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A multi-group analysis of social media engagement and loyalty constructs between full-service and low-cost carriers in Hong Kong

Abstract

This study investigates the factors that influence customer loyalty to full-service carriers and low-cost carriers in the Hong Kong airline industry. A hypothesis model is proposed to examine the relationship of various drivers of customer loyalty. In this study, engagement in social media was used to assess the effect of advertising, while the impacts of perceived service quality were considered to measure the effect on perceived value, and their impacts on customer satisfaction and loyalty. Three hundred and fifty-six questionnaires were distributed at the Hong Kong International Airport to collect data. The multi-group analysis was conducted to evaluate the hypothesis model with two groups of passengers. The results confirmed that social media engagement, perceived service quality, and perceived value have an incidental relationship to customer satisfaction. Media engagement and service quality are the strong predictors of attitudinal and behavioural loyalty in low-cost carriers. Interestingly, our findings show that the two groups of passengers have notable differences regarding loyalty construction, which adequately explain how passengers have different service expectations and needs.

Keywords: Perceived value; multi-group analysis; customer loyalty; social media engagement; airline industry; structural equation modelling

1. Introduction

Due to the increasingly competitive market in the airline industry, being able to build and keep maintain customer loyalty is essential for maintaining a stable market share and revenue (Akamavi et al., 2015; Cooil et al., 2007; Wirtz et al., 2007), leading to a sustainable competitive advantage (Min and Joo, 2016; Woodruff, 1997). It is vital for airlines to distinguish their uniqueness compared to their competitors' service quality and to establish a strong relationship with their loyal customers. The factors affecting the purchasing decision of airline service consists of the channel of purchase, corporate image, word of mouth, and service quality (Crosby and Stephens, 1987). It is believed that customers evaluate their choices and preferences before making a rational decision (Crosby, 1991). Customer experience in the airline industry represents passenger interactions with an airline during a whole journey, including pre-flight, in-flight and after-flight.

Customer satisfaction and profit earning are strongly correlated through delivering an appropriate degree of service quality (Anderson et al., 1997). With the purpose of generating a substantial profit and maintaining customer relationships, gaining customer loyalty is the ultimate goal, which leads to the long-term success of airline services (Anderson and Mittal, 2000; Baker, 2013). Loyalty refers to the changing of customer purchasing behaviour from a favourable tendency to repurchase commitment as a prior procedure to the action of buying (Oliver, 2014). The loyalty constructs may deviate regarding the formulation of their service level, business structure and pricing strategies (Kos Koklic et al., 2017). In order to maximise the revenue and Return on Investment (ROI), airlines must seize market share and compete with each other using different marketing strategies. Typically, the competition between Full-Service Carriers (FSCs) and Low-Cost Carriers (LCCs) has increased recently. FSCs offer complementary service development and enhancement, while LCCs provide no-frills basic services and allow add-on services on request (Chiou and Chen, 2010; Pels et al., 2009).

Determining passengers' expectations assist service providers to recognise passengers' needs and wants. High customer satisfaction can be achieved by delivering a high quality of service. User groups' preferences are of considerable interest to airlines as user groups perceive service quality differently. It is essential and critical to evaluate notable differences between FSCs and LCCs in regard to users' expectations in order to achieve a greater understanding of passengers' requirements (Leong et al., 2015).

Numerous scholars have studied the different determinants of perceived value, customer satisfaction and loyalty between FSCs and LCCs. Chiou and Chen (2010) investigated the factors influencing the service value between FSCs and LCCs and concluded that service perception has a significant association with customer satisfaction. Curras-Perez and Sanchez-Garcia (2016) found that the formulation of company commitment is strongly related to the trust and identification in FSC companies in regard to post-purchase behaviour. Kos Koklic et al. (2017) indicated that the degree of satisfaction for LCC airlines is determined by personal quality rather than airline tangibility. They asserted that the loyalty constructs vary between FSCs and LCCs. Loureiro and Fialho (2017) further investigated the predictors of affective commitment and trust according to the service components of personnel quality and flight ambience. Rajaguru (2016) identified that the competition between FSCs and LCCs is not limited to the value for money, but extends to service quality. The emergence of LCC business does not give rise to the failure of FSC business, but seizes market share. Apparently, neither FSCs nor LCCs should go beyond price competitions to retain and develop sustainable competitive advantages (Akamavi et al., 2015). Therefore, addressing different factors affecting perceived value, and their impacts on customer satisfaction and loyalty were the major initiative in this research. Given different business models in FSCs and LCCs, the expected influencing factors have a different weight of impact on the loyalty construct. Thus, this research attempted to investigate and address the different factors affecting customer loyalty through Multiple Group Analysis (MGA) between FSC and LCC customers.

This study aims to examine the impacts of social media engagement, perceived service quality, perceived value and customer satisfaction on passenger loyalty on FSCs and LCCs by using Structural Equation Modelling (SEM). Current research focuses on either attitudinal (Forgas et al., 2010) or behavioural loyalty (Chang and Hung, 2013). Attitudinal commitment and repurchase intentions of customers rank importantly in long-term revenue management. Also, the effect of media on brand loyalty should not be neglected (Laroche et al., 2012; McQuail, 1977). In this research, social media, attitudinal and behavioural loyalty were, therefore, considered in the hypothesis model. The survey was conducted with passengers who had taken a flight (FSC or LCC) and departed from Hong Kong International Airport. The data collection was conducted at a different time point from June 2016 to January 2017. Questionnaires were distributed at the exit of the departure hall of Hong Kong International Airport.

The rest of this paper is organised as follow: In section 2, we describe the theoretical background of the SERVQUAL model and presents the hypothesis model. The research methodology is presented in Section 3. Section 4 outlines the analysis of the survey results. The research findings and discussion are presented in Section 5. Finally, the conclusions and future work are covered in the last section.

2. Theoretical background

Airline image is an intangible asset, and it plays a major role in attracting customers. It is a unique characteristic of each airline to distinguish itself from its rivals. It is known as the impression of the corporate reflecting in customers' perceptions (Wallin Andreassen and Lindestad, 1998). A passenger's choice of the airline by considering its service is influenced by its corporate image (Zins, 2001). Corporate image is a crucial factor affecting brand loyalty, customer relations and repeats patronage (Hussain et al., 2015; Wallin Andreassen and Lindestad, 1998). Usually, social media engagement links the corporate reputation and perceived value of a service. LCCs attract lower customer loyalty when their corporate image is the main consideration for a customer to choose an airline (Chang and Hung, 2013). Park et al. (2004) stated that airline image is positively associated with behavioural intention. Nowadays, airlines try to employ social media as one of their advertising platforms (Dijkmans et al., 2015). Social media engagement may be one of the strong determinants of the expectation of service quality and loyalty. We normally have a higher service quality expectation of FSCs as FSC airlines put a great deal of effort into their media marketing. This has led to a major need to evaluate the effectiveness of social media engagement. As for LCC airlines, price promotions have become more common in order to compete with FSCs. Therefore, the research included the SERVQUAL model and the effect of engagement in social media as shown in **Figure 1**.

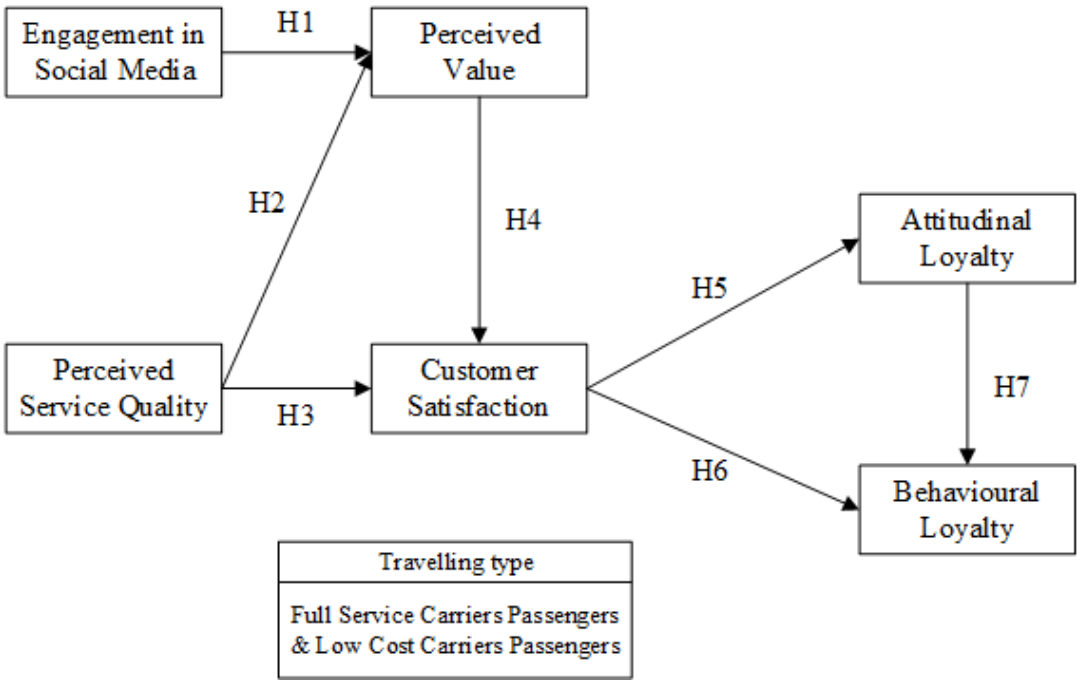

Figure 1. A theoretical model for airline loyalty

2.1. Antecedents of perceived value

Word of Mouth (WOM) is determined as information flow regarding the ownership, usage or characteristics of particular companies, services or products from one customer to another (Saha and Theingi, 2009). Customer behavioural intention and satisfaction level will be affected by WOM if the customer requires a high degree of involvement in a service (Arndt, 1967; Brown and Reingen, 1987; Rosenbaum-Elliott et al., 2015). Limited empirical work has been conducted on the relationship between social media and customer loyalty. Such research typically includes social media as a determinant of customer loyalty, since social media are the major channel of WOM. Loyal customers are willing to spread positive WOM while dissatisfied customers

tend to have negative comments on the social media regarding the service (Castronovo and Huang, 2012).

Negative WOM is harmful to an airline's reputation and image, which leads to poor profitability as a result. Negative feelings and behaviour can be expressed and delivered by dissatisfied customers through different channels. In the prosperous Internet era, the fast expansion of WOM can seriously influence a company's profitability. Gillin and Moore (2009) stated that the influencer would spread negative comments to ten individuals in traditional marketing. With the tool of social media, this number can grow to ten million (Mangold and Faulds, 2009). The power of social media has a considerable effect on building a positive corporate image via social media. Kim and Lee (2011) shared that WOM does affect the repurchase intention decision of LCC passengers.

Social media refers to the platforms for customer-generated content such as social networks, blogs and virtual communities like Facebook, Twitter, and Instagram (Gretzel, 2006; Pan et al., 2007). A Facebook user has 130 friends on average, and 15% of them will become a customer when there is a product or service recommended by a friend on the social network (ComScore, 2011). According to Kohli et al. (2015), the WOM spread by social media users has significant power. Travel opinions and comments shared on social media are considered to be more reliable and credible than reviews given by professionals and marketers (Fotis et al., 2012; Gretzel and Yoo, 2008). Passengers' opinions are regarded as a "quality warranty stamp" (Fundin and Bergman, 2003). With the broad adoption of social media, information spreading is much faster than that by using mass media (Mangold & Faulds, 2009). Thereby, the following hypothesis is suggested:

H 1. There is a positive relationship between engagement in social media and perceived value.

Perceived value is an equity theory referring to the consideration of the percentage of consequence or input by customers and service providers (Chen, 2008; Forgas et al., 2010). It can be interpreted as a trade-off between the perception of cost and perception of benefits. Service quality positively and significantly affects perceived value, as suggested by numerous studies (Kuo et al., 2009; Petrick and Backman, 2002; Zeithaml, 1988a). According to Hussain et al. (2015)'s work, the higher perceived value is led by offering quality services. Indeed, there is a research report indicating that quality of service is a key determinant of perceived value (Cronin et al., 2000; Parasuraman and Dhruv, 2000). Therefore, the following hypothesis is proposed:

H 2. There is a positive relationship between perceived service quality and perceived value.

2.2. Antecedents of customer satisfaction

Customer satisfaction refers to customers' overall subjective post-purchase assessment about a service or product, according to their expectation of pre-purchase and experience with a particular organisation (Kim and Lee, 2011). It is a vital determinant of and strongly impacts on behavioural intentions (Baker and Crompton, 2000; Westaby, 2005). "The customer is always right" is a slogan showing the superior priority of the customer and the significance of customer satisfaction (Fecikova, 2004). Customer satisfaction is becoming a popular study area in marketing since it is a critical factor in achieving business goals (Munusamy and Chelliah, 2011).

In a service industry like an airline, customer satisfaction is a key issue of interest since retaining customers is the major and significant goal in addition to acquiring new potential customers. Airlines can gain various benefits from high customer satisfaction, such as maintaining strong relationships with loyal customers, providing a sound basis for repurchase activities, retaining strong customer loyalty, promoting the airline by recommendation and WOM, creating a positive view of corporate image and finally increasing the airline's profits (Park et al., 2005; Rizan, 2010). The antecedent experience is usually the factor affecting the repurchase decision from the same company (Lin and Wang, 2006; Zeithaml et al., 1996). Fulfilling customer needs and wants eventually increase loyalty (Forgas et al., 2010).

Kim and Lee (2011) investigated the perceived service quality for LCC passengers to review the difference between expectations of service and perceptions of actual delivery of services. Perceived service quality indicates the passenger's expectation regarding service quality. However, a discrepancy may occur when passengers overestimate the actual service performance (Chen, 2008). Service quality has also been extensively acknowledged as an antecedent of the fulfilment of passengers' requirements in the airline industry (Chen, 2008; Park et al., 2004). If passengers receive service is better than expected, customer satisfaction ensues. On the contrary, customer dissatisfaction occurs when service quality is worse than expected (Parasuraman et al., 1985; Saravanan and Rao, 2007). We, therefore, propose that service quality will exert a positive effect on customer satisfaction.

H 3. There is a positive relationship between perceived service quality and customer satisfaction.

As stated by Bolton and Lemon (1999), the concept of equity involves the customer evaluating the worth and equitableness of offering from the cost perspective. It can also be defined as a customer's comprehensive evaluation of the utility of a service or product in relation to the customer's perception of perceived cost and benefits (Zeithaml, 1988b). In simple terms, the perceived value can be interpreted as a trade-off between loss and gain (Zeithaml, 1988b). Numerous studies have proposed that perceived value has a significant association with satisfaction, also being a precedent of satisfaction (Cronin et al., 2000; Forgas et al., 2010; McDougall and Levesque, 2000), which results in behavioural intentions (McDougall and Levesque, 2000). When customer perception of quality of services exceeds the costs of acquiring the service, higher perceptions of service value and greater customer satisfaction will occur (Tam, 2004). Tam (2004) studied the connection between perceived value with customer satisfaction by using an integrative model in the restaurant industry. Chen (2008) explored the relationship between perceived value and overall satisfaction in applying SEM in the Taiwan airline industry. The results from the literature consistently prove that perceived value and satisfaction are positively correlated. Therefore, the hypothesis below is proposed:

H 4. Perceived value has a significant impact on customer satisfaction.

2.3. Antecedents of loyalty

Loyalty is the highest level of commitment, which represents the previous step of purchase action from a favourable tendency to a repurchase commitment (Oliver, 2014). Customer loyalty involving both attitudinal and behavioural dimensions has four key stages: conative loyalty, affective loyalty, cognitive loyalty and behaviour loyalty (Oliver, 2014). Attitudinal loyalty goes through the first three stages (conative, affective and

cognitive), while behavioural loyalty is considered to be the result of this process (Oliver, 2014). Price, quality and loyalty programmes of airlines are regarded as conative loyalty, which has the weakest connection with loyalty. These elements are easy for a competitor to surpass, and affective loyalty is considered to be the beginning phase of real loyalty since emotional ties are constructed between the customer and company in this phase that rivals find difficult to break (Moliner et al., 2007).

2.3.1. Attitudinal loyalty

Attitudinal loyalty implies a degree of favourable disposition to a particular company (Chaudhuri and Holbrook, 2001). Forgas et al. (2010) surveyed passengers who had flown from London to Barcelona on three different airlines. The technique of SEM was applied to recognise the antecedent of loyalty in airline users. The survey results discovered that attitude loyalty is driven by satisfaction.

2.3.2. Behavioural Loyalty

Behavioural loyalty refers to recommendations and re-purchases of a brand (Chaudhuri and Holbrook, 2001). Chang and Hung (2013) adopted behavioural loyalty to assess the repurchase intention in LCC passengers. Behavioural loyalty shows the real loyalty of a consumer since the consumer will take action to repurchase. It is also a higher level of promise than attitudinal loyalty. Besides, Chen (2008) and Kim and Lee (2011) claimed that customer satisfaction has a positive influence on consumer repurchase intention. When consumers are satisfied with the service performance, they intend to repurchase from the same company in the future (Chou, 2015). The repurchase intentions and company profitability can be predicted by the degree of customer satisfaction (Jayawardhena et al., 2007). Reichheld and Sasser (1990) discovered that company profit could be increased by 25 – 85% by improving the customer retention rate by 5%. Gupta et al. (2004) stated that the result of a 5% increase in company profit is influenced by a 1% increase in retaining customers. With the aim of maximising the profit, an airline should aim at achieving a zero customer churn rate. Bandyopadhyay and Martell (2007) evaluated the relationship between attitudinal and behavioural loyalty, as the hypothesis provides managerial insights into the formulation of loyalty and possible reaction to company offers. With the support of the literature, it is reasonable to hypothesise that:

H 5. Customer satisfaction is positively related to attitudinal loyalty.
H 6. Customer satisfaction is positively related to behavioural loyalty.
H 7. Attitudinal loyalty is positively related to behavioural loyalty.

2.4. Moderating effect of the airline type

FSCs provide not only transportation services but also a full range of services from pre-flight to after-flight, and also establish loyalty programmes to retain customers. The package of FSC services usually offers passengers in-flight entertainment, beverages, unchangeable baggage allowances and pre-assigned seat allocation. FSCs concentrate on the enhancement of service quality to attract potential customers and retain current customers, while LCCs provide a relatively low-priced ticket with no-frills services and restrictions on baggage allowances. The market share of LCCs is increasing remarkably, and it has reformed the competitive environment within the liberalised airline market (Lin and Huang, 2015). Based on differentiated business strategies between FCSs and LCCs, we infer that the construction of customer satisfaction in the airline industry depends on the airline type. Chiou and Chen (2010) illustrated that the formulation of service

quality and loyalty in LCCs and FSCs varies. For instance, LCC passengers are more price than service quality sensitive, while FSC passengers have higher expectations regarding the service quality. FSC airlines are still dominant players in the market. However, Fu et al. (2015) stated that LCC airlines have the potential to directly compete with the others.

The comparison of the loyalty constructs between FSCs and LCCs can be accessed by using moderating effect of the airline type. The moderator helps to identify the significant effect on the direction of the relationships (Baron and Kenny, 1986). Although no research has examined the airline type as moderator to show the effect on perceived value between FSCs and LCCs, previous netnography research and viewpoint paper have illustrated that LCC airlines tend to engage in social media in their promotional marketing mix (Hvass and Munar, 2012; Leung et al., 2013; Mangold and Faulds, 2009). In this connection, we expected that the effect of engagement in social media on the perceived value in the case of LCCs would be stronger than the in the case of FSCs. Investigating the discrepancy in factors affecting passengers' loyalty may strengthen their marketing strategies and direction according to FSC and LCC roles in the market. Therefore, we propose the following hypotheses:

H8a. The effect of social media engagement on perceived value depends on the airline type.
H8b. The effect of perceived value on perceived service quality depends on the airline type.
H8c. The effect of perceived value on customer satisfaction depends on the airline type.
H8d. The effect of perceived service quality on customer satisfaction depends on the airline type.
H8e. The effect of customer satisfaction on attitudinal loyalty depends on the airline type.
H8f. The effect of customer satisfaction on behavioural loyalty depends on the airline type.
H8g. The effect of attitudinal loyalty on behavioural loyalty depends on the airline type.

3. Methodology and data analysis

3.1. Data collection and sampling

A total of 400 questionnaires were distributed to passengers outside Terminal 1 at Hong Kong International Airport from June 2016 - January 2017, about nine months. The questionnaire was designed for passengers who had just taken a flight. We asked the respondents to complete the questionnaire regarding the general perception of FSCs or LCCs in the recent one year. In this research, we attempted to review the similarity and discrepancy between FSC and LCC passengers in the hypothesis model. In order to avoid the possibility that the same respondents answered both questionnaires for FSC and LCC passengers, we carefully recruited the respondents according to our target sample. We considered only FSC or LCC participants in each round of the survey which was conducted in the departure hall of the Hong Kong International Airport. Participation was voluntary, anonymous and confidential. 382 surveys were completed and returned to the interviewers (a raw response rate of 95.5%). Due to missing data and incomplete responses, 26 questionnaires were excluded from the analysis. A total of 356 questionnaires qualified for the data analysis in this study.

Table 1 shows the descriptive statistics of the respondents. There were 356 qualified respondents (204 males, 57.30% and 152 females, 42.70%). The majority age group of participates fell into the group of 21-40 (n=142, 39.89% aged 21-30 and n=114, 32.02% aged 31-40). The majority had a Bachelor Degree or above (n= 213, 59.83%). The collected data had a fair distribution in the airline business model (n=173, 48.60% for FSCs and

n=183, 51.40% for LCCs). The majority of respondents travelled for leisure purposes (n=315, 88.48%). Around half (n=177, 49.72%) had travelled 1-2 times in the previous 12 months. **Appendix A** presents the mean and standard deviation of measurements for full, FSC and LCC model.

Table 1

Description of the respondents' characteristics ($N = 356$)

	Total sample (n=356)		Full-Service Carrier Passengers (n=173)		Low-Cost Carrier Passengers (n=183)	
Attributes	Freq.	Percent	Freq.	Percent	Freq.	Percent
Gender						
Male	204	57.30	106	61.27	85	46.45
Female	152	42.70	67	38.73	98	53.55
Age						
20 or below	51	14.33	39	22.54	12	6.56
21-30	142	39.89	74	42.77	68	37.16
31-40	114	32.02	42	24.28	72	39.34
41-50	20	5.62	8	4.62	12	6.56
51-60	19	5.34	6	3.47	13	7.10
60 or above	10	2.81	4	2.31	6	3.28
Travel Purpose						
Business	21	5.90	13	7.51	8	4.37
Leisure	315	88.48	150	86.71	165	90.16
Study Tutor / Academic Conference	20	5.62	10	5.78	10	5.46
Education Level						
Secondary School or below	58	16.29	34	19.65	24	13.11
Associate Degree / Higher Diploma	85	23.88	44	25.43	41	22.40
Bachelor Degree	189	53.09	80	46.24	109	59.56
Postgraduate Degree or above	24	6.74	15	8.67	9	4.92

Freq.: Frequency; Percent: Percentage (%)

3.2. Measures

A theoretical model was developed to measure airline customer loyalty with six constructs for both FSCs and LCCs. It was assumed that the relationships would be positive. The questionnaire was designed according to a multi-item measurement scale, and all the measured items were evaluated on a 7-point Likert-type scale, where 1 indicated “strongly disagree” and 7 indicated “strongly agree”, and were taken from previous studies (Chen, 2008; Leong et al., 2015; Park et al., 2004). Perceived service quality in the airline industry was examined in this study with 10 measurement items from Park et al. (2004) in various aspects. The engagement in social media focused on the effect of social media with three items as social media serving as a direct channel to engage customers with offers, promotions and advertisements from Kim and Ko (2012). Perceived value (3 items), customer satisfaction (2 items), behavioural loyalty (2 items) and attitudinal loyalty (2 items) were measured separately and were adapted from past studies of Kim and Lee (2011). The analysis was conducted with the software *IBM SPSS Statistics 22* and *IBM SPSS Amos 21.0.0*.

4. Results and discussion

4.1. Reliability and validity

Convergent validity and the measurement reliability of data were assessed by computing Cronbach's alpha (α), Composite Reliability (CR), Average Variance Extracted (AVE) and the standardised factor loading of the measurement items. Hair (2009) suggested that the score for each measurement should be acceptable with the following criteria: Standardised factor loading should be greater than 0.700; Cronbach's alpha should be greater than 0.700; composite reliability should be higher than 0.800 and AVE should be greater than 0.500. **Table 2** summarises the results of confirmatory analysis of the constructs and measurement items. Each factor was shown to have sufficient internal consistency. Based on the analysis, no items were removed from the item pool to achieve a higher level of internal consistency based on the measurement of Cronbach's alpha. The range of the Cronbach's alpha of each factor was loaded between 0.753 and 0.917. The CR varied between 0.749 and 0.831, while AVE presented the value between 0.500 and 0.712. Thus, the measurements in the hypothesis model were valid and reliable. Therefore, the proposed construct was deemed appropriate.

Table 2

Confirmatory factor analysis: standardised factor loading, Cronbach's alpha, composite reliabilities and average variance extracted

Factors (Internal Consistency)	Number of items	Number of items deleted	Standardised factor loading	α	C.R.	AVE
Attitudinal Loyalty	2	0		0.827	0.831	0.712
AL1: I will recommend airline X to my friends, family members and relatives.			0.903			
AL2: I think that I have built a personal relationship with the airline X.			0.780			
Behavioural Loyalty	2	0		0.814	0.826	0.706
BL1: For my next journey, I will repurchase from airline X.			0.934			
BL2: I will consider airline X as the first priority.			0.735			
Customer Satisfaction	2	0		0.810	0.810	0.681
CS1: I am satisfied with the overall operating performance of airline X.			0.834			
CS2: The service offered by airline X satisfied my expectation.			0.818			
Perceived Value	3	0		0.753	0.749	0.500
PV1: Airline X provides a ticket distribution channel.			0.735			
PV2: The ticket price is fair according to their service.			0.634			
PV3: The service provided by airline X is worth what I have paid (cost, time and effort)			0.746			
Service Quality	10	0		0.917	0.909	0.502
SQ1: The appearance of airline X's employees is neat and tidy.			0.664			
SQ2: Employees of airline X are courteous.			0.649			

SQ3: Employees of airline X are confident to answer my questions and make me feel comfortable.			0.716			
SQ4: I feel confident with airline X as it can provide timely solutions.			0.728			
SQ5: Airline X's service is reliable.			0.830			
SQ6: Employees of airline X are well trained.			0.693			
SQ7: Employees of airline X are always willing to help.			0.701			
SQ8: Employees of airline X offer a timely response and service to my requests.			0.676			
SQ9: Customer services provided by airline X are standardised.			0.663			
SQ10: Employees of airline X understand your specific needs and concerns.			0.748			
Engagement in social media	3	0		0.798	0.816	0.600
SM1: A airline X's social platform provides sufficient information and offers.			0.828			
SM2: The information on social media provided by airline X makes me feel confident about its service quality.			0.838			
SM3: I believe that social media are an excellent channel for airline X to promote its services.			0.641			

α: Cronbach's Alpha; C.R.: Composite Reliability; AVE: Average Variance Extracted

4.2. Measurement models

To measure the fitness of the data collected, model fit indices were considered to demonstrate the adequacy and the validity of the measures. In the measures of model fitness, the p-value of the x^2 statistic should be less than 0.05. However, Byrne (2016) suggested that only assessing the x^2 may be inappropriate for empirical research as it is based on the theory of central x^2 distribution. **Table 3** presents other model fit indicators to support the hypothesis model. The acceptable values of the model fit indices are shown as follows: the $p\ value$ is acceptable between 0.05 and 1.00 and excellent below 0.05 (Hoyle, 1995); the x^2/df is acceptable when below 3 (Kline, 2015); Comparative Fit Index (GFI) is acceptable with the value equal to/above 0.900 (Bentler, 1990); Tucker-Lewis Index (TLI) with a value geater than 0.900 represents a well fitting (Hoyle, 1995); Root Mean Square Error of Approximation (RMSEA) is suggested to be equal to/below 0.080 (Hair, 2009) and Standardised Root Mean Square Residual (SRMR) is satisfied with the value below 0.100 (Kline, 2015). Testing measurement invariance in MGA offers a more rigid statistical analysis, lower value of Akaike Information Criterion (AIC) in MGA indicates a compensation between fit and complexity (van de Schoot et al., 2012). In accordance with the above measurement, the measurement model is adequate as stated in **Table 3** and **Table 4**.

4.3. Structural models

The hypotheses were tested through a structural model with a combined sample and separated sample of FSCs and LCCs (Hartmann et al., 2017). A structural model using a combined sample presents a good fit as stated in **Table 3**. The model fit indices of the separated structural models using FSC and LCC fitted appropriately.

Table 3

Measures of model fitness

	x^2	df	x^2/df	p-value	CFI	TLI	RMSEA	SRMR	AIC
Measurement model	495.328	186	2.663	<0.001	0.941	0.926	0.068	0.0483	629.328
Structural model using a combined sample	524.556	193	2.718	<0.001	0.936	0.915	0.070	0.0441	683.673
Structural model using FSC group	437.514	193	2.267	<0.001	0.910	0.895	0.086	0.0610	557.614
Structural model using LCC group	433.428	193	2.246	<0.001	0.911	0.894	0.083	0.0599	553.428

The testing for measurement invariance follows the approach from van de Schoot et al. (2012)'s work. A set of models was evaluated in the test, including (1) default model with unconstrained factor loadings and intercepts, (2) factors loadings are equal across groups, (3) intercepts are equal across groups, (4) factors loadings and intercepts are equal across groups and (5) residual variances are fixed to be equal across groups. **Table 4** summarises the results of the measurement invariance of the set of models. Excepts the model with the fixed residual variances across the group is not supported, other models obtain a good model fit. van de Schoot et al. (2012) suggested that the model with lower information criterion in the testing of measurement invariance is preferable. The default model has the lowest AIC value. Hence, the results indicated that the default model has the best trade-off between model fit and complexity.

Table 4

Results of measurement invariance

Multiple group analysis	x^2	df	x^2/df	p-value	CFI	TLI	RMSEA	SRMR	AIC
Default	870.947	386	2.256	<0.001	0.911	0.912	0.060	0.0610	1110.947
Factor loadings are equal across groups	933.106	402	2.321	<0.001	0.902	0.903	0.061	0.0655	1141.106
Intercepts are equal across groups	920.377	393	2.342	<0.001	0.903	0.904	0.062	0.0621	1146.377
Factors loadings and intercepts are equal acoss groups	952.405	412	2.312	<0.001	0.901	0.901	0.061	0.0660	1140.405
Residual variances are fixed to be equal across groups	981.848	416	2.360	<0.001	0.896	0.897	0.062	0.0647	1161.848

4.4. Hypothesis testing using a non-discriminated sample

Figure 2 and **Table 5** present the estimated path coefficient and hypotheses results for the relationships of the proposed model using the non-discriminated sample. The standardised beta coefficients (β) were assessed.

We observed that all paths were supported and significant ($p < 0.01$).

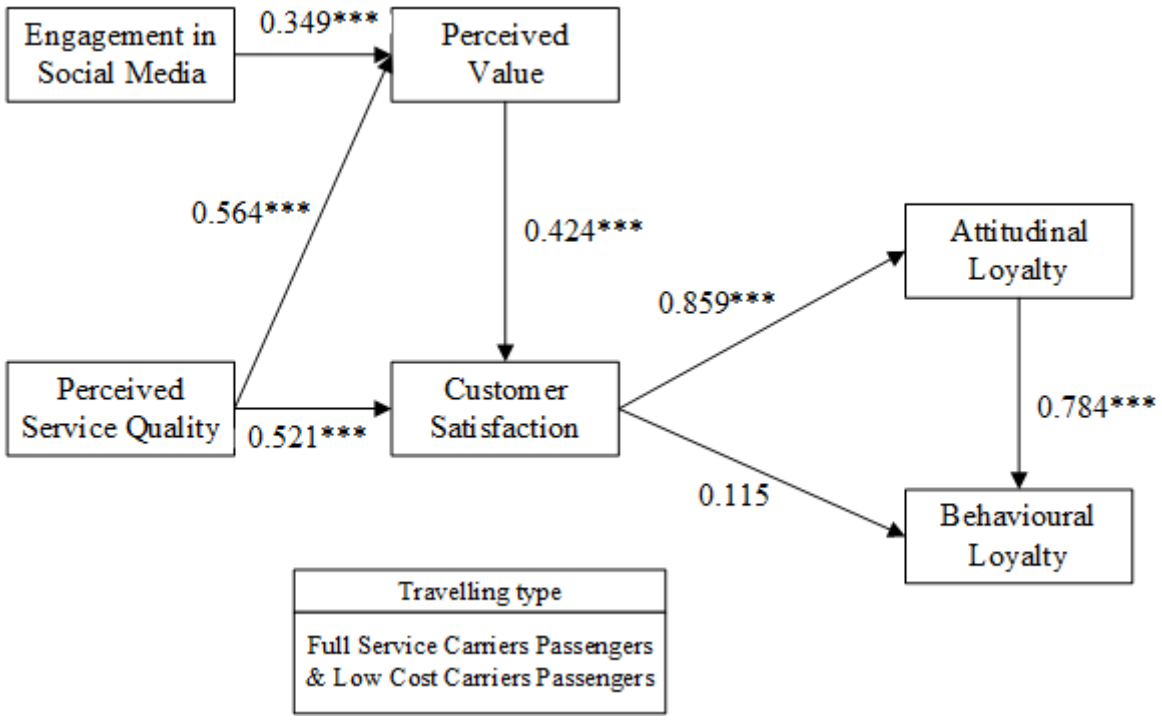

Figure 2. SEM result of structural equation modelling for the airline industry

Table 5

Summary of the hypothesis testing results for the airline industry in Hong Kong

Hypothesis	Path	β	Sign.	Result
Hypothesis 1	Media engagement → Perceived value	0.349	<0.01	Accepted
Hypothesis 2	Perceived service quality → Perceived value	0.564	<0.01	Accepted
Hypothesis 3	Perceived service quality → Customer satisfaction	0.521	<0.01	Accepted
Hypothesis 4	Perceived Value → Customer satisfaction	0.424	<0.01	Accepted
Hypothesis 5	Customer satisfaction → Attitudinal loyalty	0.859	<0.01	Accepted
Hypothesis 6	Customer satisfaction → Behavioural loyalty	0.115	0.261	Rejected
Hypothesis 7	Attitudinal loyalty → Behavioural loyalty	0.784	<0.01	Accepted

β: Standardised coefficient; Sign.: Significant

4.5. Hypothesis testing using a discriminated sample by airline type

In this study, passengers were classified into FSC passengers and LCC passengers. The airline type was defined based on the last travel experience. The FSC and LCC passengers represented 48.6% and 51.40% of all the respondents respectively. **Table 1** summarises the respondents' characteristics by the airline type. The respondents using FSCs and LCCs on their last journey from the sample had a similar ratio for each attribute. The service expectation and media exposure to customer satisfaction were further analysed based on the travel mode.

The path analysis result for the FSC passengers is shown in **Figure 3**. Hypotheses H1, H2, H3, H4, H5, H7 were accepted, whereas hypothesis H6 was rejected in the FSC model. The effect of media engagement (H1: $\beta = 0.229, p < 0.1$) demonstrated a positive relationship with perceived value, while the effect of perceived

service quality (H2: $\beta = 0.655, p < 0.01$) indicated a strictly positive relationship with perceived value. The effect of perceived service quality on customer satisfaction (H3: $\beta = 0.422, p < 0.01$) was strongly supported. The relationship between perceived value and customer satisfaction (H4: $\beta = 0.472, p < 0.01$) was strongly supported, as well as the relationship between customer satisfaction and attitudinal loyalty (H5: $\beta = 0.921, p < 0.01$). Moreover, the effect of attitudinal loyalty was found to positively influence behavioural loyalty (H5: $\beta = 0.821, p < 0.01$).

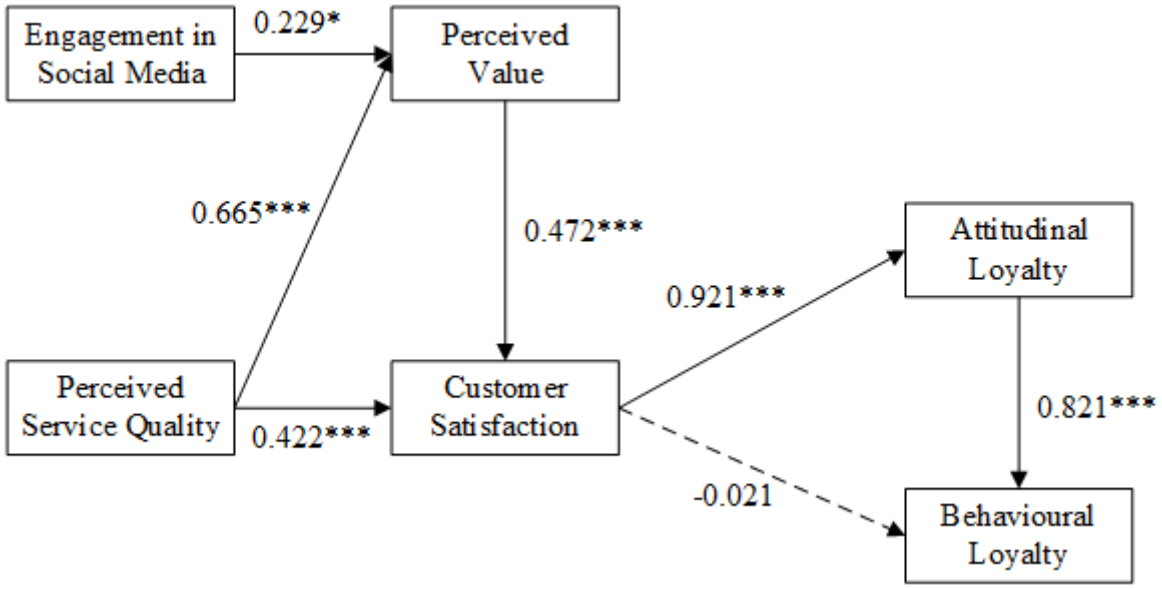

Figure 3. MGA result of structural equation modelling for Full-Service Carriers

Figure 4 describes the path analysis result for LCC passengers. The effect of customer satisfaction on behavioural loyalty (H6) was not supported. The following hypotheses were strongly supported: the effect of media engagement on perceived value (H1: $\beta = 0.492, p < 0.01$); the effect of perceived service quality on perceived value (H2: $\beta = 0.404, p < 0.01$); the effect of perceived service quality on customer satisfaction (H3: $\beta = 0.558, p < 0.01$); the effect of perceived value on customer satisfaction (H4: $\beta = 0.440, p < 0.01$); the effect of customer satisfaction on attitudinal loyalty (H5: $\beta = 0.808, p < 0.01$); and the effect of attitudinal loyalty on behavioural loyalty (H7: $\beta = 0.795, p < 0.01$).

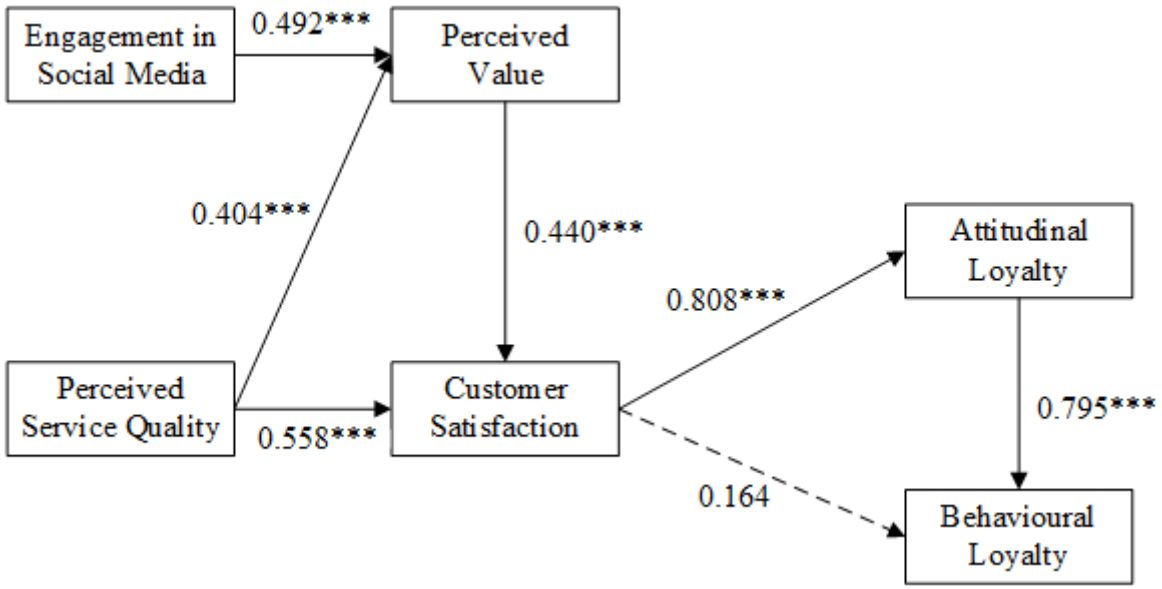

Figure 4. MGA result of structural equation modelling for Low-Cost Carriers

The coefficient and significant value are different depending on the airline type. **Table 5** and **Table 6** present the comparison of path coefficient in the non-discriminated sample and discriminated sample (FSC and LCC passengers).

Table 6

Hypothesis test results by travel mode

Hypothesis	Model construct	FSC estimate	LCC estimate
Hypothesis 1	Social media engagement → Perceived value	0.229*	0.492***
Hypothesis 2	Perceived service quality → Perceived value	0.665***	0.404***
Hypothesis 3	Perceived service quality → Customer satisfaction	0.422***	0.558***
Hypothesis 4	Perceived Value → Customer satisfaction	0.472***	0.440***
Hypothesis 5	Customer satisfaction → Attitudinal loyalty	0.921***	0.808***
Hypothesis 6	Customer satisfaction → Behavioural loyalty	-0.021	0.164
Hypothesis 7	Attitudinal loyalty → Behavioural loyalty	0.821***	0.795***

*$p < 0.1$; **$p < 0.05$; ***$p < 0.01$

4.6. Discussion

This study explored the relationships between service quality and media exposure in the civil aviation industry. The findings fill gaps in the literature by providing empirical evidence for value creation by brand community marketing via social media. The results indicate that perceived service quality exerted a significant effect on customer satisfaction in the non-discriminated sample and LCC sample. These hypotheses are grounded in the literature (Hussain et al., 2015). Social media engagement has a positive effect on perceived value. These results explain the phenomenon that airlines try to promote their business social media platforms. An airline can gain a corporate reputation by engaging in social media activities with its customers and intensifing the role of online ambassadors and influencers (Dijkmans et al., 2015).

To better contribute to the loyalty constructs in different airline business models, we further investigated users'

expectation by the airline type. We categorised the airline type into FSC and LCC passengers and reviewed their expectations using different travel mode services. From an academic perspective, this research contributes empirical support for multiple group analysis in the airline industry. Although FSC and LCC are different in their business nature, the FSC and LCC market segments compete with each other (Cento, 2008).

The construct of attitudinal loyalty and behavioural loyalty depends on the level of customer satisfaction, while the effect of perceived value has a significant effect on customer satisfaction in both the FSC and LCC models. The results of the effect of customer satisfaction on loyalty were consistent with the studies by Akamavi et al. (2015), Chen (2008), Chang and Hung (2013) and Nesset and Helgesen (2014). However, in our study, we further investigated the effect of customer satisfaction on attitudinal and behavioural loyalty. The results show that hypothesis H6: the effect of customer satisfaction on behavioural loyalty was not supported in both FSC and LCC models. In Rajaguru (2016) and Kos Koklic et al. (2017) models, the effect of customer satisfaction on attitudinal loyalty was not assessed. Their results show that customer satisfaction is a strong predictor of behavioural intention, which indicates the discrepancy of the proposed model.

The estimated coefficient of the effect of customer satisfaction as a predictor of attitudinal loyalty (hypothesis H5) in the FSC model had a higher factor load than that in the LCC model. In fact, this can be explained by the fact that FSC airlines usually deliver loyalty programmes to their passengers in order to maintain a good relationship with their loyal customers.

In our findings, estimates of the coefficient difference (hypothesis H1: the effect of social media engagement on perceived value) significantly varied across both groups. The factor load of the effect of social media engagement exerted a significant effect on the perceived value in both the FSC and LCC models. The results will be helpful to establish a strategy for FSC airlines in their crisis response activities. Social media has become a reliable source of information. This research confirms that social media engagement is a determinant of perceived value as found in the literature (Heller Baird and Parasnis, 2011).

For FSC passengers, there is a significant effect of social media engagement on perceived value. The hypothesis can be explained by the fact that the public usually produces and shares crisis information via social media (Jin et al., 2014). The general public can form an impression of insecurity if any airline accidents or service failures occurred (Ray, 1999). Palen et al. (2007) and Veil et al. (2011) stated that social media are effective platforms through which to perform crisis response activities. The results in the FSC model were consistent with the literature (Chou, 2015; Hussain et al., 2015; Kim and Lee, 2011; Leong et al., 2015; Orel and Kara, 2014; Park et al., 2004). Surprisingly, the effect of customer satisfaction on behavioural loyalty was not supported. The repurchase decision of FSC passengers may be affected by other factors.

Our findings reveal that the effect of perceived service quality on customer satisfaction in the LCC model is supported (Kim and Lee, 2011). There is strong evidence to show that LCC passengers consider reliability as the most important factor regarding the service quality. For the construct of perceived value, social media engagement has a significant effect on perceived value in the case of LCC. LCC is a newly emerging business model. In fact, the public is still reviewing the performance and service quality of LCCs. Social media allow individuals to share their opinions and experiences (Mäkinen and Wangu Kuira, 2008). The effect of customer

satisfaction on attitudinal and behavioural loyalty is supported. In particular, the effect of attitudinal loyalty is a significant antecedent of behavioural loyalty in the LCC model. The determinant of customers' repurchase decision is determined by the effect of attitudinal loyalty (Oliver, 1993; Taylor and Baker, 1994).

5. Conclusion

This research aimed to determine the factors that affect the loyalty constructs of FSC and LCC passengers.

The major contributions in this research are summarised as follows. First, we investigated the effect of media engagement in the social marketing channel on customer loyalty. Corporate branding is an incredibly important factor associated with corporate profit. Loyal customers intend to repurchase, increase the order value, and recommend friends and relatives to purchase tickets from a particular company. This inevitably enlarges the customer base and allows customer retention in the highly competitive airline service market in order to sustain business growth. Therefore, we included social media engagement in the hypothesis model to have a better understanding of the loyalty constructs in the airline industry.

Second, we incorporated the hypothesis model with multiple group analysis to investigate the coefficient difference between FSC and LCC passengers. We conceptualised that passengers have different expectations of FSC and LCC services. Due to the rise of low-cost airlines, the business model for airline services has revolutionised the competition. Although both travel modes provide different services to passengers, LCC airlines try to seize the share of value in the FSC market segment. This seems to indicate that a certain determination of factors will determine airline selection between FSCs and LCCs in a portion of customers, which implies direct competition in this market segment. Therefore, system characteristics with travel mode differences were considered in our model.

Third, the results by MGA supported that FSC and LSS passengers have significant differences in service expectation, customer satisfaction and formulation of loyalty constructs. The results show that perceived value is the antecedent of the marketing channel in social media for both FSC and LCC passengers. The interpretation is consistent with our general understanding of loyalty constructs in regards to attitudinal loyalty. There is a significant difference in the effect of customer satisfaction on behavioural loyalty. FSCs offer a more attractive loyalty programme for the purpose of customer retention. LCC passengers tend to repurchase tickets from the same company. The results will be useful to researchers and airline management in further developing loyalty models and marketing strategies.

6. Implications of the study

Engagement in social media, theoretically, is a strong antecedent of LCC passengers' perceived value. Other hypotheses are aligned with the literature. The results suggest that LCC airlines should engage in social media marketing as the effect of social media engagement on perceived value is comparatively high compared with FSC airlines. LCC airlines need to recognise that social platforms provide dual-communication channels. Managing the feedback from the passengers and developing action plans are the major challenges for LCC airlines. Comparatively, the effect of social media engagement is low but significant in the FSC model. FSCs should optimise their service quality in order to compete with the emerging LCC airlines, as the formulation of the loyalty of FSC passengers largely depends on the perceived service quality. It is interesting that customer

satisfaction does not directly affect behavioural loyalty, but is fully mediated by attitudinal loyalty for both FSC and LCC passengers. This also explains the phenomena of friends-to-friends recommendation programmes and loyalty programmes in airline marketing.

7. Limitations and future research

However, this study also had limitations. First, there was a limitation regarding the age group distribution. The age of the majority of the respondents was below 40. The respondents in this study were required to answer questions based on their general perception and travel experience of FSCs and LCCs in the recent one year. Therefore, the selection between FSCs and LCCs was neglected in this study. Also, the respondents of the research study were limited to Hong Kong residents and Hong Kong travellers. The proposed model was limited to the FSCs' and LCCs' flight leg from Hong Kong International Airport.

Future research could attempt to extend the loyalty constructs with other individual difference variables. System characteristics suggested in other loyalty constructs include relative pricing, service recovery and customer engagement, and would be expedient for the formulation of airline marketing strategies. The research direction could also be extended to the mediating effect on the antecedents, such as the mediator of the engagement in social media on the perceived service quality and perceived value, in order to assess the role of social media in the loyalty constructs.

Appendix A

Appendix 1

Mean and standard deviation of measurements for the airline industry in Hong Kong

Items	Measures	$\overline{x}$	σ
Attitudinal loyalty	AL1: I will recommend airline X to my friends, family members and relatives.	5.12	1.23
	AL2: I think that I have built a personal relationship with airline X.	4.82	1.44
Behavioural loyalty	BL1: For my next journey, I will repurchase from airline X.	5.32	1.04
	BL2: I will consider airline X as the first priority.	5.23	0.99
Customer satisfaction	CS1: I am satisfied with the overall operating performance of airline X.	5.36	1.04
	CS2: The service offered by airline X satisfied my expectations.	5.25	1.08
Perceived value	PV1: Airline X provides a ticket distribution channel.	5.38	1.02
	PV2: The ticket price is fair according to its service.	4.90	1.24
	PV3: The service provided by airline X is worth what I have paid (cost, time and effort).	5.08	1.09
Perceived service quality	SQ1: The appearance of airline X's employees is neat and tidy.	5.47	1.08
	SQ2: Employees of airline X are courteous.	5.34	1.00
	SQ3: Employees of airline X are confident to answer my questions and make me feel comfortable.	5.19	1.05
	SQ4: I feel confident with airline X as it can provide timely solutions.	5.16	1.03
	SQ5: Airline X's service is reliable.	5.35	0.96
	SQ6: Employees of airline X are well trained.	5.44	0.98
	SQ7: Employees of airline X are always willing to help.	5.37	1.02
	SQ8: Employees of airline X offer a timely response and service to my requests.	5.24	1.01
	SQ9: Customer services provided by airline X are standardised.	5.43	1.00
	SQ10: Employees of airline X understand your specific needs and concerns.	5.45	0.93
Engagement in social media	SM1: Airline X's social media platform provides sufficient information and offers.	5.10	1.11
	SM2: The information on social media provided by airline X makes me feel confident about its service quality.	5.04	1.05
	SM3: I believe that social media are an excellent channel for airline X to promote its service.	5.37	1.07

Appendix 2

Mean and standard deviation of measurements for Full-Service Carriers in Hong Kong

Items	Measures	$\overline{x}$	σ
Attitudinal loyalty	AL1: I will recommend airline X to my friends, family members and relatives.	5.30	1.23
	AL2: I think that I have built a personal relationship with airline X.	5.30	1.23
Behavioural loyalty	BL1: For my next journey, I will repurchase from airline X.	5.50	0.99
	BL2: I will consider airline X as the first priority.	5.46	0.69
Customer satisfaction	CS1: I am satisfied with the overall operating performance of airline X.	5.49	1.09
	CS2: The service offered by airline X satisfied my expectations.	5.35	1.16
Perceived value	PV1: Airline X provides a ticket distribution channel.	5.46	1.01
	PV2: The ticket price is fair according to its service.	5.03	1.26
	PV3: The service provided by airline X is worth what I have paid (cost, time and effort).	5.27	1.09
Perceived service quality	SQ1: The appearance of airline X's employees is neat and tidy.	5.47	1.17
	SQ2: Employees of airline X are courteous.	5.29	1.06
	SQ3: Employees of airline X are confident to answer my questions and make me feel comfortable.	5.29	1.09
	SQ4: I feel confident with airline X as it can provide timely solutions.	5.39	1.02
	SQ5: Airline X's service is reliable.	5.50	0.97
	SQ6: Employees of airline X are well trained.	5.56	0.97
	SQ7: Employees of airline X are always willing to help.	5.42	1.10
	SQ8: Employees of airline X offer a timely response and service to my requests.	5.36	1.01
	SQ9: Customer services provided by airline X are standardised.	5.67	0.94
	SQ10: Employees of airline X understand your specific needs and concerns.	5.56	0.92
Engagement in social media	SM1: Airline X's social platform provides sufficient information and offers.	5.23	1.11
	SM2: The information on social media provided by airline X makes me feel confident about its service quality.	5.15	1.02
	SM3: I believe that social media are an excellent channel for airline X to promote its service.	5.30	1.23

Appendix 3

Mean and standard deviation of measurements for Low-Cost Carriers in Hong Kong

Items	Measures	$\overline{x}$	σ
Attitudinal loyalty	AL1: I will recommend airline X to my friends, family members and relatives.	4.95	1.21
	AL2: I think that I have built a personal relationship with airline X.	4.37	1.49
Behavioural loyalty	BL1: For my next journey, I will repurchase from airline X.	5.15	1.07
	BL2: I will consider airline X as the first priority.	5.02	1.18
Customer satisfaction	CS1: I am satisfied with the overall operating performance of airline X.	5.23	0.97
	CS2: The service offered by airline X satisfied my expectations.	5.16	0.99
Perceived value	PV1: Airline X provides a ticket distribution channel.	5.31	1.03
	PV2: The ticket price is fair according to its service.	4.78	1.2
	PV3: The service provided by airline X is worth what I have paid (cost, time and effort).	4.91	1.05
Perceived service quality	SQ1: The appearance of airline X's employees is neat and tidy.	5.46	1.00
	SQ2: Employees of airline X are courteous.	5.38	0.95
	SQ3: Employees of airline X are confident to answer my questions and make me feel comfortable.	5.10	1.01
	SQ4: I feel confident with airline X as it can provide timely solutions.	4.94	1.00
	SQ5: Airline X's service is reliable.	5.21	0.92
	SQ6: Employees of airline X are well trained.	5.32	0.98
	SQ7: Employees of airline X are always willing to help.	5.32	0.93
	SQ8: Employees of airline X offer a timely response and service to my requests.	5.12	1.01
	SQ9: Customer services provided by airline X are standardised.	5.21	1.01
	SQ10: Employees of airline X understand your specific needs and concerns.	5.34	0.94
Engagement in social media	SM1: Airline X's social platform provides sufficient information and offers.	4.97	1.10
	SM2: The information on social media provided by airline X makes me feel confident about its service quality.	4.94	1.07
	SM3: I believe that social media are an excellent channel for airline X to promote its service.	4.37	1.49

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