrade? An investigation of how option framing affects tourists' choice of package-tour services. Tour. Manag. 33 (2), 266–275.

Jones, C., Nickson, D., Taylor, G., 1994. 'Ways' of the world: managing culture in international hotel chains. In: Wood, R., Dieke, P., Jenkins, C.L. (Eds.), Tourism/The State of the Art. Wiley, Chichester, 626–634.

Kang, G.D., James, J., 2004. service quality dimensions: an examination of Grönroos' service quality model service quality dimensions: an examination of Grönroos' service quality model. Manag. Serv. Qual. 14 (4), 266–277.

Kang, S.S., Nobuyuki, O., Herbert, D., 2004. Service quality and its effects on customer satisfaction and customer behavioral intention: hotel and Ryokan Guests in Japan. Asia Pac. J. Tour. Res. 9 (2), 189–203.

Kotler, P., Keller, K.L., 2009. Marketing management (13th end). New Jersey: Pearson Education Inc, Upper Saddle River: NJ.

Krol, M., Brouwer, W., Rutten, F., 2013. Productivity costs in economic evaluations: past, present, future. Pharmacoeconomics 31 (7), 537–549.

Kumar, V., Pozza, I.D., Ganesh, J., 2013. Revisiting the satisfaction–loyalty relationship: empirical generalizations and directions for future research. J. Retail. 89 (3), 246–262.

Lai, F., Griffin, M., Babin, B.J., 2009. How quality, value, image, and satisfaction create loyalty at a Chinese telecom. J. Bus. Res. 62 (10), 980–986.

Lassar, W.M., Manolis, C., Wisor, R.D., 2000. Service quality perspectives and satisfaction in private banking. Int. J. Bank Mark. 18 (4), 181–199.

Lee, H.S., 2013. Major moderators influencing the relationships of service quality, customer satisfaction and customer loyalty. Asian Soc. Sci. 9 (2), 1.

Lee, S.M., Lee, D., Kang, C.Y., 2012. The impact of high-performance work systems in the health-care industry: employee reactions, service quality, customer satisfaction, and customer loyalty. Serv. Ind. J. 32 (1), 17–36.

Lien, N.H., Kao, S.L., 2008. The effects of service quality dimensions on customer satisfaction across different service types: alternative differentiation as a moderator. Adv. Consum. Res. 35, 522–526.

Lundahl, N., Vegholm, L.S., Fatima, 2009. Technical and functional determinants of customer satisfaction in the bank-SME relationship. Manag. Serv. Qual.: Int. J. 19 (5), 581–594.

Malhotra, N.R., 2007. Marketing Research: An Applied Orientation (Fifth edition). Pearson Prentice Hall, New Jersey.

Minvielle, E., Waelli, M., Sicotte, C., Kimberly, J.R., 2014. Managing customization in health care: a framework derived from the services sector literature. Health Policy 117 (2), 216–227.

Oliver, R.L., 1997. Satisfaction: A Behavioral Perspective on the Consumer. McGraw Hill, New York.

Olsen, S.O., 2002. Comparative evaluation and the relationship between quality, satisfaction, and repurchase loyalty. Acad. Mark. Sci. 30 (3), 240–249.

Park, S.B., Chung, N., Woo, S.C., 2013. Do reward programs build loyalty to restaurants? The moderating effect of long-term orientation on the timing and types of rewards. Manag. Serv. Qual.: Int. J. 23 (3), 225–244.

Rust, R.T., Chung, T.S., 2006. Marketing models of service and relationships. Mark. Sci. 25 (6), 560–580.

Sadeghi, M., GhafariCherati, M., Dadkhah, R., YaghoubiBijarboneh, B., Jafari, M., Shahbazi, B., 2014. Effect of functional quality, technical quality and mental image on the satisfaction of 3, 4 and 5-star hotels customers in Mashhad City. J. Ind. Strateg. Manag. 10 (32), 29–46.

Sandoff, M., 2005. Customization and standardization in hotels – a paradox or not? Int. J. Contemp. Hosp. Manag. 17 (6), 529–535.

Schuwer, R., Kusters, R., 2014. Mass customization of education by an institution of HE: what can we learn from industry? Int. Rev. Res. Open Distrib. Learn. 15 (2), 1–25.

Söderlund, M., Öhman, N., 2005. Assessing behavior before it becomes behavior: an examination of the role of intentions as a link between satisfaction and Re-patronizing behavior. Int. J. Serv. Ind. Manag. 16 (2), 169–185.

Suh, J.C., Yi, Y., 2006. When brand attitudes affect the customer satisfaction-loyalty relation: the moderating role of product involvement. J. Consum. Psychol. 16 (2), 145–155.

Tam, K.Y., Ho, S.Y., 2005. Web personalization as a persuasion strategy: an elaboration likelihood model perspective. Inf. Syst. Res. 16 (3), 271–291.

Tsaur, S.H., Wang, C.H., Yen, C.H., Liu, Y.C., 2014. Job standardization and service quality: the mediating role of prosocial service behaviors. Int. J. Hosp. Manag. 40, 130–138.

Vasile, D., Laurentiu, T., 2008. Considerations regarding the standardization of services. Amfiteatru Econ. 23 (10), 248–255.

Wang, G., Wang, J., Ma, X., Qiu, R.G., 2010. The effect of standardization and customization on service satisfaction. J. Serv. Sci. 2, 1–23.

Wind, J., Rangaswamy, A., 2001. Customerization: the next revolution in mass customization. J. Interact. Mark. 15 (1), 13–32.

Yoo, S.J., Huang, W.H.D., Kwon, S., 2015. Gender still matters: employees' acceptance levels towards e-learning in the workplaces of South Korea. Knowl. Manag. E-Learn.: Int. J. (KMEL) 7 (2), 334–347.

Zeithaml, V.A., Berry, L., Parasuraman, A., 1996. The behavioural consequences of service quality. J. Mark. 60, 31–46.