

Exploring the Customer Relationship Management Practices of Online Shopping Malls in Hong Kong

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Abstract

Online shopping malls (such as Taobao and Tmall.com) are a new trend in the online environment. These malls offer products from many different stores in a central location. Building high quality relationships with customers is vital for online shopping malls and customer relationship management (CRM) is a widely used concept for building these relationships. Previous studies of offline platforms have examined the online platforms of individual companies. However, few studies have discussed the CRM practices of online shopping malls. This study aims to fill this gap in the literature. A mixed-method approach with both a survey (a quantitative study) and an in-depth interview (a qualitative study) is used. Four hundred people are interviewed for the quantitative study in Hong Kong to collect data to test the hypotheses. SPSS is used to conduct statistics analysis such as reliability test, Correction and t-test. The results show that there are positive relationships between information quality, system quality, service quality, and perceived relationship quality. These findings could provide useful insights for e-commerce. An in-depth interview is also conducted with an expert in the e-commerce industry to gain more insights into industry development.

Keywords: customer relationship management, relationship marketing, online shopping malls, consumer behavior, Hong Kong

1. Introduction

1.1 Introduction of the Problem and Its Importance

As technology has developed rapidly over the past few decades, the Internet has disseminated swiftly across the world (Sinha, 2010). Following this trend, E-commerce has exploded in recent years. According to the website Statista, the value of worldwide B2C e-commerce exceeded USD 1.2 trillion in 2013. Customers' shopping behaviour has also evolved tremendously. Customers can now visit traditional brick-and-mortar (physical) stores or shop at online stores via computers or mobile devices (Solomon, 2013). According to MasterCard's Mobile Shopping Survey (2015), mobile commerce is growing very fast in the Asia Pacific region. There is also a growing trend for customers to shop online via their smartphones. Through e-commerce, retailers can offer deeper product selections to their customers than they could via traditional brick-and-mortar stores (Nielsen, 2015). On the Internet, customers can also compare the prices of the products or services of different suppliers and choose the products or services that are most valuable to them.

An online shopping mall is a type of e-commerce that provides a one-stop platform for online shoppers. These malls also provide a channel for different stores to communicate with their target customers in the virtual marketplace (Keeney, 1999). Each store in an online shopping mall can be regarded as an 'e-retailer'. Taobao is a good example of online shopping mall. The Taobao site is similar to a brick-and-mortar shopping mall. Inside the Taobao website, there are a lot of stores selling different products. Customers can browse around and choose the products they want to purchase. It is important for the e-retailers in these malls to understand and monitor consumer behaviour and try to build trust and create value for customers. By doing so, e-retailers can build long-term relationship with their customers. Without this long-term relationship, the customers, particularly high value ones, will soon turn to other competitive platforms (Falk, Sockel, & Chen, 2005).

Worldwide B2C e-commerce continues to grow. The Nielsen's report forecasts that worldwide e-commerce sales

will reach USD1.5 trillion in 2014 and online buying intention in the Asia Pacific region is the highest of any area (Nielsen, 2014). Within the Asia Pacific region, China takes the lead in e-commerce growth. Sales data show that there has been substantial growth in fast-moving consumer goods (FMCG) purchasing online in China (Nieslen, 2014). In 2014, China's e-commerce sales increased by 40% compared to previous year. China's largest online shopping mall, Taobao, holds 80% of the market share and the total e-commerce value of Taobao exceeds the value of both Amazon and eBay in China (Euromonitor, 2014).

There are a lot of advantages of online shopping for customers, such as convenience, ease of use, the ability to compare prices, and the opportunities for personalisation (Keeney, 1999; Solomon, 2013; Nieslen, 2014). With the trend of increasing online shopping, the numbers of online shopping malls are also increasing. These online shopping malls can provide customers with a one-stop platform. In this fierce and competitive environment, the companies providing online shopping malls need to understand the customers' preferences and behaviour. For instance, do customers shop through computers at home or do they browse the online shopping malls via their mobile phones while waiting for public transport? Customer relationship management (CRM) is a very effective tool for understanding consumer behaviour. When companies understand their customers, they can use this knowledge to create more value for their customers and increase customer loyalty and satisfaction (Levine, 1993; Blattberg & Deighton, 1996; Reichheld, 1996a; Reichheld, 1996b; Parasuraman, 1997). In the long run, this knowledge helps companies to attract and keep the highest value customers, which is vital for a company's long-term success (Blattberg & Deighton, 1996; Xu & Walton, 2005).

1.2 Research Objectives

The purpose of this study is to provide a detailed understanding of the CRM practices of online shopping malls. Hong Kong is chosen as the research location because it is one of the key cities in China. Hong Kong is also an international city with advanced technology and infrastructure. The value of Hong Kong's e-commerce is substantial, reaching USD 3.6 trillion in 2013 (a 25.5% increase on previous year) (HKTDC Research, 2014). Additionally, the frequency of online shopping in Hong Kong has increased, from 70% in 2011 to 79% in 2012 (MasterCard, 2013). This study divides the investigation of the CRM practices of online shopping malls into three key objectives: (a) to explore CRM and e-commerce systems for online shopping malls; (b) to examine the relationship between information quality, system quality, service quality, and perceived relationship quality; and (c) to make recommendation to marketers based on these findings.

2. Literature Review

2.1 Customer Relationship Management

CRM is a concept that originated from relationship marketing in the 1990s (Payne & Frow, 2006). It is a type of business strategy that focuses on building good relationships with customers. At the beginning, research on CRM concentrated on the issue of attracting new customers. However, later CRM studies turned their attention to examining how to retain customers and try to build long-term relationships, particularly with high-value customers (Blattberg & Deighton, 1996; Parasuraman, 1997; Payne & Frow, 2006). In Dayan and Arnolds' (2012) article, they point out that 'effective employee training' (p. 3) is one of the key success factors to improve the CRM implementation. The staff with 'superior process thinking ability' (p. 3) is preferred as they can think more thoroughly and be able to implement CRM practices successfully.

In recent years, CRM has started to place more emphasis on data mining and software development (Boulding et al., 2005; Xu & Walton, 2005; Payne & Frow, 2006). In the online situation where face-to-face interaction is limited, companies will therefore look for opportunity to implement CRM system. In Xu and Walton's (2005) article, they identify six key reasons for using CRM system (p. 959). They are:

- 'Improving customer satisfaction level;
- Retaining existing customers;
- Improving customer lifetime value;
- Providing better strategic information to sales, marketing, finance etc.
- Attracting new customers;
- Cost savings.' (p. 595)

All these can apply in the online shopping mall so as to build valuable and long-term relationships with customers online in the same way as offline.

2.2 Features of Online Shopping Mall

Based on Ahn et al.'s (2004) article, the features of an online shopping mall can be seen as consisting of three dimensions: system quality, information quality, and service quality. These three dimensions are also a vital part of the updated model of DeLone and McLean (2003).

System quality measures the functionality of an e-commerce system. It consists of the 'usability, reliability, responsiveness, flexibility, integration, navigation, accessibility and timeliness of the e-commerce system' (DeLone & McLean, 2004, p. 34). Many prior researchers have found that the availability of the system significantly affects performance and customer search strategies. Customers will not be satisfied and will not trust the retailers if there are frequent system errors or if their responses to customers are too slow (Ahn et al., 2004; Sun, 2010). Additionally, other aspects of system quality, such as website design and security, can also greatly influence customer trust and satisfaction (Ahn et al., 2004; Cyr, 2008).

Information quality refers to the quality of the information provided by the e-commerce marketplace, including information formatting, accuracy, and comprehensiveness. This information helps customers to compare product features and prices. It also provides enjoyment to customers while they surf the online shopping mall (Ahn et al., 2004; Wixom & Todd, 2005). Some research studies have also shown that if companies can provide high quality information then this will increase consumer trust in and satisfaction with the website (Wang & Emurian, 2005; Flavian et al., 2006; Cyr, 2008).

Service quality refers to the overall supporting services that are provided by the website providers (DeLone & McLean, 2004). Customers always look for reliable and timely responses from suppliers. It is critical for service providers to deliver a high quality of services in the e-commerce environment. Good service quality in online shopping malls fosters customer satisfaction and loyalty (DeLone & McLean, 2004).

According to Sun's (2010) article, these three dimensions (system quality, information quality, and service quality) are part of the development of a positively perceived relationship between the customers and the website service provider (see Figure 1). Sun (2010) focuses on individual websites (such as uBid.com) in his research. However, the operation of an online shopping mall is more complicated than that of an individual website and it therefore remains to be investigated whether this relationship is also applicable to online shopping malls. Three hypotheses are proposed.

H1: Customers' perceptions of the information quality of an online shopping mall's website have a positive effect on the customers' perceptions of the quality of their relationship with the website provider.

H2: Customers' perceptions of the system quality of an online shopping mall's website have a positive effect on the customers' perceptions of the quality of their relationship with the website provider.

H3: Customers' perceptions of the service quality of an online shopping mall's website have a positive effect on the customers' perceptions of the quality of their relationship with the website provider.

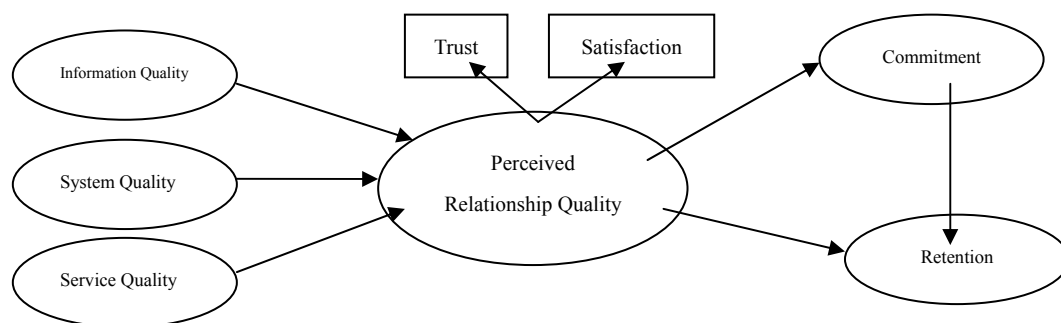


Figure 1. Conceptual model in Sun's article (2010)

2.3 Trust, Satisfaction, Commitment and Retention

Sun's model also mentions that trust and satisfaction are likely to exist if the service provider has a good relationship with the customers. Trust is an important element of a close relationship. Trust can be defined as a person's willingness to believe in or count on his or her trustee (Rempel et al., 1985; Moorman et al., 1993). In the online environment, it can be challenging to cultivate the trust of customers (Slyke et al., 2004; Wang &

Emurian, 2005). Customers also seek reliable online shopping malls. If the customers find that the information on an online shopping mall is accurate and the services are reliable, it can help to build satisfaction towards that website. Satisfaction is another vital element of a high quality relationship. Satisfied customers are those who, based on their past experiences, find enjoyment in their relationship with the retailer (Crosby et al., 1990; Palmatier et al., 2006). Customer satisfaction is important for maintaining loyalty. When there is a higher level of customer satisfaction, customers are more likely to express an intention to repurchase from the retailer (Lovelock & Wirtz, 2011).

Commitment and retention are the two major consequences when a high quality relationship is built between the service provider and the customers. When customers have a greater commitment, they are willing to spend extra money to commit to the services provided by the online shopping mall. Additionally, when levels of commitment are higher, the online shopping mall providers are also willing to spend more time to build and maintain their valuable relationships with their customers. Very often, these online shopping mall providers need to keep investing to maintain a good quality of service for their customers (Moorman et al., 1992; Lovelock & Wirtz, 2011). A state of retention indicates that customers are very satisfied with the current situation and would like to maintain this situation. If customers have a high level of retention in online shopping malls, it can also help to increase loyalty.

2.4 Gender

Traditionally, men are regarded as more technology driven than women. However, Nielsen recently reported that women make up 51% of the online population (2015). They are also more engaged in the online environment than men. Women are more likely than men to regularly browse social media profiles and more frequently use sharing buttons to share content. They also spend more time browsing the Internet via their mobile phones (see Table 1). This is supported by some research studies that found that women are more sociable and more easily influenced than men (Eagly, 1978; Graziano et al., 1993; Eagly & Wood, 1999). Research studies have also shown that there is a gender difference in perceptions of online environments (Gilroy & Desai, 1986, Gefen & Straub, 1997).

Table 1. Some key findings of online behavior between female and male users

	Female	Male
Browse social media profiles weekly/ more often	57%	46%
Use 'sharing' buttons to share content	23%	20%
Nos. of hours spent browsing the Internet on mobile phones in an average week among connected mobile users	5.6 hours	4.7 hours

Source: www.nielsen.com.

Thus, it is also both important and interesting to investigate if there is any difference between the two genders concerning perceptions of information quality, system quality, service quality, and perceived relationship quality on online shopping malls. Therefore, a fourth hypothesis is proposed.

H4: There is a significant difference between male and female customers in terms of their perception of information quality, system quality, service quality, and perceived relationship quality.

3. Methodology

3.1 Research Design

A mixed-method research design is adopted in this study that includes both quantitative and qualitative components (Saunders et al., 2012). In the quantitative section, a survey is used to collect data. Four hypotheses on CRM practices are tested. In the qualitative section, an in-depth interview with an expert in the e-commerce industry is conducted, which can help to generate more in-depth knowledge about the CRM practices of online shopping malls.

3.2 Quantitative Study-Survey

3.2.1 Sampling Method and Sample Size

In this study, random cluster sampling, a kind of random sampling method, is used. The Hong Kong population

is divided into 18 districts. Each district is treated as a cluster. The same number of samples are drawn randomly from each cluster (Saunders et al., 2012). This method minimises the variability in each hierarchy and maximises the differences between strata (Churchill, 1995).

According to the Information Services Department, HKSAR, the population of Hong Kong is 7 million (2014). Based on the advice of Saunders et al. (2012), 384 respondents are the minimum required (at 95% confidence level) for this population size. We target Hong Kong citizens who are aged 18 or above and have shopped at online shopping malls in the last six months. The reason to choose respondents aged 18 or above is that age 18 is regarded as an adult under the Hong Kong regulations and these individuals are thus deemed to have sufficient maturity to respond to the survey. Face-to-face interviews are conducted in the 18 districts in Hong Kong in January and February 2015. In total, data from 400 respondents are collected.

3.2.2 Survey Design and Measurement

There are five parts to the questionnaire. First, there are two screening questions to screen out those who are younger than 18 and have not shopped at online shopping malls in the last six months. In the second part, the questions focus on the online behaviour of the shoppers. In the third part, the questions are related to information quality, system quality, and service quality. The fourth part is focused on trust and customer satisfaction and the last part is focused on the personal particulars of the respondents. The measurement items in parts three and four are adapted from Sun's (2010) article and 5-point Likert scales are used, ranging from 1 = strongly disagree to 5 = strongly agree.

3.2.3 Common Method Bias

Common method variance is a potential problem in this research design. It refers to 'the variance that is attributable to the measurement rather than to the constructs the measures represent' (Podstakoff et al., 2003, p. 879). Two steps are taken to reduce the possibility of common method variance. First, three items are reverse-coded: 7d (The information from the online shopping mall is not always up-to-date.), 8c (The online shopping mall's pages do not load rapidly.), and 9c (I do not feel very confident about the online shopping mall.). Second, the respondents' responses are kept confidential and anonymous.

3.2.4 Pilot Test

A pilot test is conducted to check if there are any potential mistakes in the survey (Fink, 2009; Saunders et al., (2012). As suggested by Fink (2009), 10 participants are included in the pilot test. Based on the respondents' feedback, some amendments are made to the survey questions.

3.3 Qualitative Study-in-Depth Interview

In the qualitative portion of the study, an in-depth interview with an expert in e-commerce is conducted. The purpose of the interview is to gain more knowledge and insight into the key components of CRM for online shoppers. The interview is carried out for about 30 minutes and is conducted in a meeting room where the interviewee will feel more relaxed and comfortable and therefore will feel free to speak more openly. After obtaining his consent verbally, the researcher first explains the purpose of the interview and then starts the interview. After completing the interview, the researcher organises the scripts, which are then sent to the interviewer for checking and validating. Several themes are finalised after the interview.

4. Results

4.1 Quantitative Findings

4.1.1 Descriptive Statistics

After data collection, SPSS is used for analysis. The demographic profile and online shopping behaviour of the 400 respondents are shown in Table 2. There are 182 male (45.5%) and 218 female respondents (54.5%) and 82.6% of respondents are aged between 18 and 44. The respondents shop online quite often, with 90.3% of respondents shopping at an online shopping mall in the previous month. Two-thirds shop at an online shopping mall at least three times per month. The majority of the respondents (95.5%) spend HK\$201 or above. The competitiveness of the price (28.5%) and the variety of selection (27.3%) are the key reasons for them to shop at online shopping malls.

Table 2. Summary of key demographic information and the online shopping behavior of the respondents

Description	%
Gender	
Male	45.5
Female	54.5
Age group	
18-24	34.3
25-34	27.8
35-44	20.5
45-54	17.5
The last time you shopped at online shopping mall:	
Half a year ago	
Three months ago	3.0
One month ago	6.8
Two weeks ago	35.5
One week ago	47.0
How many time per month do you purchase product or service in an online shopping mall:	7.8
None	
Everyday	
1-2 times	4.5
3-4 times	13.8
5-6 times	15.3
7 items or above	26.0
How much you spend on purchasing product or service in online shopping mall (HKD per month):	21.8
Less than \$200	18.8
\$201-\$400	4.5
\$401-\$600	40.0
\$601-\$800	29.5
More than \$801	22.0
Reasons for purchasing at online shopping mall:	4.0
Convenience	13.5
Competitiveness of price	28.5
The provision of after-sale service	12.3
Detailed product information	18.4
Variety of selection	27.3

4.1.2 Reliability Test

Reliability is a measurement of the consistency of the research findings (Hair et al., 2003). Cronbach's Alpha is commonly used to measure the internal stability and consistency of research findings (Sijtsma, 2009). If the Cronbach's Alpha for the measuring item is 1, this indicates that the results have perfect internal reliability. If the Alpha value is 0, this means that there is no internal reliability. An Alpha value of 0.7 is considered to indicate an acceptable level of internal reliability (Lui, Tong, & Wong, 2012; George & Mallery, 2006). In this study, Cronbach's Alpha is used for measuring the reliability of the four factors: information quality, system quality, service quality, and perceived relationship quality. The results are shown in Table 3 and indicate a good or excellent reliability. According to George and Mallery (2006), an Alpha value greater than 0.8 is good and greater than 0.9 is excellent.

Table 3. Results of reliability test for the four factors

Variables	Items	Cronbach's Alpha
IQ	Information completeness	0.888
	Information accuracy	
	Information format	
	Information currency	
SQ	System availability	0.956
	System reliability	
	System responsiveness	
	System flexibility	
	System integration	
	System navigation	
	System accessibility	
	Website design	
	Security and privacy	
	Overall	
SeQ	Quick responsiveness	0.936
	Service assurance	
	Service reliability	
	Follow-up service	
	Overall	
PRQ	Trust – secure	0.944
	Trust – comfortable	
	Trust – promises	
	Trust – trustworthy	
	Trust – ability to complete transactions	
	Satisfaction	

Notes. IQ = Information Quality, SQ = System Quality, SeQ = Service Quality;

PRQ = Perceived Relationship Quality.

4.1.3 Correlations Matrix Analysis

A correlation matrix is used to show the coefficients of the correlations between each pair of variables (Lind, Marchal, & Wathen, 2006). Pearson's correlation coefficient is used to describe the linear association between two continuous variables and the overall strength of the relationship (Hair et al., 2003). As shown in Tables 4 to 7, the overall results demonstrate a high degree of association between the attributes within the same construct.

Table 4. Correlation analysis of information quality

	Information completeness	Information accuracy	Information format	Information currency
Information completeness	1			
Information accuracy	.665(**)	1		
Information format	.651(**)	.516(**)	1	
Information currency	.677(**)	.782(**)	.727(**)	1

Note. **Correlation is significant at the 0.01 level (1-tailed).

Table 5. Correlation analysis for system quality

	System availability	System reliability	System responsiveness	System flexibility	System integration	System navigation	System accessibility	Website design	Security and privacy
System availability	1								
System reliability	.794(**)	1							
System responsiveness	.721(**)	.673(**)	1						
System flexibility	.760(**)	.777(**)	.783(**)	1					
System integration	.769(**)	.823(**)	.768(**)	.845(**)	1				
System navigation	.674(**)	.799(**)	.735(**)	.826(**)	.913(**)	1			
System accessibility	.638(**)	.576(**)	.685(**)	.606(**)	.605(**)	.603(**)	1		
Website design	.612(**)	.729(**)	.623(**)	.703(**)	.691(**)	.664(**)	.688(**)	1	
Security and privacy	.708(**)	.702(**)	.771(**)	.851(**)	.786(**)	.780(**)	.622(**)	.722(**)	1

Note. **Correlation is significant at the 0.01 level (1-tailed).

Table 6. Correlation analysis for service quality

	Quick responsiveness	Service assurance	Service reliability	Follow-up service	Overall
Quick responsiveness	1				
Service assurance	.639(**)	1			
Service reliability	.840(**)	.564(**)	1		
Follow-up service	.809(**)	.591(**)	.811(**)	1	
Overall	.897(**)	.603(**)	.853(**)	.862(**)	1

Note. **Correlation is significant at the 0.01 level (1-tailed).

Table 7. Correlation analysis for perceived relationship quality

	Trust - secure	Trust - comfortable	Trust - promises	Trust - Trustworthy	Trust- Ability to complete transactions	satisfaction
Trust - secure	1					
Trust - comfortable	.705(**)	1				
Trust - promises	.757(**)	.789(**)	1			
Trust - Trustworthy	.789(**)	.747(**)	.861(**)	1		
Trust- Ability to complete transactions	.637(**)	.904(**)	.729(**)	.698(**)	1	
Satisfaction	.795(**)	.737(**)	.721(**)	.703(**)	.668(**)	1

Note. **Correlation is significant at the 0.01 level (1-tailed).

Hair et al. (2003) discuss the process of data transformation, changing the original form of the data to a new format. This involves calculating the summated score of each variable and then dividing it by the number of variables. The average summated (mean) score of each construct (factor) is found using this calculation. These mean scores are then used to test the correlation between perceived relationship quality and the other three qualities (i.e. information quality, system quality, and service quality).

Table 8. Correlation analysis for information quality and perceived relationship quality

	Information Quality	Perceived Relationship Quality
Information Quality	1	
Perceived Relationship Quality	.881(**)	1

Note. **Correlation is significant at the 0.01 level (1-tailed).

Table 9. Correlation analysis for system quality and perceived relationship quality

	System Quality	Perceived Relationship Quality
System Quality	1	
Perceived Relationship Quality	.933(**)	1

Note. **Correlation is significant at the 0.01 level (1-tailed).

Table 10. Correlation analysis for service quality and perceived relationship quality

	Service Quality	Perceived Relationship Quality
Service Quality	1	
Perceived Relationship Quality	.896(**)	1

Note. **Correlation is significant at the 0.01 level (1-tailed).

4.1.4 Regression Analysis

Regression analysis is a statistical technique that is used for numerical analysis of an input variable and an output variable (Scalzo et al., 2009). According to Hair et al. (2003), regression analysis is a widely applied data analysis technique for measuring linear relationships between two or more constructs. After transforming the data, the average summated score of each factor is used to perform the regressions, which can then be used to test the hypotheses.

4.1.4.1 Regression Analysis on H1

Table 11. Results of the regression analysis for information quality and perceived relationship quality (H1)

Model 1	
Dependent Factor	Independent Factor
(Perceived Relationship Quality)	(Information Quality)
Standardized Coefficient (Beta)	.881* (Information Quality)
Unstandardized Coefficient (B)	.732 (Constant)
	.781 (Information Quality)
R ²	.777
Adjust R ²	.776
F	1384.061*

Note. *indicates that the value is significant ($p < 0.01$).

Model 1 shows the simple effect of information quality on perceived relationship quality. It has an R² of 0.777, indicating that 77.7% of the variance in perceived relationship quality can be explained by information quality. The model is significant ($F = 1384.061$, $p < 0.01$). Information quality has a positive and significant effect on perceived relationship quality ($\beta_{TF} = 0.881$, $p < 0.01$). The unstandardised coefficient and constants are used to measure the predicted values for perceived relationship quality. The equation is shown below:

Perceived relationship quality = 0.732 + 0.781 x information quality

Model 1 provides evidence in support of H1. Customers' perceptions of the information quality of an online shopping mall's website have a positive effect on the customers' perceptions of the quality of their relationship with the website provider.

4.1.4.2 Regression Analysis on H2

Table 12. Results of the regression analysis for system quality and perceived relationship quality (H2)

Model 2	
Dependent Factor (Perceived Relationship Quality)	Independent Factor (System Quality)
Standardized Coefficient (Beta)	.933* (System Quality)
Unstandardized Coefficient (B)	-.055 (Constant) .996 (System Quality)
R ²	.871
Adjust R ²	.871
F	2689.903*

Note. *indicates that the value is significant ($p < 0.01$).

Model 2 shows the simple effect of system quality on perceived relationship quality. It has an R^2 value of 0.871, indicating that 87.1% of the variance in perceived relationship quality can be explained by system quality. The model is significant ($F = 2689.903$, $p < 0.01$). System quality has a positive and significant effect on perceived relationship quality ($\beta TF = 0.933$, $p < 0.01$). The unstandardised coefficient and constant are used to measure the predicted values for perceived relationship quality. The equation is shown below:

$$\text{Perceived relationship quality} = (-0.055) + 0.996 \times \text{system quality}$$

Model 2 provides evidence in support of H2. Customers' perceptions of the system quality of an online shopping mall's website have a positive effect on the customers' perceptions of the quality of their relationship with the website provider.

4.1.4.3 Regression Analysis on H3

Table 13. Results of the regression analysis for service quality and perceived relationship quality

Model 3	
Dependent Factor (Perceived Relationship Quality)	Independent Factor (Service Quality)
Standardized Coefficient (Beta)	.896* (Service Quality)
Unstandardized Coefficient (B)	.645 (Constant) .820 (Service Quality)
R ²	.802
Adjust R ²	.802
F	1612.550*

Note. *indicates that the value is significant ($p < 0.01$).

Model 3 shows the simple effect of service quality on perceived relationship quality. It has an R^2 value of 0.802, indicating that 80.2% of the variance in perceived relationship quality can be explained by service quality. The model is significant ($F = 1612.550$, $p < 0.01$). Service quality has a positive and significant effect on perceived relationship quality ($\beta TF = 0.896$, $p < 0.01$). The unstandardised coefficient and constant are used to measure the predicted values for perceived relationship quality. The equation is shown below:

$$\text{Perceived relationship quality} = 0.645 + 0.820 \times \text{service quality}$$

Model 3 provides evidence in support of H3. Customers' perceptions of the service quality of an online shopping mall's website have a positive effect on the customers' perceptions of the quality of their relationship with the website provider.

4.1.5 Independent Sample T-test

The independent sample t-test is an inferential statistic used to examine disparities in the population (Rock, 2007). An independent sample t-test is used to test the different between male and female views on the importance of information quality, system quality, service quality, and perceived relationship quality of online shopping malls. The results (see Table 14) show that the mean of the two groups does not differ significantly. The variables for gender have a p-value of greater than 0.05 ($p = 0.384, 0.484, 0.715, \text{ and } 0.446$). It can therefore be concluded that gender is not significant and thus H4 is rejected. There is no significant difference between male and female customers in terms of their perceptions of information quality, system quality, service quality, and perceived relationship quality in online shopping malls.

Table 14. Results of the independent sample t-test (Male vs Female)

		N	Mean	SD	Mean different	t	Significance
Information Quality	Male	182	3.9135	.68104	.06598	.871	.384
	Female	218	3.8475	.81104			
System Quality	Male	182	3.8535	.51441	.04410	.701	.484
	Female	218	3.8094	.70686			
Service Quality	Male	182	3.7824	.60323	-.02676	-.365	.715
	Female	218	3.8092	.82177			
Perceived Relationship Quality	Male	182	3.73	.53331	-.05119	-.762	.446
	Female	218	3.78	.76368			

Note. The mean between two groups differ significantly ($p < 0.05$).

4.2 Qualitative Themes

Five key themes about CRM practices in online shopping malls emerge from the in-depth interview with an e-commerce expert.

Theme 1: System Quality is the Most Important Quality

The three qualities (i.e. information quality, system quality, and service quality) are all important because they can directly influence customers' experiences of online shopping. However among these, system quality is the most important in the online environment because it directly influences the satisfaction level of the customers. Website design is the most important element of system quality. Most customers base their purchasing decisions on the visual description of the products.

Theme 2: Work Closely with E-retailers

The operator of an online shopping mall needs to work closely with the e-retailers. For instance, the operator needs to make sure that e-retailers understand the regulations of the online shopping mall and that the e-retailers have good quality products. The e-retailers' products and services will affect the entire image of the online shopping mall.

Theme 3: Prompt Response to Customers

Customers' questions are normally divided into two groups: pre-sale and post-sale questions. To maintain a high service quality, most companies will allocate staff into pre-sale and post-sale service teams. Increasing sales is the main impetus for businesses to provide high quality service and solve customers' problems. It is important that online retailers respond promptly to customers' questions.

Theme 4: Build Word-Of-Mouth (WOM)

In the online environment, it is difficult to ask the customers to repeat purchase single items. Customers will consider if the product features match their needs or not. However, it is important to generate positive WOM in the online environment as people like to share information via social media. This WOM can encourage shoppers to visit the online shopping mall more often.

Theme 5: Tendency of Using Mobile Phone for Online Shopping

The use of mobile phones for online shopping is becoming more widespread. More than half of online shoppers

purchase products via their mobile phones. Thus, operators of online shopping malls need to focus on the development of a transaction platform for mobile phones. Customers tend to do online shopping during down time, such as while they wait for public transport or in restaurants.

5. Discussion and Conclusion

5.1 Summary and Key Contributions

In this study, a mixed-method research design combining a survey and an in-depth interviewed is used to investigate the CRM practices of online shopping malls. This study makes several key theoretical and practical contributions.

From a theoretical perspective, the first contribution is that few research studies discuss the CRM practices of online shopping malls. This study tries to close this gap in the literature. Our quantitative study shows that customers' perceptions of the information quality, system quality, and service quality of online shopping malls' websites have a positive effect on the customers' perceptions of the quality of their relationship with this website provider. The second contribution is that this is a field study involving Hong Kong citizens. Previous studies in this area have been conducted in universities and were focused on students (Slyke, Belanger, & Comunale, 2004; Guo, Ling, & Liu, 2012). The external validity of these studies is therefore low. However, this study can improve the external validity and generalisability of these findings. The third contribution is that previous studies have found that there is a gender difference in terms of perceptions of online environments (Gilroy & Desai, 1986; Gefen & Straub, 1997). However, the results of this study show that there are no significant differences between male and female customers in terms of their perceptions of information quality, system quality, service quality, and perceived relationship quality.

From the practical perspective, the insights drawn from the in-depth expert interview can provide background and practical insights into how to manage online shopping malls. For instance, the providers of online shopping malls should focus on system quality and, in particular, website design. Additionally, customer questions must be responded to rapidly to gain or maintain the trust and satisfaction of the customers. Another practical contribution is that the in-depth interview provides some consumer insights for online marketers to formulate appropriate strategies to capture business opportunities for their online shopping malls. For instance, there is a trend of customers increasingly using their mobile phones to browse online shopping malls when they are travelling or queuing. Marketers could consider developing promotions to capture this population.

5.2 Limitation

There are several limitations of this study. First, only one in-depth interview with an e-commerce expert was conducted. In the future, a greater number of in-depth interviews could be conducted to gain more practical knowledge about e-commerce. Second, technology and consumer behaviour are both changing very fast. As this is only a cross-sectional study, the data may not be current enough to accurately predict consumer satisfaction levels. Third, the respondents' experiences in this study are skewed towards the experiences of Hong Kong Chinese and therefore the generalisability of the results may be low.

5.3 Recommendation and Areas of Future Research

Due to the limitations of this research, some recommendations are suggested for further research. First, a larger number of in-depth interviews with both e-commerce experts and customers could be conducted. This could help to generate more in-depth experience and insights for the company. Second, this study could be repeated to investigate longitudinal aspects. Third, the study could also be repeated in other countries or other cities in China to increase the generalisability of the findings. Finally, it would be worthwhile to further investigate consumer behaviour concerning shopping using mobile phones. This could provide more insights for companies to develop online shopping malls in the near future.

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