A Study of the Determinants to School Image and Reputation in Higher Education Institutions in Hong Kong

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Authors' contributions

This work was carried out in collaboration between all three authors and all authors read and approved the final manuscript.

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ABSTRACT

Having a rapid expansion and huge investment in the higher education sector in Hong Kong in last ten years, especially the development of self-financed programmes, it becomes necessary to address the issue of the education quality, student satisfaction and reputation of institutions. In order to investigate the relationships of these issues, this study conducted a research by approaching four self-financed institutions in Hong Kong and 100 student respondents were randomly selected in each selected institution. Consequently, the questionnaire was distributed to 320 students in these four higher education institutions. The questionnaire survey elicited a response from 297 students from four self-financed higher education institutions, which gave a response rate of 92.81%. This study found that teaching quality has a positive influence on student satisfaction whilst student satisfaction has a positive influence on the respective student loyalty and school image. However, there is no indication of a positive influence of the respective student

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loyalty, school image and student satisfaction on school reputation. Maximizing student recruitment rate is one of the main goals of self-financed higher education institutions. In order to achieve this objective, the education institutions having a good reputation will have the privilege of admitting high quality students. This study contributes theoretically and practically in the area of self-financed higher education by verifying the relationships between teaching quality, student satisfaction, school image, student loyalty, and school reputation.

Keywords: Teaching quality; student satisfaction; school image; student loyalty; school reputation.

1. INTRODUCTION

Due to the rise of a knowledge-based economy and the influences of internationalization and diversification in Hong Kong's higher education sector, Hong Kong has become a regional education hub [1]. Higher education institutions in Hong Kong need to develop management strategies that will lead them to success in this very competitive environment. School reputation is normally viewed as a valuable intangible asset that helps enhance competitiveness if it can be soundly managed [2]. To maintain a competitive edge, higher education institutions must handle reputation seriously in order to gain support from stakeholders [3-5]. Prior studies have revealed that there are different views regarding the influences of customer satisfaction, image, loyalty and service quality on corporate reputation [6-8]. The aim of this study was to determine the influences of teaching quality, student satisfaction, school image, and student loyalty on school reputation of self-financed higher education institutions in Hong Kong.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1 Teaching Quality

Friedman [9] argued that an education institution wrestling successfully in a highly competitive market is reliant on its reputation for providing efficient educational services. Meanwhile, teaching quality is a most important tool in marketing educational institutions [10-17]. The recruitment of a 'good' teacher can add an important ingredient to a reputable higher education institution [18]. Research has shown that good teaching is strongly related to students' perception of high teaching quality and that students' evaluation of teaching staff plays a crucial role in the evaluation of teaching effectiveness in higher education institutions [19,20].

2.2 Student Satisfaction

Until the study undertaken by [21], customer satisfaction was defined as a post consumption evaluation judgment concerning a particular product or service acquired. [22] defined customer satisfaction as a consequence of an evaluative process that compares prepurchase expectations with perceptions of performance during and after the consumption experience, while [23] argued that customer satisfaction occurs in the course of a purchase and consumption, after a comparison of the organization's past, present, and future cumulative performance with a customer's expectations.

In a keen competitive higher education environment where students have many choices available for them, school management must seriously evaluate any elements that help their education institution to attract and retain students [24]. Increasing student satisfaction with services provided is one of the most effective ways to attract and retain students, as well as upholding a positive relationship between students and the educational institution, which in turn improves the institution's competitiveness in the market [25,26].

2.3 Student Loyalty

Many studies describe customer loyalty as an attitude resulting from a commitment to repurchase a preferred product or service [27,28]. [29] divided loyalty into two approaches: behavioural and attitudinal. The behavioural approach applies to an individual customer repeating purchase behaviour, but such purchasing patterns do not simply focus on consumer goods [28,30]. However, some researchers argued that the behavioural approach does not provide a comprehensive explanation of loyalty because the repeated purchases may be due to other reasons, for instance the low price, rather than loyalty [27,28]. Measuring behavioural and attitudinal loyalty is

crucial to evaluate customer loyalty [31]. Behavioural attitude may occur with spurious or no loyalty even though the product or service provider has a negative image, whereas attitudinal purchasing behaviour normally happens with active loyalty by referring to positive word-of-mouth and recommendations [32]. Some studies on student loyalty such as [33-35] have employed repurchase intention and word-of mouth, which have been identified by [26], for examining study loyalty. [36] claimed that positive word-of-mouth communication, retention and repeat are the outcomes of student loyalty in higher education institutions. This study thus adapted three items from the study by [36] and [28] to measure student loyalty by asking questions related to the loyalty of students to their own education institution.

2.4 School Image

Boulding [37] raised the concept of an image and argued that it is the role of people who are in business activities and other fields and such image is a mental description based on the faith of people. [38] commented that an image is a combination of attitudes, opinions, beliefs and imagination, and it influences the formation of attitudes and thoughts of individuals. [39] argued that the development of an image is based on individuals' thinking, knowledge, prejudice and feelings regarding the relevant topics. It can be argued that an image can be viewed as a personal subjective belief or idea, rather than the truth and fact. [40] argued that an image is a concept that forms in people's minds after they have collected opinions. [41] also asserted that an image is where people have specific opinions of certain things they already know by describing, memorizing and imaging. In light of this it can be posited, therefore, that an image is a composition of opinions, beliefs, thoughts and experiences.

2.5 School Reputation

Reputation is a concept related to image, but refers more to value judgments among the public about an organization's consistency, trustworthiness and reliability formed over a long period of time [42]; it consists of the history of users' experiences with products and service providers [43]. Reputation is a collective evaluation of an organization's desirability by external parties [44]. Reputation is viewed as a valuable intangible asset to the organization that helps enhance its competitiveness [2]. Thus, the organization will become successful if it manages its reputation soundly [45]. Customers tend to view brand reputation as a quality indicator, since it implies that the organization has high quality products and services that it is able to consistently deliver [46]. To maintain a competitive edge, organizations must take the handling of reputation seriously in order to garner support from external parties [3-5]. Corporate reputation is claimed to develop via interactions between product and service providers and external parties [47], and represents an assessment of a provider's attributes by external and internal parties [48]. Thus, reputation is created as a valuable intangible asset by management and helps substantially in building sustainable competitiveness [49-52].

2.6 Hypothesis Development

2.6.1 Relationship between student satisfaction and quality of teaching staff

In the management and relationship marketing literature, customer satisfaction has been arisen as the consequence of customer's experience on a particular service provided and therefore service quality is viewed as an important element of customer satisfaction. A positive relationship between customer satisfaction and service quality has been established in previous studies [53-56]. The relationship between satisfaction and quality is also valid in the higher education sector [57]. Service quality is the difference between expected service and perceived service received by students through the evaluation process while they are enrolling in a particular education institution [58]. On the other hand, service in context is dynamic [59] and unique in nature due to its intangibility, inseparability, heterogeneity, perishability and lack of ownership [60]. It is therefore a challenge for higher education institutions to define and measure the quality of the service they offer [61,62]. According to the SERVQUAL (service quality) gap model developed by [63,64], perceived service quality comprises five dimensions, namely: (i) tangibility, (ii) reliability, (iii) responsiveness, (iv) assurance, and (v) empathy. These five dimensions are broadly applied to measure service quality in different business sectors [63,65]. Notwithstanding, students normally assess the quality of education institution based on tangibility (teachers), reliability and responsiveness (methods of teaching), and the management of the institution has a direct impact on the level of satisfaction [66]. By applying marketing concepts that involved customer (students) satisfaction with

product/service (degree programmes and knowledge conveyed by the professors) provided by organizations (higher education institutions), [67] study found that teaching quality is strongly related to student satisfaction. As a similar connection is expected in the context of Hong Kong, this study hypothesized that:

H1: Teaching quality positively affects student satisfaction in Hong Kong's self-financed higher education institutions.

2.6.2 Relationship between student satisfaction and student loyalty

Enhancing customer satisfaction leads to customer loyalty. A study by [68] found that there is a linear relationship between satisfaction and loyalty when customers make a choice between products or between services [69,70]. Thus, customer satisfaction is not an assurance of customer loyalty [71]; on its own, it does not undoubtedly cause customer loyalty [72]. Only highly satisfied customers keep a long term relationship with an organization [73] which is the same in the higher education sector where student satisfaction affects the marketing strategy of self-financed high education programmes. This phenomenon is due to the positive relationship between student loyalty and their satisfaction levels [74,75]. [76,77] also supported the idea that there should be a positive relationship between student loyalty and student satisfaction if an educational institution wants to improve the source of funding and enhance its financial performance. Further, student satisfaction has been found to be an antecedent of student loyalty in Western countries [27,78]. Based on the findings of prior studies, a similar relationship is expected to occur in the Hong Kong context. It was hypothesized in this study that:

H2: Student satisfaction positively affects student loyalty in Hong Kong's self-financed higher education institutions.

2.6.3 Relationship between student satisfaction and school image

According to prior studies, customer satisfaction is positively related to customer image [79,80]. Based on his different customer satisfaction index model, [79] argued that corporate image is a consequence rather than an antecedent of customer satisfaction. He further claimed that the effect of satisfaction on image shows the extent of a customer's purchasing patterns and

experiences that improve organization's image and customer loyalty over time. However, some argue that corporate image is a driver and has a strong impact on customer satisfaction [81]. On the other hand, [33] have validated a conceptual model in which student satisfaction has a significant influence on the image of college programmes. A study by [82] found that the construct of image of an institution has a direct and significant effect of 0.45 on the construct of student satisfaction in higher education. Based on the foregoing arguments found in the literature, it was hypothesized in this study that:

H3: Student satisfaction positively affects school image in Hong Kong's self-financed higher education institutions.

2.6.4 Relationship between student loyalty and school reputation

Corporate reputation has been known as one of the most important areas of marketing research because it plays a key role in establishing long-term brand equity [83]. [84] commented that international students take school reputation as one of key factors when determining the right higher education institution to enrol in. School reputation and image also strongly influence students' retention decision [35,85] and positively relate to superior student loyalty [86]. [36] confirmed that the reputation of higher education institution has a positive impact on student loyalty through the mediator of student satisfaction. Based on the findings from previous studies regarding reputation and loyalty, it was expected that a positive relationship between student loyalty and school reputation would be found in the Hong Kong context. It was therefore hypothesized in this study that:

H4: School reputation has direct and positive relationship with Student loyalty in Hong Kong's self-financed higher education institutions.

2.6.5 Relationship between school image and school reputation

Image and reputation are entwined concepts. There are many debates in the literature regarding the relationship between image and reputation. [87] suggested that corporate image refers to outside stakeholders' perceptions of an organization, while corporate reputation includes views of internal and external stakeholders. [88] suggested a similar distinction, in that image is
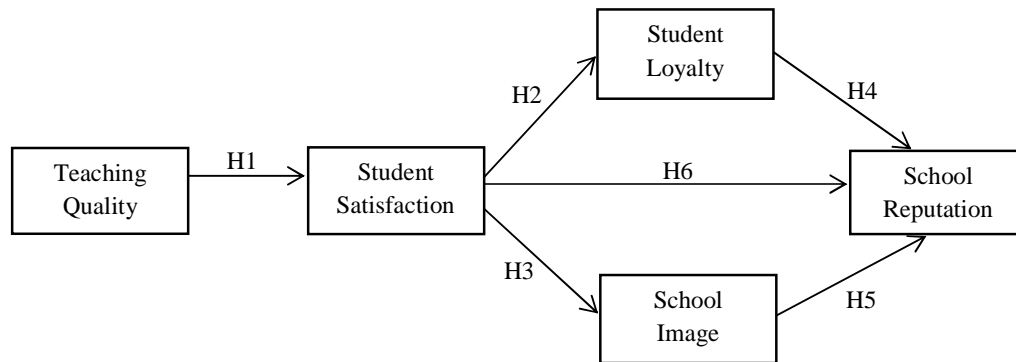
Fig. 1. Research framework

what organization's members believe external stakeholders think about the organization, and reputation is what all (external and internal) stakeholders actually think. [89] argued that a customer can be influenced by corporate reputation of an organization when establishing a corporate image; this means that corporate reputation can be both a driver and an outcome of corporate image formation. Corporate reputation is evaluated by stakeholders with reference to the ability of the organization to fulfill pre-determined criteria [90]. Based on the arguments regarding image and reputation, the viewpoint of [91] was adopted in this study. Since the exact relationship between image and reputation is still unknown, this study examined the interactions between these two constructs. [92] argued that the significance of image and reputation found in prior studies can be applied to the higher education context and their findings support a significant correlation between school image and reputation (r = 0.47, p < 0.001). Based on discussions in the literature, a positive relationship between school image and school reputation was expected to exist in the Hong Kong context. It was therefore hypothesized in this study that:

H5: School image positively affects school reputation in Hong Kong's self-financed higher education institutions.

2.6.6 Relationship between student satisfaction and school reputation

Many studies reveal that corporate reputation is positively linked with customer satisfaction [3,8]. While some studies have found corporate reputation to be an antecedent to customer satisfaction [93,94], others claim corporate reputation to be an outcome of customer satisfaction and argue that satisfaction is a key factor in long-term customer behaviour and the retention of customers [95]. The supporters of satisfaction determining reputation also contend that student satisfaction aids in measuring a school's reputation [96,97].

The studies of [98,99] provide evidence that satisfaction drives reputation. Based on the findings of various studies in the satisfaction and reputation literature, the driver of student satisfaction on school reputation was expected to occur in the Hong Kong context, and so this study hypothesized that:

H6: Student satisfaction positively affects school reputation in Hong Kong's self-financed higher education institutions.

2.7 Research Framework

The research framework of this study consists of five constructs and is shown in Fig. 1 above.

3. METHODOLOGY

3.1 Sample and Data Collection

The selected target population was students enrolled in full-time accredited self-financed post-secondary programmes, including associate degree, higher diploma and undergraduate degree programmes at higher education institutions in Hong Kong. According to the Government of the Hong Kong Special Administrative Region (HKSAR), in 2011 there were twenty-four approved self-financed higher education institutions in Hong Kong, including sub-degree institutions, with about 60,000 students enrolled in their various programmes [100]. This population served the aim of this study, which was to investigate the influences of teaching quality, student satisfaction, and school

image, student loyalty on the school reputation of self-financed higher education institutions in Hong Kong. Sample data was extracted from the database of three major public domain directories of higher education institutions in Hong Kong.

A self-administered questionnaire survey was used to collect data for this study and students were invited to complete the questionnaire on the spot. This ensured anonymity and confidentiality because participants could complete the questionnaire without disruption from the researcher and it also avoided interviewer bias. 100 student respondents were randomly selected in each selected institution. Consequently, the questionnaire was distributed to 320 students in four higher education institutions in Hong Kong. The questionnaire survey elicited a response from 297 students from four self-financed higher education institutions, which gave a response rate of 92.81%.

3.2 Characteristics of Sample

The profile of respondents in Table 1 shows that almost the same percentage of male (50.5%) and female (49.5%) students at Hong Kong's self-financed higher educational institutes responded to the questionnaire.

3.3 Questionnaire Design

Five constructs were identified for this study, namely, quality of teaching staff, school reputation, student satisfaction, school image, and student loyalty. The purpose of this study was to investigate the relationships among these constructs. The questions for each construct are shown in Table 2.

3.4 Data Analysis

To test the hypotheses H1 to H6, Structural Equation Modelling (SEM) was used. SEM is a powerful tool [101-103] and is usually used to remodel a research framework as it verifies model fit. However for studies requiring testing of hypotheses, several SEM statistics as shown below were used to verify the confirmatory factor analysis (CFA) model for the present study.

i. χ^2, p – value > 0.05 indicating no significance, CFA model fit
ii. CFI: 0 < CFI < 1, the closer CFI > 0.9, the better the fit
iii. PCFI: closer PCFI > 0.9, the better the fit
iv. GFI ≥ 0.9, shows better model fit

v.   AGFI ≥ 0.9, shows better model fit
vi. RMSEA: 0.03 < RMSEA < 0.08 model fit

(CFI: Comparative Fit Index; PCFI: Parsimony-adjusted Comparative Fit Index; GFI: Goodness of Fit Index; AGFI: Adjusted Goodness of Fit Index; RMSEA: Root Mean Square Error of Approximation)

The regression weights of the relationships between constructs, variances and co-variances obtained from the analyses were used for the analyses [103,104]. At least four of the above listed statistics are adequate to rule the model fit or support the hypotheses [104].

Table 1. Demographic profile of respondents

Demographics	Frequency	Percentage (%)
Gender		
Male	150	50.5
Female	147	49.5
Age		
18-25	292	98.3
>25	5	1.7
Division of study		
Business	265	89.2
Science and technology	13	4.4
Communication and social science	13	4.4
Others	6	2.0
Level of study		
Associate degree	144	48.5
Higher diploma	5	1.7
Undergraduate degree	148	49.8

3.5 Exploratory Factor Analysis (EFA)

Table 3 shows the results of EFA that the items of teaching quality (TQ), school image (IQ), student loyalty (LQ), student satisfaction (SQ) and school reputation (RQ) are loaded into 5 components. One item in the component LQ with question "LQ2: I will maintain my relationship with my institution after I graduate" removed. One component of RQ with question "RQ3: My institution is better than other institutions" was removed, thus allowing convergent and determinant validity of items measuring the five constructs in the present research.

3.6 Confirmatory Factor Analysis (CFA)

Confirmatory factor analysis (CFA) was further applied for confirmation of the measurement

Table 2. Questions for each construct in this study

Quality of teaching staff	Questions (Constituent variables)
TQ1	The teaching staff of my institution has appropriate academic credentials.
TQ2	The teaching staff of my institution is incorporating appropriate use of technology to teach.
TQ3	The teaching staff of my institution conducts lectures effectively.
TQ4	The teaching staff of my institution is aware of my learning needs and provides help to students.
TQ5	The teaching staff of my institution treats students with respect and as mature individuals.
TQ6	The teaching staff is sympathetic and supportive to the needs of students.
Student satisfaction	**Questions (Constituent variables)**
SQ1	I am satisfied with my institution in general.
SQ2	I am satisfied with my institution when compared with my initial expectations.
SQ3	I am satisfied with my institution when compared with an institution that is considered ideal.
Student loyalty	**Questions (Constituent variables)**
LQ1	I will recommend my institution to friends or acquaintances.
LQ2	I will maintain a relationship with my institution after I graduate.
LQ3	If I had the chance to enrol in an institution for study again, I would enrol in this institution.
School image	**Questions (Constituent variables)**
IQ1	I have a good impression of my institution.
IQ2	My institution has a good image in the minds of its students.
IQ3	My institution is better than other institutions.
IQ4	My institution has good course programmes when compared with other institutions.
School reputation	**Questions (Constituent variables)**
RQ1	My institution fulfils the promises it makes to its students. (honouring promise)
RQ2	My institution has a good reputation. (good reputation)
RQ3	My institution is better than other institutions. (better reputation than others)

Table 3. Rotated component matrix

Items	Component				
	TQ(1)	**IQ(2)**	**LQ(3)**	**SQ(4)**	**RQ(5)**
Teaching staff effectively conduct lectures	.796				
Teaching staff have appropriate academic credentials	.754				
Teaching staff treat students with respect	.731				
Teaching staff are aware of students' learning needs and provide helps	.694				
Teaching staff are sympathetic and supportive	.682				
Teaching staff appropriately use technology to teach	.667				
Institution is better image than others		.822			
Institution has a good image in minds of students		.636			
Institution has good course programs than others		.612			
Students have a good impression of institution		.588			
Students will enrol in institution again if have chance to study again			.893		
Students recommend institution to friends			.872		
Students are satisfied with institution in general				.900	
Students are satisfied with institution as compared with initial expectation				.625	
Students are satisfied with institution as compared with ideal one				.613	
Institution has a good reputation					.743
Institution fulfils the promises it makes to students					.603

model of the inter-relationship of the five constructs hypothesised for the present research (the reduction in items representing the student loyalty and school reputation constructs increased the validity of the model). With CMIN = 557.91, df = 110, and p-value = 0.0001 (p-value

= 0.05), there is an indication that the model might not adequate, however, with the value of CMIN/df less than 5 showing the model is fit [102,105], and CFI is 0.91 (> 0.9) which is satisfying for model fit; and PCFI = 0.72 (> 0.7) showing that the model is fit. In addition, even though NFI = 0.87, PNFI is 0.71 (> 0.7) showing that the model fit. GFI is the most common statistics used as an indicator to recognise model fit [102,106]. In this case GFI = 0.8 (> 0.8), while AGFI = 0.9 (≥ 0.8) indicating model fit and with that, measurement validity is satisfied [102,105,107,108]. These indicators confirm the validity of the items used for measuring the relationship of the latent variables in this research.

Table 4 shows [109] reliability test outcome where all five latent variables result in alpha (α) greater than 0.8. This satisfies [110] reliability requirement for management research.

Table 4. Cronbach's alpha results for constructs

Constructs	Cronbach's alpha
Teaching quality (TQ)	0.921
School reputation (RQ)	0.800
School image (IQ)	0.854
Student satisfaction (SQ)	0.878
Student loyalty (LQ)	0.905

4. ANALYSIS AND FINDINGS

4.1 Hypotheses Testing

The hypotheses (H1-H6) were tested using the structural model shown in Fig. 2. The teaching quality construct was measured using six items (TQ1 to TQ6), the school image construct was measured using four items (IQ1 to IQ4), the student satisfaction construct was measured by three items (SQ1 to SQ3). One item in student loyalty construct and the school reputation construct was removed respectively after reliability and validity tests, so these two constructs were measured by two items each (LQ1 to LQ2 and RQ1 to RQ2 respectively). The confirmation of direct relationships requires the common assumption of data normality. Though, the sample size (n = 297) for this study is large, SEM's robustness in relation to the normality of data was taken into consideration before assessing the data in order to confirm the posited relationships [101,102,105]. Table 5 shows that the multivariate kurtosis = 182.47 as larger than

1.96, indicating violation of the normality assumption.

Following the violation of normality, the Mahalanobis distance test was run and confirmed in order to proceed with the analysis. The Mahalanobis distance observed for this study was calculated using an EXCEL function that describes the inverse of the right tail probability of the chi-squared (χ^2) distribution, as in CHIINV (0.001, 17) = 40.8; with 17 items being assessed, the degree of freedom = 17 at a 0.001 significance level. With 32 observations showing Mahalanobis-d^2 beyond this threshold value of 40.8 as shown in Table 6, asymptotically distribution free (ADF) was used for assessing the structural model. This model was then used to perform the necessary analysis to determine the direct relationships [102,103,107].

The ADF method assessed the structural model and produced the indices displayed in Table 7, which indicate a model fit. Although the Minimum of discrepancy function (CMIN) = 389.33, degrees of freedom (df) = 113, and p-value = 0.0001 indicates an inadequate model fit, the CMIN/df = 3.45 indicates that the research model is an adequate fit. The model was taken to be a fit due to the inconsistent decision-making rule presented by several SEM proponents, where some researchers advocate CMIN/df < 2 as appropriate to decide on model fit, while others advise that CMIN/df > 3 is sufficient [105,106,110,111]. As well as the aforementioned decision rules, CMIN/df < 5 is also believed by some to be sufficient to decide on model fit [102,103,110,111]. Hence with reference to the output of indices in Table 7 for the structural model presented in Fig. 2, the model fit is confirmed. Four out of the five indices selected amongst GFI = 0.9, AGFI = 0.81, CFI = 0.9, PCFI = 0.9 and RMSEA = 0.09 show indices that comply with a decision rule, thus the structural model was considered to be an adequate fit.

Although the model is a confirmed fit, the testing of hypotheses and their respective outcomes were considered more important for this study since it is focused on verifying theories of relationships between constructs (teaching quality, student satisfaction, student loyalty, school image, and school reputation). With the measurement assessment of the items used to measure the five constructs of this study satisfied, the structural model analysis produced
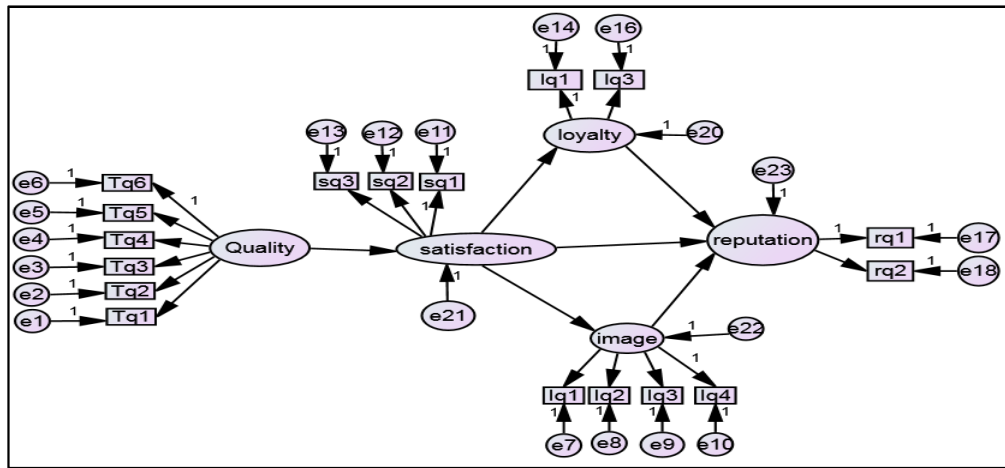
Fig. 2. Structural model

Table 5. Assessment of normality

Variable	Min	Max	Skew	c.r.	Kurtosis	c.r.
RQ2	1.000	7.000	-.847	-5.960	.577	2.029
RQ1	1.000	7.000	-.212	-1.494	.631	2.221
IQ1	1.000	7.000	-.662	-4.661	.044	.155
IQ2	2.000	7.000	-.412	-2.896	-.004	-.015
IQ3	2.000	7.000	-.408	-2.869	.041	.145
IQ4	1.000	7.000	-.972	-6.838	1.300	4.575
LQ1	1.000	7.000	-.828	-5.825	.957	3.367
LQ2	1.000	7.000	-.993	-6.988	1.566	5.509
TQ1	2.000	7.000	-.321	-2.257	-.198	-.696
TQ2	1.000	7.000	-.455	-3.199	.237	.834
TQ3	2.000	7.000	-.179	-1.257	-.384	-1.352
TQ4	1.000	7.000	-.335	-2.355	-.104	-.365
TQ5	1.000	7.000	-.691	-4.862	.864	3.038
TQ6	1.000	7.000	-.808	-5.687	.857	3.015
SQ3	1.000	7.000	-.583	-4.102	.468	1.645
SQ2	1.000	7.000	-.372	-2.616	.181	.636
SQ1	1.000	7.000	-.679	-4.778	.957	3.368
Multivariate					182.469	61.862

regression weights for the relationships posited in the research framework shown in Table 8. The outcome for H1 shows a critical ratio (CR) of 19.42 and a p-value of 0.0001. As the p-value < 0.05, the hypothesis that teaching quality is positively related to student satisfaction is supported. The standardized regression weights in Table 9 shows that student satisfaction increases by 0.88 units for every unit of increase in teaching quality,

H2 is supported with a critical value of 25.35 and a p-value of 0.0001. The p-value < 0.05 demonstrates the positive influence of student satisfaction on student loyalty. The influence is very strong where the standardised regression weight of this relationship is 0.999, or when student satisfaction increases by one unit,

student loyalty is expected to increase by one unit.

The posited H3 reflects the positive relationship between student satisfaction and school image. The critical ratio of 22.08 and p-value of 0.0001 shown in Table 8 means that the hypothesis is supported because the p-value < 0.05. Table 9 demonstrates the importance of student satisfaction in affecting school image, as the standard regression weight of 0.97 shows that with every unit increase in student satisfaction, school image increases by 0.97 units.

A comparison of regression weights shows that student satisfaction has the greatest direct effect on loyalty and image. Furthermore, the effect of satisfaction on student loyalty is greater than school image.

Table 6. Observations of mahalanobis distance

No.	Observation number	Mahalanobis d-squared	p1	p2
1	213	66.897	.000	.000
2	53	66.671	.000	.000
3	228	65.064	.000	.000
4	221	63.154	.000	.000
5	246	63.154	.000	.000
6	51	62.674	.000	.000
7	231	61.899	.000	.000
8	226	54.971	.000	.000
9	243	54.971	.000	.000
10	225	53.801	.000	.000
11	242	53.801	.000	.000
12	175	53.209	.000	.000
13	230	51.063	.000	.000
14	261	49.740	.000	.000
15	140	47.728	.000	.000
16	109	47.626	.000	.000
17	117	47.434	.000	.000
18	172	46.599	.000	.000
19	190	46.096	.000	.000
20	222	45.693	.000	.000
21	247	45.693	.000	.000
22	258	45.240	.000	.000
23	218	44.590	.000	.000
24	250	44.590	.000	.000
25	224	41.800	.001	.000
26	241	41.800	.001	.000
27	212	41.229	.001	.000
28	223	41.229	.001	.000
29	249	41.229	.001	.000
30	184	41.207	.001	.000
31	219	41.037	.001	.000
32	244	41.037	.001	.000

However, referring to Table 8, hypotheses H4, H5, and H6 are not supported. The direct relationship between reputation and loyalty shows CR = -0.03 and p-value = 0.978. With a p-value > 0.05 the relationship between loyalty and reputation is not statistically significant and therefore H4 is not supported. Moreover, the standardised regression weight in Table 9 shows a large and negative value of -23.09. Therefore, student loyalty does not directly relate to school reputation.

The positive relationship between school image and school reputation is not supported either, as the CR value in Table 8 shows CR = -1.57, with the p-value = 0.12; as the p-value is > 0.05, H5 is not supported. Further analysis using standardised regression weights recorded -1.18, indicating a negative and small effect of school image on school reputation.

Likewise, the relationship between student satisfaction and school reputation is not statistically significant as the CR = 0.03 with a p-value = 0.976 in Table 8. As the p-value is greater than 0.05, the hypothesis is not supported. Though positive and large, the standardised regression weights = 25.22 in Table 9 demonstrate that H6 is not supported. This outcome, though theoretically important and its direct term shows an important contribution of student satisfaction to school reputation, this hypothesis is not supported might imply that there is other variables to be significant.

Table 7. Summary of indices of the structural model

Model	CMIN	df	P	CMIN/df	GFI	AGFI	CFI	PCFI	RMSEA
Default model	389.331	113	.000	3.445	.886	.806	.886	.887	.090
Saturated model	.000	0	----	----	1.000	----	1.000	.000	----
Independence model	803.848	136	.000	5.911	.552	.496	.000	.000	.129

Table 8. Regression weights (default model)

Endogenous		Exogenous	Estimate	S.E.	C.R.	p-value	Hypotheses
Satisfaction	<---	Teaching quality	.852	.044	19.419	***	H1
Loyalty	<---	Satisfaction	1.310	.052	25.346	***	H2
Image	<---	Satisfaction	1.058	.048	22.077	***	H3
Reputation	<---	Loyalty	-17.130	629.929	-.027	.978	H4
Reputation	<---	Image	-1.047	.666	-1.573	.116	H5
Reputation	<---	Satisfaction	24.520	825.472	.030	.976	H6

Table 9. Standardized regression weights (default model)

Endogenous		Exogenous	Estimate
Satisfaction	<---	Teaching quality	.884
Loyalty	<---	Satisfaction	.999
Image	<---	Satisfaction	.967
Reputation	<---	Loyalty	-23.087
Reputation	<---	Image	-1.178
Reputation	<---	Satisfaction	25.222

5. DISCUSSION

The result of H1 indicates a positive relationship between teaching quality and student satisfaction in Hong Kong's self-financed higher education, which means that the higher the teaching quality, the higher the student satisfaction. This finding supports the findings from prior studies in the higher education setting that teaching quality is one of the main factors for assessing quality of educational institutions and has a strong direct impact on the level of student satisfaction [66,67]. According to [112], the contribution of teaching quality to student satisfaction is commonly accepted. Students normally assess the quality of an education institution based on tangibility (teachers quality), reliability and responsiveness (methods of teaching), management of education institution as the direct impact on the level of satisfaction [66]. Students' evaluations play a crucial role in the assessment of teaching effectiveness in higher education institutions [19,20]. According to the literature on teaching effectiveness, knowledge and organization, clarity, grading and evaluation, teaching methods and skills, lecturer personality, interaction with students and passion and enthusiasm are important factors to student satisfaction [113-116].

Therefore, academics should find ways to improve teaching quality, for example, by developing new pedagogies suitable for today's students, becoming a specialist or expert in a particular area of study, or equipping themselves with further studies in a particular subject area. The management of education institutions should design a more appropriate compensation and reward system for recruiting appropriate teaching staff and maintaining good quality of teaching.

The findings of H2 validate and support the direct relationship between satisfaction and loyalty [69,70,117]. In fact, there is an increasing awareness of the importance of student loyalty in the higher education sector [118,119]. Management of self-financed education institutions should realize that student loyalty not only helps educational institutions attract potential candidates and retain existing students [119] but also maintain competitiveness in local and overseas educational markets [120]. Therefore, higher education institutions must find ways to improve positive word-of-mouth and recommendations among stakeholders, such as good matriculation and employment rates, well-structured programme curricula, and all-rounded

facilities support. Meanwhile, the result of H3 validate [33] conceptual model showing significant influence of student satisfaction on the image of college programmes. The current study also supports the argument of [79] that school image is a consequence of student satisfaction, meaning that the higher the student satisfaction, the greater the school image is over time.

On the other hand, the findings of H4 do not support prior studies regarding the findings of a positive correlation between corporate reputation and customer loyalty where reputation plays an important role in establishing customer loyalty [86,121]. In addition, the result of H5 do not support the findings of [92] regarding the significant correlation between school image and reputation whilst the findings from H6 also do not support prior studies showing corporate reputation as being an outcome of customer satisfaction [95]. According to evidence from H4, H5, and H6, it is not clear in the education context what direct influence student satisfaction, student loyalty, and school image have on school reputation. This implies that other constructs may have a significant impact on school reputation rather than student satisfaction, student loyalty and school image, although prior studies support the contribution of student satisfaction to school reputation. The results of this study do not support the similar research by [6] who found that both quality of teaching staff, school reputation, school image and student satisfaction are positively correlated to each other.

This study provides a theoretical contribution to the reputation of self-financed higher education institutions by having developed a research model that illustrates and anticipates the effects of teaching quality, student satisfaction, student loyalty and school image on school reputation. With reference to existing relevant literature, this study investigated the complicated relationships among the constructs of teaching quality, student satisfaction, student loyalty, school image, and school reputation. Several findings of the current study are different from the prior similar empirical studies. First, though theoretically most of the relationships presented in this study exist, the positive correlation of student loyalty, school image and student satisfaction on school reputation may not be supported due to the analysis that views the entire model as one.

These findings have theoretical and practical implications for policy setters and administrators of higher education in Hong Kong, especially the

self-financed higher education institutions. Before the beginning of the new millennium, the higher education industry was dominated by government-funded universities. The self-financed higher education sector developed dramatically with annual student intake from 9,000 in 2001/02 to over 70,000 students in 2013/14 [122]. Under the competitive environment of the self-financed higher education sector, one of the methods for improving the recruitment rate of individual education institutions is by improving school reputation. Self-financed higher education institutions do their best to formulate strategic initiatives to improve student satisfaction in order to establish a unique and prestigious school reputation. High teaching quality enhances student satisfaction and in turn promotes a positive school reputation. The findings of the current study validate the positive and direct impact of teaching quality on student satisfaction. Therefore, self-financed higher education institutions are keen to attract potential candidates by highlighting their well-qualified teaching teams with well-articulated curricula and pastoral care in order to help students achieve their goals. By delivering these messages, self-financed higher education administrators intend to establish an outstanding reputation by analysing and matching potential students' needs and wants to the corresponding programme development, various resource support, and learning environment.

6. LIMITATIONS AND RECOMMENDA-TIONS

Firstly, as there were only 320 respondents from twenty-four approved self-financed higher education institutions in Hong Kong, the size of the sample may not be sufficient for generalization and as the sample came solely from self-financed programmes, the results may not apply to other programmes. Further, the expectations may vary between private and public schools, among primary, secondary and universities, and between schools with geographical and/or educational jurisdiction differences. Such differences could be addressed with different hypotheses in future studies. Second, the study focused on investigating student satisfaction on a cross-sectional basis, restricting the generalizability of the statistical findings over time. A longitudinal similar study is advised for providing a clear causal relationship between the constructs. Third, although this study examined the relationship

between school reputation and student satisfaction, the study relied on the students' perception of school reputation, which some may consider too subjective. As reputation is a complicated asset to measure, it is suggested to use other objective factors for measuring school reputation.

Based on the findings of this study, recommendations are made for further similar research. As this study collected data by using a cross-sectional approach, other models such as a longitudinal study with measurements over a longer period of time could provide a clear picture of the causal relationships between quality of teaching staff, student satisfaction, student loyalty, school reputation and image. The findings would help the management of self-financed higher education institutions define appropriate strategies and allocate resources for promoting reputation, identifying students' needs and wants, and in turn, enhancing students' satisfaction and recruitment rate.

7. CONCLUSION

Findings of the study show that teaching quality has a direct influence on student satisfaction and that student satisfaction has a direct influence on student loyalty and school image. Nevertheless, the evidences of the study indicates that student loyalty, school image and student satisfaction does not have a direct influence on school reputation. In order to achieve a high recruitment rate, attract high quality students, and enhance competitiveness in the international self-financed higher education market, higher education institutions need to play an active role in building their own reputation. To achieve this goal, self-financed higher education institutions need to ensure high teaching quality, which enhances student satisfaction and unique school image and turns satisfied students into loyal students [35,112].

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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