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Moderating effect of perceived trust on service quality – student satisfaction relationship: evidence from Indian higher management education institutions

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ABSTRACT

The purpose of this paper is to examine service quality constructs which leads to student satisfaction in the setting of Indian higher management education institutes. In this study, researchers made an attempt to investigate the moderating effect of perceived trust on the relationship between service quality and student satisfaction. The findings of the study suggested that teaching skills of teacher, staff competence, reputation and access have significant impact on student satisfaction whereas generic skills of teachers and staff attitude does not influence student satisfaction significantly. Results of the study also suggested the moderating effect of perceived trust on student satisfaction. This study is a sole attempt to identify various academic and non-academic aspects of service quality which influence student satisfaction. The findings of the study suggest that it is important for management of HEI's to recruit not only good instructors but also the competent staff.

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Service quality; student satisfaction; perceived trust; higher education; HEDPERF

Introduction

Customer satisfaction measures how products and services meet expectations set by the customer. Customer satisfaction is an intangible and slightly abstruse concept. Expression of satisfaction is different from person to person, and from product to product. Satisfaction is behaviour of the customer towards dissimilarity in their expectations and experience (Hansemak & Albinsson, 2004; Johnson et al., 2001). Companies often use worth of product as a function of quality to measure customer satisfaction. Many customer satisfaction surveys used SERVQUAL as a common service quality framework (Johnson et al., 2001). Quality is a well-defined term for tangible products, but becomes very complex to define for intangible services and is often referred to as service quality (SQ).

Education institutions are similar to any other service-based company whose eventual objective is to earn profit through customer satisfaction. Indian higher education institutions (HEI's) vie for customers, hence customer satisfaction becomes a key discriminator of their marketing strategies. Though there are several stakeholders in education institutions, students are acknowledged as the primary customers (Douglas et al., 2008).

Kundu (2016) emphasized in his research that SQ is defined differently, from the perspectives of employers, teachers, front line staff and students. There are a few past researches that studied SQ from the perspective of top management, accreditation agencies and teachers (Mishra, 2007; Sahney et al., 2008; Shahaida et al., 2009) but there is dearth of studies done to understand students' perspective of SQ in the context of Indian HEI's. Weerasinghe and Fernando (2017) revealed that in an institution, student satisfaction (SS) depends upon several parameters such as educational practices, quality of teaching and the service facilities they come across throughout the process of learning. Fitzpatrick et al. (2016) suggested that satisfied students are a good source of recommendation for the institute whereas, displeased students may create a negative environment that could earn a bad name for the institute.

Although, there is agreement on the significance of SQ in education institutions, it is essential to identify SQ factors that affect students' satisfaction. Many education practitioners wish to recognize quality issues in experiences faced by the students. Literature reveals that SERVQUAL given by Parasuraman et al. (1988) and SERVPERF given by Cronin and Taylor (1992) are established instruments to measure quality and performance of service. Later, Abdullah (2006) developed HEDPERF scale that considered additional dimensions related to higher education.

In India, identifying and reviewing SQ parameters in an education institution becomes important, since it is contended that there is dearth of talented and employable students graduating from these institutions. A report says that Indian HEI's produce over one million engineering and management graduates every year; out of them, not even one-third have the required skills to find suitable employment (Nanda, 2014). As per a report published in *India Today*, 93% of management graduates in India are unemployable (Chakrabarty, 2018). Indian government has budgeted INR 93,847.64 Cr for education in Budget 2019. Hence, it becomes vital to check the quality of public/ private universities/ institutions engaged in higher education. Also, in 2015, Ministry of Human Resource Development approved National Institutional Ranking Framework (NIRF) to assess the overall quality of Indian HEI's.

To summarize, this study contributes to the service quality in HMEI'S by clarifying the role of individual variables in determining the students' satisfaction. More precisely, the present study empirically examines the moderating role of perceived trust in the relationship between service quality and student satisfaction.

Justification of the study

Indian higher management education institutions (HMEI's) are under tremendous pressure to improve quality, since very few of them are accredited from international bodies such as Association to Advance Collegiate Schools of Business (AACSB) and Association of MBA's (AMBA). The motivation behind this study is to recognize the influence of SQ dimensions on SS in the presence of perceived trust as moderator, in the setting of Indian higher management education institutes. Literature has ample instances that establish the direct impact of SQ on SS (Abili et al., 2012; Dib & Alnazer, 2013; Gruber et al., 2010; Malik et al., 2010; Sapri et al., 2009), but there is dearth of research that attempts to establish an indirect link involving the relation of SQ and SS. A few studies have attempted to include different moderating variables affecting the relationship of SQ and SS. Past

studies report the relationship between SQ and SS as being moderated by service convenience (Humaidi et al. 2019); motivation (Damaris et al., 2019); student demographic characteristics such as gender, race and state of origin (Padlee et al., 2016); value (Yamaqupta, 2014). Another study conducted by Saleem et al. (2017) found the moderating effect of university image, university culture and price, on the relationship between SQ and SS. Several researchers have studied trust as a successor of SS (Chaparro-Peláez et al., 2015; Dennis et al., 2016; Ennen et al., 2015; Kunanusorn & Puttawong, 2015), but none has incorporated perceived trust as a moderating variable. It is important to study the moderating effect of perceived trust on the relationship between different aspects of SQ and SS because, if students have higher level of perceived trust on their institute, they may tend to ignore small issues with SQ and their satisfaction may not get affected. Otherwise, with low perceived trust, they may tend to create issues related to small faults in SQ. Outcomes of this study would add to the results of previous studies while establishing the relationship between these constructs. The result may have influential implications for higher education management institutes globally. This study follows an interdisciplinary (management and education) approach which further boosts its significance.

Literature review

The purpose of this study is to validate the proposed theoretical model which represents the interactions between various SQ parameters and SS, in the presence perceived trust as moderator. A brief synopsis and arguments related to the main concepts and relationships among them follow in this section.

Service quality

Grönroos (1984) introduced the concept of SQ, which was further developed by Parasuraman et al. (1985). Since then, SQ gained attention of researchers and has grown into a recognized concept due to vigorous business obligations worldwide. Parasuraman et al. (1985, 1988) have used various quantitative and qualitative research methods to produce SERVQUAL scale, which represents the most used operationalisations of SQ. The usefulness of SERVQUAL is apparent as it has been used in several studies, conducted in different service settings (Ali & Raza, 2017; Carman, 1990; Kassim & Bojei, 2002; Kouthouris & Alexandris, 2005; Kumar et al., 2009; Lee et al., 2012; Muhammad Butt & Cyril de Run, 2010; Young et al., 1994; Yousapronpaiboon, 2014). In spite of its enormous application, this model has attracted criticism on operational grounds. Some objections for the scale are with respect to gap in performance and expectation scores, length of scale and validity of the five-constructs structure (Cronin & Taylor, 1992; Teas, 1994).

Later, Cronin and Taylor (1992) proposed SERVPERF scale as a variant of SERVQUAL to measure SQ. SERVQUAL measures SQ by comparing perception and expectation whereas, SERVPERF only measures perception of customers about SQ based on performance. Though, several researchers (Boulding et al., 1993; Cronin & Taylor, 1992; Parasuraman et al., 1994; Quester & Romaniuk, 1997) believe that customers assess sequence of services and not just one performance, they suggested that performance explains more variance in SQ. This endorses that SERVPERF is more reliable since it explains greater amount of variability and is not biased as SERVQUAL (Carlos Bou Llusar & Camisón Zornoza, 2000; Carrillat

et al., 2007). Despite the fact that contribution of SERVPERF in SQ is unquestionable, it is too generic to be applied to assess SQ in HEI's. Later, Abdullah (2005) suggested HEDPERF scale to comprehensively measure factors of SQ in HEI's. Later, numerous researchers compared these scales (SERVQUAL and SERVPERF) with HEDPERF and found HEDPERF to be the best in terms of consistency, strength, explained variance and unidimensionality, as far as HEI's are concerned (Abdullah, 2006; Brochado, 2009; Sultan & Wong, 2010). Recently, Ali et al. (2016) endorsed the five constructs of SQ with respect to HEDPERF scale and concluded that these dimensions also influence SS. Several recent studies have mentioned contribution of HEDPERF in measuring SS (Ali et al., 2016; Banahene et al., 2018; Majeed, 2019; Yusuf, 2017). HEDPERF measures service quality through various dimensions. Academic aspect is an important dimension of service quality in the context of HEI's and is measured through aspects such as positive attitude of teachers, their good communication skills, giving sufficient time for consultation and providing feedback (Abdullah, 2006). Previous researches have concluded that student perception about faculty, teaching pedagogies, instructors' generic skills and syllabus management are key predictors of student's satisfaction and loyalty towards the institute (Banahene et al., 2018). Non-academic aspect includes variables that support students to achieve their study requirements related to attitude and competence of non-academic staff (Abdullah, 2006). Athiyaman (1997) also emphasized on the importance of administrative services along with academic services. Reputation of any HEI is related to its image among students (Abdullah, 2006). Elsharnouby (2015) submits that the perceived reputation of higher education institution and faculty competence are predominant factors effecting SS. Access relates to accessibility of the tangible and intangible facilities provided to students. This includes accessibility of academic/ non-academic staff, or to other facilities such as building, labs, libraries, hostel etc (Douglas et al., 2015). Abdullah (2006) relates programme issues to the importance of offering comprehensive range of reputed academic programmes or academic streams, with flexible curriculum architecture.

Service quality in Indian HEI's

Students expectations have evolved over a period of time. Initially, mechanisms of quality management in HEI's was either inspired by quality practices followed in the corporate world or based on excellence models such as Kanji Business Excellence Model (KBEM) or European Foundation of Quality Management (EFQM). Presently, with coexistence of these models, there are new approaches that pay more consideration to specificities of HEI's (Harvey & Williams, 2010). As suggested by European University Association, mechanism for quality management in HEI's includes self-evaluations of processes, assessing quality of teaching, periodic review of academic courses, measuring student feedback, surveys on staff and student's satisfaction, assessment of workload on students, monitoring progress of students as they move with the programme by analyzing the data statistically, and many more.

Despite HEI's putting efforts, quality is a concern for many HMEI's (Sohail & Shaikh, 2004; Angell et al., 2008). There is tremendous growth in the number of applicants joining HMEI's (Rugh, 2002). To achieve quality in HEI's, processes need to implement both direct and indirect assessment of quality (Hill et al., 2005). Student is a crucial element in evaluating quality of HEI's (Ginns et al., 2007; Hill, 1995; Oldfield & Baron, 2000). Many a time, student's

perception of institute's quality does not coincide with the description of quality given by accreditation agencies (Akareem & Hossain, 2016). Notions of consumer-centrism, consumer-engagement and customer satisfaction influence HEI's and force them to acknowledge students as customers (Hill, 1995; Shank et al., 1996). Hence, it is important to consider students as a channel to assess SQ in any higher education institution (Athiyaman, 1997).

Students usually assess quality of an institute by matching their expectations with performance of the institute. SQ is not only important for HEI's but is a vital consideration for learning excellence. Extensive discussions are going on globally to define SQ in the best way for HEI's (Becket & Brookes, 2006). Looking at the different requirements of each student, quality in education becomes an ambiguous and debateable concept (Cheong Cheng & Ming Tam, 1997). Several researchers emphasized that appropriate use of SQ dimensions improves the perception of students towards these services (Gallifa & Batallé, 2010; Yunus et al., 2009). Importance of tangible facilities in creating a good image of an institution cannot be ignored (Malik et al., 2010).

Student satisfaction

Satisfaction is emotion of a person when actual performance meets expectation (Kotler & Clarke, 1987). Students form their expectations before joining the institute (Hill, 1995). There are no limits to students' expectations; hence, it becomes important for researchers to understand their expectations prior to their joining any HEI (Palacio et al., 2002). On the contrary, some researchers consider that satisfaction includes matters related to students' experience during their studies in HEI's (Alves & Raposo, 2007; Carey et al., 2002; Kajenthiran & Karunanithy, 2015; Saleem et al., 2017). Satisfaction for a student is short-term outlook that is developed based on the quality of education service received from the institute (Elliott & Healy, 2001). Although numerous researches studied student's satisfaction, researchers have no clue about standardizing the definition of the same. Hence, there is a need to pick and revise a customer satisfaction theory to cater to the need of a precise definition of SS (Hom, 2002). Most of the HEI's have accepted student as customer, which has created further obligation to hear and act upon the demands of students (William, 2002). SS largely depends upon the atmosphere provided by the institute to gain knowledge and assists students to meet their educational goals (Lo, 2010). Customer satisfaction is a global phenomenon for predicting customer behaviour (Parahoo et al., 2013). Letcher and Neves (2010) pose satisfaction as provision for students to revise their confidence, which eventually leads to improvement of the needed expertise and acquiring logical abilities.

Service quality and student satisfaction

SQ is an intense predecessor to satisfaction (Arambewela & Hall, 2013; Spreng & Mackoy, 1996) and not many researches establish the same in the context of services (Prabhakar & Ram, 2013). Hence, apposite understanding of factors of customer satisfaction and its background is highly required to gain high financial value in the competitive environment for any service organization (Lassar et al., 2000). Binge et al. (2003) establish a high degree of significant relationship between customer satisfaction and SQ. Another study conducted by Helgesen and Nesset (2007) inveterate the association between customer satisfaction and SQ factors. Since there exists close association between SS and SQ. Helgesen and Nesset

suggest that HEI's must pay ardent consideration to excellence of SQ offered to the students. Another research done by Brown and Mazzarol (2009) concludes that SQ has impact on satisfaction and is transiting through superficial values in the setting of higher education institution. Alves and Raposo (2010) used European Customer Satisfaction Index (ECSI) model to establish a straightforward relation between SQ and satisfaction. Thus, it becomes mandatory to ensure SS through correct execution of various aspects of service.

Theoretically, there is a blurred association between SS and SQ provided at HEI's (Anderson et al., 1994). Several studies done in the context of different geographies have found evidence of close association of SQ with SS. Annamdevula and Bellamkonda (2016a, 2016b) found similar results in their study based in India; Duarte et al. (2012) in Portugal; Chandra et al. (2018); Khoo et al. (2017) in Singapore; Mansori et al. (2014) in Malaysia; Azam (2018) in Saudi Arabia. However, another research conducted in Syria could not establish the influence of SQ on SS (Dib & Alnazer, 2013). The SS could be driven by several SQ factors such as academic aspects, non-academic aspects, reputation of an institution and accessibility to facilities (Abdullah, 2006).

Academic services and student satisfaction

Satisfaction of students in the setting of academic institutions is generally linked with their academic experience and their perception about teachers' effectiveness. Elliott and Shin (2002) studied various facets of academic experience of a student and concluded that teaching competence of instructor is the most important determinant of student's satisfaction. Parahoo et al. (2013) studied the moderating effect of gender on satisfaction of students, considering three of its aspects in the form of total satisfaction, inclination to recommend their institute and satisfaction from academic experience. The result of their study suggests that reputation and competence of faculty plays a significant role in the satisfaction of male students in HEI's. Shirazi (2017) suggested teacher's expertise on the subject and the way the teacher deals with students affect student academic satisfaction. Teachers being helpful in fulfilling student expectations and maintaining respectful outlook towards students have significant effect on student academic satisfaction (Elliott & Shin, 2002). Specifically, general teaching skills refers to the instructors' ability to enhance the students interest in the subject and motivate the students to success. Whereas, generic skills of an instructor refer to listening the students patiently outside the class and their communication skills (Chakrabarty et al., 2016). Above studies inspire the authors to frame the following hypotheses:

H1: General teaching ability of instructor has a positive and significant effect on SS.

H2: Generic skill of teachers has a positive and significant effect on SS.

Non-academic services and student satisfaction

Kamal and Ramzi (2002) attempted to measure students' perception of administrative services such as registration process, library and lab services, career counselling required to assure good quality of teaching and learning process. SS is not restricted to academic experience but also related to infrastructure, student support activities and dealing with non-academic staff (Anantha & Abdul Ghani, 2012). Along with competence of academic

staff, competence of non-academic staff also makes a difference in the satisfaction levels of students (Rombe et al., 2016). Competence is also one of the ten determinants of SQ (Parasuraman et al., 1985). Tornow and Wiley (1991) defined service attitude as promptness of server in providing effective service to the customers. The service attitude plays a significant role in developing long-term relationships between server and customer which further leads to customer satisfaction (Heskett et al., 1994). Owlia and Aspinwall (1996) has described competence and attitude as important components of the SQ framework in higher education institutions. Hence, it becomes important to understand the role of staff competence and attitude in ensuring SS. The above studies inspire the authors to frame the following hypotheses:

H3: Service attitude of non-academic staff has a positive and significant effect on SS.

H4: Competence of non-academic staff has a positive and significant effect on SS.

Reputation and student satisfaction

Reputation is an important imprint of the company on its external stakeholders (Davies & Miles, 1998) and an important factor to achieve success (Chun et al., 2005). Students' experience is guided by reputation of the institute which, in turn, is influenced by exceptional brand image (Berry, 2000). Reputation of the institute is an important determinant for prospective students. Many a time, it has been observed that reputation of an institute plays a key role in the decision-making process (Merchant et al., 2015). Several other researchers have examined the relationship between brand image and SS, and affirmed reputation as an important driver of SS (Brown & Mazzarol, 2009; Palacio et al., 2002). Sadiq Sohail and Shaikh (2004) suggest that accessibility of good physical facilities required for learning activities improves reputation of the institute. Availability of such facilities help students to construct a positive image of institute in their minds. Further, students relate reputation with the quality assurance provided by different accreditation agencies. The above studies inspire the authors to frame the following hypothesis:

H5: Reputation of institute has a positive and significant effect on SS.

Access and student satisfaction

Abdullah (2005) defined accessibility of staff and facilities as an important factor in determining SS. Parasuraman et al. (1985) first included access as a component of SQ. Douglas et al. (2015) consider access as the right to avail tangible amenities such as buildings, hostel, lab, library, and intangible amenities such as services, guidance from instructor etc. Woo and Ennew (2004) suggest that access to the facilities in hostel and cafeteria have direct impact on SS. Insch and Sun (2013) established positive effect of transport and mess facilities on SS. Similar results were obtained by Toyin Sawyerr and Yusof (2013). Altman and Hernon (1998) found significant effect of access to technology and library services on SS. These studies inspire the authors to frame the following hypothesis:

H6: Accessibility of staff and facilities has a positive and significant effect on SS.

Moderating effect of perceived trust

Trust can be defined as faith of a customer on any person or organization to hold their promises and work in the best interest of the consumer (Singh & Sirdeshmukh, 2000). In the context of HEI's, trust may be defined as the confidence of students on the institute's truthfulness. Student may develop trust towards an institute based on the efficiency and attention of institution displays towards them, and their experiences with instructors and other facilities within the institute. Andaleeb (1994) suggests that lack of trust may deteriorate the long-term relationship between organization and customers. Ghosh et al. (2001) found perceived trust to be an important ingredient to develop long term relationships between student and institute. Many previous researches have established perceived trust as a positive and significant predictor of SS (Aritonang & Lerbin, 2014; Kim & Sax, 2009; Mohamad, 2009). Therefore, perceived trust could moderate the relationship between SQ and SS. This leads to the following hypothesis:

H7: Perceived trust moderates the relationship between SQ dimensions (general teaching, generic skills of teachers, service attitude of staff, staff competence, reputation and access) and SS; the relationship would be stronger when perceived trust is higher rather than lower.

Research framework and research hypothesis

We proposed the following hypothesized model, grounded on the literature review detailed in the previous section. The research model examines the effect of SQ parameters based on HEdPERF scale towards SS. General teaching skills and generic skills of teachers are considered under academic aspect; service attitude of staff and staff competence are considered under non-academic aspects; reputation and access are independent variables and perceived trust is a moderating variable. Figure 1 illustrates the hypothesized model for the study.

Research method

The main purpose of the study is to identify the effect of SQ dimensions on SS, with a moderating effect of perceived trust, in HMEI's in India. Respondents for the study were students studying in higher education institutions in Delhi and National Capital Region. Structured questionnaire was used to collect data and IBM SPSS 20 and AMOS Graphics were used for analysis.

Sample and data collection

Data for this study was collected from Indian students studying in various higher education management institutions, in public and private sectors, in Delhi and National Capital Region. These institutes were accredited institutes with students from various states of India. Authors being in the field of education leveraged their professional contacts to collect data from 14 institutions running management programmes. The process of data collection followed the convenience sampling procedure. Since English is an official language in India and also all respondents were well educated, survey was prepared in English. Responses were collected in phases through pen paper survey and

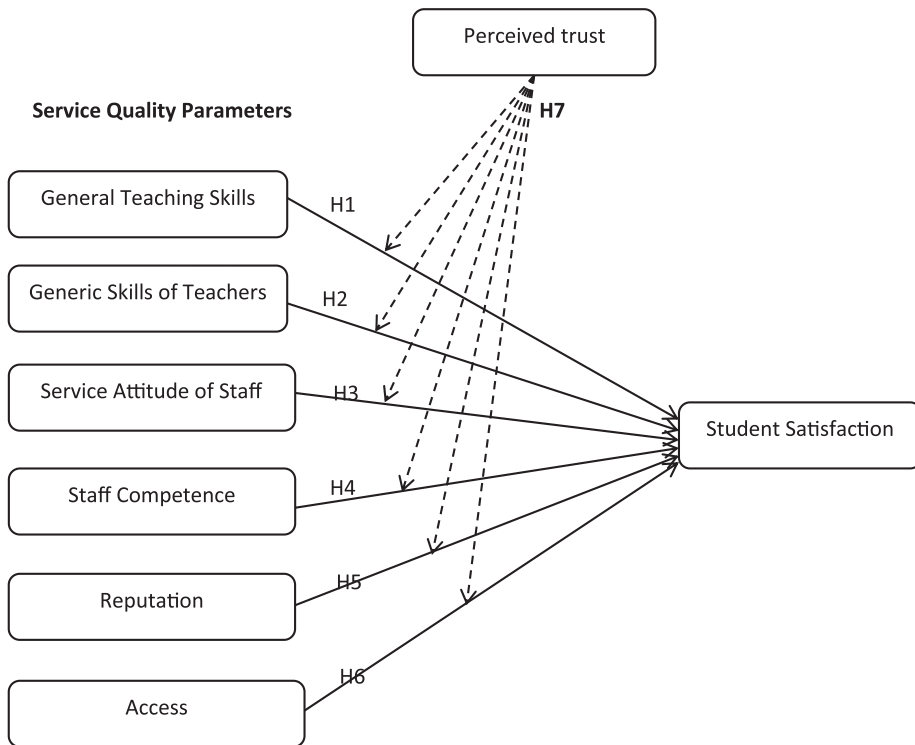


Figure 1. Hypothesized model.

online survey. To ensure reliability of data, personal information such as name of respondent, institute name, phone number etc., was not collected. However, respondents were asked to submit email ids so as to confirm and match the respondents during two stages of the survey.

Data was collected in two phases. In the first phase of survey, new students were given pen paper survey at the time of registration in the institute, and were asked about perceived trust on the institute. That was the right time to measure perceived trust since they had not experienced the institute yet. The second phase of the survey was conducted after six months where the students were asked questions related to SQ and their satisfaction levels. By that time, they had experienced the SQ offered by the institute and could express their satisfaction levels with the same. The second phase of survey was conducted in online mode where a link was provided to the students. The time gap of six months between both the surveys was adequate for students to understand the SQ offered at the institute and to describe their satisfaction levels. However, it was inadequate to actually build trust on the institutes (Nadler & Simerly, 2006).

During both the surveys, a cover letter explained purpose of the survey and guaranteed confidentiality of the given responses. Moreover, instructions given in the survey clearly mentioned that there is no right or wrong answer, and respondents were asked to fill the survey to the best of their ability. During phase one, out of total 550 questionnaires distributed, 469 were completed and returned. During phase two, the survey form on SQ and satisfaction was administered to 469 respondents obtained from phase

Table 1. Demographic profile of students.

Demographics	Frequencies	Percentage
Gender		
Male	198	60.7
Female	128	39.3
Work experience		
Yes	119	36.5
No	207	63.5
Type of institution		
Private	246	75.5
Public	80	24.5
System of education		
Annual	22	6.7
Semester	213	65.3
Trimester	91	27.9
Region of belongingness		
North	185	56.8
East	56	17.2
West	30	9.1
South	55	16.9

Source: Authors' survey.

one; only 326 were returned with complete information. Minimum sample size was calculated using Cochran's formula which uses population proportion and follows confidence interval approach. The minimum sample size was estimated to be 139 using this formula. Among the respondents, approximately 36 percent had work experience, 75 percent were studying in private institutes and 72 percent were studying under semester system. First phase of survey was conducted during July 2018, whereas the second phase was conducted in January 2019. Detailed demographic profile of the respondents is presented in Table 1.

Questionnaire Design

The scales required for constructs in the research model were taken from earlier studies. The study included eight constructs in all: general teaching skills (academic aspect), generic skills of teachers (academic aspect), service attitude of staff (non-academic aspect), staff competence (non-academic aspect), reputation, access, perceived trust, SS. All the variables were adopted from standardized scales and were measured on 5-point Likert scale ranging from '1 = strongly disagree' to '5 = strongly agree'.

- (1) Service Quality: 37 items scale was adopted from Abdullah (2005). This scale includes the statements like 'Academic staff are never too busy to respond to my request for assistance', 'Administrative staff communicate well with students', 'The institution runs excellent quality programmes'.
- (2) Student Satisfaction: 6 item scale was adopted from Athiyaman (1997). This scale includes the statements like 'If I have choice to do it all over again, I will still enrol in this institute.', 'My choice to enrol in this institute is a wise decision'.
- (3) Perceived Trust: 3 items scale adapted from Jarvenpaa et al. (1998). This scale includes the statements like 'The institute is trustworthy.', 'I trust that institute will work in my best interest.'

Additionally, the survey included a few questions on respondent demographics such as gender and work experience, and on institute demographics such as type of institution and education system followed. The detailed questionnaire is given as Annexure 1.

The instrument was first presented to a group of three experts (academic deans) who made an assessment to confirm content validity and accuracy of the language used. The questionnaire was then piloted using data obtained from the first 20 respondents. Pilot test was performed by comparing data from each of the respondents. This ensured reliability and appropriateness of the survey. To ensure reliability, Cronbach Alpha (0.94) was calculated, which was found to be good (Nunnally & Bernstein, 1978).

Measurement model: reliability and validity

First, exploratory factor analysis (EFA) was performed using principle component analysis where 46 items were reduced to eight factors. While performing EFA, five items were dropped due to low factor loading. The remaining forty-one items with factor loading more than 0.6 were considered to form the factors (Klien, 2005). Kaiser-Meyer-Okin value was found to be 0.960 with significant value of Barlett's test of sphericity (0.000).

Podsakoff et al. (2003) suggested presence of common method bias when all variables are measured on the same scale. To avoid common method bias, procedural processes were used in the study. Sufficient number of items were reverse coded and identity of the respondents was kept anonymous. Further, Harman's single factor test was used to measure common method bias. All items were subjected to factor analysis using principal component analysis with Varimax rotation where all variables were adjusted to single factor; 46.2 percent of variance was explained which is sufficiently less than the suggested level of 50 percent (Yang et al., 2015).

Further, to establish reliability of the identified factors, Cronbach alpha was calculated and was found to be between 0.756 and 0.912. Table 2 confirms the reliability, validity of the measurement model. To confirm the factors, confirmatory factor analysis was employed using AMOS. The measurement model was found to be a good fit with all the fit indices well above the accepted value. The ratio of chi square value and degree of freedom was found to be 2.376 which was statistically significant and well below the threshold value of 5. All other fit indices, GFI = 0.923, AGFI = 0.901, CFI = 0.980, NFI = 0.923, TLI = 0.979 and RMSEA = 0.039, support the fit of measurement model and hence confirms all the factors. Items and their loadings are presented in Table 2.

Moreover, composite reliability (CR) and average variance extracted (AVE) were calculated for all the constructs and were found to be above the threshold values of 0.70 and 0.50 respectively (Hair et al., 2010). To confirm discriminant validity, square root of AVE was compared with correlation coefficients between each pair of constructs. For each construct, square root of AVE was found to be greater than correlation coefficients with all other constructs (Table 3). Therefore, good model fit, construct reliability, convergent validity and discriminant validity were confirmed for the measurement model. Table 2 shows the factor loading of items under every construct which fulfils the condition for convergent validity. Correlation coefficients between variables are presented in Table 3. Since all independent variables and moderator are found to have significant relation with dependent variable, hence suitable to be included for regression analysis.

Table 2. Factor loadings, construct reliability and convergent validity.

Constructs (number of items)	Variables	Factor loading	Cronbach Alpha	Average Variance Extracted (AVE)	Composite Reliability (CR)
General teaching skills (3)	SQ1	0.767	0.756	0.598	0.821
	SQ7	0.850			
	SQ8	0.709			
Generic skills of teachers (5)	SQ2	0.688	0.850	0.60	0.819
	SQ3	0.834			
	SQ4	0.724			
	SQ5	0.798			
	SQ6	0.822			
Service attitude of staff (7)	SQ18	0.716	0.912	0.588	0.905
	SQ19	0.728			
	SQ20	0.758			
	SQ22	0.718			
	SQ23	0.739			
	SQ24	0.742			
	SQ25	0.927			
Staff competence (4)	SQ21	0.821	0.876	0.639	0.819
	SQ26	0.720			
	SQ27	0.809			
	SQ28	0.843			
Reputation (6)	SQ9	0.693	0.896	0.524	0.861
	SQ10	0.702			
	SQ11	0.709			
	SQ15	0.685			
	SQ37	0.680			
Access (7)	SQ17	0.831	0.897	0.514	0.884
	SQ29	0.641			
	SQ30	0.688			
	SQ31	0.728			
	SQ32	0.642			
	SQ34	0.658			
	SQ35	0.739			
	SQ36	0.892			
Perceived trust (3)	PT1	0.794	0.858	0.770	0.906
	PT2	0.911			
	PT3	0.913			
Satisfaction (6)	SS1	0.722	0.906	0.579	0.891
	SS2	0.712			
	SS3	0.718			
	SS4	0.721			
	SS5	0.957			
	SS6	0.707			

Source: Author's survey.

Table 3. Correlation coefficients and square root of AVE.

Constructs	GTS	GST	SAS	SC	REP	ACC	PT	SS
GTS	0.75							
GST	0.49**	0.77						
SAS	0.37**	0.67**	0.83					
SC	0.51**	0.23**	0.17**	0.78				
REP	0.64**	0.59**	0.35**	0.64**	0.79			
ACC	0.58**	0.62**	0.48**	0.33**	0.42**	0.72		
PT	0.42**	0.53**	0.18**	0.47**	0.56**	0.53**	0.89	
SS	0.72**	0.42**	0.31**	0.55**	0.69**	0.71**	0.59**	0.76

Source: Authors' survey, bold diagonal values denoted square root of AVE; ** denoted significance at 5 percent level of significance.

Results

Hypotheses testing

After confirming the factors and assessing reliability and validity of the model, the hypotheses framed based on literature were tested. To assess the significance of hypotheses, standardized beta coefficients, *t* value and significance value were used. Regression analysis was run using IBM SPSS 20. The results are presented in Table 4.

First, general teaching skills, generic skills of teachers, service attitude of staff, staff competence, reputation and access were studied as antecedents of SS. General teaching skills, staff competence, reputation and access were found to have positive and significant impact on SS, whereas significant effect of generic skills of teachers and service attitude of staff could not be established.

The first hypothesis (H1), general teaching skills have positive impact over SS, was found to be significant ($\beta = 0.389$; sig. < 0.01), in line with previous studies (Gee, 2018; Shirazi, 2017). H2 and H3 were rejected due to lack of statistical evidence for significant relationship of SS with generic skills of teachers ($\beta = 0.056$; sig. > 0.01) and staff service attitude ($\beta = 0.073$; sig. > 0.01). These results are in contrast with recent researches that reported significant relationships (Alves & Raposo, 2010; Douglas et al., 2008; Elliott & Shin, 2002; Nevill & Rhodes, 2004). Next, H4, which proposed positive impact of staff competence on SS was supported ($\beta = 0.362$; sig. < 0.01). Results of the study demonstrate that reputation of an academic institution has direct and positive effect on SS ($\beta = 0.318$; sig. < 0.01). This supports H5 and is in agreement with studies conducted earlier (Azoury et al., 2014; Brown & Mazzarol, 2009). Finally, easy accessibility to faculty, staff and other facilities in the institute has positive and significant impact on SS ($\beta = 0.426$; sig. < 0.01), as reported by a recent study (Douglas et al., 2015).

Moderating effect of perceived trust

In the present study, we have tested moderating effect of perceived trust on the relationship between various dimensions of SQ and SS. To assess moderating role of perceived trust on the relationship, we used Model 1 in SPSS PROCESS macro (Hayes, 2013). Hayes process used bootstrapping while testing for indirect effects. It delivers the combined estimates from 5000 sub-samples, which further provides accurate estimated coefficients and their standard errors. Bootstrapping approach thus validates multivariate model. We further compared the beta coefficients obtained for high and low perceived trust on each of these relationships and performed *t*-test for independent samples (Lee, 2000).

Table 4. Results of hypothesis testing.

Hypothesis	Independent Variable	Beta coefficient	<i>p</i> -value	Supported
H1	General teaching skills	0.389	0.000	Yes
H2	Generic skills of teachers	0.056	0.083	No
H3	Service attitude of staff	0.073	0.064	No
H4	Staff competence	0.362	0.000	Yes
H5	Reputation	0.318	0.000	Yes
H6	Access	0.426	0.000	Yes

Source: Authors' survey.

Table 5. Moderating effect of perceived trust.

Hypothesis	Model	Beta	SE	t-value	R ² change	F	Outcome
H7a	GTS	0.248***	0.120	2.067	0.0103***	6.015	Supported
	PT	0.191***	0.097	1.970			
	GTS x PT	0.084***	0.034	2.453			
H7b	GST	0.257***	0.129	1.993	0.0014	2.187	Not Supported
	PT	0.075	0.137	0.550			
	GST x PT	0.019	0.036	0.527			
H7c	SAS	0.397***	0.124	3.204	0.0054	3.417	Not Supported
	PT	0.018	0.127	0.144			
	SAS x PT	0.062	0.044	1.424			
H7d	SC	0.217***	0.102	2.135	0.0134***	8.183	Supported
	PT	0.116***	0.056	2.084			
	SC x PT	0.097***	0.034	2.861			
H7e	REP	0.348***	0.114	3.053	0.0112***	7.489	Supported
	PT	0.168***	0.062	2.705			
	REP x PT	0.088***	0.032	2.737			
H7f	ACC	0.402***	0.124	3.239	0.0078***	5.257	Supported
	PT	0.119***	0.042	2.834			
	ACC x PT	0.078***	0.034	2.293			

Source: Authors' survey.

As per the results of moderation analysis, perceived trust was found to moderate the relationships of SS with general teaching skills, staff competence, reputation and access, with significant interaction effects ($\beta = 0.084$; $\beta = 0.097$; $\beta = 0.088$; $\beta = 0.078$) though perceived trust did not moderate the relationship of SS with generic skills of teachers and service attitude of staff ($\beta = 0.019$; $\beta = 0.062$). Subsequently, the results of moderation analysis partly supported H7 which indicates that perceived trust moderated the relationship between SS and SQ dimensions. Further, higher beta values for various SQ dimensions suggested perceived trust to be weak, but a significant moderator in comparison to independent variable SQ which is a more powerful indicator of SS. Though perceived trust also has significant impact on SS, to identify the nature of interaction, conditional effects were studied and significant differences were found in the satisfaction level of students with high perceived trust ($\beta = 0.836$; p -value = 0.000) and low perceived trust ($\beta = 0.669$; p -value = 0.000). Results of moderation are presented in Table 5. This could be explained as students who trust teachers and the institute could perceive learning to be a more satisfying experience as compared to students who always think that the institute does not have adequate facilities or has teachers with inferior knowledge.

Concluding discussion

Purpose of the present study was to identify the important dimension of SQ affecting SS in Indian HMEI's. General teaching skills, generic skills of teachers, service attitude of staff, staff competence, reputation of institute and access were the constructs used to measure SS (Abdullah, 2006; Shirazi, 2017). The interacting effect of perceived trust and SQ on SS was also studied.

To start the analyses, academic aspects were studied as an antecedent of SS. Under academic aspects, impact of two constructs, general teaching skills and generic skills of teachers, were measured on SS. General teaching skills of instructors came out to be the significant predictor of SS, whereas generic skills of instructor did not have significant impact on SS. Results of the study show that teacher competence and good teaching

skills are needed in achieving SS. This finding is in line with the results of the research done by Greenland (2005). More the interaction between teacher and student, more would be the students' involvement and more would be the satisfaction level of students (Volery & Lord, 2000). On the other hand, generic skills of teachers in the form of interaction with students outside classroom, their attitude and behaviour towards students were not found to be significant predictors of SS. It means that even if the teacher is not very polite and does not behave in a very positive manner with students outside the classroom, but is very effective in the class and is able to impart knowledge, students appreciate a teacher and remain satisfied. For example, if teacher does not give extensions for assignment submissions or does not give good grades to the students in term exams but if he/she is good with the delivery of subject matter students remain satisfied.

Next, under non-academic construct, service attitude of staff and staff competence were studied as predecessors of SS. The results of the study explain that service attitude of staff has no significant impact on SS, whereas staff competence has significant influence on SS. In this sense, SS is not driven by individual attention given by staff or display of a positive attitude towards students, but by competence of the administrative staff in terms of keeping correct and retrievable records, having good understanding of systems and the ability to provide service in expected time. The results indicating that staff competence is an important predictor of SS is in line with other previous studies (Anantha & Abdul Ghani, 2012; Rombe et al., 2016). Contrary to our findings, Vaz and Mansori (2013) found service attitude of staff to be a strong predictor of SS.

Thirdly, this study has put efforts to explain the strong role of institutes' reputation in SS. Quality of programmes offered, adequate facilities required for the teaching and learning process, location of the institute and employability of graduates, lead to satisfaction of students. This finding is consistent with results of previous studies (Brown & Mazzarol, 2009; Elsharnouby, 2015). Lastly, results of the study ascertain the effect of accessibility of facilities on SS. In this case, if staff is easily accessible in their office or on phone after office hours, and provide good lab, library or counselling facilities, it leads to SS. This includes the institutes' encouragement for setting up student excellence council to have better accessibility of students to the facilities and management.

Finally, results of the study confirmed the moderating effect of perceived trust on SS. Perceived trust (before actually joining an institute), is the degree of student trust and assurance that the institute would do everything for their benefit which can help them to accomplish their learning objectives (Ghosh et al., 2001). Perceived trust has both positive and negative effects on the relationship between SQ and SS. Students with high perceived trust for the institute may overlook faults in service quality whereas students with low perceived trust may complain against even small flaws in SQ offered by institution. There are several past studies which discussed the importance of perceived trust in the context of other services such as hospitality (Gill, 2008); technology related services (Daud, Farida, & Razak, 2018); e-marketplace (Sfenrianto et al., 2018) etc. In the context of Indian HMEI's, often students take admission because of parents' pressure, insufficient finances available or inadequate scores in the courses attended previously. We have chosen perceived trust as a moderator because if a student does not trust the institute s/he takes admission in, no matter how good the SQ provided by the institute, the student will never get satisfied and will try to find fault in everything.

Implications

First, this study is a distinctive effort to include perceived trust as a moderator between SQ dimensions and SS, in the context of Indian HMEI's. Since findings of the study have confirmed perceived trust as the moderator between various SQ dimensions and SS, this study could be used as a base to explore various aspects of perceived trust. Future studies may use this model to further identify motivating and inhibiting factors of perceived trust which influence the relationship of SQ and SS. Second, many previous studies have used HEdPERF Model to assess the SQ of higher education institutions (Abdullah, 2005; Ali et al., 2016; Chanaka Ushantha & Samantha Kumara, 2016) and have further related it to satisfaction level of students (Abdullah, 2006), but this study is the sole attempt to identify various academic and non-academic aspects of SQ. Teaching skills of instructor and staff competence came out to be the next two important predictors of SS. Though there are previous studies that have studied teacher and staff competence as a significant predictor of SS, this study is a unique attempt in the context of HEdPERF model. This result would be helpful for management of HMEI's while recruiting teaching and non-teaching staff. They need to recruit the staff not just in right quantity, but also of right quality. For example, a teacher only with good generic skills may not be recruited until they have in-depth knowledge of the subjects and are good in imparting the same. Similarly, for non-teaching staff, competence is more important than attitude towards job.

Another contribution of the study that it has established access as the most important predictor for SS. Many previous studies have established the positive relationship between access and SS in the context of other countries such as Bangladesh, Somalia, Sri Lanka, Malaysia, Italy, Vietnam, Indonesia etc. (Ali & Mohamed, 2014; Asaduzzaman & Rahman, 2013; Chanaka Ushantha & Samantha Kumara, 2016; Jiewanto et al., 2012; Kadirova et al., 2015; Petruzzellis et al., 2006; Tuan, 2012) but this may be a pioneer study in the Indian context. Now days in Indian HMEI's, teachers are expected to perform administrative work in addition to their primary task of teaching, due to which their accessibility may become a problem in future. So, management of HMEI's may keep this in mind before allocating work (other than academics) to teachers. Lastly, reputation of the institution was also found to have positive and significant impact on SS. In the context of Indian higher education institutions, reputation of an institute is of much significance because for an Indian student, image of the institution is formed through having good facilities such as excellent quality programmes, classrooms equipped with latest technology devices, unrestrained student lounges, good hostel and mess facilities etc. Trust of students on the institution and its image has significant relation with positive word-of-mouth (Harsono, 2015) which, in turn, is influential in building perceived trust of prospective students.

Thus, HMEI's top management need to understand student expectations on various aspects such as infrastructure, teaching, academic and non-academic facilities, student support services etc., to plan better for exponential change in the expected nature of services provided at HMEI's.

Limitation and directions for future research

There are some limitations to the present study. The first limitation concerns the variables that have not been included in the study. Though this study is based on HEdPERF model

which covers all major dimensions of SQ, still there exists other variables such as physical environment, social life, location of the institute, exam methods, that may influence SS. Future research may include all these variables to study their effect on SS. The second limitation of the study is that only the technical aspect of quality (what is delivered to the customer) has been taken care of whereas functional aspect of quality (how the end result of the process is transferred to the customer) has been left out. In the case of HMEI's, technical quality may be measured in the form of SQ (teaching quality, programme quality, support staff quality, reputation, access etc.), but functional quality may include quality of placements, achievement of programme education outcomes etc., and would be more difficult to measure (Caruana, 2002). The third limitation concerns sampling. Respondents for the study was selected from Delhi NCR. The sample represents students from reputed institutes only, whereas there are many smaller institutes where students may have changed priorities for different dimensions of SQ. Future research may consider stratified probability sampling to overcome this limitation. Next, our study specifically considered the overall perceived trust, which may not cover all aspects of trust. Future studies may identify and include various instigators and inhibitors of trust. Finally, future studies may include demographic variables related to both students and institute, either as moderators or control variables, which may provide important insights into SS.

Disclosure statement

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

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Annexure 1. Measurement items.

General teaching skills (GTS)

Teachers have enough knowledge to clear my doubts related to the course.
 Teachers give proper feedback related to my course progress.
 Teachers give adequate and appropriate time for discussions.

Generic skills of teachers (GST)

Teachers treat me in a thoughtful and polite way.
 Teachers always react to my request for any kind of help.
 Teachers show a genuine concern when I have a problem.
 Teachers display constructive attitude for all students.
 Teachers connect well with the students in the classroom

Service attitude of staff (SAS)

Staff provide gentle and individual consideration for all students.
 Student grievances are handled proficiently and quickly.
 Staff members adequately react to all requests for support.
 Staff always help by the time given by them.
 The working hours of various administrative offices are suitable for me.
 Staff shows positive approach towards students.
 Staff communicates effectively with students.

Staff Competence (SC)

Staff in different admin offices possess correct and easy to access records.
 Staff have perfect information about systems.
 I feel safe and assured while dealing with staff
 Staff delivers services within realistic time.

Reputation (REP)

The institute has a good reputation.
 Sufficient facilities are provided by the institute.
 My institute offers excellent quality programmes.
 The location of the institute is ideal location with marvelous aesthetics
 All passing students from the institute are easily employable
 The institute offers variety of reputable programmes.

Access (ACC)

All employees of institute treat students respectfully.
 Reasonable independence is given to all the students.
 Teachers and staff members respect my privacy and do not disclose any personal information.
 Teachers and staff members make sure that they are easily contacted.
 The institute promotes setting up Student's Union.
 The institute considers students feedback for improving services.
 The institute has well defined and simple service delivery procedures.

Student Satisfaction (SS)

I am satisfied with my choice to join this institute.
 If given a choice again, I would join this institute only.
 I make a wise decision to join this institute.
 I am pleased with my choice to join this institute.
 I made a correct decision when I decided to join this institute.
 I am glad that I joined this institute.

Perceived Trust (PT)

The institute is trustworthy.
 Institute will keep its promises to me.
 I trust that institute will work in my best interest.
