Using the European Customer Satisfaction Index (ECSI) Model to Examine Student Satisfaction in the Context of Universities in Uganda

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Abstract

Student satisfaction (SS) is one of the strategic tools for a university in a competitive environment. Hence the need to investigate SS in universities. The aim of our study was to use the European Customer Satisfaction Index (ECSI) model to examine SS in universities in Uganda. The ECSI model suggests that SS is dependent on university image (UI), student expectations (SE), service quality of infrastructure and tangible service elements (SQITSE), service quality of people and processes (SQPP) and perceived value of investment (PVI). The ECSI model further suggests that PVI is dependent on UI, SE, SQITSE and SQPP. It also suggests that student loyalty (SL) is dependent on UI, SS and SQPP and finally that SE is dependent on UI. We designed a self-administered questionnaire on those constructs and had a sample of 704 students from seven universities in Uganda respond to it. We analysed our data using linear regression. Our findings gave support to the ECSI model in examining SS. We established that all the relationships among the constructs in the ECSI model were significant except the relationship between SQITSE and SS. We concluded that the ECSI model was appropriate for examining SS in the context of universities in Uganda. We recommend that university authorities allocate resources to improving their respective UI, SE, SQPP and PVI so as to enhance SS which invariably leads to SL.

Keywords: *ECSI; Linear regression; Student satisfaction; Uganda; Universities*

Introduction

Student satisfaction (SS) according to Munteanu, Ceobanu, Bobalca and Anton (2010), is defined as a student's "evaluative summary of direct educational experience, based on the discrepancy between prior expectation and the performance perceived after passing through the educational cycle" (p.126). Shahsavar and Sudzina (2017) define SS as perceived performance of services meeting or exceeding a student's expectations , whereas Weerasinghe and Fernando (2018) define it as "a … [good] attitude based on [a] student's educational experiences" (p. 117). From these three definitions, we may say that SS is a good attitude which a student develops after encountering a service at an educational institution; this attitude arises from the student's expectation of a given service and that student's perception of the service after the student has received it. SS is important to a university because it may lead to student loyalty (Osman & Saputra, 2019), recruitment of students (Munteanu et al., 2010) and high completion rates (Grebennikov & Shah, 2013). SS further boosts a university's image, giving it a competitive advantage (Karna & Julin, 2015), thus leading to profitability (Guilbault, 2017; Mihanovic, Batinic & Pavicic, 2016). SS also plays a fundamental role in the social stability of students at a university (Mayega, 2015; Oliver, 2015). In spite of the importance of SS, universities in Uganda have persistently faced student strikes, which could be an indicator of student dissatisfaction (Mayega, 2015). However, if the challenge of student dissatisfaction in the universities persists, there may be a decline in student loyalty, recruitment of students, and student performance and completion rates. The problem could damage the image of the respective universities which, in turn, might compromise their competitive advantage, hence reducing their profitability. It is, therefore, necessary to find the antecedents of SS and its consequent. In this study, our aim was to use the European Customer Satisfaction Index (ECSI) model (Figure 1) to examine SS in the context of universities in Uganda.

Theoretical Perspective

We anchored our study in the ECSI model (Figure 1) which was developed by the European Organisation for Quality Technical Committee in 1998 (Shahsavar & Sudzina, 2017). The authors of the ECSI model illustrate the relationship between customer satisfaction (CS), its antecedents and consequence.

Figure 1: European Customer Satisfaction Index (ECSI) model
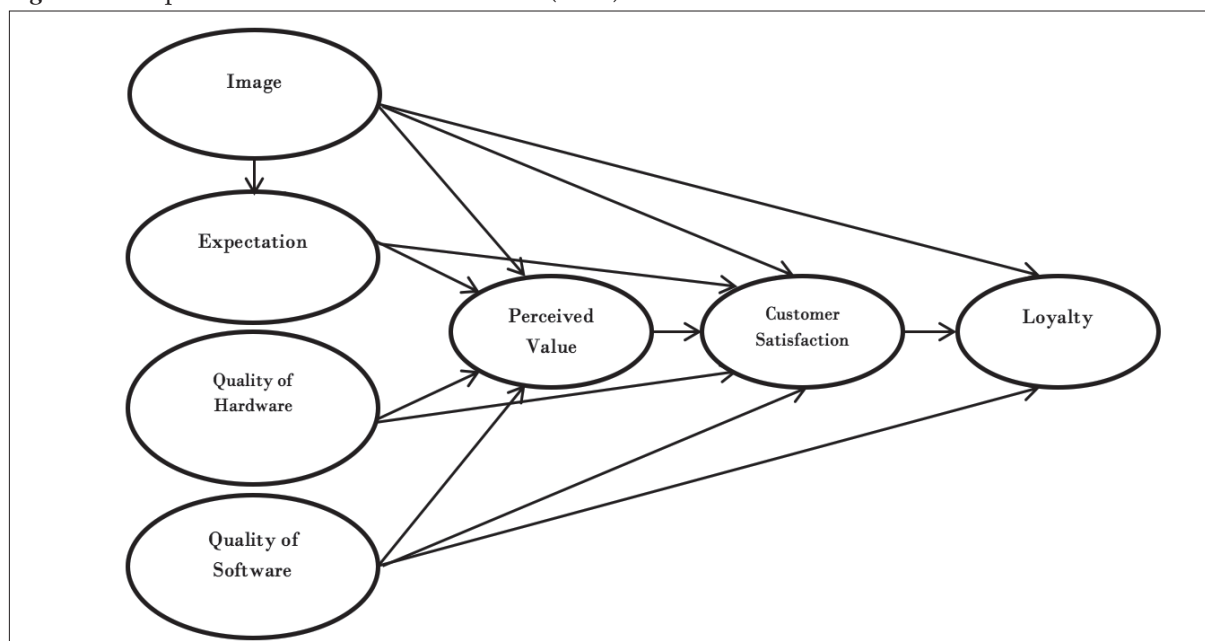
(Source: Shahsavar & Sudzina, 2017, p. 4)

The main variable in the ECSI model (Figure 1) is CS. Angelova and Zekiri (2011) define CS as an emotional reaction to the difference between what a customer anticipates and what they receive. The antecedents of CS as per Figure 1 are image, expectation and the quality of "hardware" and that of "software". Image is defined by Ciavolino and Dahlgaard (2007) as an organisation's brand name and the type of associations a customer gets from the organisation. Ciavolino and Dahlgaard (2007) defined expectations as the level of quality that a customer expects to receive from an organisation and is as a result of a prior consumption experience of a service. The terms quality of "hardware" and quality of "software" refer to service quality (SQ), where SQ is the comparison between a customer's service expectation and their perception of actual performance (Shahsavar & Sudzina, 2017). "Hardware" refers to infrastructure and tangible service elements of the organisation, while "software" refers to people offering the service; and the processes related to the service (Brown & Mazzarol, 2006).

The ECSI model (Figure 1) postulates that the four antecedents of CS (i.e. image, expectation, quality of "hardware" and quality of "software") influence CS through perceived value of investment in a service. Perceived value, according to Caruana, Money and Berthon (2000), is a "consumer's overall assessment of the utility of a product based on perceptions of what is received and what is given" (p. 1342). Perceived value directly influences CS. The ECSI model (Figure 1) further postulates that customer loyalty (CL) is a consequence of CS. CL, according to Douglas, McClelland and Davies (2008), is a customer's willingness to recommend a product or service to other customers. CL (Figure 1) is directly influenced by two antecedents of CS, namely image and quality of "software". Lastly, the ECSI model (Figure 1) posits that image directly influences expectations.

Theoretical Framework

Based on the ECSI model (Figure 1), we proposed a theoretical framework (Figure 2) elucidating the antecedents and consequent of student satisfaction (SS) in universities. We refer to it as a theoretical

framework because it is based on the entire theory and not parts of it (Lester, 2005). The main variable customer satisfaction (CS) in the ECSI model (Figure 1) is SS (Figure 2) in universities in our study. The antecedents of CS (Figure 1), namely image, expectations and service quality (SQ) of "hardware", SQ of "software" and perceived value are university image (UI), student expectations (SE), SQ of infrastructure and tangible service elements (SQITSE), SQ of people and processes (SQPP) and perceived value of investment (PVI) respectively in our study (Figure 2). The consequence of CS (Figure 1), namely customer loyalty, is student loyalty (SL) (Figure 2) in our study.

Figure 2: Theoretical framework on the antecedents and consequent of SS in a university.
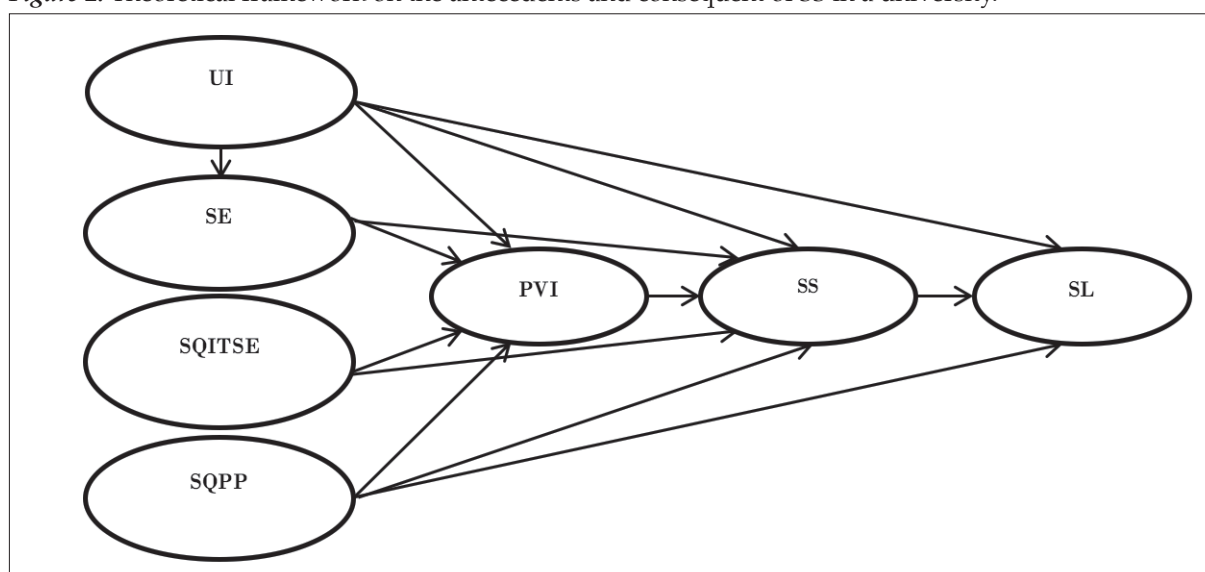
(Source: Adapted from Figure. 1)

Literature Review

In this section, we chronologically review empirical studies in which scholars used the European Customer Satisfaction Index (ECSI) model to explain student satisfaction (SS). Ostergaard and Kristensen (2005) examined the drivers of SS and loyalty in Aarhus School of Business in Denmark. They used quantitative methodology involving a self-administered questionnaires, which they administered to 1,310 undergraduate degree students. Hence using Partial Least Squares (PLS) Path Modelling for analysis, they found that "all inner coefficients proved to be highly significant, having at least a significance level of 0.01" (p. 10). They critiqued themselves for their inability to explain why a negative relationship existed between service quality of people and processes (SQPP) and student loyalty (CL) and yet SQPP predicted SS which predicted SL.

Brown and Mazzarol (2006) explored the factors that influenced SS and SL within a university in Australia. They used a quantitative methodology involving a self-administered questionnaire, which they administered to 373 undergraduate students. Hence using Partial Least Squares (PLS) for analysis, they found that on the antecedents, SS was significantly influenced by university image (IM) and perceived value of investment (PVI). In addition, they found that PVI was significantly influenced by UI. They also found that PVI had an indeterminate relationship with service quality of infrastructure and tangible service elements (SQITSE) and service quality of people and processes (SQPP). On the consequence, SS had a strong relationship with SL and PVI had a strong relationship

with SL. They did not point out any limitations to their study. They also left out the variable student expectations (SE), which is a construct in the ECSI model.

Duarte Raposo and Alves (2012) explored factors that influenced the satisfaction of students with higher education services in Portugal, and whether these factors changed after graduation. They used a quantitative methodology involving a self-administered questionnaire, which they administered to 412 continuing students in their first phase of the study in 2002 and to 150 alumni in the second phase in 2008. Using Partial Least Squares (PLS) Path Modelling for analysis, they found that for both phases one and two, all paths in the model were significant (see Table 3 at p. 16: All their sig or p values < 0.05) except for SE → PVI and UI → SL (Table 3 at p. 16: For both p > 0.05). They critiqued the studies that they had reviewed on the basis that there had been "limited research on alumni satisfaction" (p. 20). There is also a geographical gap to the effect that the country (Portugal) to which the study (Duarte et al., 2012) related was/is European, making the study findings not generalisable to especially Africa. The study also used a specific context (one university), leading one to wonder how generalisable the findings were to other universities.

Temizer and Turkyilmaz (2012) examined the use of a Student Satisfaction Index (SSI) model in higher education institutions in Turkey. They used quantitative methodology involving a self-administered questionnaire, which they administered to 454 university graduates. Using Partial Least Squares (PLS) Path Modelling for analysis, they found that student satisfaction (SS) was significantly influenced by service quality (SQ), followed by university image (IM) and perceived value of investment (PVI) and student expectations (SE), had the lowest and most insignificant effect on SS. While Temizer and Turkyilmaz did not mention any limitations to their study, there was a geographical gap in the sense that the country (Turkey) to which their study related was European, making the study findings not generalisable to especially Africa. The study also used a specific context (one private university), leading one to wonder how generalisable the findings were to other universities.

Shahsavar and Sudzina (2017) examined the antecedents of student satisfaction (SS) and their importance to SS and student loyalty (SL) at universities in Denmark. They used a quantitative methodology involving a self-administered questionnaire, which they administered to 1,030 students. Using Partial Least Squares (PLS) Path Modelling for analysis, they found that all paths in the model were significant except for SE → PVI and SQPP → SL. All their sig or p values < 0.05; 0.01. (p. 11, Figure 2). While Shahsavar and Sudzina did not point out any limitations to their study, they claimed that their study findings could be extended to Sweden, Norway and Finland which had similar cultures as Denmark. Since all the four countries are part of one empire, this creates a geographical gap deriving to the fact that all the countries are European, making the study findings not generalisable to Africa.

Eurico, Pinto, Silva and Marques (2018) examined the extent to which the antecedents and consequent of student satisfaction (SS) as measured by the ECSI model change for different sets of higher education consumers in Portugal. They used a quantitative methodology involving a self-administered questionnaire, which they administered to 166 tourism graduates. Using Partial Least Squares (PLS) Path Modelling for analysis, they found that all paths in the model were significant except for SE → SS and SQPP → SS. All their sig or p values < 0.05; 0.10 (p. 219, Table 4). Eurico et al.'s (2018) limitations to their study were to the effect that their results would not be generalised to other countries since they had carried out the study in Portugal, and that they had used a small sample size, which would curtail generalisability. They also pointed out that they had used an

instrument where all items were measured by the same respondent, which could lead to "common method bias" (p. 223).

In summary, out of the six studies, two (i.e. Eurico et al., 2018; Shahsavar & Sudzina, 2017) were recent publications that are less than five years old, while the rest were rather dated publications, being over seven years old. Hence the existence of a gap created by limited recent literature on the application of the ECSI model in explaining SS. Whereas all the six studies applied the ECSI model in explaining SS in higher education, the scholars carried out the studies in countries other than Africa (i.e. Australia [Brown & Mazzarol, 2006]; Denmark [Ostergaard & Kristensen, 2005; Shahsavar & Sudzina, 2017]; Portugal [Duarte et al., 2012; Eurico et al., 2018] and Turkey [Temizer &Turkyilmaz, 2012]). This created a geographical gap, making generalisability of their findings not possible, especially to the Ugandan context. Regarding methodology, all the studies applied the quantitative methodology and used self-administered questionnaires for data collection. In terms of sampling method, except for Duarte et al.(2012) and Ostergaard and Kristensen (2005) who did not reveal their sampling method, the rest of the studies used the random sampling method to select their sample. In terms of the sample sizes, Eurico et al. (2018) had a small sample size of 166 for a quantitative study; the rest had reasonable sample sizes. A small sample size could affect the generalisability of their findings. In terms of analysis, all of the studies used structural equation modelling (SEM) in general and specifically Partial Least Squares (PLS). Regarding results, whereas they applied to the geographical contexts of the studies, they were not generalisable to the Ugandan context. Regarding limitations, only Eurico et al. (2018) raised the issue of limitations in connection with their study on the basis of their having used a small sample size, which curtailed the generalisability of their findings. They also pointed out that they used an instrument where all items were measured by the same respondent, which could lead to "common method bias". Whereas Duarte et al. (2012) did not point out any limitations to their study, they critiqued the studies that they had reviewed on the basis that they had done limited research on alumni satisfaction. In addition, while Ostergaard and Kristensen (2005) and Temizer and Turkyilmaz (2012) did not raise limitations to their studies, their studies used specific contexts (one university), leading one to wonder how generalisable the findings were to other universities.

Hypotheses

We identified some gaps from our literature review. One was the use of a small sample size, as pointed out by Eurico et al. (2018). We also noted an inadequate number of recent publications. Furthermore, there was the use of specific contexts in particular studies carried out in one specific university. Also, all studies were done outside Africa. Hence, we contributed to narrowing the gaps by using a large sample of 704 respondents from seven universities as opposed to one. We also conducted our study in Africa to cater for the geographical gap and the publications from our study will narrow the gap of inadequate recent literature. Thus, our study was about examining student satisfaction (SS) in universities in Uganda using the European Customer Satisfaction Index (ECSI) model. Hence, using our theoretical framework (Figure 2), we developed the following hypotheses which guided our study:

H1.   University image (UI), student expectations (SE), service quality of infrastructure and tangible service elements (SQITSE), service quality of people and processes (SQPP) and perceived value of investment (PVI) positively predict student satisfaction (SS).

H2.   University image (UI), student expectations (SE), service quality of infrastructure and tangible service elements (SQITSE), service quality of people and processes (SQPP) positively predict perceived value of investment (PVI).

H3.   University image (UI), student satisfaction (SS) and service quality of people and processes (SQPP) positively predict student loyalty (SL).

H4.   University image (UI) positively predicts student expectations (SE).

Method

Data collection instrument

We collected quantitative data using a self-administered questionnaire which we developed based on instruments (Table 1) which other scholars had tested and used in a number of studies and whose validities and reliabilities we could cite. Table 1 shows the number of items we adapted from the respective instruments and their reliabilities. Our instrument had eleven constructs which we operationalised with four to eight items (see Table 1). We measured the items using a five-point Likert scale from a minimum of one for strongly disagree (SD) or very poor (VP) to a maximum of five for strongly agree (SA) or very good (VG). We ensured the quality of our instrument by adapting the existing tested instruments whose validities and reliabilities were already reasonable (Table 1). We then confirmed face validity and reliability using expert advice from academic supervisors. Furthermore, we carried out confirmatory factor analysis (CFA) (Tables 2 and 3) to identify valid items of each of our constructs. Our CFA results showed that all the items in the constructs, i.e. assurance (A), university image (UI), student expectations (SE), service quality of people and processes (SQPP), perceived value of investment (PVI) and student loyalty (SL), were valid. The CFA results also showed that some items in the constructs, i.e. tangibles (T), reliability (Rel), responsiveness (Res), empathy (E) and service quality of infrastructure and tangible service elements (SQITSE), were not valid, so we dropped them. We then used confirmatory reliability analysis (CRA) (Tables 2 and 3) to confirm if all the valid items in the constructs were also reliable. The alpha results showed that all the valid items in the constructs in our instrument were reliable.

Table 1: Variables, constructs, number of items adapted, source of instrument, items and their reliability

Variable	Construct	Number of items adapted	Source of instrument, number of items and their reliability (α value)
Student Satisfaction (main variable)	Tangibles (T)	4	Parasuraman et al. (1991), 04 items ($\alpha = 0.60$)
	Reliability (Rel)	5	Parasuraman et al. (1991), 05 items ($\alpha = 0.85$)
	Responsiveness (Res)	4	Parasuraman et al. (1991), 04 items ($\alpha = 0.61$)
	Assurance (A)	4	Parasuraman et al. (1991), 04 items ($\alpha = 0.81$)
	Empathy (E)	5	Parasuraman et al. (1991), 05 items ($\alpha = 0.66$)
Explanatory Variables	University image (UI)	6	Ostergaard & Kristensen (2005), 08 items ($\alpha = 0.92$)
	Student expectations (SE)	4	Shahsavar & Sudzina (2017), 04 items ($\alpha = 0.63$)
	SQ of infrastructure & tangible service elements (SQITSE)		Lai et al. (2015), 08 items ($\alpha = 0.80$)
	SQ of people and processes (SQPP)	4	Ostergaard & Kristensen (2005), 04 items ($\alpha = 0.82$)
Intervening Variable	Perceived value of investment (PVI)	5	Duarte et al. (2012), 05 items ($\alpha = 0.925, 0.958$)
Outcome Variable	Student loyalty (SL)	4	Duarte et al. (2012), 04 items ($\alpha = 0.921, 0.959$)

Population and sample

Our parent population was students from all universities in Uganda. However, our sampled population was all students from seven universities in Uganda, namely: Bishop Stuart University (BSU), Kabale University (KAB), Kampala International University (KIU), Makerere University (Mak), Mountains of the Moon University (MMU), Mbarara University of Science and Technology (MUST) and Uganda Christian University (UCU). We considered each university as a cluster. We classified the clusters by size and ownership. KAB and MUST represented small public universities, whereas Mak represented the large ones. BSU and MMU represented small private universities, whereas KIU and UCU represented large ones. We ascertained the population sizes of the universities and then used Krejcie and Morgan's (1970) table to determine the minimum sample sizes. We then selected respondents using convenience sampling. We would go into lecture rooms in the universities and approach any student willing to respond to the questionnaires. The suggested sample size was 2,426 and the sample size attained was 704. Our typical respondent was a male (51.3%) Ugandan student (97%) from the Western region (64.2%) aged 20 and above but below 25 (72.3%). He was from Makerere University (36.2 %) undertaking a bachelor's degree (85.2%), and in his first year of study (46.9%).

Data analysis

We analysed our data at three levels: univariate, bivariate and multivariate. At the univariate level, we used descriptive statistics, i.e. frequencies, percentages and means. At the bivariate level, we used the student's t-test, Analysis of Variance (ANOVA), Pearson's linear correlation coefficient (PLCC), scatter/dot graphs and simple linear regression model (SLRM). At the multivariate level, we used the multiple linear regression model (MLRM). In particular, we tested our four study hypotheses using regression. We tested our first hypothesis (H1) using a MLRM, hence regressed student satisfaction (SS) on university image (UI), student expectations (SE), perceived value of investment (PVI), service quality of infrastructure and tangible service elements (SQITSE) and service quality of people and processes (SQPP). We then tested our second hypothesis (H2) using a MLRM, in which we regressed PVI on UI, SE, SQITSE and SQPP. We tested the third hypothesis (H3) using a MLRM, by regressing student loyalty (SL) on UI, SS and SQPP. Lastly, we tested the fourth hypothesis (H4) using a simple linear regression model (SLRM), by regressing SE on UI. We managed our data using IBM SPSS Statistics.

Results

Student satisfaction

We operationalised our main variable student satisfaction (SS) using Parasuraman et al.'s (1991) SERVQUAL constructs, i.e. tangibles (T), reliability (Rel), responsiveness (Res), assurance (A) and empathy (E). Each item was accompanied by a five-point Likert scale ranging from the worst case of strongly disagree (SD) measured by one (1) to the best case of strongly agree (SA) measured by five (5). In Table 2, we give the means and ratings of the items of each of the five constructs (T, Rel, Res, A, E) of SS. The means of the five constructs of SS as shown in Table 2 implies fair to good levels of satisfaction among the respondents. An average index of SS based on the 31 valid items of the constructs of SS (Table 2) had a mean of 3.52 which, being high, implies that the respondents rated their level of satisfaction with their universities highly.

Table 2: Summary of statistics of the constructs of student satisfaction (SS)

Construct	CFA: No. of valid items (total no. of items)	CRA for the valid items (α)	Mean of the valid items	95% confidence interval for mean of valid items	Interpretation of the rating
T	3 (5)	0.716	3.88	3.81-3.95	High
Rel	8 (10)	0.894	3.26	3.18-3.33	Fair
Res	4 (8)	0.830	3.46	3.39-3.53	Fair
A	8 (8)	0.869	3.68	3.61-3.74	High
E	8 (10)	0.897	3.21	3.13-3.39	Fair
Average index of SS	31 (41)				High

Other explanatory constructs of the ECSI model

In our theoretical framework (Figure 2), the other constructs of the ECSI model were: university image (UI), student expectations (SE), service quality of infrastructure and tangible service elements (SQITSE), service quality of people and processes (SQPP) perceived value of investment in a

university (PVI) and student loyalty (SL). Each item was accompanied by a five-point Likert scale ranging from the worst case of strongly disagree (SD)/very poor (VP) measured by one (1) to the best case of strongly agree (SA)/very good (VG) measured by five (5). In Table 3, we give the means and ratings of the items of each of the other ECSI constructs (UI, SE, SQITSE, SQPP, PVI and SL). Except for the mean of SQITSE, which suggested that the respondents rated their perception of SQITSE as fair, the means of the rest of the constructs (UI, SE, SQPP, PVI and SL) implies that the respondents rated their perception of those constructs as high.

Table 3: Summary of statistics of the other constructs of the ECSI model

Construct	CFA: No. of valid items (total no. of items)	CRA for the valid items (α)	Mean of the valid items	95% confidence interval for mean of valid items	Interpretation of the rating
UI	7 (7)	0.792	3.96	3.89-4.01	High
SE	6 (6)	0.799	3.68	3.62-3.74	High
SQITSE	5 (6)	0.802	3.14	3.07-3.21	Fair
SQPP	4 (4)	0.842	3.86	3.80-3.91	High
PVI	5 (5)	0.759	3.79	3.73-3.86	High
SL	4 (4)	0.835	3.92	3.84-3.99	High

Testing of the hypotheses

We tested four hypotheses (H1-H4) (Figure 2). H1 was to the effect that university image (UI), student expectations (SE), service quality of infrastructure and tangible service elements (SQITSE), service quality of people and processes (SQPP) and perceived value of investment (PVI) positively predicted student satisfaction (SS). H1 had five sub-hypotheses (H1.1-H1.5), namely: H1.1: UI positively predicted SS; H1.2: SE positively predicted SS; H1.3: SQITSE positively predicted SS; H1.4: SQPP positively predicted SS; H1.5 PVI positively predicted SS. Hence, using multiple linear regression (MLRM), we regressed SS onto UI, SE, SQITSE, SQPP and PVI. H2 to the effect that UI, SE, SQITSE and SQPP positively predicted PVI. H2 had four sub-hypotheses (H2.1- H2.4), namely: H2.1: UI positively predicted PVI. H2.2: SE positively predicted PVI; H2.3: SQITSE positively predicted PVI; H2.4: SQPP positively predicted PVI. Hence using MLRM, we regressed PVI onto UI, SE, SQITSE and SQPP. H3 was to the effect that UI, SS and SQPP positively predicted SL. H3 had three sub-hypotheses (H3.1-H3.3), namely: H3.1: UI positively predicted SL; H3.2: SS positively predicted SL; H3.3: SQPP positively predicted SL. Using MLRM, we regressed SL onto UI, SS and SQPP. H4 was to the effect that UI positively predicted SE. Using simple linear regression (SLRM), we regressed SE onto UI. We present the results of the four hypotheses (H1-H4) in Table 4.

Table 4: Results from the linear regression models for testing the hypotheses

Hypotheses	Sub-hypotheses	Path	Measures of the goodness of the model	Standardised coefficients, β, and p value	Hypotheses supported?
H1	H1.1	UI → SS	Adj R² = 0.508, F = 87.608, p = 0.000	β = 0.190, p = 0.000	Yes
	H1.2	SE → SS		β = 0.282, p = 0.000	Yes
	H1.3	SQITSE ¬ SS		β = 0.028, p = 0.485	No
	H1.4	SQPP → SS		β = 0.229, p = 0.000	Yes
	H1.5	PVI → SS		β = 0.178, p = 0.000	Yes
H2	H2.1	UI → PVI	Adj R² = 0.429, F = 104.579, p = 0.000	β = 0.220, p = 0.000	Yes
	H2.2	SE → PVI		β = 0.191 p = 0.000	Yes
	H2.3	SQITSE → PVI		β = 0.123, p = 0.001	Yes
	H2.4	SQPP → PVI		β = 0.300, p = 0.000	Yes
H3	H3.1	UI → SL	Adj R² = 0.276, F = 57.039, p = 0.000	β = 0.205, p = 0.000	Yes
	H3.2	SS → SL		β = 0.149, p = 0.000	Yes
	H3.3	SQPP → SL		β = 0.272, p = 0.000	Yes
H4		UI → SE	Adj R² = 0.318, F = 290.893, p = 0.000	β = 0.565, p = 0.000	Yes

Discussion

Our results from the MLR (Table 4) gave support to H1 and its sub-hypotheses H1.1, H1.2, H1.4 and H1.5 but rejected H1.3. Our finding on H1.1 to the effect that UI positively predicted SS was consistent with those of Eurico et al. (2018) and Shahsavar and Sudzina (2017). Our finding on H1.2 to the effect that SE predicted SS was consistent with Alves and Raposo's (2007) but different from those of scholars (i.e. Duarte et al., 2012; Temizer & Turkyilmaz, 2012; Shahsavar & Sudzina, 2017; Eurico et al., 2018) whose findings showed that SE did not predict SS. With regard to H1.3 to the effect that SQITSE positively predicted SS, our finding was consistent with Alves and Raposo's (2007) but different from that of Shahsavar and Sudzina (2018), who reported that SS was predicted by SQITSE. Our finding on H1.4 to the effect that SQPP positively predicted SS was similar to Ostergaard and Kristensen's (2005) but differed from that of Eurico et al. (2018), who found that SS was not predicted by SQPP. Regarding H1.5, to the effect that PVI positively predicted SS, our

finding was similar to those of researchers (e.g. Shahsavar & Sudzina, 2017; Eurico et al., 2018) who found that PVI predicted SS. In terms of which independent variables (IV) (UI, SE, SQITSE, SQPP and PVI) was the strongest predictor of the dependent variable (DV) SS, we found that SE was the strongest predictor of SS. This was a finding different from those of researchers (e.g., Eurico et al., 2018; Shahsavar & Sudzina, 2017), who found a weak link between SE and SS. The implication of our findings on H1 is that in their quest to improve SS, university authorities should allocate time and resources to improving and maintaining their university brands. They should also recruit quality staff (i.e. academic and administrative) and ensure that their staff have good customer care. Universities should offer value for students' time and money, i.e. the services offered should be commensurate with what the universities charge. Finally, our finding draws attention to the fact that SE was the strongest predictor of SS, implying that universities should manage their students' expectations by delivering on what they promise and by consistently engaging with students to find out their expectations.

The results from the MLM (Table 4) gave support to H2 and its sub-hypotheses H2.1-H2.4. Our finding on H2.1 suggested that UI positively predicted PVI, which is consistent with Shahsavar and Sudzina's (2018). In turn, the finding on H2.2, which suggested that SE positively predicted PVI, is similar to that of Shahsavar and Sudzina (2017) but differed from that of Temizer and Turkyilmaz (2012), whose finding showed that SE did not predict PVI. Our result on H2.3, which suggested that SQITSE positively predicted PVI, is consistent with the results of Shahsavar and Sudzina (2017) and Temizer and Turkyilmaz (2012) but differ from those of Alves and Raposo (2007) and Brown and Mazzarol (2006), whose results, respectively, suggested that SQITSE did not predict PVI. In turn, our result on H2.4, which suggested that SQPP positively predicted PVI, was consistent with the results of some researchers (e.g. Shahsavar & Sudzina, 2017; Temizer & Turkyilmaz, 2012) but differed from those of Eurico et al. (2018), whose results suggested that SQPP did not predict PVI. Ostergaard and Kristensen (2005) found that SQITSE and SQPP had a strong link with PVI whereas Brown and Mazzarol (2006) found a weak link between SQITSE and SQPP and PVI. This contradiction points to the need for further investigation on the link between service quality (SQ) and PVI. In terms of which IV (UI, SE, SQITSE and SQPP) was the strongest predictor of the DV (PVI), we found that SQPP was the strongest predictor of PVI, a result similar to Ostergaard and Kristensen's (2005) but different from that of Brown and Mazzarol (2006), who found a weak link between SQPP and PVI. Since PVI is a predictor of SS (H1), university authorities should ensure that the predictors of PVI (UI, SE, SQITSE and SQPP) are improved, in particular, SQPP, which involves quality of university staff and the process of service delivery. The university authorities should continuously carry out re-tooling of their staff to ensure quality in service delivery. They should also simplify the processes of service delivery and make them known to the students.

The MLR results (Table 4) supported hypothesis H3 and sub-hypotheses H3.1, H3.2 and H3.3. Our finding on H3.1, which suggested that UI positively predicted SL, was consistent with Eurico et al.'s (2018), Shahsavar and Sudzina's (2017) and Temizer and Turkyilmaz's (2012). In turn, our result on H2.2, which suggested that SS positively predicted SL, is in line with Alves and Raposo's (2007). The result on H3.3, which suggested that SQPP positively predicted SL, is similar to Shahsavar and Sudzina's (2017) but differed from that of Ostergaard and Kristensen (2005), who found that SQPP did not predict SL. In reference to which of the IVs (UI, SS and SQPP) was the strongest predictor of the DV (SL), we found that SQPP was the strongest predictor of SL. Our finding differed from that of Alves and Raposo (2006), who reported that "student's loyalty was the main consequence for satisfaction, given that… [SS] had a direct influence… in loyalty" (p. 1276). It also differed from that

of Ostergaard and Kristensen (2005), who found a weak link between SQPP and SL. The implication of our finding is that in order for universities to improve SL, which is positive recommendation of the university by students, they should improve on the university brand, SS as well as the quality of their staff and processes of service delivery. Universities should in particular improve the quality of their staff and boost their service delivery processes. Our findings imply that students are loyal to universities who have quality staff and whose service delivery processes are of high quality.

The SLR results (Table 4) gave support to H4 to the effect that UI positively predicted SE. Our finding was consistent with that of Alves and Raposo (2007), who found that the "influence of [UI] is also significant in the formation of student's expectations in higher education" (p. 1275). Universities should, therefore, manage their students' expectations by managing their university brands.

Conclusions

We sought to examine SS in universities in Uganda using the ECSI model. Based on the ECSI model (Figure 1), we developed a theoretical framework (Figure 2) with four hypotheses H1-H4, which guided our study. Our linear regression results (Table 4) supported the four hypotheses except sub-hypothesis H1.3, which revealed that SQITSE did not predict SS. We concluded that the ECSI model was an appropriate model for examining SS in universities in Uganda. In order to enhance SS, we recommend that university authorities improve their university brands (UI), know their student expectations (SE) and manage them, recruit, retrain and retool their staff and improve their service delivery processes (SQPP), and offer value for the students' time and money (PVI). When SS is improved, it invariably leads to student recommendations of the university (SL). Furthermore, we proposed a slight modification to our theoretical framework (Figure 3), describing a new pattern of the European Customer Satisfaction Index (ECSI) model for examining student satisfaction (SS). Unlike our theoretical framework in Figure 2, Figure 3 suggests that the link between SQITSE and SS is loose (not supported) while the rest of the links are firm (supported).

Figure 3: Modified theoretical framework relating the explanatory variables of ECSI that significantly and non-significantly (i.e. SQITSE) predicted SS.
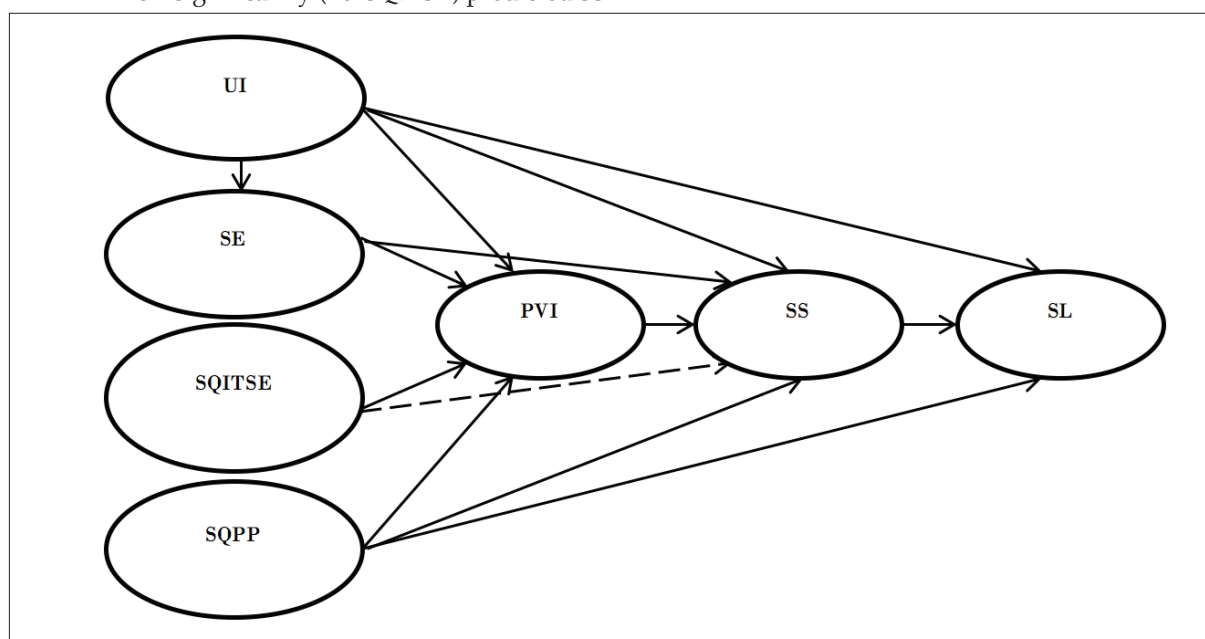
Note: Dotted line suggests an unsupported hypothesis.

Limitations and Areas of Further Study

We carried out our study in seven universities in Uganda out of over 51 universities. This may limit the generalisation of our findings to those universities. Our sample was dominated by students from the Western region; students aged between 20-25; students undertaking bachelor's degrees; and students in their first year of study. We conducted our research in a developing country. Lastly, our study was quantitative. We recommend that a similar study is conducted in other universities in Uganda, and on a sample structure with characteristics catering for those we left out. We also recommend a similar study using the interpretivist paradigm.

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