THE HONG KONG TOURIST SATISFACTION INDEX

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ABSTRACT

This study develops a tourist satisfaction assessment system based on a dual-model framework and demonstrates its general applicability. The first model concerns tourist satisfaction and its key antecedents and consequences. Structural equation modelling is employed to investigate the relationships amongst the constructs in the theoretical framework, and is then used as a basis for the computation of sectoral-level tourist satisfaction indexes. The second model is designed to estimate an aggregate service satisfaction index and an overall destination satisfaction index using a multiple indicator and multiple cause approach. The framework is applied to a large dataset that represents six tourism-related sectors and seven major source markets of inbound tourism to Hong Kong

Keywords: Tourist satisfaction, index, SEM, MIMIC Model, Hong Kong.
INTRODUCTION

Tourism and hospitality is a people business, which means that the encounter between service providers and tourists is an important characteristic of the industry. Hence, many tourism and hospitality operators are keen to adopt industry-wide and internationally recognised service standards to ensure high levels of service quality. Although there has been a gradual migration towards service standardisation amongst industry members, evaluation platforms and outcomes may not be comparable across service sectors. Furthermore, there is a tendency for industry members to keep the results of their service evaluations to themselves, leaving national tourism authorities in the dark about the service performance of the various service industries. Increasing the visibility of the service performance of tourism-related sectors may help tourism stakeholders to devise policies and allocate resources more effectively.

Although promoting the unique products and services of a destination constitutes an important task for tourism authorities, their ability to innovate, improve and creatively market tourist experiences may ultimately determine their continued success. One definition of ‘success’ is satisfied tourists. Accordingly, “measuring and managing customer satisfaction is crucial for the survival, development and success of service industries like tourism” (Sirakaya, Petrick, & Choi, 2004:518). Hence, the development of a consumer-based system for evaluating tourism service performance that focuses on tourist satisfaction is of great importance for tourist destination management.

An evaluation system that can objectively inform tourism authorities and related stakeholders about the performance of various service sectors and effectively help service
providers to enhance their performance must be both backward- and forward-looking (Fornell, Johnson, Anderson, Cha, & Bryant, 1996). In other words, such a consumer-based evaluation system must be able to capture the cause and effect relationships associated with tourist satisfaction. For example, if the data show a decline in tourist satisfaction, then the system should allow tourism practitioners to identify the possible causes (e.g., tourists’ expectations, perceived performance or assessed value) and suggest immediate remedies.

The consequences of a decline in satisfaction, such as negative tourist voice and declining consumer loyalty, should also be indicated by the evaluation system. By adopting a universal framework for performance evaluation and reporting, such as a tourist satisfaction index (TSI) system, service providers can establish internal targets against which to assess their performance over time and to obtain useful comparisons with other organisations. By facilitating increased transparency and accountability, such performance measures will enable service providers to establish a platform from which to clearly articulate their contribution to stakeholders and the local community. An evaluation system should thus be able to identify the relationship between the performance of individual service providers and a destination’s overall performance as perceived by its inbound tourists. This study aims to develop such a universal system of tourism service evaluation from the consumer’s point of view, that is, a TSI system.

**LITERATURE REVIEW**

Customer satisfaction is often found to be at the heart of firms’ marketing activities (Machleit & Mantel, 2001), because it helps to ensure that firms achieve their desired strategic results. A higher level of consumer satisfaction is likely to increase customer loyalty,
reduce price elasticity, insulate current market share from competitors, lower transaction costs, reduce the costs of failure and attracting new customers, and help develop an organisation’s reputation in the marketplace (Anderson, Fornell, & Lehmann, 1994).

Rust, Zahorik and Keiningham (1995) indicate that customer satisfaction and service quality have a measurable impact on customer retention, market share and profitability. Many of these outcomes have been identified across a range of tourism studies, such as increased loyalty amongst zoo visitors (Cole & Scott, 2004), the increased likelihood of tourists revisiting Thailand (Rittichainuwat, Qu, & Mongknonvanit, 2002), a willingness to pay more amongst festival goers (Baker & Crompton, 2000), a willingness to recommend a tourism destination in Spain (Bigné, Sánchez, & Sánchez, 2001) and increased customer retention amongst travel operators in the United Kingdom (Appiah-Adu, Fyall, & Singh, 2000). These outcomes are also in line with the findings of exit-voice theory (Hirschman, 1970), which posits, for example, that dissatisfied consumers will usually choose to either exit (e.g., go to a competitor) or voice their complaint to seek compensation, whereas increased satisfaction decreases consumers’ desire to complain and at the same time increases their loyalty towards a product or service.

Augustyn and Ho (1998:73) refer to the adage that, “on average, customer loyalty is worth ten times the price of a single purchase and if customers like the service, they will tell three people; if they do not like the service, they will tell eleven people”. In other words, dissatisfied consumers are much more likely to report their discontent to others (Machleit & Mantel, 2001). The idea that loyalty is worth far more than a single purchase is a well-accepted phenomenon in consumer research, in that a satisfied consumer is more likely to repurchase the product or service and remain loyal to the provider. This relationship is desired
by many organisations, essentially because creating loyalty amongst customers is more cost-effective than finding and persuading new customers.

Tourism organisations are also interested in the concept of customer loyalty, and many have implemented their own loyalty schemes. Empirical evidence indicates that obtaining tourists’ commitment to a destination may lead to reduced marketing costs and increased loyalty (e.g., Rittichainuwat et al., 2002; Yuksel, 2001). Ozgener and Iraz (2006) estimate that it is at least five times more cost-effective for an organisation to retain existing tourists than to acquire new tourists. Moreover, repeat tourists not only provide a constant source of income, but may also generate a positive word-of-mouth effect (Lau & McKercher, 2004).

Other studies also verify that satisfied tourists are more likely to engage in positive word-of-mouth (e.g., Anderson et al., 1994). Numerous studies have reported the positive effect of tourist satisfaction on loyalty and the increased likelihood of reusing the same services (e.g., Tomas, Scott, & Crompton, 2002; Tsaur, Chiu, & Wang, 2007). Overall, the large body of company loyalty schemes and consumer studies shows that there is abundant evidence for the positive relationships between tourists’ satisfaction and their revisit intentions, intentions to recommend and likelihood of complaining (Cole & Scott, 2004; Kozak, 2001).

A great deal of research has investigated the importance of understanding and maintaining consumer satisfaction across various industries, in particular the service industry. This study aims to further advance the research on consumer satisfaction in the tourism context. The aforementioned relationships between tourist satisfaction and consumer loyalty are included in the framework of the proposed TSI system. The conceptual model of the TSI
system is based on Oliver’s (1980) expectancy-disconfirmation framework, which is often applied in studies of consumer and tourist satisfaction (e.g., Chan et al., 2003). The framework is underpinned by the adaptation level theory, which suggests that an adapted standard determines the perception of a stimulus (Helson, 1964). Consumers develop expectations of products or services as an adaptation before purchasing them, and then compare the actual performance of the products or services with their expectations to form positive or negative disconfirmation. In this sense, satisfaction represents the consumer’s evaluation of the difference between his or her expectations and his or her perception of the performance of the actual product or service (Churchill & Surprenant, 1982). For instance, in a tourism setting, Chon (1989) indicates that recreational travellers, both during and after participating in a travel activity, may have feelings of satisfaction or dissatisfaction with the travel experience based on a comparison with previously held expectations and the perceived evaluative outcome of the experience.

As with many other consumer satisfaction studies, the post hoc measures of expectations used in this study are imperfect. However, obtaining data on tourists’ expectations before a visit is a difficult task. Aside from the practical obstacles, conceptually, expectations can be boundless and are often unique. For example, LeBlanc (1992) finds that consumer perceptions of service quality in travel agencies are determined by corporate image, competitiveness, courtesy, responsiveness, accessibility and advertising competence. Other influences, such as friends, consumer groups, the media and public institutions, may also help shape people’s expectations, all of which makes controlling for expectations an extremely challenging task. We acknowledge the limitations of our approach and focus on the fact that any differences found between the expectations and performance of a service may result in customer satisfaction or dissatisfaction.
Although higher expectations may increase the magnitude of disconfirmation, they may also increase the perceived performance (Yi, 1990). According to cognitive dissonance theory, when individuals perceive an inconsistency between two cognitions, they are in a state of psychological dissonance, which may be experienced as psychological discomfort (Festinger, 1957). Consumers tend to reduce this mental tension by changing their dissonant beliefs to make them more consistent. In the case of a disparity between expectations and perceived performance, customers may attempt to reduce the unpleasant tension by changing their perception of the performance of the product or service. In the tourism context, this implies that raising tourist expectations may increase perceived performance, which further enhances tourist satisfaction. Fornell et al. (1996) attest that there is a positive relationship between expectations and satisfaction. Bosque, Martín and Collado (2006) also confirm that tourist satisfaction is positively affected by tourist expectations.

Other scholars report that consumer satisfaction is also related to the value of the product or service, which in turn depends on the price paid for it (De Rust & Oliver, 1994). Perceived value can be regarded as an assessment of the utility of a product or service, which represents a trade-off between what is received (i.e., volume, quality and convenience) and what is given (i.e., money, time and effort) (Zeithaml, 1988). For example, the higher the quality in relation to the price paid, the greater the value perceived by consumers (Ostrowski, O’Brien, & Gordon, 1993). The positive relationship between perceived value and satisfaction has similarly been identified in the tourism field (Gallarza & Saura, 2006; Lee, Yoon, & Lee, 2007). Accordingly, this relationship is included in the framework of the proposed TSI system. The relationship between perceived performance and tourist satisfaction has also been well researched, with many studies indicating that consumer satisfaction is positively influenced
by perceptions of performance (e.g., Anderson & Sullivan, 1993; Churchill & Surprenant, 1982).

Oliver’s (1980) expectancy-disconfirmation framework has been the common theoretical foundation for the successful development of several consumer satisfaction indexes, such as the Swedish customer satisfaction barometer (Fornell, 1992) and the American customer satisfaction index (Fornell et al., 1996). Although the TSI framework proposed here shares the same theoretical foundation as these consumer satisfaction indexes at the individual product level, there are several dissimilarities at other levels, and thus the methodology requires some adjustment. Consumer satisfaction indexes mostly focus on domestically purchased consumer products. Although some of the index systems include tourism-related services, the consumers of these tourism services tend to be domestic households. Thus, insufficient attention has been paid to the full range of consumers of tourism services and facilities, especially in destinations where international tourists account for a high proportion of the consumers of tourism services and facilities.

Some of the consumer satisfaction index systems include both product-level indexes and aggregated overall satisfaction indexes, yet they only cover paid goods and services, and the prices of the products concerned are related to the aggregation scheme for calculating the overall satisfaction index (e.g., Chan et al., 2003). This means that free-of-charge services and facilities are excluded from the satisfaction evaluation. Given the importance of public services (such as immigration) and admission-free attractions (such as museums and public parks) to a tourist’s overall satisfaction with a destination, such systems are unable to provide a comprehensive evaluation of tourist satisfaction. Hence, this study aims to develop a new satisfaction index system that is able to generate a comprehensive evaluation of tourist
satisfaction with individual services, paid and free-of-charge, and the overall satisfaction of tourists with a destination. This evaluation system should be able to support the identification and explicit communication of cause-effect linkages of tourist satisfaction within each key tourism sector.

The proposed evaluation system developed in this study is also able to identify the contribution of the performance of individual sectors in its evaluation of overall tourist satisfaction. The system involves a two-stage evaluation at the sectoral and destination levels. As explained, the conceptual model of consumer satisfaction is applied to create the sectoral level of the tourist satisfaction index. However, the second stage of calculating the overall satisfaction index uses an innovative weighting scheme to allow the aggregation of the tourist satisfaction indexes with individual services, including non-paid services. In addition, tourists’ overall satisfaction with their encountered services (which are mostly manageable) and their satisfaction with the overall tourism experience at a destination (including controllable and non-controllable elements, such as the weather and culture) must be distinguished to enable clear managerial implications to be identified. Accordingly, this two-stage TSI system should effectively serve a destination’s need for continuous monitoring and improvement of tourism service performance and the management of tourist experiences.

METHOD

In the first step of the two-stage TSI system, six key service sectors related to tourism (i.e., hotels, restaurants, retail shops, attractions, transportation and immigration services) are examined using the conceptual model of consumer satisfaction. The second stage of the
evaluation system focuses on the structural relationships in the TSI model, and explores systematic variations across sectors and markets. The structural equation model that measures the hypothesised relationships needs to be carefully scrutinised, as it serves as the baseline model for the calculation of the index (see Figure 1). In addition to the formative measures, a component-based approach known as partial least squares (PLS) is used to estimate the sectoral models. PLS is an iterative procedure for estimating structural equation models that does not impose distributional assumptions on the data (Fornell et al., 1996). The model is expected to be applicable to various service sectors because the constructs therein are designed to provide the necessary level of generality. The multiple indicator approach is similarly sufficiently universal to be comparable across firms, industries, sectors and nations (Fornell et al., 1996). This assumption is examined through several steps, the first of which is to examine the diagnostic statistics used to evaluate the reliability and validity of the model across the six sectors.

(Insert Figure 1 about here)

The second step applies an aggregation model to synthesise the service performance metrics across source markets and tourism-related sectors to visualise their contributions to the performance of the destination as a whole. The aggregation model is equivalent to a multiple indicator and multiple cause model in PLS (Hardin, Chang, Fuller, & Torkzadeh, 2010) (see Figure 2). The indicators for the aggregate service satisfaction are variables of sectoral TSIs calculated from the sectoral model. The overall level of destination or experience satisfaction reflects the influence of certain non-service attributes of a destination, such as culture and climate. Hence, the aggregate service satisfaction index generates more useful managerial implications, because services can be managed, controlled and improved,
whereas there is little that practitioners can do about the climate or overall culture. Taken together, the aggregate service satisfaction index and the overall destination satisfaction index are a useful measure of tourist experience.

(Insert Figure 2 about here)

Empirically validating the interactions amongst the constructs is important to support the \textit{a priori} specified theoretical relationships. The tourist satisfaction construct is at the centre of the model and is combined with other related constructs to form the conceptual framework of the TSI model. All of the constructs are measured by two or three items, which are presented in Figure 1. Most of the measurement items are adapted from customer satisfaction index studies (e.g., Fornell et al., 1996; Chan et al., 2003). The wording was tailored to each specific service sector, with additional fitting required for the public sector. For example, the value of time spent is a more appropriate measure for public services because they are often free of charge. This is in line with the perceived value of customers’ overall assessment of the benefits obtained relative to the sacrifice made (Slater, 1997; Woodruff, 1997), either in effort, time or monetary value. The first item for loyalty was converted to switching costs so that the item measured loyalty as the likelihood of switching in the absence of switching costs, following the study of Bontis, Booker and Serenko (2007). The respondents thus rated the likelihood of substituting a service for an equivalent service if no effort or expenditure were involved.

The survey data were collected in Hong Kong, where the tourism industry has witnessed continuous growth over the past few decades and is one of the most important economic pillars of the region. Questionnaires were distributed at various strategic locations
that correspond to the sites surveyed by the Hong Kong Tourism Board. A quota sampling method ensured a representative sample of inbound tourists to Hong Kong. The quotas were set according to source market and demographic characteristics obtained from the authoritative tourist profile published annually by the Hong Kong Tourism Board. An intercept face-to-face survey method was used for the data collection.

The questionnaires were made available in a number of languages, including English, Chinese, Japanese and Korean. To ensure a high level of clarity and consistency between the English version and the other language versions, the questionnaire was translated using a double translation method (de Mooij, 1997). Each respondent evaluated his or her satisfaction, and the antecedents and consequences of that satisfaction (as suggested in Figure 1) in relation to two sectors that they had experienced during their stay in Hong Kong. The respondents also assessed their satisfaction with the services they experienced in the other four sectors and their overall satisfaction with Hong Kong. Eleven-point scales from 0 to 10 were used to allow the tourists to better discriminate their response to each survey question. The scales range from ‘extremely poor’ to ‘extremely good’ or from ‘completely disagree’ to ‘completely agree’. The data collection took place between May and August 2010, and in total 2760 responses covering six sectors across seven source markets were obtained.

**STUDY FINDINGS**

The sample is almost equally composed of men and women, and of first-time and repeat visitors. In total, 73.3% of the respondents were independent travellers, and 23.5% were travelling on package tours. Other demographic characteristics of the respondents, such as age and education, do not appear to deviate in any significant way from the population of
interest. Table 1 shows the descriptive statistics of the indicators for each construct. Across all sectors, the respondents’ evaluation of the variables is positive and the scores well above average. Although, negatively worded, the same is true for the items relating to complaint intentions. Reliability analysis helps to evaluate the level of internal consistency of the measurements of the reflective constructs. The indicators of the reflective constructs (Tourist Satisfaction, Perceived Performance, Expectations, Assessed Value) are reliable because all of the standardised indicator loadings for the six sectors are relatively large and positive, ranging from 0.771 to 0.968. Indicator loadings of 0.70 or more imply that there is more shared variance between the construct and its indicators than error variance (Hulland, 1999).

(Insert Table 1 about here)

Further tests illustrate and confirm that each reflective construct is reliable, as shown by the average variances extracted (see Table 2). For all six sectors examined, the average variances extracted are consistently above 70%, higher than the critical value of 50% recommended by Fornell (1992) and Fornell and Larcker (1981). This indicates that each reflective dimension and its respective indicators are strongly correlated (Chan et al., 2003). It is also important to examine the model’s performance in explaining the two most important strategic outcomes, satisfaction and loyalty. The model explains a considerable amount of the variance in the two constructs (see Table 2). For tourist satisfaction, the R-squares range from 0.64 for Attractions, to 0.73 for Hotels (average of 0.68). For loyalty, the R-squares range from 0.49 for Immigration services to 0.55 for Attractions (average of 0.55).

(Insert Table 2 about here)
As shown in Table 2, the Dillon-Goldstein’s ρ values are larger than 0.7 for all of the constructs across all sectoral models, which implies that all of the items within the same construct are unidimensional (Tenenhaus, Vinzi, Chatelin, & Lauro, 2005). The communality and redundancy coefficients are also presented in Table 2. These figures can be used in the same way as the R-square, as they reflect the relative amounts of explained variance for constructs and indicators (Guenzi, Georges, & Pardo, 2009). Tenenhaus et al. (2005) introduced a global fit measure for PLS path modelling that has been widely accepted (Guenzi, et al., 2009; Wetzels, Odekerken-Schroder, & van Oppen, 2009) and it is defined as the geometric mean of the average communality and the average R-square, which range between values of 0 and 1. The goodness-of-fit values range from 0.61 for Attractions and Transportation to 0.67 for Hotels (average of 0.64), which exceeds the cut-off value of 0.36 for large effect sizes of R-square (Wetzels et al., 2009) and allows us to conclude that the models perform well across all six sectors. It is also important to test whether the estimated path coefficients are significant and in the predicted directions. Bootstrapping, which is a nonparametric technique for estimating standard errors and approximate confidence, was used to test the significance of the relationships (Efron, 1988). The results are summarised in Table 3.

(Insert Table 3 about here)

**Structural Relationships**

All of the estimated paths from *Perceived Performance* to *Tourist Satisfaction* and from *Perceived Performance* to *Assessed Value* are supported across all six sectors. Clearly, perceived performance positively affects tourist satisfaction during service encounters. This
has also been found in other service contexts, such as hairstyling services (Jayanti & Jackson, 1991), healthcare services (Shaffer & Sherrell, 1997), hotel services (Voss, Paraguayan, & Grewal, 1998) and restaurant services (Yi & La, 2003). The positive relationship between perceived performance and assessed value is in line with findings in the literature. For example, Andreassen and Lindestad (1998) find the same relationship across four service settings: dental services, auto services, restaurants and hairstylists. The concurring results of this study imply that raising service performance is likely to enhance tourists’ satisfaction and their assessed value of the received services across all six service sectors. For instance, a one-point increase in the performance of hotels increases tourist satisfaction by 0.55 points and increases perceived value by 0.81 points (see the corresponding path coefficients in Table 3). Accordingly, increased service performance means that tourists perceive that they are obtaining good value for money.

The relationships between Expectations and Perceived Performance are significant. This result suggests that enhancing expectations has a positive effect on perceived performance. This backs up previous research that finds that increasing consumer expectations may raise the assessed performance of a product (Johnson, Anderson, & Fornell, 1995). Similarly, in the context of airline services, expectations have been found to have a significantly positive influence on perceived performance (Park, Robertson, & Wu, 2004).

This study identifies a negative relationship between Expectations and Tourist Satisfaction in most cases. Similar findings have been reported in other studies, as highlighted by Chan et al. (2003). These studies suggest that increasing expectations may have a weak impact or no impact at all on satisfaction (Anderson & Sullivan, 1993; Johnson et al., 1995; Johnson & Fornell, 1991), or may even yield decreased satisfaction (Yi, 1990). Some scholars
claim that the relationship between expectations and satisfaction may depend on the context (Cronin & Taylor, 1992; Hellier, Geursen, Carr, & Rickard, 2003; Spreng & Droge, 2001), and question the underlying assumptions of the satisfaction framework. Johnson (1998) states that the effects of expectations on satisfaction are weaker in a service context because the intangible nature of services makes information relating to expectations less concrete and less useful.

The results for the relationships between *Expectations* to *Assessed Value* are also unexpected, with only two paths being significant. One explanation for these results is that tourist expectations are less predictive because of the large variance between consumption and production factors (Anderson, 1994). The path between *Assessed Value* and *Tourist Satisfaction* is in the proposed positive direction and significant for all six sectors. This indicates that if tourists perceive a service to be good value for money or time spent, then their satisfaction levels are likely to increase. The influence of perceived value on overall customer satisfaction is also supported by several studies (Cronin, Brady, & Hult, 2000; Petrick & Backman, 2002).

The *Complaint Intentions* and *Loyalty* constructs are formative in nature, and show consistent sign structures of the estimated indicator weights or loadings across all sectors. The structural coefficients between *Tourist Satisfaction* and *Complaint Intentions* and between *Complaint Intentions* and *Loyalty* show mixed results. For the first relationship, the majority of the paths are significant. However, for the second relationship only two paths are significant. Previous research shows that the relationship between complaint behaviour and consumer loyalty is uncertain as, for example, it may depend on the effectiveness of complaint handling procedures (Fornell, 1992). In this study, the respondents evaluated their
intention to complain either to employees or to others. The means of these two variables vary between 1.67 and 1.71 across the six sectors, respectively, indicating that the respondents had no intention to complain. As expected, the majority of the relationships between Tourist Satisfaction and Complaint Intentions carry a negative sign, suggesting that increased satisfaction leads to a decrease in complaint behaviour.

When tourists have no intention of complaining, this should have a positive impact on their willingness to use services again and to create positive word-of-mouth. According to Hirschman’s (1970) exit-voice theory, the direct outcomes of increased consumer satisfaction are reduced complaint intention and increased customer loyalty (Fornell & Wernerfelt, 1988). When tourists are not satisfied, they have the choice of exiting (e.g., going to a competitor) or voicing their complaint. Hence, increased satisfaction should decrease the intention to complain, and at the same time enhance tourist loyalty.

As expected, the relationship between Tourist Satisfaction and Loyalty is positive across all six service sectors. This implies that greater tourist satisfaction results in greater tourist loyalty to the sector. Loyalty is the main dependent variable in the model due to its value as a proxy for profitability (Reichheld & Sasser, 1990). Numerous studies indicate that perceptions of service quality affect feelings of satisfaction, which then affect loyalty and post-purchase behaviour (Anderson & Sullivan, 1993; Cronin & Taylor, 1992; Oliver, 1980). Similar results have been found by other tourism researchers in the Hong Kong hotel industry (Choi & Chu, 2001), a golfing context (Petrick & Backman, 2002) and restaurant services (Tam, 2000).

Comparisons across Service Sectors
Although different service sectors are likely to share similar characteristics and serve the same tourists, benchmarking across sectors should be carried out with caution. The differences in the structure and nature of sectors may limit the extent to which one sector can enhance tourist satisfaction levels. Some researchers even argue that comparisons between sectors are psychologically problematic (Olander, 1977). Nevertheless, the cumulative satisfaction approach taken in this study provides a reliable performance benchmark for making broad based comparisons (Johnson, Herrmann, & Gustafsson, 2002). Fornell and Johnson (1993) argue that if observed differences in the variables can be explained by underlying differences amongst the industries themselves, then the differences are arguably systematic and meaningful. Scholars have adopted this argument to justify the use of similar frameworks to assess satisfaction across sectors and countries. For example, Johnson et al. (2002) successfully compared customer satisfaction between Sweden, Germany and the United States, and found systematic similarities, as well as differences, in sector satisfaction from country to country.

Another important finding is that methodological differences do not appear to limit the comparability of the satisfaction measures. Johnson and Nilsson (2002) successfully compared 188 firms from 30 industries, and Andreasen and Best (1977) successfully compared customer satisfaction and complaint behaviour across 35 categories. Examining cross-sector variance takes us back to the primary goal of the customer satisfaction index model. The first customer satisfaction barometer, which was developed in Sweden, was a government initiative to provide public agencies with the opportunity to benchmark their performance against private sector industries to help them to compete effectively in the open market (Johnson et al., 2002). Essentially, this served as a necessary step for the smooth
privatisation of some of these public organisations. The result of the initiative was that Swedish public agencies have, over time, approached the level of satisfaction provided by more competitive service industries (Johnson et al., 2002).

The gap analysis is based on the average of the measurement items. The gap represents the difference between the respondents’ expectations and their perceived performance of a service, and may result in either satisfaction or dissatisfaction. The figures for the gap analysis are all positive, which indicates that the perceived performance of the six service sectors exceeded the respondents’ expectations. The transportation sector managed to exceed the tourists’ expectations the most (by .57), followed by Attractions (by .31), Immigration (by .30) and Restaurants (by .23). Although the gap for Retail Shops and Hotels is the smallest (both by .22), the perceived performance of these sectors still exceeded the respondents’ expectations.

The TSI at the sectoral level is computed first using the model-implied weights. The computation follows the calculation introduced by Chan et al. (2003). They explain that PLS estimates the case values of each construct by the weighted aggregate values of its indicators, where the weights are the factor loadings for reflective indicators and regression coefficients for formative indicators after rescaling (Chin, 1998; Fornell & Cha, 1994). Hence, the estimated unstandardised weights (if unstandardised measurements are used) $\omega_{y_{31}}$, $\omega_{y_{32}}$ and $\omega_{y_{33}}$ for the three satisfaction indicators (overall satisfaction [$y_{31}$], confirmation of expectations [$y_{32}$] and comparison with ideal [$y_{33}$]) are used to estimate the TSI. The formula is as follows.
Tourist satisfaction with a particular sector equals the weighted average of the mean values of the three satisfaction indicators multiplied by a scaling constant of 10. Thus, each TSI is expressed on a comparable 0-100 scale. Essentially, the higher the respondents’ average score for the satisfaction questions, the higher the calculated level of tourist satisfaction for the sector. Across the six tourism-related sectors, the transportation sector has the highest index score of 78.73, followed by Attractions (75.57) and Immigration (72.85). The hotel sector is fourth, with an overall index score of 70.52. Retail Shops and Restaurants are in fifth and sixth places with overall index scores of 68.66 and 66.61, respectively.

The difference between the top three and bottom three sectors can be explained by many factors. Some of these factors are outlined by Anderson (1994), who notes that satisfaction is greater when levels of competition, differentiation, involvement or experience are high or when switching costs, ease of standardisation or ability to evaluate quality are low. As services are co-produced in the customer’s presence, at a time and in a place of the customer’s choosing and with the customer’s input, high levels of service performance are more difficult to achieve (Fornell & Johnson, 1993; Grönroos, 1990). This is particularly true for hotels, retail shops and restaurants, where the nature of the service encounter is different from that in the first three sectors. Hong Kong is well known as a shopping paradise and culinary centre, and it has a large number of hotels. As the competition within these sectors is very intense, it is much easier to switch providers than in the first three service sectors. Competition in the transportation, attractions and public services sectors in Hong Kong is limited in comparison.
The findings of this study contrast with the claim of Fornell et al. (1996) that customers are relative ‘hostages’ in monopolistic systems such as public services and transportation, and are forced to put up with high degrees of dissatisfaction due to the ‘take it or leave it’ nature of pricing. Their follow-up studies verify that customer satisfaction is lower amongst government agencies than in the private sector. However, in this study immigration and transportation services outperformed the other sectors. Although these public and semi-public services are subdued by a lack of competition, they are still able to generate entrepreneurial incentives to target market segments with services that are able to satisfy tourists’ needs.

Market conditions may encourage a competitive environment, but organisations can also be stimulated to be competitive by other means. For example, the Hong Kong Efficiency Unit, which was established in 1992, introduced several performance pledges to communicate to the public the standards of service that they could expect from each government agency. These measures brought about gradual improvements in public services, the economy and society. As a result of these pledges, several public and semi-public agencies received national awards in acknowledgement of their service performance. Moreover, many of them are now setting international standards. For example, the immigration department’s goal is to become the leading immigration service in the world in terms of effectiveness and efficiency. A similar trend is seen in the transportation sector. For example, the Kowloon Motor Bus company and the Mass Transit Railway Corporation in Hong Kong are now regarded as global leaders in public transportation.

*Overall Tourist Satisfaction Index*
This section illustrates the second stage of the TSI evaluation system. The aggregation model of the TSI is applied to estimate the aggregate service satisfaction and overall satisfaction with a destination. The idea of aggregate service satisfaction was originally proposed and empirically examined by Song, Li, van der Veen and Chen (2010). This study uses a similar concept of aggregate satisfaction, but the analysis has been simplified. In Song et al. (2010), overall tourist satisfaction is represented by the observed service sectors. In this study, in contrast, aggregate satisfaction with a sector is a construct that is measured by the levels of tourist satisfaction in each service sector, that is, the weighted average of the three satisfaction indicators for each sector.

As the aggregate service satisfaction construct is formative, the outer model on the left-hand side of the equation is similar to a multiple regression. The weights used to calculate the aggregate service satisfaction index are the outer weights, or regression weights, derived from the estimated multiple indicator and multiple cause model. This helps with the interpretation, in that the current weights are regression weights rather than factor loadings, and hence represent the influence of each service sector on the overall satisfaction level. These weights are then introduced in the following equation to obtain the overall TSI for Hong Kong based on the six measured service sectors.

Aggregate Service Satisfaction Index for Hong Kong: \(73.94\)

\[
= (7.5958 \times 0.1681 + 7.2651 \times 0.1380 + 7.4039 \times 0.1761 + 6.8817 \times 0.1103 + 6.9339 \times 0.1828 + 7.9418 \times 0.2246) \times 10.
\]

Overall satisfaction with the destination is estimated by building a reflective construct that its measured by its own three satisfaction indicators. Given its reflective nature, factor
loadings are adopted as the weights for this construct. The gap between aggregate service satisfaction and overall destination satisfaction is due to the non-service attributes of the destination, such as culture and climate, which contribute (mostly positively) to tourists’ overall satisfaction with their tourism experiences in Hong Kong. However, it is necessary to understand tourists’ overall satisfaction with their entire travel experience in a destination in addition to their aggregate satisfaction with manageable services.

Overall Destination Satisfaction Index for Hong Kong: **78.46**

\[
= (7.9809 \times 0.3394 + 7.6045 \times 0.3081 + 7.9280 \times 0.3525) \times 10.
\]

**CONCLUSION**

It is important to examine the structural relationships within a TSI model to identify critical issues. Overall, the model presented here appears able to address and evaluate the links between performance measures and strategic outcomes related to tourist satisfaction for all of the service sectors considered. By establishing a measure of tourist satisfaction that has reliable and valid links to strategic goals, the model may even help to instil a long-term market perspective in regulators, investors and other tourism stakeholders. Armed with the information obtained from the TSI system, organisations that cater for tourists can identify areas for further improvement and implement suitable procedures to enhance tourist satisfaction levels. Local residents may also benefit from such improvements, as several purpose-built tourism facilities are now open to them that improve their quality of life. Similarly, although the government supplies important services primarily for its citizens, tourists can also benefit from these services. In terms of creating synergy between public and private organisations, the model could be useful in predicting and monitoring the effects of
policy decisions on matters such as taxation, interest rates, deregulation, price ceilings and subsidies.

As demonstrated in the empirical analysis, the proposed TSI framework contains features that are capable of supporting benchmarking and various types of comparisons. Standardising the satisfaction scores (and the evaluation of other constructs in the model) scientifically allows comparisons across service sectors, across source markets and amongst destinations in which the same framework has been adopted. Accordingly, useful implications with regard to service performance improvements can be identified. The TSI framework is also able to track changes in the service performance of relevant sectors over time through the conducting of surveys and the calculation of the indexes on a regular basis, such as monthly, quarterly or annually. Monitoring the dynamic changes in the TSI scores will help to evaluate the success and effectiveness of relevant business strategies and government policies. It should be noted that although the importance of service quality is commonly recognised amongst governments and tourism practitioners, a commitment to high-quality service itself does not necessarily guarantee tourist satisfaction or repeat visits. Research indicates that other factors beyond service quality may also influence tourist satisfaction. Thus, further research should consider additional factors as part of the comparative and ongoing evaluation of tourist satisfaction in and across destinations.

Some limitations of this study should be noted. First, the post hoc measures of expectations are not flawless. Unfortunately, it is practically impossible to survey tourists about their expectations before their visit and survey the same respondents again about their perceived performance and satisfaction after their visit, particularly on a large scale. Second, due to the formative measurement of the complaint and loyalty constructs, the sector-level
satisfaction model would not have been identified by using the traditional maximum likelihood estimation method. Hence, the PLS approach was the automatic choice for this study, as with most previous customer satisfaction index studies. However, the PLS method also has its limitations, such as the potential underestimation of path coefficients and overestimation of factor loadings (Chin, 1995). Future research using alternative methods, such as the Bayesian approach, is thus needed to improve model estimation. Another potential extension of this study would be to investigate the relationship between the TSI and the financial performance of tourism-related firms and sectors, and of the tourism industry as a whole. Modelling longitudinal data might also provide insights into the dynamics of tourist satisfaction.
REFERENCES


Table 1. Descriptive Statistics of the Key Constructs

<table>
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<th>Construct</th>
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Note: 1. Scale ranges from: 0 (Lowest) to 10 (Highest), with 5 as the mid-point (Neutral). 2. The correlations between the indicators are available from the authors upon request.
<table>
<thead>
<tr>
<th>Model</th>
<th>Diagnostic Statistics</th>
<th>Expectations</th>
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</table>

Note: 1. The Dillon-Goldstein’s ρ and AVE are not applicable to Complaints and Loyalty, as these constructs are formative. 2. The R-square and the redundancy coefficient are not applicable to Expectations, as it is an exogenous variable. 3. The diagnostic statistics for the other models are available from the authors upon request.
### Table 3. Path Coefficients of the Structural Equation Models by Sector

<table>
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<tr>
<th>Sector</th>
<th>Expectations to Perceived Performance</th>
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<th>Perceived Performance to Assessed Value</th>
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<tr>
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<td>-0.06</td>
<td>0.02</td>
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</table>

### Table 3. Path Coefficients of the Structural Equation Models by Sector (cont.)

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<tr>
<th>Sector</th>
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<th>Assessed Value To Loyalty</th>
<th>Complaint Intentions to Tourist Satisfaction</th>
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<td>0.42**</td>
<td>-0.13**</td>
</tr>
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</table>

**p < .01, *p < .05.
Figure 1. Theoretical Framework of the Tourism Satisfaction Index at the Sectoral Level
Figure 2. Aggregation Model of the Tourist Satisfaction Index at the Overall Level, with Outer Weights, Loadings and Paths