

Factors Affecting Student Satisfaction and Performance Gap in relation to the Model of Strategic Enrolment, Graduation and Articulation (SEGA): The Case of Self-financing Higher Education in Hong Kong

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Abstract

In respond to the 2001 Policy Address of the HKSAR Government, the number of places for post-secondary graduates has increased drastically from 33% in 2001 to 66% in 2013; however, the children population decreased from 17% in 2001 to 12% in 2013. In order to face the foreseeable challenge of surplus supply in self-financing tertiary education sector, understanding tertiary students' expectation and satisfaction is important to education policy makers as well as senior management in the course of developing quality education strategies. This paper attempts to examine the performance gap of self-financing institutions in Hong Kong by comparing the perceived importance and satisfaction levels of students studying at sub-degree and undergraduate degree levels with a focus on SEGA issues. The study also identifies aspects that are more important in influencing student satisfaction in relation to the SEGA model in the areas of "enrolment", "graduation" and "articulation". It is found that the attributes of (1) articulation, (2) career services, (3) financial aid (4) programme design and (5) academic advising have strong impacts on students' perceived importance at both sub-degree and degree levels. However, large performance gaps are concurrently found in these five aspects, reflecting high student dissatisfaction in the important SEGA attributes. The results suggest that specific strategies with reference to the SEGA model should be adopted to improve the satisfaction level of students on the influential attributes of their educational experiences.

Keywords: student satisfaction, articulation, performance gap, self-financing, Strategic Enrolment Management (SEM)

Introduction

In the 2001 Policy Address, the Hong Kong Special Administrative Region (HKSAR) announced the policy which aimed at increasing the post-secondary education opportunities for secondary school leavers in order to provide places for 60% of the relevant age group within 10 years. Corresponding to the policy, the number of

Introduction

In the 2001 Policy Address, the Hong Kong Special Administrative Region (HKSAR) announced the policy which aimed at increasing the post-secondary education opportunities for secondary school leavers in order to provide places for 60% of the relevant age group within 10 years. Corresponding to the policy, the number of local self-financing sub-degree and top-up degree programmes has been increased drastically in order to provide sufficient education opportunities for secondary school leavers. The post-secondary participation rate for senior secondary graduates was doubled in five years' time, from 33% in the academic year 2001/02 to 66% in the academic year 2005/06 (EDB, 2006). The rate was then levelled off in the academic year 2006/07, and currently maintains at slightly above 60%.

At present, most of the secondary school graduates are having opportunities to pursue their higher education studies, with a small number of them need to look for employment after graduation. However, the situation will be reversed very soon due to the continued decline in child population (EDB, 2012). The proportion of people aged under 15 decreased from 17% in mid-2001 to 12% in mid-2013 (see Table 1). It is predicted that there will be more post-secondary places available than the number of secondary school graduates (EDB, 2012). Thus, self-financing tertiary institutions in Hong Kong will experience difficulties in maintaining student enrolment due to an excess supply of post-secondary places. The challenges facing Hong Kong tertiary self-financing institutions, specifically the demographic changes and dynamic competition, could create significant impacts on maintaining student enrolment. Therefore, identifying important factors influencing students' enrolment decision and their

Table 1: Mid-year population by age group (Hong Kong Census and Statistics Department, 2006)

	2001	2011	2012	2013	2016	2021	2026	2031	2036	2041
Age structure										
Aged 0-14	17%	12%	12%	12%	12%	12%	12%	11%	10%	10%
Aged 15-64	71%	74%	74%	73%	72%	68%	64%	61%	59%	58%
Aged 65 & above	12%	14%	14%	15%	17%	20%	24%	28%	31%	32%
Median age										
	37.2	42.4	42.8	43.4	44.4	46.5	47.8	49.3	50.7	51.8

Factors or attributes link to the areas of enrolment, graduation and articulation have significant impacts on students' enrolment decision (Dolence, 1993, Huddleston, 2000; Elliott and Healy, 2001; Wan, 2011). This study takes the model of SEGA (Ng et al., 2013) as a framework for investigating perceived importance and satisfaction levels of students, since it comprises a comprehensive list of attributes informed by existing literatures pertaining to Hong Kong's education context. The management model of SEGA is modified from the concept of Strategic Enrolment Management (SEM). "SEM

is a comprehensive process designed to help an institution achieve and maintain the optimum student recruitments, retention and graduation rates of students, where optimum is defined within the academic context of the institution" (Dolence, 1993; also 1996, 1997).

Research Objectives

As there is no evidence that key factors influencing student satisfaction in the area of enrolment, graduation and articulation for the tertiary education sector in Hong Kong have ever been explored, this study aims to fill this gap by determining the level of importance of SEGA attributes from students' perspectives and at the same time identifying the key attributes that influence student satisfaction.

By comparing the perceived importance level and satisfaction level of students studying at self-financing institutes, the performance gap of each SEGA attribute is also measured. Attributes with highest performance gaps signify greatest discrepancies between their perceived importance and satisfaction levels. These represent areas deserving highest attention from education policy makers as well as self-financing institutions, necessitating more resources and specific strategies for improving student satisfaction.

Literature Review

SEM is a proven method for increasing enrolment and graduation rates of students in the United States (Taylor et al., 2008). On top of the attributes suggested by SEM, the parameter of "articulation" is also addressed by SEGA, as it has been found that institutions providing articulation pathways for students (i.e. from an associate degree to a top-up degree or from a top-up degree to a postgraduate degree) tend to maintain positive relationships with students and foster loyalty among them (Bejou, 2005; Zamani, 2001). Furthermore, from the perspectives of the senior management of Hong Kong's self-financing institutions, articulation is also found to be a significant factor affecting students' enrolment choice (Ng et al., 2013).

Figure 1: SEGA Management Model (Ng et al., 2013)



Core Attributes of SEGA Model and Student Satisfaction

Core attributes of SEGA: Proposed by Ng et al. (2013), the management model of SEGA (Strategic Enrolment Graduation and Articulation) contains 7 core attributes: marketing, admission, academic advising, financial aids, career services, learning assistance, institutional research. The purpose of applying SEGA concept is to help institutions identify important attributes in relation to enrolment, graduation and articulation that influence student satisfaction. Student satisfaction is found to be a significant performance indicator of institutional performance, which in turn affects student retention, recruitment and overall reputation of institutions (Douglas et al., 2006).

Student Satisfaction and Loyalty: Grounded on Herzberg's two factor theory, DeShields Jr et al. (2005) find that students who have positive college experience are more likely to be satisfied with their institutions than those who do not have. Student satisfaction and dissatisfaction are found to be impactful on institutional performance. Retention and loyalty (Druzdzel and Glymour, 1994), as well as academic performance (Campbell and Campbell, 1997) of students are often considered as an indication of student satisfaction. Other studies discover that student dissatisfaction resulting from poor perceived quality will lead to attrition (Aldridge and Rowley, 1998) and defect (Jones and Sasser Jr, 1995). Many higher education institutes therefore strive for ways to improve student satisfaction and minimize dissatisfaction. While there is a linear link between satisfaction and loyalty, Jones and Sasser Jr (1995) assert that "satisfied" customers are six times more likely to defect than "completely satisfied" customers in service markets with intense competition. Hence, their respective strengths of loyalty could be very different. It is therefore important to keep high satisfaction levels among customers (students) in order to ensure loyalty.

Many studies ascertain that student satisfaction is a prerequisite to student loyalty. Student satisfaction is closely linked to retention and recruitment, and in turn the overall performance of institutions (Douglas et al., 2006). Devinder and Datta (2003) avow that satisfied customers are loyal, and that students' intentions to re-attend or recommend lectures depend on the satisfaction they obtain from attending previous lectures. This demonstrates that student loyalty (Douglas et al., 2006) as well as brand image (Palacio et al., 2002) are attributable to students' satisfaction towards their institutions. Different attributes of education, however, imply different extent of influence on a student's overall satisfaction. Yu and Dean (2001) assert that affective components of satisfaction (including positive and negative emotions) serve as better predictors of student loyalty than cognitive components.

Measuring instruments on student satisfaction

Taylor (1981) believes that, even though students may not be objective in evaluating institutional performance, their perception will guide their behaviour and decision towards their institutions. Their subjective viewpoints therefore must be measured and addressed. Many instruments have been developed to gauge student

satisfaction. Among the most notable is the Student Satisfaction Inventory (SSI) designed by Elliott and Shinn (1999; also Elliott and Healy, 2001). Their multiple attributes scale, being developed from the SERVQUAL gap model of Parasuraman et al. (1985), measures both student satisfaction and perceived importance on each attribute. The perceived quality is generated by comparing the perceived service delivery (satisfaction in the SSI) and the prior expectation (importance in the SSI). The mismatch or discrepancy between the two becomes an indicator of service satisfaction or dissatisfaction.

As Taylor et al. (2008) claim, despite its wide adoption, the SSI presents cultural bias outside the education context of the US. It is therefore necessary to introduce contextual adaption to existing instruments when a different culture is involved. As discussed earlier, an exploratory study (Ng et al., 2013) on the views of senior education management in Hong Kong reflects that "articulation" is a significant but yet to be explored factor (Wan, 2011). This area is also not addressed in popular measuring constructs such as SSI or SEM.

Attributes of SEGA

In the following section, the attributes incorporated by the SEGA model will be discussed in details.

Marketing: According to Brown and Oplatka (2006), most institutions now recognize the need to market themselves within the competitive climate of the higher education sector. Kotler and Fox (1995, p.6) define marketing as "analysis, planning, implementation and control of formulated marketing programmes designed to bring about voluntary exchanges of values with target markets to achieve institutional objectives". Once an institution has developed an appropriate marketing plan, the process of recruiting students can be started (Hossler and Kalsbeek, 2008). Building on this, Nicholls et al. (1995) have proposed that higher education is not a product but rather a service; therefore, the marketing of services must adopt different approaches. As the nature of educational services is people-based, enhancing relationships with students and possessing an understanding of students' needs are significant factors in marketing research.

Admission: The admission office is one of the major functions in institutions, and is responsible for a variety of activities. The role of the admission office is to provide information to prospective students, arrange campus visits, conduct tours of facilities and provide in-depth information to prospective students about the resources and assets offered by the institution (Schuh, 2003). As suggested by Maringe and Carter (2007), an easy application process is one of the decision making factors motivating international African students to study in UK higher education. The admissions personnel are also key factors affecting student satisfaction, as they are institutions' core representatives providing direct contact with prospective students (Tallman, 1994).

Academic Advising: The function of academic advising is to enable students to bridge the gap between undergraduates and the institution (Kau, 2014). This connection between quality advising and student retention has been confirmed by many studies (Tinto, 1975; Tinto, 1993; Hagedorn et al., 2000). Therefore, the involvement of the academic advising staff helps to connect students to institutions, enhancing an ongoing relationship between them and the persistence of students in their study. More recently, Young-Jones et al. (2013, p.16) find that academic advising impacts multiple factors that contribute to student success. Thus, academic advising is an element that should be further developed "to help students achieve educational and career goals while helping institutions to accomplish stated educational missions".

Financial Aid: Studies show that financial aid can have an impact on the retention of currently enrolled students. Using the empirical data from the University of Minnesota, DesJardins et al. (2002) simulated how changes in financial aid packages will affect students' retention decisions. The simulations predicted that greater generosity in the financial aid package would improve student retention. This implies that providing scholarships rather than loans would help retain students and foster loyalty. Singell (2004) confirmed these findings using an alternative empirical approach and data for the University of Oregon. According to Dynarski and Scott-Clayton (2013), financial aid such as grants tying to academic achievement would boost students' persistence in study more than the grants without strings attached. The authors also suggest that the scope of financial aid programmes could be expanded in the forms of grants, subsidized loans and tax credits.

Career Services: Heinzen and Rakes (1995) stress the importance of career services in higher education as part of the overall enrolment management efforts. One of the objectives of career services is to increase students' retention level by providing a series of programmes and services that create opportunities for students to strengthen their confidence that they will be equipped and prepared to face the new challenges upon graduation. Several researches find that students with strong career plans are more likely to persist in their college studies (Tinto, 1975; Tinto, 2006).

Learning Assistance: In order to promote student persistence, institutions and universities should offer a wide variety of academic assistance services and resources, as Roberts and Styron (2008, p.5) put:

"It is important for institutions of higher learning to implement and maintain various academic resources that promote student success and increase student persistence because these resources are needed by a significant number of students who are not adequately prepared for the academic challenges they will face at the university."

Similarly, Kuh (2008) contends that institutions should implement and promote the usage of responsive, learner-centred support services, such as peer tutoring and special labs to reinforce student persistence.

Institutional Research: Most strategic planning in institutions relies on research that supports scanning external conditions and evaluating existing operations (McIntyre, 2011). Institutional research is essential in every stage of SEM. The institutional research office provides data analysis and research to its institution for the purpose of better planning and quality improvement. In terms of functions, Huddleston (2000, p.66) comments that "an institutional research effort manages and provides relevant data including retention rates, historical trends, registration statistics, student characteristics, and enrolment patterns and projections". Hence, institutional research can be capitalized as basis for positioning in the marketplace (Hossler et al. 1990).

Articulation: Bejou (2005) and Zamani (2001) argue that institutions should provide articulation pathways and transfers to students making the transition from two to four-year institutions, allowing them to maintain positive relationships and fostering post-graduate loyalty. Kember (2010) and Wan (2011) address that as Hong Kong lacks articulation opportunities for associate degree students, institutions should offer top-up degrees for them to earn their bachelor degree qualification. Therefore, two-year programme institutions need to address these issues of lacking successful articulation and transfer process. Wan (2011) recommends that the Hong Kong SAR Government could expand articulation opportunities for sub-degree graduates such as associate degree or higher diploma graduates by facilitating the development of self-financing degree-awarding institutions and private universities. Based on these arguments, the attribute of articulation in the SEGA model is highly relevant to Hong Kong's self-financing higher education sector.

Methodology

The survey design in this study incorporates insights from both the current literature and the senior management of Hong Kong's tertiary education sector. The importance and satisfaction levels of each SEGA (Strategic Enrolment Graduation and Articulation) attribute across eight self-financing tertiary institutions in Hong Kong were examined. Students from these institutions were invited to complete a questionnaire that covers a wide range of tertiary education experience as well as students' demographic characteristics.

To facilitate the understanding of student respondents, the 9 factors of the SEGA model were broken down into 11 comprehensible categories, from which 45 important attributes were developed into question items. Among these 11 categories, "articulation" has not been covered in any previous empirical studies, though it is found to be a crucial factor that concerns students when they make choices on institutions for their sub-degree and top-up degree programmes (Wan, 2011; Ng et al., 2013). The related findings therefore would provide valuable insights to policy makers and tertiary institutions of Hong Kong.

In the survey, students were asked to rate both the importance and satisfaction levels of each of the above attributes. The importance that students placed on each

attribute was measured by a 7-point Likert scale, where 1 is "not important at all", 2 is "not very important", 3 is "somewhat unimportant", 4 is "neutral", 5 is "somewhat important", 6 is "important," and 7 is "very important". In addition, students were required to express their perceived satisfaction on each attribute which also utilize a 7-point Likert scale, where 1 is "not satisfied at all", 2 is "not very satisfied", 3 is "somewhat dissatisfied", 4 is "neutral", 5 is "somewhat satisfied", 6 is "satisfied", and 7 is "very satisfied".

Table 2: 11 Categories of SEGA Core Attributes

9 core attributes of SEGA	Corresponding 11 Factors adopted in the questionnaire	No. of question items included
Marketing	Institution and Programme Information	8
	Other References	4
	Programme Design	5
Admission	Admission and Registration	6
Financial Aid	Financial Aid	4
Orientation	Orientation	3
Academic Advising	Academic Advising	4
Learning Assistance	Learning Assistance	3
Career Services	Career Services	4
Articulation	Articulation	2
Institutional Research	Institutional Research/ Feedback	2

The results of the survey study provide three scores for each attribute: (1) a perceived importance score, (2) a perceived satisfaction score, (3) a perceived performance gap score, which is determined by subtracting the perceived satisfaction score from the perceived importance score. Such design rides on the analytical framework of SSI developed by Elliott and Shinn (1999) and modified by Elliott and Healy (2001), demonstrating exceptionally high internal reliability. A zero gap score on an item indicates that the performance of institutions meets exactly the expectations of students. A positive perceived performance gap score indicates that institutions do not meet the expectations of students, resulting in dissatisfaction. For the same token, a negative gap score indicates that institutions exceed the expectations of students, implying satisfaction. Apart from assessing individual items, the analysis also ranks the above three scores among all 45 items to provide further insights for policy makers and institutions. Resources can then be allocated more effectively according to the relative importance, satisfaction and performance levels.

Sample

A purposive non-probability sampling technique was used in this study. 626 students (216 males, 405 females, 5 unknown cases) of self-financing sub-degree/degree programmes from eight self-financing tertiary education institutions took part in the survey. The data were collected in 2013 in classroom settings. Students

participated in the survey voluntarily. Each was rewarded a bookstore or café voucher after completing the questionnaire. Table 3 summarizes the key demographic characteristics of the students. The data were then analysed to determine the level of importance of the SEGA attributes and the level of satisfaction perceived by the respondents.

Table 3: Demographic Mix of the Respondents

I. Gender Distribution	Frequency	%
Male	216	34.5
Female	405	64.7
Missing	5	0.8
Total	626	100
II. Institution Distribution		
1. City University of Hong Kong - Community College of City University	123	19.7
2. Hong Kong Shue Yan University	60	9.6
3. The Chinese University of Hong Kong - School of Continuing and Professional Studies	26	4.2
4. The Hong Kong Polytechnic University		
-Hong Kong Community College	96	15.3
-School of Professional Education and Executive Development	183	29.2
5. The Open University of Hong Kong - Li Ka Shing Institute of Professional and Continuing Education	27	4.3
6. The University of Hong Kong - HKU SPACE Community College	34	5.4
7. Tung Wah College	20	3.2
8. Vocational Training Council - Hong Kong Institute of Vocational Education (IVE)	57	9.1
Total	626	100
III. Programme Type		
Sub degree	370	59.1
Degree	256	40.9
Total	626	100
IV. Age		
15 or below	0	0
16 - 19	204	32.6
20 - 22	358	57.2
23 - 25	58	9.3
26 or above	4	0.6
Missing	2	0.3
Total	626	100

Results

In this section, the mean scores on the importance and satisfaction levels for each of the SEGA attributes rated by students studying at self-financing institutions will be presented. Attributes viewed as having higher importance as well as those perceived with lower satisfaction will be highlighted in tables, as they are areas deserving greater attention from education policy makers and the management of institutions. On top, the differences between these two scores will also be computed and presented as "mean performance gap scores". Based on these findings, institutions can determine the aspects of SEGA attributes that students identify as having high levels of importance but low levels of satisfaction. Policy makers can also take the findings as guidelines for formulating more relevant policies and provide specific support to areas that necessitate improvements. As students of different tertiary education levels may possess diverse expectations and perceived satisfaction on their study experience, apart from the overall results, the respective findings for sub-degree and degree students will also be presented.

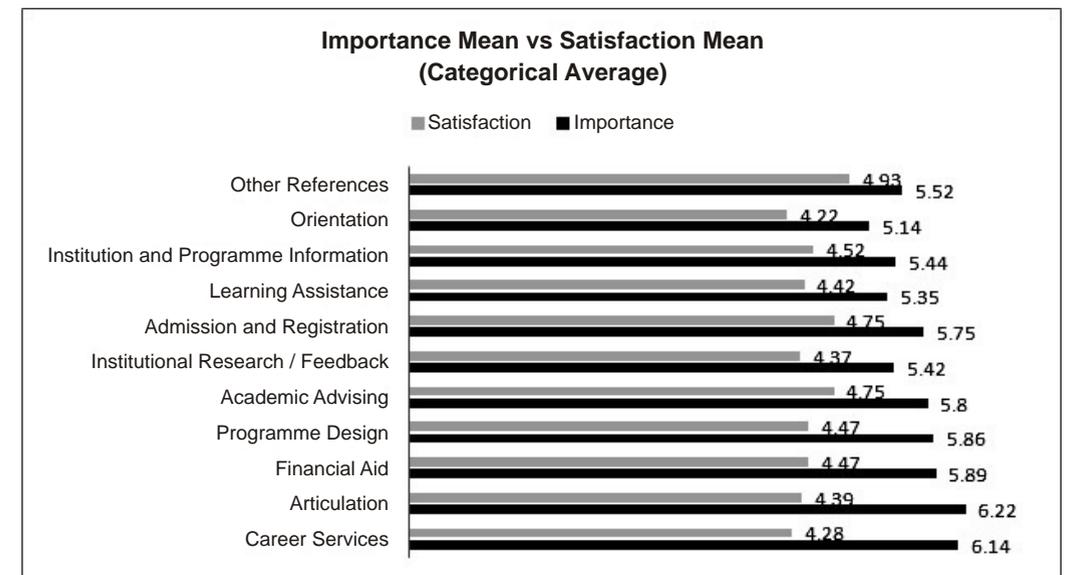
Importance and Satisfaction Levels for Both Sub-degree and Degree Students

Table 4 summarizes the mean importance, satisfaction and performance scores for each of the 11 categories of SEGA attributes for both sub-degree and degree students from eight self-financing tertiary institutions in Hong Kong. The first two scores are also visualized by bar charts in Figure 2, where the discrepancies between them can be illustrated. The total sample size is 626. From the table, we can see that all attributes yield positive performance gaps (3rd column) and the average performance gap score is 1.18, meaning that in general students' satisfaction is not particularly high when compared with their expectations on their study experience. While this is a generic trend, it would be more insightful to look into the relative scores among attributes. The table lists the 11 attributes according to the descending order of their "performance gap scores". The five *highest* scores in importance levels and five *lowest* scores in satisfaction levels are also highlighted. At the same time, the performance gap score with values greater than 1 are highlighted as well. The higher the positive performance gap scores, the greater the discrepancies between expectations and perceived performance. The five highest mean performance gap scores are found in attributes of "career services" (mean = 1.86), "articulation" (mean = 1.83), "financial aid" (mean = 1.42), "programme design" (mean = 1.39) and "academic advising" (mean = 1.06). The gap scores indicate that these SEGA attributes have the largest differences between importance and satisfaction scores, implying higher dissatisfaction among students. "Career services" is the most important SEGA attribute (mean = 6.14) for students. However, it has the second lowest overall satisfaction score (mean = 4.28). Similarly, "articulation" is the second most important SEGA attribute viewed by students, but this same attribute does not receive a good satisfaction score (mean = 4.39), resulting in the second highest performance gap score (mean = 1.83).

Table 4: Perceived Importance against Perceived Satisfaction on the SEGA Attributes for Both Sub-degree and Degree Students

SEGA attributes (listed in descending order of the Performance Gap Scores)	Mean Importance Scores	Mean Satisfaction Scores	Mean Performance Gap Scores
	5 highest scores highlighted	5 lowest scores highlighted	Scores > 1 highlighted
Career Services	6.14	4.28	1.86
Articulation	6.22	4.39	1.83
Financial Aid	5.89	4.47	1.42
Programme Design	5.86	4.47	1.39
Academic Advising	5.80	4.75	1.06
Institutional Research/ Feedback	5.42	4.37	1.04
Admission and Registration	5.75	4.75	1.01
Learning Assistance	5.35	4.42	0.93
Institution and Programme Information	5.44	4.52	0.92
Orientation	5.14	4.22	0.92
Other References	5.52	4.93	0.59
Average Performance Gap Score:			1.18

Figure 2: Overall Perceived Importance Vs Overall Perceived Satisfaction of the SEGA Attributes (Both Degree and Sub-degree students) by order of importance



To deepen our understanding on how students regard different areas of their study experience at self-financing institutes, Table 5 displays the average importance scores for all the 45 items under the 11 SEGA attributes. These detailed figures provide more specific insights on what concretely concern Hong Kong's tertiary students.

Table 5: Importance Score of 45 items for Both Sub-degree and Degree Students

Attributes	Importance	
	Mean	Std. Dev.
Factor 1: Institution and Programme Information	5.51	
1) Brand image of institution	5.96	0.95
2) Information about college life	5.16	1.32
3) Information about college facilities	6.08	0.99
4) Ancillary transport facilities of college	5.50	1.31
5) Market info about graduates' employment prospects	6.29	0.99
6) Delivering college information by various media	4.82	1.37
7) Delivering college information by social media	4.84	1.43
8) Delivering college information on face-to-face basis by Info Day	5.40	1.19
Factor 2: Other References	5.52	
9) Opinions of parents or family members	5.29	1.28
10) Opinions of the teachers from previous school or institution	5.60	1.19
11) Opinions of alumni from my previous school or institution	5.45	1.22
12) Opinions of friends studied HD/ AD/ Top-up Degree	5.75	1.11
Factor 3: Programme Design	5.86	
13) Programmes offered are unique	5.38	1.17
14) Programmes offered are recognized in the job market	6.28	0.93
15) Sufficient elective courses for per semester within the program of study	5.88	1.05
16) Provision of other learning experience by college	5.60	1.20
17) Provision of internship by college	6.17	0.99
Factor 4: Articulation	6.22	
18) Provision of clear articulation pathway	6.33	0.92
19) Provision of clear credit transfer/ exemption	6.11	1.06
Factor 5: Financial Aid	5.89	
20) Provision of scholarships based on academic performance	5.88	1.20
21) Provision of studentships based on economic needs	5.93	1.20
22) Student loan counselling is available if needed	5.92	1.14
23) Student loan results are announced in time	5.82	1.26
Factor 6: Admission and Registration	5.75	
24) Convenient application and registration procedures	5.62	1.20
25) Clear instructions on application and registration procedures	5.72	1.09
26) Provision of admission status by college	5.82	1.02
27) Admission staff provides accurate explanation about programme information	5.87	1.02
28) Admission staff provides personal guidance	5.62	1.12
29) Strong linkage between the self-financing arms and the proper institution	5.87	1.20
Factor 7: Orientation	5.14	
30) Provision of Orientation day facilitating students' familiarization with college	5.34	1.34
31) Inclusion of overnight camp for orientation activities	4.97	1.54
32) Orientation activities facilitating students' familiarization with college	5.12	1.53
Factor 8: Learning Assistance	5.35	
33) Support programmes in study skills	5.44	1.17
34) Support programmes in writing skills	5.40	1.19
35) Support programs in Information and Communication Technology	5.20	1.32
Factor 9: Academic Advising	5.79	
36) Provision of academic advising by college	5.84	1.09
37) Programme officers act as academic advisors	5.68	1.19
38) Lecturers act as academic advisors	5.88	1.07
39) Students are advised by the same advisor throughout their study years	5.74	1.15
Factor 10: Career Services	6.15	
40) Provision of credit-based course on career planning by college	6.02	0.98
41) Assistance is provided to students in locating internship opportunities	6.14	0.98
42) Assistance is provided to students in locating practicum opportunities	6.17	1.02
43) Assistance is provided to graduates in locating job opportunities	6.25	0.97
Factor 11: Institutional Research/ Feedback	5.42	
44) Surveys on learning experience and school life are periodically conducted	5.48	1.13
45) Students are invited to staff-student meetings to express opinions on learning experience and school life	5.35	1.19

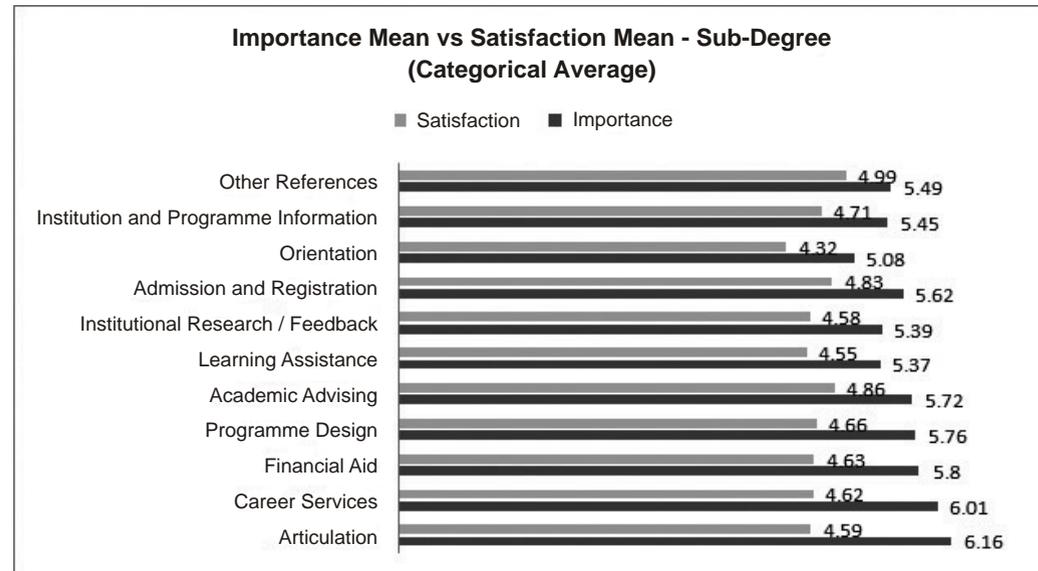
Importance and Satisfaction Levels for Sub-degree Students

Table 6 summarizes the mean importance, satisfaction and performance scores for each of the 11 categories of SEGA attributes for "sub-degree students" only. A total of 370 students (59.1% of the total sample size) were recruited under this category. The first two scores are also visualized by bar charts in Figure 3, where the discrepancies between them can be illustrated. Same as Table 4, Table 6 lists the 11 attributes according to the descending order of their "performance gap scores". Again, the five highest scores in importance levels, five lowest scores in satisfaction levels and the performance gap scores with values greater than 1 are also highlighted. The higher the performance gap scores, the greater the discrepancies between expectations and perceived performance. The average performance gap score is 0.96. Among sub-degree students, the five highest mean performance gap scores are found in attributes of "articulation" (mean = 1.57), "career services" (mean = 1.39), "financial aid" (mean = 1.17), "programme design" (mean = 1.10) and "academic advising" (mean = 0.86). Four of these high mean performance gap scores are greater than 1. "Articulation" is the most important SEGA attribute (mean = 6.16) for sub-degree students; however, its satisfaction score is one of the lowest (mean = 4.59), resulting in the highest performance gap score (mean = 1.57). Similarly, "career services" is the second most important SEGA attribute viewed by sub-degree students, but this same attribute also fails to receive a good satisfaction score (mean = 4.62).

Table 6: Perceived Importance against Perceived Satisfaction on the SEGA Attributes for Sub-degree Students

SEGA attributes (listed in descending order of the Performance Gap Scores)	Mean Importance Scores	Mean Satisfaction Scores	Mean Performance Gap Scores
	5 highest scores highlighted	5 lowest scores highlighted	Scores > 1 highlighted
Articulation	6.16	4.59	1.57
Career Services	6.01	4.62	1.39
Financial Aid	5.80	4.63	1.17
Programme Design	5.76	4.66	1.10
Academic Advising	5.72	4.86	0.86
Learning Assistance	5.37	4.55	0.82
Institutional Research/ Feedback	5.39	4.58	0.81
Admission and Registration	5.62	4.83	0.79
Orientation	5.08	4.32	0.76
Institution and Programme Information	5.45	4.71	0.74
Other References	5.49	4.99	0.50
Average Performance Gap Score:			0.96

Figure 3: Perceived Importance against Perceived Satisfaction of the SEGA Attributes for Sub-degree Students by order of importance



Importance and Satisfaction Levels for Degree Students

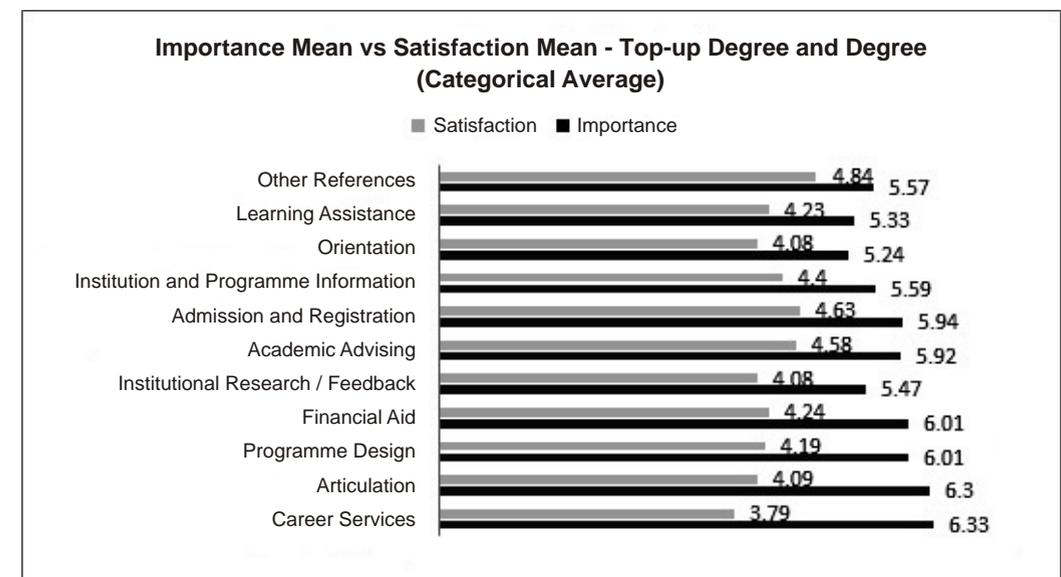
Table 7 presented the mean importance, satisfaction and performance scores for each of the 11 categories of SEGA attributes for "degree" students only. A total of 256 students (40.9% of the total sample size) are recruited under this category. The first two scores are also visualized by bar charts in Figure 4, where the discrepancies between them can be illustrated. Same as Table 4 and 6, Table 7 lists the 11 attributes according to the descending order of their "performance gap scores". Again, the five highest scores in importance levels, five lowest scores in satisfaction levels and the performance gap score with values greater than 1 are also highlighted. The average performance gap score is 1.50, much higher than the average score of 0.96 among the sub-degree students. The two highest mean performance gap scores generated from the survey conducted among degree students, namely "career services" and "articulation", are the same as those two from sub-degree students. However, sub-degree students perceive "articulation" as the most important SEGA attribute; whereas degree students perceive this same attribute as the second most important based on their educational experience. The two highest mean performance gap scores of the SEGA attributes of "career services" and "articulation" generated among degree students are both above 2 (mean = 2.54 and mean = 2.21 respectively), meaning relatively high dissatisfaction comparing to other attributes and the results for sub-degree students. Moreover, all attributes except one yield performance gap scores greater than 1. As said above, the higher the positive performance gap scores, the greater the dissatisfaction. It reflects that the dissatisfaction levels on important SEGA attributes (such as career services and articulation) among the degree students are more intense than those among the sub-

degree students. This observation is further confirmed when we compared the average performance gap scores of sub-degree students (0.96) and that of degree students (1.50).

Table 7: Perceived Importance against Perceived Satisfaction on the SEGA Attributes for Degree Students

SEGA attributes (listed in descending order of the Performance Gap Scores)	Mean Importance Scores	Mean Satisfaction Scores	Mean Performance Gap Scores
	5 highest scores highlighted	5 lowest scores highlighted	Scores > 1 highlighted
Career Services	6.33	3.79	2.54
Articulation	6.30	4.09	2.21
Programme Design	6.01	4.19	1.82
Financial Aid	6.01	4.24	1.77
Institutional Research/ Feedback	5.47	4.08	1.39
Academic Advising	5.92	4.58	1.34
Admission and Registration	5.94	4.63	1.31
Institution and Programme Information	5.59	4.40	1.19
Orientation	5.24	4.08	1.16
Learning Assistance	5.33	4.23	1.10
Other References	5.57	4.84	0.73
Average Performance Gap Score:			1.50

Figure 4: Perceived Importance against Perceived Satisfaction of the SEGA Attributes for Top-up Degree and Degree Students - by order of importance



Discussion

As there are differences regarding the criteria and considerations adopted by students of the sub-degree programmes and those of the degree programmes, the importance of the SEGA attributes is further investigated separately. For the sub-degree level, the five most important attributes of SEGA are: (1) Articulation, (2) Career services, (3) Financial aid, (4) Programme design and (5) Academic Advising; whereas, for the degree level, the five most important attributes of SEGA are: (1) Career Services, (2) Articulation, (3) Programme Design, (4) Financial Aid (5) Admission and Registration. The pattern appears similar between students of the two levels, but it reflects that students of sub-degree programmes concern more with "articulation" while those of degree programmes concern more with "career services". Both types of students place high importance on futuristic aspects. They tend to put greater expectations on areas that are more directly related to their post-graduate endeavours. Studying at tertiary level is regarded as a means to further pursuance. Such observation has rarely been investigated in previous studies especially regarding the self-financing higher education in Hong Kong.

The overall mean performance gap scores of the SEGA attributes among all types of students studying at self-financing tertiary institutions in Hong Kong are also examined in this study. It is found that the five SEGA attributes with highest positive mean performance gap scores are: (1) Career Services, (2) Articulation, (3) Financial aid, (4) Programme Design, and (5) Academic Advising. These are areas where perceived performance of institutions fall short of students' expectation, and thus require more specific improvement plans.

With regard to the above findings on the attributes with highest "mean performance gap scores", the study reflects that the two most important SEGA attributes, namely, "articulation" and "career services" fail to receive high satisfaction among students disregarding their levels of study (Table 4). The importance and satisfaction of the SEGA attributes are also separately reported for the two levels of study: sub-degree level and degree level. As comprehensive research on the perceptions towards self-financing tertiary education in Hong Kong is not readily available, the findings from this study, especially with the under-explored attribute of "articulation" being included, become a valuable reference to education stakeholders. Our results can serve as a guide to senior management on institutional planning as well as to education policy makers in formulating appropriate programmes to enhance quality education in Hong Kong. To boost students' satisfaction level on self-financing tertiary institutions in Hong Kong, the followings are some suggestions and recommendations on five of the SEGA attributes that reflect more alarming performance gaps.

Articulation

"Articulation" is the attribute with prime importance for sub-degree students to fulfil their wishes of becoming a university graduate. According to Heron as cited in

Kember (2010), the HKSAR Government, through the UGC, assigned 1,680 second-year university places in 2007/2008 to the most successful associate degree graduates; however, these places only cater for a small proportion of associate degree graduates in Hong Kong. This creates concerns to sub-degree students. As reflected in our findings, these students put great emphasis on further studies rather than looking for jobs. Providing more articulation opportunities and clear articulation pathways are therefore necessary for associate degree graduates. The need for articulation into degree programmes has grown to the extent that top-up degrees are now being offered by some self-financing institutions that used to serve associate degree graduates only. Other than the local top-up degrees offered by self-financing tertiary institutions, some degrees are also offered in conjunction with overseas universities. Promoting a clear articulation arrangement in a knowledge-based society at the national and international levels is deemed appropriate (Lam, 2010). With reference from this study, Hong Kong education policy makers should consider providing more senior year places (both UGC and self-financing institutions) to sub-degree students so that more articulation opportunities can be offered.

Career Services

The attribute of "career services" is viewed as significant for both sub-degree and degree students as seen in Table 4. Through career services, institutions could provide supportive environment in which students would be assisted to develop a range of skills and qualities appropriate for the working world. It is suggested that the function of career services should be operated at the institutional level (Engelland et al., 2000). If resources are allowed, it is crucial to build up a central career service centre such that the link between employers and institutions could be strongly built. Apart, providing regular basic training to students such as grooming, CV writing, etc. would also help increase student's confidence in job interviews. In addition, providing career advice at programme levels would provide more specific, industry-oriented career guidance. These could be achieved by means of organizing profession-based training and seminars, networking with potential employers for career opportunities, etc. The importance of this attribute indicates that "*students believe that graduating from a certain institution will allow them to be more competitive in the labor market as compared to graduating from other institutions*" (Ancheh et. al., 2006, p.3). In fact, students tend to be outcome-oriented and highly influenced by the career prospect of previous graduates. Their enrolment choice is dependent on how much the projected qualification to be obtained from institutions could help them find desirable jobs (Ming, 2010).

Financial Aids

Financial aid has been increasingly regarded as one of the key important factors in enrolment management (Hossler, 2000). In Hong Kong, students with good academic performance will choose universities funded by the University Grants Committee (i.e. UGC-funded universities), if they have been offered places, instead of self-financing

institutions. In this regard, financial aid may not be the paramount attribute in maximizing the enrolment figures of self-financing tertiary institutions in Hong Kong. However, financial aid is a useful tool to retain current students. It is therefore recommended that financial aid in the form of scholarships, grants and student loans should be focused on student retention, which affects student persistence and momentum in completing their studies. Education policy makers could also consider offering merit-based and need-based grants to students of self-financing higher education. Need-based grants are awards given to students with financial needs, while merit-based grants are typically awarded to students with outstanding performance, or are awarded to the best and brightest students. Many studies reveal that grants, especially merit-based ones, can successfully motivate students, boost academic results (Henry and Rubenstein, 2002), and raise enrolment rate (Cornwell et al., 2006).

Programme Design

Programme design would have an impact on students' enrolment decision. Thus, the uniqueness and the recognition of the programmes offered are crucial to enhance the enrolment dimension of the institution. Yusof et al. (2008; as cited in Ming, 2010) state that availability of the required programme, such as the range of programmes offered, flexibility of degree programmes and range of degree options, is a very important attribute that affects the choice of higher education for first-year university students. The link between programme design and student enrolment decisions is positively associated (Soutar and Turner, 2002). The senior management could design unique programmes to attract prospective students as well as to improve student satisfaction.

Academic Advising

Academic advising is an important attribute which supports students' learning in developmental education. This helps improve studying outcomes pertaining to graduation goals. To foster the function of academic advising, the specialism of academic advisors should be more or less similar to the students' specialism, such that students would turn to academic advisors for specific academic advice on areas such as choosing electives, discussing study patterns, etc. Quality academic advising can be one of the ways to enhance the relationship between institutions and students. Astin (1993) contended that next to "peer group", "the faculty" represents the second most significant aspect of the student's undergraduate development.

Conclusion

This study provides insightful information to self-financing tertiary education in Hong Kong regarding the importance of the SEGA attributes from students' perspectives. In addition, key factors influencing student satisfaction in the areas of enrolment, graduation and articulation were identified. Furthermore, the mean

performance gap scores of the SEGA attributes were also measured. The outcomes of this research, on the one hand, help the management team of self-financing tertiary institutions improve their overall strategic plan by addressing relevant aspects of the SEGA attributes. On the other hand, this study is of paramount importance for education policy makers to understand the key factors that are influencing post-secondary students' enrolment choice and satisfaction with their chosen institutions, based on which proper guidance and policy on improving education quality can be formulated.

Future Research

Studies of strategic enrolment and student satisfaction in higher education or private institutions have been increased recently. A study to determine the cost effectiveness and cost efficiencies associated with the implementation of a SEGA programme is recommended for further research. Such research can lead to further insights into how education policy makers or senior management can be better supported to ensure cost effectiveness of SEGA implementation for maintaining student enrolment and improving student satisfaction.

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