



An examination of the relationship between service quality perception and customer satisfaction

Service quality perception

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A SEM approach towards Malaysian Islamic banking

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Abstract

Purpose – This study attempts to examine the relationship between service quality perception and customers' satisfaction in Malaysian Islamic banking using the SEM approach.

Design/methodology/approach – This model starts with SERVQUAL measurement scales consisting of six dimensional structures: tangibles, reliability, responsiveness, assurance, and empathy, and plus the compliance dimensions to measure Malaysian Islamic banking service quality. Respondents are the customers (Muslim and non-Muslim) who visit the bank counters. They must have an account with one of the full-fledged Islamic banking and dual-banking systems.

Findings – The results showed that the proportion of Malaysian Muslims' awareness of the Islamic banking products and services were high compared to non-Muslim customers. The majority of the Islamic banking customers were satisfied with the overall service quality provided by their banks. The findings suggest that the standard model of Islamic banking service quality dimensions should consist of the six dimensions and good determinants of satisfaction. The relationship between service quality and customer satisfaction was significant.

Research limitations/implications – Further research should be considered in order to gather more information regarding service quality and customer satisfaction dimensions in the context of Malaysian Islamic banking industry.

Practical implications – The six dimensions of SERVQUAL represent a valid instrument to measure service quality in Malaysian Islamic banking. Providing financial counseling to attract Muslim customers to use more Islamic banking products and services is critical, where 60 percent of the Malaysian population is Muslim. There is a potential target market for Islamic banking that needs be concerned.

Originality/value – This research is important in line with the obvious cross-cultural and religious differences between these two key customer segments; Muslims and non-Muslims. In the Malaysian context, there is a strategic dimension that needs to be understood.

Keywords Customer services quality, Customer satisfaction, Banking, Islam, Malaysia

Paper type Research paper



Introduction

Islamic banking is a popular topic in Muslim countries. Islamic banking has been established in more than 100 countries, with an estimated \$300 billion in assets that are increasing by 15 percent a year, according to the Asian Banker (2005) a financial-services consultancy. In Malaysia, where 60 percent of the population is

Muslim, both Islamic banks and conventional banks operate side by side. The first Malaysian Islamic bank, Bank Islam Malaysia Berhad (BIMB, 2004), was established under Bank Act 1983. The Malaysian Government has issued three licenses for international banks to operate full-fledged Islamic banking in 2004. Today, there are 11 Islamic banks under the Islamic Banking Act 1983 and eight dual-window banks under the Islamic Banking Scheme are offering Islamic banking products and services in Malaysia. In implementing a dual-window banking system, the Islamic banking system operates in parallel with the conventional banking system (Bank Negara Malaysia, 2007).

As of June 2006, assets in Malaysia's Islamic banking increased 5 percent of RM117.393 million, representing 11.8 percent of the assets in the overall banking system. The market shares of Islamic deposits and financing stood at 15.6 and 11.6 percent compared with 11.7 percent in 2005 (Bank Negara Malaysia, 2007). Meanwhile, Bank Islam (BIMB) reported that some 70-80 percent of the bank's trade and corporate financing are with non-Muslim clients (*Malaysian Business* (Ngui, 2004)). Deloitte Touche Tohmatsu Malaysia reported that 70 percent of Islamic banks financing in Malaysia was contributed by non-Muslims. Deloitte Touche explained that Islamic banking in Malaysia lacks participation from Muslims due to the lack of awareness among the Muslims in Malaysia (Saifuddin, 2003).

Thus, Islamic banking is not merely of interest to Muslim customers but clearly non-Muslims customers see benefits from such a system. In an increasing competitive and liberalized global banking industry, the competition to attract and retain Muslim and non-Muslim customers is likely to increase. In the future, more foreign players are likely to enter into Malaysian Islamic banking, thereby pushing local banks to innovate and compete more aggressively in developing products and services. Although, there is a difference between Islamic banks and conventional banks, they are nonetheless competing in the same market in terms of offering complementary products and services (Naser and Moutinho, 1997). In order to compete, Islamic banks probably need to develop effective marketing strategies, upgrade their technological capabilities and develop their human resources. In particular, there is a need for Islamic banks to develop and maintain better service quality and customer satisfaction.

The aim of this paper

This study attempts to examine the relationship between service quality perception and customer's satisfaction in Malaysian Islamic banking by adapting and modifying SERVQUAL and CARTER scales (Parasuraman *et al.*, 1988; Othman and Owen, 2001, 2002). This research is important in line with the obvious cross-cultural and religious differences between these two key customer segments, Muslims and non-Muslims. In the Malaysian context, there is a strategic dimension that needs to be understood. The dichotomy between Muslims and non-Muslims has traditionally been an invisible frontier between ethnic groups in light of the role of religion in Malaysia. The widespread use of Islamic banking by non-Muslim customers may indicate that this invisible barrier can be crossed. That would bode well for the Malaysian Government's effort to promote national unity.

Compliance dimension in Islamic banks

Islamic banking is conducted on the basis of Islamic principles, in particular the prohibition of giving or taking interest. The argument is that taking the interest before a completed economic activity is unfair. Islamic banking is based on the idea of profit sharing after the economic transaction has been completed. Thus, the bank could theoretically lose money if a business venture fails to yield a profit. As far as Islamic law is concerned, it is unfair if the bank gains a profit while the entrepreneur suffers a loss. Similarly, Islamic banks are not allowed to invest in industries that are considered unlawful under Islamic law, such as gambling, the selling of alcohol and so forth (Siddiqui, 1992).

There is a compliance dimension that should be made clear. Muslims are told in the *Koran* that taking interest is a major sin. To protect Muslim customers from interest, Islamic banks have to set up financial instruments that are in accordance with Islamic principles and in line with the objectives of Islamic banks. The common products used in Islamic banking products and services are *mudharabah* (profit sharing), *wadiah* (safekeeping), *musyarakah* (joint venture), *murabahah* (cost plus), and *ijarah* (leasing). According to the Bank Act 1983, Islamic banks and banking institutions that offer Islamic banking products and services are required to establish a Syariah Advisory Committee to advise them and to ensure that the operations and activities of the bank comply with Syariah principles. In addition, the National Syariah Advisory Council set up at Bank Negara Malaysia advises the central bank on the Syariah aspects of the operations of these institutions, as well as on their products and services (Lock, 1987).

Service quality in Islamic banking

The foundation philosophy underlying Islamic banking as mentioned above is important to add compliance dimension under service quality dimension. Othman and Owen (2001, 2002) used the SERVQUAL dimensions in examining service quality in Islamic banking. In order to provide useful insights into how the service might be improved, they attempted to develop an alternative model, called CARTER. These studies have established the compliance factor as dimension of service quality. The findings obtained from this analysis have shown that the CARTER model is a multidimensional variable consisting of six dimensions. The result revealed that the Islamic banking customers placed more emphasis on the compliance dimension, because 93 percent of them said that it is important for Islamic banks to run Islamic law principles. However, Erol and El-Bdour (1989) explained that religious factors have not played an important role in selecting Islamic banks in Jordan. In Malaysia, 40 percent of Muslims were motivated to use the Islamic banks due to the compliance factor (Haron *et al.*, 1994). It means that compliance with Islamic principles appears to play an important role for Malaysians in determining the decision to select their banks. Meanwhile, the profit orientations motivated Singaporeans to use the Islamic product and service, and Singaporean Muslims were more aware of the existence of Islamic banking compared to Singaporean non-Muslims (Gerrad and Cunningham, 1997).

Over the last 20 years, research on service quality has grown extensively and substantively. The service quality model gained a lot of attention after the controversial findings of Parasuraman *et al.*'s, (PZB) in 1985. The model looked at service quality as a comparison differentiation between the customer perception and expectation of the service and the actual performance of the service received by the

customer provided by the company at a certain period of time (Parasuraman *et al.*, 1985). In this study, PZB developed a gap model of perceived service quality and revealed ten dimensions to measure service quality. In a second study in 1988, the ten dimensions were reduced to five dimensions. PZB developed a 22-item questionnaire and called it the SERVQUAL model (Parasuraman *et al.*, 1988). Parasuraman *et al.* (1991, 1994) stated that the SERVQUAL measurement has more diagnostics and more practical implications than was previously thought.

The SERVQUAL model has provided a comprehensive conceptualization of service quality with an instrument to measure perceived service quality. This method has been very popular with academics and researchers to assess the customer perception of service quality for a variety of service industries. The five dimensions of service quality include:

- (1) tangibles (appearance of physical components);
- (2) reliability (dependability of service provider and accuracy of performance);
- (3) responsiveness (promptness and helpfulness);
- (4) assurance (knowledge and courtesy of employees and their ability to inspire trust and confidence); and
- (5) empathy (caring, individualized attention the firm gives its customers).

This is a generic model and instrument for all service encounters. In fact, a number of researchers and academics have recently studied the conceptualization and measurement approach used for developing the SERVQUAL scale in different industries. Dabholkar *et al.* (1996) suggested that service quality is multi level and multi dimensional. They found that quality of service is directly influenced by the customer's perceptions of performance levels, and the customers' personal characteristic are important in assessing the value, but not quality. Angur *et al.* (1999) suggested that the SERVQUAL scale is multidimensional and is able to provide more diagnostic information due to its greater variability across banks than the SERVPERF scale.

Although the SERVQUAL model has greatly contributed to the literature on service quality it has been criticised. Generally, critics have questioned the multidimensional nature of the instrument, measurement scales, psychometric properties, and the feasibility of SERVQUAL as a framework in measuring service quality. Carman (1990) says that the SERVQUAL needed to be customized by adding items or changing the wording of items. The dimensions stability of SERVQUAL was unclear, not completely generic, and not sufficient to meet service quality measurement needs. Babakus and Boller (1992) revealed that the SERVQUAL model appears to suffer from a number of methodological and measurement flaws. The five dimensions of SERVQUAL failed to construct a service quality measurement and the SERVQUAL is uni-dimensional rather than a five-dimensional construct. They further suggested that the dimensionality of service quality may depend on the type of industry being studied. Cronin and Taylor (1992) suggest that the SERVPERF scale explains more variation in service quality than does SERVQUAL and the SERVQUAL is unidimensional. Teas (1993) revealed that the P-E model indicates a number of problems of the conceptual and operational definitions of the expectations and the revised expectations (E^*) components of the model.

In retail banking, Newman (2001) suggested that the SERVQUAL model does not appear to be the holistic model and doubted the value of SERVQUAL as a measure of service quality. In commercial banks, Jabnoun and Al-Tamimi (2003) explained that the dimensions found were different from the original SERVQUAL dimensions, and there were problems with these as there were some overlaps. Cui *et al.* (2003) revealed that SERVQUAL and SERVPERF were not uni-dimensional. Confirmatory factor analysis revealed that the measurement scale lacked validity with samples from different cultures.

To date, there have been a few empirical studies regarding the dimension of service quality in Islamic banking, especially in Malaysia. Al-Tamimi and Al-Amiri (2003) modified the five SERVQUAL dimensions to measure service quality in two Islamic Banks (Abu Dhabi Islamic Bank, and Dubai Islamic Bank). They found that reliability was the most important dimension on their instrument. Meanwhile, Jabnoun and Khalifa (2005) studied service quality in the UAE and compared UAE service quality between conventional and Islamic banks. Results of regression analysis revealed that all four dimensions were significant in determining service quality in conventional banks, and only personal skill and values were significant in determining service quality in Islamic banks. Al-Tamimi and Al-Amiri (2003) did not attempt to address different dimensions of service quality and no attempt was made to address new service quality dimensions that might be related to Arab culture (Jabnoun and Khalifa, 2005).

Even though a number of methodological issues have been debated and are controversial, the preponderance of research has been strongly influenced by the conceptual model of service quality proposed by Parasuraman *et al.* (1985), and subsequently operationalized and refined by the same authors. This articulation of the service quality construct and its associated SERVQUAL measure has spawned hundreds of studies across the industries. Furthermore, in adopting service quality effectively in Islamic banking, management is required to clearly understand the nature of service quality and how to implement and adjust it in the context of Malaysian culture. Although, the SERVQUAL dimensions were validated in a western context, it is likely that the cultural difference of consumers will influence its applicability in Malaysia. Karatape *et al.* (2005) suggested that service quality measures developed in one culture may capture service quality sentiments in another culture. Therefore, this study provides useful insights for academics and researchers in implementing SERVQUAL in the Malaysian perspective, especially for Islamic banking. On the practical side, the overall consistencies between the two groups (Muslims and non-Muslims) in assessing service quality suggest that Islamic banking operating in Malaysia can benefit from a standardized approach.

Service quality and customer satisfaction

In the service literature, Oliver (1980) explained that customer satisfaction entails the full meeting of customer expectation of the products and services. If the perceived performance matches or even exceeds customers' expectations of services, they are satisfied. If it does not, they are dissatisfied (de Wulf, 2003). In the real world, unsatisfied customers tends to create negative word-of-mouth and convey their negative impression to other customers (Lewis, 1991; Newman, 2001; Caruana, 2002). These positive and negative word-of-mouth communications are very useful in Asian

countries such as Malaysia, where social life and culture are structured in a way to improve social relationships among them.

Previous research has identified various factors that determine customer satisfaction in the retail banking sector in the USA and Europe. To satisfy customers, Greek Cypriot bank in Turkey used service quality to achieve customer satisfaction. The SERVQUAL dimensions were explanatory variables in predicting customer satisfaction and the reliability dimension had highest impact on overall customer satisfaction (Arasly *et al.*, 2005a). This study was consistent with Othman and Owen (2001) who suggested that there is a strong link between SERVQUAL and customer satisfaction. In the Islamic banking industry, customers have put the criteria of customer satisfaction towards service quality provided by their banks. There were no big different between both Muslim and non-Muslim customers in this respect in Malaysia. For example, fast and efficient service; friendliness of bank personnel; confidentiality of bank; speed of transaction are as the key criteria which they has satisfied by their banks (Haron *et al.*, 1994). Finding from college students in Bahrain, indicated that young customers places more emphasis on factors like a bank's reputation, friendliness of bank personnel, convenient location, 24-hours ATM, and availability of parking space in selecting their banks (Almossawi, 2001). The bank's ability to deliver these benefits on an on-going basis probably influences the level of customer satisfaction. Banks have provided innovative methods of satisfying customers, such as internet banking and online system, telephone and call center. According to Levesque and McDougall (1996), convenience and competitiveness of the bank are two important factors which are likely to influence the overall satisfaction levels of a customer.

In the services literature, strong emphasis is placed on the importance of service quality perceptions and the relationship between service quality and customer satisfaction (Cronin and Taylor, 1992; Taylor and Baker, 1994). Some researchers and academics described that customer satisfaction is an antecedent of service quality (Parasuraman *et al.*, 1985, 1988, 1991, 1994; Carman, 1990; Bitner, 1990), and others have counterargued that the service quality as an antecedent of customer satisfaction (Cronin and Taylor, 1992, 1994; Bolton and Drew, 1991; Anderson and Sullivan, 1993) and that service quality is not equivalent to satisfaction (Oliver, 1980). The current research from retail banking sector in UAE, indicated that service quality dimensions appear to be linked to customer satisfaction, where core and relational dimensions of service quality are causal antecedents of customer satisfaction (Jamal and Naser, 2002).

However, there is very little empirical research demonstrating the importance of service quality dimensions in determining customer satisfaction (Fisk *et al.*, 1993; Levesque and McDougall, 1996). In a recent study, Levesque and McDougall (1996) found that the performance of the service provider on core and relational dimensions of services was an important driver for customer satisfaction in retail banking. Bitner *et al.* (1994) and Anderson *et al.* (1994) also point to this link by suggesting that improved service quality will provide significant impact of customer satisfaction. The causal relationship between service quality and customer satisfaction is the subject of great academic debated and no consensus has been reached (Bahia *et al.*, 2000). Nevertheless, from a theoretical point of view the researchers and academics have established the conceptual definition of customer satisfaction. Then, we develop a set of hypothesis, service quality are positively related to customer satisfaction.

Conceptual model and hypothesis

Our conceptual model is demonstrated and tested as Figure 1. This model starts with SERVQUAL measurement scale, consisting of six dimensional structures: tangibles, reliability, responsiveness, assurance, and empathy, and compliance dimensions to measure Malaysian Islamic banking service quality. Furthermore, a conceptual model of the relationship between service quality and customer satisfaction (Figure 1) is developed based on the literature and hypotheses are explored.

Data collection process

A quota sampling technique was used for this study. Quota samples attempt to ensure that the sample is representative by selecting sample elements in such a way that the proportion possessing a certain characteristic is approximately the same as the proportion in the population (Maholtra *et al.*, 2002). To develop these quotas, the researcher lists relevant control characteristics and determines the distribution of these characteristics in the target population. The relevant control characteristics of the demographic profile of the initial quota sample were determined based on the characteristics of Malaysian banking customers: aged 18 years and older, gender, Muslims and non-Muslims, education, and occupation. The sample elements within each quota were selected based on the convenient sampling.

In this study, respondents are customers visiting the counters of banks and they must have an account with one of the fully-fledged Islamic and dual-banking systems. The Islamic banks were the two leading fully fledged Islamic banks (BIMB and Bank Muamalat Malaysia Berhad) and the two dual-window banking systems (Maybank and Public Bank) in eight different states of the Peninsula Malaysia. Two branches of each state for two fully-fledged Islamic banks, and two branches of each state for two dual-windows banks. The respondents were from four branches of each state in eight states (32 branches). The Islamic banking sectors were chosen because they represent one of the typical service sectors involved in developing economic growth in Malaysia.

These two fully fledged Islamic banks and the two dual-window banks were selected based on accessibility and have branches across the country. These two cities represent levels of economic development in the southern area (Johor Bahru and Seremban), two cities represent the north area with rising economic growth

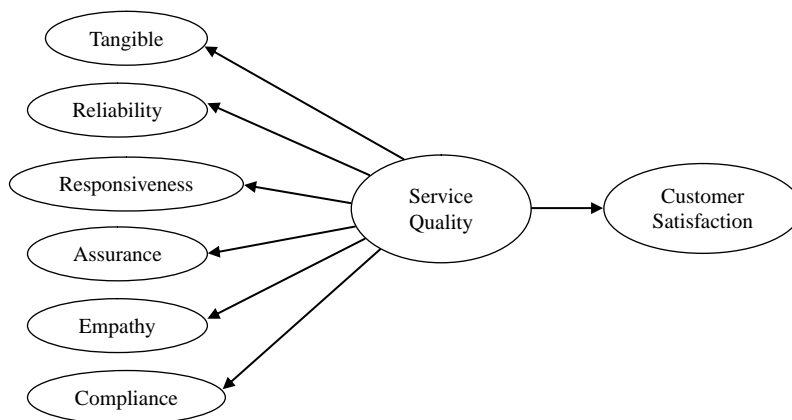


Figure 1.
Hypothesis
research model

(Pulau Pinang and Alor Setar), two cities represent the east coast area (Kota Bharu and Kuantan), and two cities represent triangle and central areas where most commercial banks in Malaysia locate their head offices (Kuala Lumpur and Shah Alam), and are relatively prosperous compared with north and east coast. The selection of bank branches across a spread of different cities has the purpose of enhancing the generalizability of the findings and representation of Malaysian Muslims and non-Muslims customers.

Data were collected from personal interviews using questionnaires as a measurement tool, conducted in eight states in Peninsula Malaysia by six trained interviewers during April to July 2007. The questionnaires were distributed in two types. First, for the fully-fledged Islamic banking, the questionnaires were given to bank managers and requested them to distribute the questionnaires to their clients. Second, for dual-banking, the interviewers visited and distributed the questionnaires by hand to the customers outside the bank counters. This was done in eight different states where the banks were selected. Respondents were selected from among the customers who visit the sampled banks during day time and at various days for a week or a month. In answering the questions, respondents were assured of confidentiality. Various controls and filter questions were put in place to ensure the quality of the survey. The purpose of the filter questions was to make sure that the respondents fit the three basic restrictions, being 18 years old or over, holding an account with Islamic banking and dual-banking systems, Malaysian Muslim and non-Muslim Islamic banking customers. The last filter question was to ensure that the respondents agreed to participate in this survey. They were politely approached and the purpose of the study was explained. The questionnaire was written in Malay language to ensure clarity, while the respondents in this research are all Malaysians where their national language is Bahasa Malaysia.

A total of 660 questionnaires were distributed and 440 were returned (66.7 percent response rate). The sample characteristic includes 214 customers of fully-fledged Islamic banks and 226 customers of the dual-banking system. Females account for 46.6 and males 53.4 percent of the customers of fully-fledged Islamic banks and the dual-window banks. Muslims make up 71.1 and non-Muslim 28.9 percent of the customers of both the fully-fledged Islamic banks and dual-window banking systems. According to Anderson and Gerbing (1988) and Hair *et al.* (2004), this sample size should be sufficient to obtain a converged and proper AMOS solution for models with three or more indicators per factor.

The instrument

The five dimensions of SERVQUAL as proposed by Parasuraman *et al.* (1988), Othman and Owen (2001, 2002) and Jabnoun and Al-Tamimi (2003) were adapted and modified in this study. The modifications consisted of substituting questionnaire items particularly suited to a specific service industry (Islamic banking) and context (Malaysia). The original items were translated and modified into Bahasa Malaysia, and their content validity (wording and meaning) was checked carefully by two Malaysians experts. A pre-test was then conducted with a group of bank customers, and minor changes to the scales were made accordingly to ensure that the questions were not repetitive. The wording reflected the local Islamic context. A seven-point Likert scale was used to measure the perception of perceived quality which ranged from

“1 = strongly disagree” to “7 = strongly agree”. To avoid the issues of conceptual and psychometric properties raised by Cronin and Taylor (1992) and Babakus and Boller (1992) by using different scores, and to be more efficient the researchers only had to measure perception of quality (Dabholkar *et al.*, 1996; Yavas *et al.*, 2004).

In addition to the original SERVQUAL scale, relevant items from the Islamic banking service quality scale (Othman and Owen, 2001; Jabnoun and Al-Tamimi, 2003) were also adapted and incorporated. For example, compliance items one, two, three, and four are items from compliance aspects of the Islamic banking service quality scale (Othman and Owen, 2001). Subsequently, empathy items one, two, and three from the empathy dimension of commercial bank service quality were also incorporated in the current scale (Jabnoun and Al-Tamimi, 2003).

Studies on customer satisfaction within the banking sector measured the construct with multi-item measures (Levesque and McDougall, 1996; Fornell *et al.*, 1996) that identified how satisfied a customer felt with products and services provided by Islamic banking. In addition, a seven-point scale ranging from “1 = very un-satisfied” to “7 = very satisfied” was used to measure the customer perception and assessment to overall satisfaction. Finally, demographic information and product knowledge of Islamic banking customers were elicited from the respondents.

Results

The understanding of Islamic banking terminology

This section evaluated whether both Malaysian Muslim and non-Muslim customers understood Islamic banking terminologies. As shown in Table I, Malaysian customers show a good understanding of the terminology in term of products and services offered by Islamic banks. The results indicate that terms such as *riba* (84 percent), *mudharabah* (75 percent), *murabahah* (61 percent), and *ijarah* (64 percent) are generally understood. Thus, approximately 27 percent of Muslim respondents could not define the meaning of *ijarah* and *murabahah*. Surprisingly, more than 50 percent non-Muslim customers could answer accurately the meaning of *riba* and *mudharabah* and had little understanding of *ijarah* and *murabahah*, but most of them were using these products and services.

A study conducted by Gerrard and Cunningham (1997) indicates that Muslim respondents in Singapore were unaware of the specific meaning of Islamic banking terminology like *mudharabah*, *musharakah* and *ijara*. Meanwhile, Naser *et al.* (1999) reported that Jordan's customers were more aware of specific Islamic terms of *murabahah*, *mudharabah*, and *musharakah*, but they were not using these specific types of Islamic banking. Surprisingly, their results reported that 47 percent of Islamic banking customers were totally unaware of *ijara*. For Malaysian bank

Term	Muslim responses (<i>n</i> = 313)	Correct	
		Non-Muslim responses (<i>n</i> = 127)	Total (<i>n</i> = 440)
Riba	286	87	373
Mudharabah	260	70	330
Murabahah	233	35	268
Ijarah	222	58	280

Table I.
Product knowledge
of Islamic banking

account holders, the majority of the customers indicated that they held a saving account and current account, and 44 percent of the respondents held an account in financing and investment (Table II). These results supported by Haron *et al.* (1994) indicated that most frequently Muslim and non-Muslim customers held saving accounts.

The history of banking relationships

This study of historical Islamic banking relationships will give information regarding the bank's customer background and customer's relationship with their banks. As seen in Table II, the results showed that the majority of customers have good relationship with Islamic banking where they hold accounts above three years. Meanwhile, 23.3 percent of the customers have been customers for two years, 18.4 percent for three years, and 13.2 percent below one year. It means that both customers have good relationship with the Islamic banks and there was a relatively high degree of stability maintaining relationships between them.

Muslim and non-Muslim perception of service quality

Table III shows the mean scores and *t*-test coefficients for the significance perception between Muslim and non-Muslim customers on the service quality dimensions.

In general, all items for both Muslim and non-Muslim customers have a mean higher than four (out of seven). This indicates that both Muslim and non-Muslim customers perceived that they were receiving a high level of service quality. In this case, Muslim customers have higher mean score compared to non-Muslim customers. The highest mean scores for Muslim customers was 5.62 (bank provides data customers confidentiality), and the lowest mean scores was 4.56 (bank provides more branches to open up). At the same time, the highest mean scores of non-Muslim customers was 5.48 (bank keep its records accurately), and the lowest mean scores was 4.07 (bank provides more branches to open up).

A *t*-test was used to test the statistical differences between mean scores perception of service quality between Muslim and non-Muslim customers. According to Table III again, most items shown statistically significant differences ($\rho < 0.05$) in quality perception between Muslim and non-Muslim customers in the Malaysian Islamic banking context. Interestingly, for the compliance dimension, the three items were not statistically significant different regarding the perception of receiving service quality between Muslim and non-Muslim customers, and only one item has significant

Attribute	Percentage
<i>The period time of bank's customer relationship</i>	
Less one year	13.2
One to two years	23.0
Two to three years	18.4
Above three years	45.5
<i>The customer bank accounts types</i>	
Current account	12.5
Saving account	43.6
Investment and financing account	44.0

Table II.
The history Islamic
banking relationships

	Muslim (n = 313)	Mean Non-Muslim (n = 127)	ρ -value	Service quality perception
<i>Tangible</i>				201
T1	5.12	4.94	0.189	
T2	5.22	4.82	0.002	
T3	5.46	5.29	0.166	
<i>Reliability</i>				
R1	5.51	5.48	0.774	
R2	5.30	5.03	0.022	
R3	5.17	4.94	0.055	
R4	5.19	4.93	0.033	
R5	4.88	4.98	0.482	
<i>Responsiveness</i>				
R1	5.35	5.06	0.014	
R2	5.20	4.85	0.006	
R3	5.15	4.70	0.001	
R4	4.56	4.07	0.005	
<i>Assurance</i>				
A1	5.31	4.91	0.002	
A2	5.13	4.88	0.034	
A3	5.62	5.44	0.149	
A4	4.86	4.65	0.107	
<i>Empathy</i>				
E1	5.14	4.76	0.017	
E2	5.04	4.56	0.001	
E3	4.98	4.55	0.004	
E4	5.08	4.86	0.086	
E5	5.08	4.07	0.002	
E6	5.01	4.69	0.017	
<i>Compliance</i>				
C1	4.79	4.49	0.072	
C2	5.22	5.06	0.191	
C3	4.87	4.46	0.012	
C4	4.76	4.66	0.555	
Note: Significance at the 0.05 level				

Table III.
Distribution of mean scores and *t*-test results of service quality

differences perception between Muslim and non-Muslim customers (provision of profit sharing investment product, $\rho = 0.012$). This indicated that non-Muslim customers were more concerned with the profit that they could acquire from Islamic banking products and services.

Overall customer satisfaction with Islamic banking

As seen in Table IV, the level of customer satisfaction was measured using a seven point Likert scale ranging from “very unsatisfied (1)” to “very satisfied (7).” The results from the table showed that the majority of respondents have a positive impression about the overall service quality provided by Islamic banking. The products and services provided by Islamic banks showed the highest mean score was 5.03, followed by the overall service quality, employees respond and prompt services, and financial services advice, respectively, (5.02, 4.86, and 4.84).

Furthermore, the Malaysian Islamic banking customers were very satisfied and satisfied with the products and services provided by their banks. This study is consistent with the studies reported by Metawa and Almossawi (1998) where they noticed that the Islamic bank customers in Bahrain were satisfied with those products and services provided by their bank, but not satisfied with the financial facilities. Meanwhile, Othman and Owen (2001) demonstrated that 78 and 65 percent of Islamic banking customers were satisfied with overall and personal contact with bank staff.

First-order CFA model of Islamic banking service quality

The most direct application of structural equation modeling is a confirmatory modeling strategy. The researcher specifies a single model, and an SEM approach is used to assess how well the model fits the data set. If the proposed model has acceptable fit by whatever criteria are applied, the researcher has not proved the proposed model but only confirmed that it is one of several possible acceptable models (Hair *et al.*, 2006).

To assess the measurement model, two analyses were conducted. First, a first-order CFA model was conducted to examine the measurement model using AMOS 5. The purpose of a measurement model is to describe how well the observed indicators serve as a measurement instrument for the latent variables. Second, the squared multiple correlation was conducted to measure each indicator and how well an item measures a construct (Al-Hawari and Ward, 2006; Holmes-Smith, 2001; Hair *et al.*, 1998). The first run of squared multiple correlation showed that the majority of the measurement items indicated a value greater than 0.5, which indicated a good reliability level (Holmes-Smith, 2001). However, five items had R^2 values less than 0.4. By checking the squared multiple correlations for each measurement items, five items were dropped as the R^2 values were less than 0.4. The effect of high of R^2 values indicated the acceptance of model fit. As result of this procedure, 21 observed indicators from the original 26 were derived to estimate the model fit.

Attribute label	Mean ^a	Rank
I am satisfied with products and services provided by my banks	5.03	1
I am satisfied with employees respond and prompt services	4.86	3
I am satisfied with financial services advice	4.84	4
The overall service quality provided by my banks is excellent	5.02	2

Note: ^aMaximum – 7

Table IV.
Degree of satisfaction of services offered by the Islamic bank

To test the reliability of the Malaysian Islamic banking service quality instruments, the Cronbach' α coefficient was computed. The coefficient α exceeded the minimum standard of 0.70 (Nunnally and Bernstein, 1994). This indicated that good estimates of internal consistency reliability were provided. The coefficient α obtained greatly exceeded the minimum acceptable values which are 0.75, 0.79, 0.82, 0.84, 0.83, 0.77, respectively, (tangibles, reliability, responsiveness, assurance, empathy, and compliance with *Syariah*). The estimates of standard factor loadings were used to determine the validity of the SERVQUAL dimensions. The factor loadings in the confirmatory factor analysis ranged from 0.56 to 0.89 for the SERVQUAL dimensions. Because each factor loading on each dimension is more than 0.50, the convergent validity for each dimension of the SERVQUAL scale was established and provided evidence of construct validity (Hair *et al.*, 1998).

A re-run CFA was conducted, and the results of measurement model showed that the goodness-of fit was satisfied (Table V). Although, the GFI value of 0.89 did not meet the threshold of 0.90, but the value was very close to the recommended threshold level. The RMSEA value of 0.07 and CFI value of 0.92 were above the threshold level of 0.08 and 0.90. The results show that 21 indicators of first-order CFA model of Islamic banking service quality were fit to the sample data.

Structural equation modeling

A structure model of Islamic banking service quality was conducted to estimate the parameters. In this model, there were six models from the first-order constructs (tangible, reliability, responsiveness, assurance, empathy, and compliance), and two second-order construct (service quality and customer satisfaction). The dimension of tangible was measured by three indicators, reliability by four indicators, responsiveness by three indicators, assurance by three indicators, empathy by five indicators, and compliance by three indicators. The objective of conducting the structure model was designed to test that Islamic banking service quality is a multidimensional construct consisting of six sub-dimensional and each dimension has a positive relationship with Islamic banking service quality. The causal structure model shown in Figure 1 of antecedent customer satisfaction was designed to test the hypothesis that customer satisfaction was influenced by perception Islamic banking service quality.

According to our hypothesis (Figure 1), results of the research model indicate the acceptable goodness-of-fit models (Table V). The χ^2 is significant ($\chi^2 = 772.684$, $\chi^2/\text{degree of freedom}$ (χ^2/df) ratio 2.883, $\rho = 0.000$, which is expected given the sample size. Although, the GFI value of 0.87 and AGFI value of 0.84 did not meet the threshold of 0.90, their values were in range of the recommended levels. The model had a CFI of 0.93 and NFI of 0.89 indicated that the model is parsimonious, since the

Variable	GFI	CFI	χ^2/df	RMSEA	Sig.
Measurement model	0.89	0.92	3.274	0.07	0.000
Structure model	0.87	0.93	2.883	0.06	0.000

Notes: Measurement model – 21 items; structure model – 21 items

Table V.
Goodness-of-fit statistics
for modified and
initial model

value is close to 0.90. Bentler (1990) and Hair *et al.* (2006) suggested that both CFI and NFI should be the index of choice, and these were consistent in suggesting that the hypothesized model represented an adequate fit to the data. Even if the model fits the data, it is not necessarily the correct model. Many equivalent models can fit the data equally well as judged from any goodness-of-fit measure (Anderson and Gerbing, 1988).

Meanwhile, the model had a RMSEA of 0.06, which was below range level and considered satisfactory. Overall, the values were close to the threshold and thus they represented an acceptable model fit and the hypothesis was supported. The model indicated that each dimension of the perception of Islamic banking service quality had a positive relationship with Islamic banking service quality. It means that the SERVQUAL model is still an acceptable and useful instrument to measure service quality in Malaysia's Islamic banking industry. The compliance dimension was found to contribute service quality, and may be a critical aspect for customers in judging the quality of Islamic banking services.

The standardized parameter estimates and significant values for the hypothesis relationships are presented in Table VI. The findings suggest that the standard model of Islamic banking service quality dimensions is a good determinant of satisfaction. The standardized regression weight of Islamic banking service quality to customer satisfaction was significant ($\rho = 0.000$, $\alpha = 0.01$) with parameter estimates (0.799). These regression weights explain the degree of association between the construct and the manifesting variables. In other word, if service quality increased by 1 standard deviation, the standard deviation of customer satisfaction would have increased by 0.799.

Furthermore, the significant path coefficient shown that the reliability and the empathy dimension had the most important positive impact on Malaysian Islamic banking service quality, followed by tangible, assurance, and responsiveness, respectively. The standardized path was 0.999 for reliability and 0.966 for empathy, 0.930 for tangible, 0.915 for responsiveness, and 0.896 for assurance, and compliance is 0.242, but it was significant ($\rho = 0.000$).

Discussions and conclusions

The purpose of this study is to measure service quality perceptions of Islamic banking customers and to examine the relationship between service quality and customer satisfaction in the context of Malaysian Islamic banks. The SEM approach was used to

Table VI.
Standardized regression weights for the research model

	Description		Estimate	<i>p</i> -values
Tangible	←	Service quality	0.930	0.000
Reliability	←	Service quality	0.999	0.000
Responsiveness	←	Service quality	0.915	0.000
Assurance	←	Service quality	0.896	0.000
Empathy	←	Service quality	0.966	0.000
Compliance	←	Service quality	0.242	0.000
CS	←	Service quality	0.799	0.000

Notes: Significance at the 0.01 level. CS, customer satisfaction

test the constructs framework that customer satisfaction was influenced by the perception of Islamic banking service quality.

The results confirmed that the six dimensions (tangible, reliability, responsiveness, assurance, empathy, and compliance with *Syariah*) are distinct constructs. The results indicated that Islamic banking service quality consisting of six dimensions has appropriate reliability and each dimensions has a positive significant relationship with Islamic banking service quality. For Malaysian Islamic banking service quality, reliability was the key driver of service quality, followed by empathy, tangible, responsiveness, assurance, and compliance, respectively. Reliability had the highest regression coefficient (0.999). It means that Muslim and non-Muslim customers are looking for banks that provide services at the promised time, are able to solve problem and cooperative, and offer a wide range of products and services. In other words, Malaysian Muslim and non-Muslim customers more concerned with the reliability dimension than other dimensions as a key factor in establishing relationship with their banks. This result is consistent with Parasuraman *et al.* (1988, 1991) in that reliability was found to be the most important factor to service quality. Meanwhile, similar results were found in UAE Islamic banking in that the reliability was the most important dimension (Al-Tamimi and Al-Amiri, 2003).

In addition to relationships between service quality and customer satisfaction, prior research suggested that service quality has a positive relationship with customer satisfaction (Parasuraman *et al.*, 1988, 1991). The findings of this study indicate that the establishment of higher levels of service quality will lead customer to have a high level of satisfaction. As a result, these indicate that service quality is positively associated with customer satisfaction in Malaysian Islamic banking. In addition, the findings of this study are consistent with previous studies by Othman and Owen (2001) who stated that there was a strong link between service quality and customer satisfaction in Islamic banking. Arasly *et al.* (2005a, b) found service quality to be a significant predictor of customer satisfaction in Turkey's banking industry. Additionally, Karatape *et al.* (2005) identified that service quality has the strongest effect on satisfaction since satisfaction is a mediator between service quality and purchase intention in conventional banking. The literature suggests that the implication is clear, the better the service quality, the higher is the customer satisfaction.

Although Islamic banking customers are satisfied with the overall service quality provided by their banks, it is not guaranteed that their customers do not switch to other banks. Therefore, Islamic banks need to improve the relationship between bank and customers, and this is based on customer trust towards the principles of *Shariah* (compliance) used in creating that relationship. In the Malaysian banking context, Muslim customers' trust in Islamic banks may be linked to customers perceiving that products and services are running with *Shariah* principles. One explanation for this could be that respondents may have believed and felt that the operations of Islamic banking system are consistent with Islamic principles, as the mechanisms to ensure that Islamic banks are *Syariah* compliance are numerous. The legitimate of Islamic banks operations are strongly backed up by the Central Bank of Malaysia and *Syariah* Advisory Council to assist and supervise the compliance aspects. This confidence is based on the customer's belief that Malaysian governance rules sufficiently supervise Islamic banks. This has significant impact on consumer behavior decisions and influences their perceptions towards Islamic banks.

Implications for management

In addition to the responses of attitudes towards Islamic banking, there were no significant differences between Muslim and non-Muslim customers. In the context of the history banking relationship, most of them have had banking experience and dealt with Islamic banking for more than one year. The greater the number of years relationship between customers with their banks, the higher degree of their customers in holding the bank accounts. It is advantageous for Islamic banking to maintain a long-term relationship with their customers.

In general, this study highlights that Malaysian consumers are more satisfied with products and services provided by fully-fledged Islamic banking and dual-window banking. In fact, reliability and empathy dimensions were the main important factors of service quality in Malaysian Islamic banks. Therefore, Islamic banks may be required to do more promotion and focus on strategic choice in providing products and services which are more innovative in order to gain competitive advantage. Islamic banking should provide financial counseling to attract Muslim customers to use more Islamic banking products and services where 60 percent of the Malaysian population is Muslim. There is a potential target market for which Islamic banking should be concerned. Today, high competitiveness and availability of products and services and innovation in a global banking market, requires that Islamic banking has no choice but to focus on attracting, developing, and retaining customer satisfaction. It can be achieved if Islamic banking has good information about the level of bank customer satisfaction. In fact, the prerequisite of high-quality service may be a differentiation strategy in enhancing customer satisfaction.

Limitations and further research

Further research should be considered to gather more information regarding the service quality and customers' satisfaction dimensions in context of the Malaysian Islamic banking industry. The limitation of this study was the difficulty in approaching the respondents for the dual-window banking. This is due to their office hours. The borders between the Islamic bank and conventional bank customers exist. It was different with the fully-fledged Islamic banking in that we could automatically identify the customers. The potential of the inaccurate data collection exists due to the questionnaires that were distributed through the branch managers. For further research, the researchers need to increase the number of banks involved in the research study, the number of respondent, and the research should represent the whole Malaysia.

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