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The role of university switching costs, perceived service quality, perceived university image and student satisfaction in shaping student loyalty

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ABSTRACT

While majority of earlier studies have examined service quality, student satisfaction, and university image as determinants of student loyalty, university switching costs have largely been ignored. This study includes university switching costs with perceived service quality (perceived academic quality, perceived administrative quality, and perceived physical facilities), student satisfaction, and perceived university image as determinants of student loyalty. Data was gathered through purposively sampling undergraduate business students from five universities in Karachi. Using exploratory factor analysis and structural equation modeling, a significant impact of student satisfaction, university image, and university switching costs on student loyalty was established. Universities may provide monetary and non-monetary incentives to increase university switching costs and, consequently, help retain students. This study contributes to student loyalty literature by adapting the customer loyalty definition to educational context, examining the role of university switching costs in retaining students, and presenting an empirical model depicting interrelations among determinants of student loyalty.

Introduction

Higher education is critical to the development of a country (Annamdevula & Bellamkonda, 2016) and, therefore, it is desirable to offer high-quality education to students. There has been an exponential increase in the number of higher education institutes (HEIs), resulting in fierce competition to attract new students and retain them (Darawong & Sandmaung, 2019).

Rising competition pushes universities to raise quality levels to encourage students to choose the same university for their future educational needs. Teeroovengadum et al. (2019) posit that 'Institutions that were previously accessible to the societal elites only, now have to compete to attract students and gain market share' (p. 428). It costs more to attract new students than to retain current students (Rojas-Mendez et al., 2009). The positive feedback of university graduate students convinces their siblings and friends

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to prefer the same university for their educational needs. Consequently, university policy-makers are faced with the challenge of devising ways to increase student loyalty (Austin & Pervaiz, 2017; Pedro et al., 2018). Loyalty is not restricted to the duration of students' stay at university but continues even after their graduation (Giner & Rillo, 2016). Student loyalty helps in increasing student enrollment (Taecharungroj, 2014).

University management needs to know what factors lead to student loyalty (Saoud & Sanséau, 2019). The antecedents of loyalty guide the management of universities to devise policies aimed at the retention of students. Literature cites perceived service quality (Douglas et al., 2006; Suyanto et al., 2019), student satisfaction (Alves & Raposo, 2007; Saoud & Sanséau, 2019), and university image (Dollinger et al., 2018; Nguyen & LeBlanc, 2001) as main antecedents of student loyalty (See Table 1). Though there is an adequate number of research studies on student loyalty determinants, however, some aspects warrant our attention.

First, few studies have attempted to capture a holistic view by measuring the impact of multiple determinants of student loyalty simultaneously (see for example: Helgesen & Nesset, 2007; Hennig-Thurau et al., 2001; Schlesinger et al., 2017; Sultan & Yin Wong, 2012). This study will contribute to this stream of research by examining the various antecedents of student loyalty and their interrelationships.

Table 1. Prominent studies about antecedents of student loyalty.

Authors	Antecedents of Student Loyalty	Findings
Saoud and Sanséau (2019)	Student Satisfaction, Perceived Service Quality, Curriculum quality	All antecedents had positive impact on student loyalty but highest impact of curriculum quality on student loyalty was observed through the mediation of student satisfaction
Austin and Pervaiz (2017)	Student Satisfaction	Students were more satisfied with aspects related to skill development compared to administrative side of college management. Overall, students' satisfaction was found to have impact on student loyalty.
Ali et al. (2016)	Academic and Non-academic aspects, Access, Reputation, Student Satisfaction	The academic and non-academic aspect, access of academic staff, university reputation influence student satisfaction, which in turn affects university image. Both student satisfaction and university image had positive impact on student loyalty.
Giner and Rillo (2016).	Student Satisfaction and Co-Creation of Service Quality	Both co-creation of service quality and student satisfaction influenced student loyalty
Annamdevula and Bellamkonda (2016)	Perceived Service Quality and Student Satisfaction	Perceived service quality of university impacted student loyalty through the mediation of student satisfaction.
Sultan and Yin Wong (2014).	Perceived Service Quality, Trust, Student Satisfaction	This study measured academic, administrative and physical facilities aspects of service quality, which influenced student satisfaction, their trust and student loyalty
Brown and Mazzarol (2009)	Image, Perceived quality of Human ware and Hardware and Software, Perceived Value, student Satisfaction	Perceived human ware representing people and Hardware representing infrastructure predicted perceived value and student satisfaction. Student satisfaction influenced student loyalty.
Helgesen and Nesset (2007)	Service Quality, Facilities, Image of university and program, Student Satisfaction	Image of academic program impacted student loyalty through the mediation of university image while service quality and facilities influenced student loyalty through student satisfaction. The image of university also had significant impact on student loyalty

Second, the concept of switching costs, an important antecedent of customer loyalty, has been largely ignored in the context of university education (Ali & Ahmed, 2018), though earlier studies have used it as a determinant of customer loyalty in other contexts (example: Blut et al., 2014; Blut et al., 2015). One exception is a recent study by Lai et al. (2019), highlighting the effect of switching costs on university loyalty of Vietnamese students in an international context. In contrast, our study has covered switching costs faced by Pakistani students in a local environment. There is a rationale for studying switching costs in this context. The higher education system in Pakistan does not have a unified grading system. There are different courses in universities, and the eligibility criteria for admissions are significantly diverse. Therefore, students thinking of changing their universities face several switching costs. The impact of switching costs associated with changing universities is relevant to Pakistan in particular and the world in general. Finding its relevance to student loyalty will contribute to the literature on student loyalty.

Third, the definition of customer loyalty has not been adapted to define student loyalty. This paper attempts to define student loyalty by adapting the definition of customer loyalty to the higher education concept.

The objectives of this research study are as under:

(1) To find the causal relationships among major determinants of student loyalty, and their relationship with student loyalty, and to propose a model in light of empirical findings.
(2) To investigate university switching costs as an essential antecedent of student loyalty.
(3) To adapt the definition of customer loyalty given by Oliver (1999) to define student loyalty.

Research context: education scenario in Pakistan

There are around 53.6 million students enrolled in Pakistan, of which 1.9 million are enrolled in higher education institutes (Pakistan Economic Survey, 2020). The Federal Government of Pakistan has allocated Rs.70.74 billion to support tertiary education in Pakistan (Annual Budget Statements 2020-21, 2020). The Higher Education Commission of Pakistan (HEC) governs higher education in Pakistan. It evaluates universities' performance and ranks them so that students can judge all potential universities when seeking admission. It provides grants for scholarships within and outside Pakistan. It also provides financial and technical assistance to universities to raise the quality of education. HEC has made different accrediting bodies for various disciplines. For management science, National Business Education Accreditation Council (NBEAC) accredits the Bachelor and Master programs of business administration institutions. NBEAC accredits universities based on quality assurance, teaching quality, research, finance, facilities, social integration, and community development (NBEAC, 2021).

According to the HEC website, there are forty-four (44) institutes of higher education in Karachi (HEC, 2020). Thirty-four (34) of these institutes offer BBA/MBA degree programs, out of which 28 institutes are in private and 6 in the public sector. When students choose an educational institute, they consider many aspects, such as, perceived academic quality, perceived administrative quality, perceived physical facilities, and university image (El Alfy & Abukari, 2020).

Perceived service quality

Perceived service quality is an assessment of service delivered (Parasuraman et al., 1988). It may be defined as the attitude toward a service provider (Cronin & Taylor, 1992) or a broader overall assessment of service (Sultan & Yin Wong, 2012). It is a general perception resulting from objective information and reputation and not necessarily from personal experience (Letcher & Neves, 2010).

Perceived service quality has many dimensions in a university setup. Douglas et al. (2006) mentioned three components of service quality: (1) physical goods; (2) explicit service; and (3) implicit service. Physical goods cover facilities that expedite student learning, such as state-of-the-art computer labs, appealing infrastructure, cafeterias, uninterrupted internet services, etc. Explicit service deals with the quality of teaching. Implicit service reflects administrative staff's interaction with the students, whether the staff is courteous and friendly and shows concern and empathy towards students. Brown and Mazzarol (2009) refer to the terms human-ware to connote people and processes, and hardware to connote physical infrastructure. Manzuma-Ndaaba et al. (2016) divide services into the core, augmented, and tangible layers. The core includes the attainment of a degree, certificates, and knowledge. The augment level covers courtesy of teachers and staff and their sincerity and responsiveness. The tangible layer points to the architecture of buildings, libraries, labs, and other learning facilities.

Service quality models

There are many service quality models, but two of them – SERVEQUAL and SERVPERF – take the lead in usage and popularity. The SERVQUAL model (Parasuraman et al., 1988) uses a confirmation-disconfirmation approach to measure service quality through the difference in expectation and perception. It measures service quality through five dimensions: reliability, responsiveness, empathy, tangibles, and assurance. However, SERVQUAL has been criticized for its scope (Brady & Cronin, 2001), predicted power (Letcher & Neves, 2010), and dimensions (Sahney et al., 2004). Another model, SERVPERF, was presented by Cronin and Taylor (1992) to address this criticism. SERVPERF considers perceptions as a measure of service quality and is a better estimate than SERVQUAL in reliability, convergent and discriminant validity, and higher explained variance (Abdullah, 2006).

Three specific scales, HEdPERF, HESQUAL and PAKSERV, related to the education sector, were designed by Abdullah (2006), Teeroovengadum et al. (2016), and Kashif et al. (2016), respectively. The first two were adapted from SERVPERF, and the third one from SERVQUAL specifically in the context of Pakistan. When we look at the use of these service quality models in the education sector, we find both SERVEQUAL (Jiewanto et al., 2012; Kashif et al. (2016) and SERVPERF (Annamdevula & Bellamkonda, 2016; Sultan & Yin Wong, 2012) in many studies. Carrillat et al. (2007) have reviewed research studies of 17 years and concluded that both SERVQUAL and SERVPERF are almost equal in importance. Usage of either of the two may depend on the specific objectives of the research study. Therefore, most researchers recommend that if the study aims to predict service quality through perceptions, then SERVPERF should be used (Sultan & Yin Wong, 2012). Following the logic of SERVPERF, this study employs students' perceptions to measure service quality.

Student satisfaction

Student satisfaction with a university refers to the favorableness of the student's subjective evaluation of the various outcomes and experiences associated with the university (Hunt, 1977). According to customer satisfaction theory (Oliver, 1980), satisfaction is attained when customers' expectations are met (Nesset & Helgesen, 2009). This theory was applied in an educational context by Taylor (1996). When a student selects a university, she/he has a set of expectations from the university (Saoud & Sanséau, 2019). Those expectations are usually the result of the university's public image and the promises made by the university. Higher expectations set low tolerance levels for inferior quality (Yeo & Li, 2014). When a student studies at a university for several years, she/he gets many opportunities to evaluate service quality (Ali & Ahmed, 2018). Service quality affecting student satisfaction may include teachers' expertise, subjects offered, learning environment, and classroom facilities (Massoud & Ayoubi, 2019).

University image

A university's image helps its graduates secure a job (Polat et al., 2016). Image is the perception of an organization resulting from the associations held in consumer's memory (Keller, 1993). Image can be described as a 'mental representation of a real object that acts in place of that object' (Capriotti, 1999, p. 16; as cited by Palacio et al., 2002, p. 488). University image refers to the image perceived by the external public, such as the employer, government institutions, alumni, the general public, and the internal public, such as students, professors, and administrative and service employees (Fernández & Trestini, 2012).

Student loyalty

The most famous definition of customer loyalty is given by Oliver (1999), which describes loyalty as 'a deeply held commitment to rebuy or repatronize a preferred product or service consistently in the future, despite situational influences and marketing efforts having the potential to cause switching behavior' (p. 34). This definition implies multiple choices available to consumers and their freedom to move from one service provider to another. Loyal consumers repeatedly purchase the same brands (Ram & Wu, 2016), which points towards behavioral loyalty.

One main conceptual issue with behavioral loyalty is that it often ignores latent loyalty, which is characterized by a highly favorable attitude toward a product but less frequent purchase due to competitive or social pressures (Dick & Basu, 1994). Likewise, consumers repurchase a product at times due to lack of options but do not hold a favorable opinion about the product or service performance. On the other hand, truly loyal consumers repurchase the same brands and hold a favorable attitude toward the brand/product (Ali et al., 2016). Therefore, loyalty has two main subdivisions: attitudinal loyalty and behavioral loyalty (Jacoby & Kyner, 1973; Lai et al., 2019). Our conception of loyalty encompasses both aspects of loyalty.

Student loyalty has both behavioral and attitudinal aspects (Vianden & Barlow, 2014). Behavioral student loyalty is the intention to continue education at the same university and also prefer the same institute for future educational needs (Mohamad & Awang,

2009). In terms of attitude, loyal alumni may support their alma mater through institutional donations, providing a helping hand to graduates of the same university, placing interns, and spreading positive word of mouth (Hennig-Thurau et al., 2001). Toledo and Martínez (2020) believe that 'attitudinal loyalty is a good indicator for the university that students perceive it as something more than a distant memory of their youth, but more as a place to which they can return various times during their life to expand their knowledge without necessarily enrolling on a full-time course' (p. 353). Therefore, the definition, given by Oliver (1999), has been adapted in this study to define student loyalty as 'a deeply held commitment towards one's alma mater, reflected in preference for the educational institute as a first choice for further educational needs in the presence of competitive options, as well as continued patronage, advocacy in one's professional and social circles, and sustained cooperation towards the educational institute and its graduates'. (Refer to Table 2 for operationalization of constructs)

University switching costs and student loyalty

Studies show that customer retention could be enhanced through high customer satisfaction and high perceived switching costs (Ranaweera & Prabhu, 2003). Switching costs are the costs a buyer faces when switching from one service provider to another (Porter, 1980). Switching costs have also been described as losses incurred when moving from one supplier to another (El-Manstrly, 2016). The costs are not limited to monetary form but also include physical and psychological costs (Jackson, 1985).

University switching costs associated with seeking admission to another university involve financial costs, search costs, time costs, and psychological costs (Mohamad & Awang, 2009). Students may have to pay a higher tuition fee, or they may be required to take some additional courses. Students may have to contact different universities searching for information, which requires extra effort and consumes time. Finally, students may have to go through a phase of uncertainty (psychological costs) regarding the acceptance of their completed courses by the university they are seeking admission into.

Table 2. Operationalization of constructs.

Variables	Definition	Source
Perceived Service Quality	Perceived service quality is a broader or overall assessment of service	(Sultan & Yin Wong, 2012)
Perceived University Image	A mental picture in the minds of students representing an overall impression of a university.	(Chun, 2005; Capriotti, 1999; as cited by Beerli Palacio et al. (2002))
Student Satisfaction	Student satisfaction from a university refers to the favorableness of the student's subjective evaluation of the various outcomes and experiences associated with the university.	Adapted from Hunt (1977)
University Switching Cost	Financial, psychological and time costs a student may pay as a result of moving from current university to another university for education needs.	Adapted from Porter (1980); Mohamad and Awang (2009) in this study.
Student Loyalty	A deeply held commitment towards one's alma mater, reflected in preference for the educational institute as a first choice for further educational needs in the presence of competitive options, as well as continued patronage, advocacy in one's professional and social circles, and sustained cooperation towards the educational institute and its graduates	Adapted from Oliver (1999) in this study.

University switching costs are an essential factor in students' loyalty (El-Manstrly, 2016; Lewis, 2002). As stated above, high switching costs lead to customer retention (Caruana, 2003; Ghazali et al., 2016). Therefore, perceived switching costs lead to both behavioral and attitudinal loyalty (Cheng, 2011).

H1: University switching costs are positively related to student loyalty.

Perceived service quality and student satisfaction

This study measures perceived service quality through perceived academic quality, perceived administrative quality, and perceived physical facilities. This conception of quality is taken from Sultan and Yin Wong (2013). Dimensions related to teaching and learning are part of academic quality (Sultan & Yin Wong, 2013). Teachers' knowledge and expertise in delivering lectures and their response to student queries form the backbone of academic quality. Administrative quality includes activities that facilitate academic affairs, such as office staff's engagement in solving student issues and queries (Sultan & Yin Wong, 2013). It deals with individual matters of students such as registration, withdrawal from a course, the process of holding an event on campus, and applying for reference letters. Satisfaction with support services is gauged through students' complaints and feedback (Yeo & Li, 2014). Physical facilities include amenities like cafeteria, parking, classroom facilities, computer labs, sports facilities, and avenues for entertainment (Douglas et al., 2006).

Good quality positively affects satisfaction, and poor quality negatively influences satisfaction (Santini et al., 2017). For instance, an increase in class enrollment will decrease student satisfaction (Coles, 2002). In the context of education, perceived service quality has a direct relationship with student satisfaction (Ali et al., 2016; Kärnä & Julin, 2015; Manzuma-Ndaaba et al., 2016; Martínez-Argüelles & Batalla-Busquets, 2016; Saoud & Sanséau, 2019; Sultan & Yin Wong, 2014). It leads us to assume a positive link between perceived service quality dimensions and student satisfaction. Therefore, we hypothesize that:

H2 (a,b,c): Perceived service quality is positively related to student satisfaction.

Student satisfaction and student loyalty

There are many studies where student satisfaction has directly and significantly influenced student loyalty (Borraz-Mora et al., 2020; Kashif & Cheewakrakokbit, 2018; Khoo et al., 2017; Martínez-Argüelles & Batalla-Busquets, 2016). When students feel satisfied with academic and administrative quality, they tend to remain loyal to the university and are more likely to choose the same institution for future needs (Pham et al., 2019). Therefore, it is proposed that:

H3: Student satisfaction is positively related to student loyalty.

Student satisfaction and perceived university image

Literature mentions the mutual influence of satisfaction and image over each other. Palacio et al. (2002) and Alves and Raposo (2007) reported a significant impact of

university image on satisfaction in their studies. Likewise, Taecharungroj (2014) and Helgesen and Nesset (2007) found the impact of student satisfaction on university image.

Johnson et al. (2001) studied customer satisfaction models and concluded that it is customer satisfaction that drives corporate image rather than image influencing customer satisfaction. Satisfaction with products reflects customers' positive experiences with them, which is likely to enhance corporate image (Johnson et al., 2001). Similarly, students' first-hand positive experience with university services' quality will result in their satisfaction and lead to favorable university image (Ali & Ahmed, 2018). However, students without first-hand experience are likely to use university image as a criterion for choosing a university. Therefore, the role of image as antecedent or consequence depends on the situation. The purpose of our study is to investigate the attitudes of current students towards their university. Therefore, the relationship between university image and student satisfaction is hypothesized as under:

H4: Student satisfaction is positively related to perceived university image.

University image and student loyalty

University image plays a vital role in forming students' relationships with the university (Dollinger et al., 2018), which affects student loyalty (Helgesen & Nesset, 2007; Suyanto et al., 2019). The image of the study program and the university's image both are positively related to student loyalty (Helgesen & Nesset, 2007). Brown and Mazzarol (2009) also demonstrated the effect of university image on student loyalty. Therefore, it is assumed that:

H5: Perceived university image is positively related to student loyalty.

Perceived service quality and university image

A higher level of service quality will lead to a favorable image of the service provider (Nguyen & LeBlanc, 2001; Polat et al., 2016). Thus, perceived service quality influences university image (Jiewanto et al., 2012; Osman & Saputra, 2019). Usually, customers have some idea about the service they opt for, but the actual delivery of service may improve or deteriorate brand image (Grönroos, 1984). When service quality lives up to expectation, it improves university image (Tan et al., 2013). Therefore, it could be assumed that:

H6 (a,b,c): Perceived service quality is positively related to university image.

Perceived service quality and student loyalty

Despite extensive research about the relationship between perceived service quality and student loyalty, it is unclear whether perceived service quality directly or indirectly relates to student loyalty (Saoud & Sanséau, 2019). For example, the direct influence of service quality on student loyalty was not found in the studies of Mohamad and Awang (2009) and Dabholkar et al. (2000). In contrast, a positive relationship between service quality

and student loyalty was empirically found in the studies of Suyanto et al. (2019) and Al-Kilani and Twaissi (2017). It leads us to the following hypothesis:

H7 (a,b,c): Perceived service quality is positively related to student loyalty.

These hypotheses are reflected in the conceptual model presented below (Figure 1).

Methodology

This quantitative research employed the survey research method and collected data from the universities of Karachi. Non-probability sampling was employed because students' data was inaccessible. In the absence of a sampling frame, non-probability sampling may be used (Zikmund et al., 2013). However, non-probability sampling may result in a sampling error known as selection bias (Bethlehem, 2010). This error may be reduced by matching characteristics of sample and population with the help of a large and diversified sample (Baker et al., 2013). Therefore, data was collected from five universities of Karachi, which were different from each other in their reputation, HEC ranking, and quality of students.

Purposive sampling technique was employed to include relevant respondents. Purposive sampling is used when the researcher wants to reach people relevant to the objective of the study. Following similar rationale, senior undergraduate students belonging to bachelor of business administration (BBA) were selected because they had passed enough time in the university to evaluate all facets of quality education. Another important reason was that most of these students would be faced with the decision of continuing in the same institute or choosing another business school for their Master of Business Administration degree.
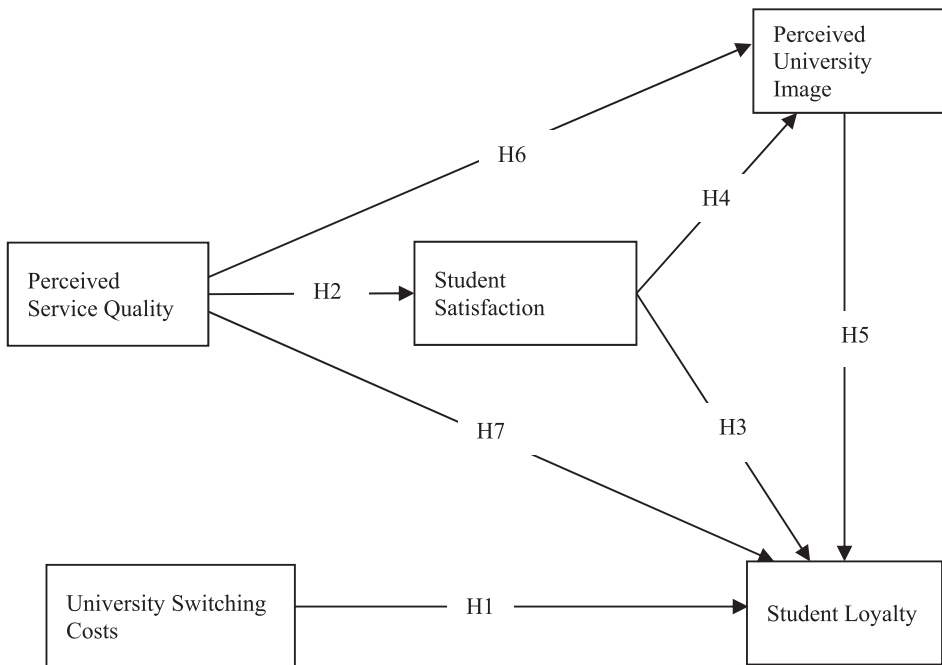

Figure 1. Conceptual framework.

Data was collected through self-administrated questionnaires. Five hundred and three questionnaires were returned from five universities. Extant literature recommends that there should be a minimum sample size of 300 respondents for seven or fewer constructs, but greater than 300 sample size is considered better to run structural equation modeling (Hair et al., 2010).

Items of perceived academic quality and perceived administrative quality were adapted from Chen et al. (2005). Items of physical facilities, student satisfaction, and university image were adapted from Helgesen and Nesset (2007). The scale used for switching costs (Ping, 1993) was adapted for the education context and covered financial, time, and psychological costs (Mohamad & Awang, 2009). Scale's validity was ensured through face validity, convergent validity, and discriminant validity. Items of student loyalty were adapted from Hennig-Thurau et al. (2001). Items of perceived academic quality, perceived administrative quality, and perceived physical facilities were evaluated against a 5-point scale ranging from 'very satisfied' to 'very dissatisfied' options. Perceived university image was measured against a 5-point scale ranging from 'very good' to 'very bad', whereas student satisfaction, switching costs, and student loyalty were measured on a 5-point scale ranging from 'strongly agree' to 'strongly disagree.'

Data analysis

Out of the 503 questionnaires that were returned, a very small number of cases had missing values. According to Hair et al. (2010), if such cases are too few to significantly impact the results, they could be deleted. Therefore, cases having any missing values were deleted. The workable sample was 489. The percentages of male and female students were 54% and 46%, respectively (see Table 3). Since some items were contextualized, it was essential to perform exploratory factor analysis (Izquierdo et al., 2014).

The primary purpose of exploratory factor analysis is to identify the magnitude of the observed variables' association with their underlined factors (Bryman & Cramer, 2009). Kaiser-Meyer-Olken (KMO) was run to check the adequacy of the sample size for performing EFA. More than 0.6 value of KMO is considered desirable (Pallant, 2010). The value of KMO was 0.875, which was above the desired threshold. Varimax rotation method was used to extract factors. Factors having more than 1 Eigenvalue were considered for further analysis. Overall, seven factors were extracted (see Table 4). Two items from perceived academic quality, one item from perceived administrative quality and two items from student loyalty were removed due to low factor loadings or cross-loadings.

The validity of the instrument was ensured through convergent and discriminant validity. Convergent validity shows the extent to which items of a construct are correlated to itself. Table 5 shows the Average Variance Extracted (AVE) by each factor and Composite

Table 3. Sample description.

Sample size	503
Workable sample	489
Level	under graduate students
Subject	bachelor of business administration
Male	54%
Female_	46%

Reliability (CR). Ideally, AVE should be 0.5 or more. Three factors have more than 0.50 AVE, while four factors have less than 0.50 AVE. According to Fornell and Larcker (1981), if a construct's AVE is less than 0.50 but composite reliability (CR) is more than 0.70; the construct would have convergent validity. It is very clear from Table 5 that all constructs have more than 0.70 composite reliability. The second type of construct validity is discriminant validity. It shows the uniqueness of a construct compared to other constructs (Cooper & Schindler, 2008). It is established if the AVE of a construct is higher than its squared correlation with any other construct. It is evident in Table 5 that AVEs of all constructs are higher than their squared correlations with other constructs.

Since the data was collected from a single source, there is a likelihood that cross-sectional data may inflate correlation among constructs due to common method variance (Lindell & Whitney, 2001). To check the presence of common method variance, Harmon

Table 4. Exploratory factor loadings.

Items	Factor Loading	Explained Variance
Perceived Academic Quality (Cronbach's Alpha = 0.722)		
1. Instructor's teaching ability	0.568	5.06%
2. Instructor's response to student queries	0.783	
3. Instructor's availability outside class	0.706	
4. Fairness of marking system	0.696	
5. Usefulness of offered courses	0.581	
Perceived Administrative Quality (Cronbach's Alpha = 0.683)		
1. Registration Process	0.657	3.56%
2. The process of applying for letters issued by the university	0.583	
3. Special help to solve student problems	0.661	
4. Friendliness of office staff	0.738	
Perceived Physical Facilities (Cronbach's Alpha = 0.822)		
1. Library	0.701	25.45%
2. Classroom Facilities	0.743	
3. Internet Facility	0.669	
4. Sports facilities	0.642	
5. Computer Labs	0.704	
6. Cafeteria	0.665	
Perceived University Image (Cronbach's Alpha = 0.861)		
1. Image in General Public	0.833	6.70%
2. Image in your social circle	0.768	
3. Image in corporate sector	0.800	
4. Overall image of University	0.785	
University Switching Cost (Cronbach's Alpha = 0.650)		
1. It will be costly to move to other university for MBA	0.660	4.52%
2. It will take more time to complete my Master Program if I change my current university	0.664	
3. I am not sure about the acceptance of BBA courses by the administration of the new university	0.617	
4. My travel time will increase if I change the university	0.592	
Student Satisfaction (Cronbach's Alpha = 0.861)		
1. I am satisfied with my academic learning	0.772	8.03%
2. My experience in this university is in line with my expectations	0.790	
3. My university is very close to be my ideal university	0.637	
4. Overall, I am satisfied with my university	0.710	
Student Loyalty (Cronbach's Alpha = 0.807)		
1. I will recommend others to study from my university	0.744	8.50%
2. I feel attached to my university	0.789	
3. I will visit my university as an Alum	0.822	
4. As Alum, I will extend my cooperation to my university.	0.826	
5. As Alum, I will help my university students in internships and job placement.	0.728	

Table 5. Convergent & discriminant validity (Correlation with other constructs).

Constructs	AVE	CR	PAQ	PADQ	PPF	USC	SS	SL
Perceived Academic Quality (PAD)	0.45	0.84						
Perceived Administrative Quality(PADQ)	0.44	0.75	0.10					
Perceived Physical Facilities (PPF)	0.47	0.84	0.14	0.13				
Perceived University Image (PUI)	0.63	0.87	0.05	0.05	0.18			
University Switching Cost (USC)	0.49	0.73	0.01	0.01	0.00	0.00		
Student Loyalty (SL)	0.61	0.88	0.12	0.13	0.15	0.19	0.01	
Student Satisfaction (SS)	0.53	0.82	0.16	0.21	0.16	0.18	0.03	0.40

one-factor test was conducted. The maximum covariance explained by one factor was 25.45%. Since it was significantly less than 50%, the probability of common method bias was ruled out. The proposed hypotheses were checked through structural equation modeling, and the results follow below.

Table 6 presents the model fit indices. Overall, the model was a good fit. The value of GFI is 0.908 (>0.90) and AGFI=0.889 (>0.80) and RMSEA=0.041 (<0.05). Other incremental fit and Parsimony fit measures were either more than or close to Hair et al. (2010) benchmarks.

Table 7 presents path analysis for different hypotheses. The first hypothesis was about the relationship between university switching costs and student loyalty. University switching costs show a significant positive relationship with student loyalty (β=.10, p<.05). A positive relationship between switching costs and customer loyalty has been reported in previous studies such as Ghazali et al. (2016), Blut et al. (2015), de Matos et al. (2013), Minarti and Segoro (2014), Lewis (2002), and Cheng (2011). This study confirms the relevance of switching costs in universities' context and is in line with Lai et al.'s (2019) findings. Therefore, switching costs are an essential factor that students may consider when making decisions about further educational needs.

The second hypothesis was about the relationship between perceived service quality and student satisfaction. The relationship between the three aspects of service quality – perceived academic quality (β=.21, p<.01), administrative quality (β=.41, p<.01) and physical facilities (β=.17, p<0.01) – and student satisfaction proved to be positive and significant. These results are in line with the findings of Paul and Pradhan (2019), Kashif and Cheewakrakokbit (2018), Annamdevula and Bellamkonda (2016), and Khoo et al. (2017). Satisfaction with the university increases when students perceive the quality dimensions of the university to be higher.

Table 6. Goodness of fit indices for structural model.

Fit Indices	Model Value
Absolute Fit Measures	
χ^2 (chi-square)	133.27
GFI (Goodness of Fit Index)	0.908
RMSEA (Root Mean Square Error of Approximation)	0.041
Incremental Fit Measures	
AGFI (Adjusted Goodness of Fit Index)	0.889
NFI (Normed Fit Index) >	0.866
CFI (Comparative Fit Index)	0.934
IFI (Incremental Fit Index)	0.034
RFI (Relative Fit Index)	0.848
Parsimony Fit Measures	
PCFI (Parsimony Comparative of Fit Index)	0.825
PNFI (Parsimony Normed Fit Index)	0.765

Table 7. Path analysis for structural model.

Path	β	S.E.	C.R.	P	Results
Perceived Academic → Student Satisfaction Quality	.21	.069	3.292	0.00	Supported
Perceived Administrative →Student Satisfaction Quality	.415	.066	5.426	0.00	Supported
Perceived Physical → Student Satisfaction	.170	.054	2.616	.009	Supported Facilities
Perceived Academic → University Image Quality	−.071	0.078	−1.122	.262	Not Supported
Perceived Administrative →University Image Quality	−.047	.077	.584	.552	Not Supported
Perceived Physical → University Image	.366	.066	5.238	0.00	Supported Facilities
Perceived Academic → Student Loyalty Quality	.107	.062	1.727	.084	Supported
Perceived Administrative → Student Loyalty Quality	−.067	.062	−.866	.386	Not Supported
Perceived Physical Facilities → Student Loyalty	.087	.053	1.275	.202	Not Supported
Student Satisfaction → University Image	.403	.085	5.422	0.00	Supported
Student Satisfaction → Student Loyalty	.553	.094	5.471	0.00	Supported
Perceived University Image → Student Loyalty	.120	.049	1.996	.046	Supported
University Switching Cost → Student Loyalty	.104	.042	2.467	.014	Supported

The third hypothesis was about the relationship between student satisfaction and student loyalty. Student satisfaction shows a significant positive relationship with student loyalty (β = .55, p < .01), which brings no surprise as satisfaction is most frequently used as an antecedent of loyalty. Similar results were reported in earlier studies such as Paul and Pradhan (2019), Borraz-Mora et al. (2020), and Paswan and Ganesh (2009). Therefore, it is logical to assume that a satisfactory level of services such as a good environment, effective learning, and caring staff play a key role in developing student loyalty.

The fourth hypothesis investigated the relationship between student satisfaction and perceived university image. Results show a significant positive relationship between student satisfaction and university image (β = .40, p < .01). This study supports earlier studies' stance (Ali & Ahmed, 2018; Helgesen & Nesset, 2007; Pedro et al., 2018; Taecharungroj, 2014) regarding the relationship between student satisfaction and university image. When students are satisfied, they tend to pass on favorable word-of-mouth (WOM) in their social circle, contributing to image formation.

The fifth hypothesis investigated the association between university image and student loyalty. A significant positive relationship was established between perceived university image (β=.12, p<.05) and student loyalty. The effect of university image on student loyalty was observed by Paul and Pradhan (2019), Helgesen and Nesset (2007), Brown and Mazzarol (2009) and Alves and Raposo (2007). The image of an institution plays a vital role among colleagues, employers, and friends. At times, students change the institution to better brand themselves for future endeavors.

The sixth hypothesis was about the direct relationship of perceived service quality with university image. Perceived academic quality (β = -.07, p > .05) and perceived administrative quality (β = -.047, p > .05) did not show a significant relationship with university image, whereas perceived physical facilities (β = .36, p < .01) were found to be significantly positively related to university image. However, the three quality dimensions impact the university image through the mediation of student satisfaction. Our results partially contradict the findings of Polat et al. (2016) and Nguyen and LeBlanc (2001), who showed that service quality was positively related to organization image. A positive and significant association of physical facilities with the university image reflects students' concern for better facilities (Pedro et al., 2018).

The seventh hypothesis proposed a relationship between perceived service quality and student loyalty. It is evident from our analysis that perceived administrative quality

(β = −0.06, $p > .05$) and perceived physical facilities (β=0.08, $p>.05$) do not show a statistically significant relationship with student loyalty, whereas perceived academic quality (β = .10, $p < .10$) is positively and significantly related to student loyalty. The results are very close to that of Lin and Tsai's (2008) study, which produced mixed results where academic quality significantly impacted student loyalty while administrative quality had an insignificant impact on student loyalty. The relationship of perceived service quality with student loyalty is indirectly mediated through student satisfaction, which confirms the findings of Saoud and Sanséau (2019), Giner and Rillo (2016), Annamdevula and Bellamkonda (2016) and Subrahmanyam (2017). The direct relationship of perceived service quality with student loyalty was not significant in the studies of Mohamad and Awang (2009) and Dabholkar et al. (2000). The results of this study suggest the supremacy of perceived academic quality over other quality dimensions because it affected student loyalty directly as well as indirectly through the mediation of student satisfaction.

Based on the results of this empirical study, the model depicted below is being recommended. This study elaborately covered direct and indirect antecedents of students' loyalty and their interrelationships. As covered in the literature review section, the direct association of perceived quality with university image and student loyalty has been reported in earlier studies. This study found partial support for this direct relationship. All partially supported hypotheses have been ignored in this model to increase the parsimony of the model (Figure 2).

Contribution and conclusion

This research has attempted to identify student loyalty determinants to address a few research gaps prevalent in the literature. Determinants of student loyalty have been studied before. However, most studies have covered mostly the main determinants of student loyalty such as student satisfaction, service quality, and university image but ignored interrelationships of all these antecedents and their collective impact on student loyalty. This study has explored the relationships among determinants of students' loyalty and presented a model based on empirical findings. The other highlighted research gap is the near exclusion of university switching costs as a determinant of student loyalty. This study adapted Ping's (1993) scale to measure university switching costs by modifying items to incorporate the education context (Mohamad & Awang, 2009). Furthermore, the extant literature on student loyalty still lacks adaptation of customer loyalty definition to describe student loyalty. Therefore, this study modified the customer loyalty definition given by Oliver (1999).

Results showed that student satisfaction has significant positive relationships with perceived academic quality, perceived administrative quality, and perceived physical facilities. These results are in line with the plethora of studies on the relationship between perceived service quality and satisfaction.

The effect of perceived service quality on university image showed a mixed trend. Perceived academic quality and perceived administrative quality did not establish a significant relationship with perceived university image, while perceived physical facilities showed a significant association with university image. Interestingly, the direct relationship of perceived administrative quality and physical facilities with student loyalty was not significant, while perceived academic quality had a significant relationship with
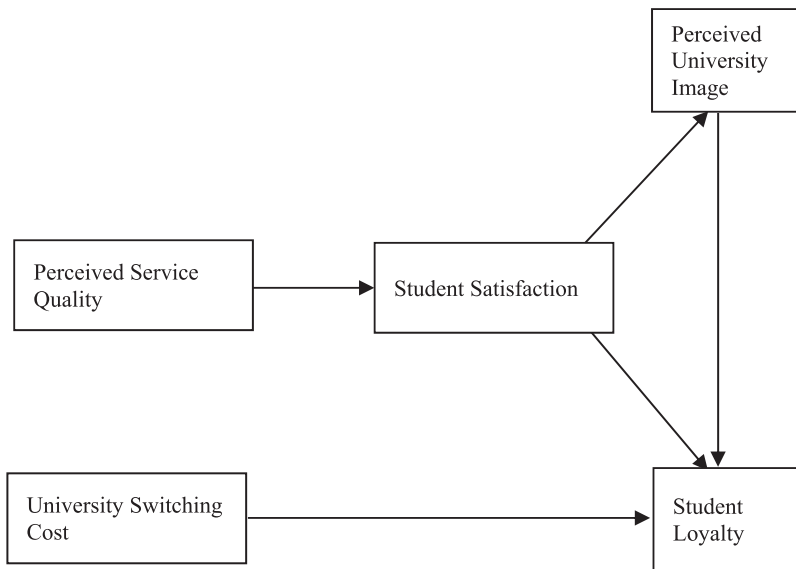
Figure 2. Model of student loyalty in higher education.

student loyalty. However, administrative quality and physical facilities have a significant positive relationship with student loyalty through the mediation of student satisfaction, which is again quite noticeable in the literature.

The relationship between university switching costs and student loyalty was of prime interest to this study because of the near absence of its application in the education sector despite its relevance. The relationship between different types of switching costs with student loyalty came out as positive and significant. It shows that the higher the monetary and non-monetary costs of switching from one university to another, the more the probability that students will continue education in the same university.

The relationship between perceived university image and student loyalty was also positive and significant. Students may feel a sense of joy or even pride when their university is perceived to hold a good impression. This study confirmed the role of student satisfaction in shaping a positive image of the university. When students are satisfied, they convey positive feedback to the external world, which helps build a good university perception.

Implications for higher education institutions

There are implications for HEIs that may be drawn out of this research. HEIs may increase monetary switching costs by providing some financial incentives to its existing students to continue further education with the institution. A monetary incentive could be a loyalty discount offered for continuing education within the same institution. Non-monetary switching costs may also be increased by offering incentives such as course waivers – without compromising academic rigor – to existing students to retain them. Other examples may include cross-program, cross-departmental, or cross-discipline sharing of courses, and offering skill-enhancing courses unique to the university expertise and not easily transferable.

This study has demonstrated a direct relationship between physical facilities and university image. The concerned authorities should take this into account while making budget allocations. Students' interest in lectures could be enhanced through well-furnished classrooms equipped with visual and audio aids. In the same way, sports facilities improve physical fitness, and wholesome food offering by dining facilities enhance students' overall well-being.

Perceived academic quality also directly influenced student loyalty. The primary purpose of going to university is education. The ability of teaching faculty, coupled with professional knowledge and a supportive attitude, is key to learning. Faculty must be trained in modern teaching pedagogy to kindle students' interest in courses and learning. Students' satisfaction with academics and physical and administrative facilities improves an institution's image, which builds loyalty.

All dimensions of perceived service quality directly correlated with student satisfaction, but surprisingly, perceived administrative quality had the highest impact on student satisfaction. The administration of universities is often given the least importance. It shows that students are very sensitive about resolving their queries on time. They want to be treated with care and respect. It is recommended that office staff be trained to address students' various issues and resolve them in a timely and courteous manner. It is suggested to tie the performance of front line employees with some financial reward in addition to their salaries.

All aspects of perceived service quality indirectly affected university image and student loyalty through the mediation of student satisfaction. In addition to improving teaching quality, increasing administrative support, and enhancing the quality of physical facilities, HEIs should invest in establishing public relations departments to manage their public image. Universities may hold seminars and intra-university competitions and send students to exchange programs nationally and internationally to improve university image. Universities need to keep monitoring their image in public and take every possible step to improve people's perception to have a favorable image of the institution.

Limitations and future research

This study has investigated university switching costs as a new antecedent of student loyalty. However, the dimensions of switching costs are very specific to Pakistan. Therefore, it is recommended to use this construct in other developing and developed countries by considering their specific switching costs of moving from one university to another. Furthermore, this study only included five universities of Karachi: many universities in other cities of Pakistan were not covered in this study. Future studies should overcome this shortcoming.

This study adapted the switching costs scale to reflect university switching costs, but it could not achieve high reliability. Other researchers can utilize this shortcoming as an opportunity to enhance reliability by improving construct development. It is suggested that future researchers could further enhance the predictive power of the above model by introducing some new antecedents and moderating variables that have not been used so far.

This study considered university image as an antecedent of student loyalty. Considering the debate regarding university image as a consequence or antecedent of student satisfaction, one may empirically compare university image as a consequence and antecedent of student satisfaction using the same sample.

This study used structural equation modeling approach (SEM), which is not without limitations. The study employs path analysis through structural equation modeling to derive a model that may be used for future research. Causal relationships indicated by the model may be confirmed through causal research designs such as experimentation.

In SEM, the accuracy of results tends to decline with decreasing sample size (Nachtigall et al., 2003). This study, as per the requirement, used a large sample to find an association between variables. These results may differ if a similar study is replicated using small samples.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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