Adapting and validating global knowledge branding scales in the education services sector

Achutha Jois and Somnath Chakrabarti
Department of Marketing, Indian Institute of Management Kashipur, Kashipur, India

Received 25 January 2022
Revised 18 June 2022
8 September 2022
Accepted 10 October 2022

Abstract

Purpose – The education services sector faces ever-changing global market dynamics with creative disruptions. Building knowledge brands can push the higher education sector beyond its geographical boundaries into the global arena. This study aims to identify key constructs, their theoretical background and dimensions that aid in building a global knowledge brand. The authors' research focuses on adapting and validating scales for global knowledge and education services brands from well-established academic literature.

Design/methodology/approach – The authors have adopted a mixed methodology approach and a systematic literature review. Authors interviewed 18 subject matter experts as part of content and face validity to arrive at select constructs, dimensions and items. Quantitative methods with random sampling were adopted as the primary methodology. Initially, the survey was administered to 390 students to test preliminary results. The survey was also administered to 5,112 students at a later part of this study. Valid responses stood at 3,244 with a 63% response rate. Further, the authors conducted confirmatory factor analysis, exploratory factor analysis and structural equation modeling to test the reliability and validity of scales. This study analyzed composite reliability, convergent validity and discriminant validity to finalize items for scales. The authors also validated the hypotheses based on the discriminant validity assessment scores.

Findings – Authors' key research findings are that academic stimulus, campus infrastructure and student intent play a significant role in campus culture and events design and experience at campus. Authors were able to bring out 16 key constructs and 55 critical dimensions vital to global education services brand building. This study also adapted and validated 99 items that meet construct validity and composite reliability criteria. This study also highlights that constructs such as student intent, academic stimulus, campus infrastructure scalability, selection mechanism, pedagogical content knowledge, brand identity, events experience and campus culture play a vital role in global brand recognition.

Research limitations/implications – The authors' work is fairly generalizable to education services and the higher education sector. However, this study must be extrapolated and empirically validated in other industry sectors. The research implications of this study are that it aided the authors in building theoretical background for student brand loyalty theory, student expectation theory and study loyalty theory. This study adds to the body of knowledge by contributing to theoretical concepts on students, knowledge culture, events, infrastructure and branding. Researchers can adopt the scales proposed in this study to build research models

Authors would like to thank all the student respondents, education experts, vice chancellors and senior researchers who helped with their feedback on this research. Authors are refraining from naming any of the executives, as they have requested for anonymity of themselves and universities while authors present their research data. Authors would like to thank all organizations which supported this research. Authors would also like to thank IIM Kashipur for providing vibrant research culture along with diversified research expertise. Authors would like to thank all research colleagues who are from either teaching fraternity or executive research fellows.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

VINE Journal of Information and Knowledge Management Systems

2059-5891
DOI 10.1108/VJIKMS-01-2022-0028

in higher education branding. This study acts as a catalyst for building theories in education services areas. Researchers can delve deep into proposed research aspects of campus infrastructure, knowledge infrastructure, campus knowledge culture, events design and events experience.

Practical implications – This study aids educators and brand managers to develop global education services and optimize their effort and budget. Administrators in the education services sector must focus on practical aspects of student perception, campus infrastructure, culture and events experience. Practically administrators can reorient their efforts based on this study to achieve global brand recognition.

Social implications – This study highlights that students are not customers but are co-creators of value in the education sector. This study provides scales and dimensions needed to build co-creation frameworks and models.

Originality/value – Most research in higher education branding has not covered wider aspects of global brand building. Existing theories proposed in higher education and education services articles cover only narrower aspects of campus infrastructure, culture, events design and branding. This study presents a comprehensive list of critical factors that play a vital role in global knowledge brand building. This study highlights the constructs and scales integral to building a global education services brand.

Keywords Scale adaption, Knowledge brand, Infrastructure scalability, Education services, Academic stimulus, Brand loyalty, Higher education branding

Paper type Research paper

Introduction

Knowledge attains primacy in the journey to achieve global order. The education services sector is vital in building a knowledge environment and academic infrastructure. Higher education services are key to building leaders and significantly impact leaders' thought processes. Globalization of education, newer market opportunities, plateauing western economies and an increase in the purchase power of middle-income families of emerging economies are pushing educators to globalize their brand. In the current knowledge-based, technology-driven world, knowledge management infrastructure plays a vital role in spreading information (Hamid *et al.*, 2017). The education services sector is rapidly changing because of globalization, technology adoption, global health hazards like COVID, global campus infrastructure and knowledge management infrastructure (KMI, Kushwaha and Rao, 2015). The infrastructure ecosystem is pushing the thought process of educators to think beyond its traditional boundaries to enter the global arena. Education services branding becomes critical in achieving global scale.

Traditionally brands are distinguished based on logo design, style, look, feel, sound, symbol and promise (AMA, 2017); however, this study aims to cover broader horizons of education services brand building. Education brand building begins with delivering the promise smoother admission process to engaging students, learning at the campus and engagement post-graduating from campus (Chapleo, 2015). The author's study primarily focuses on identifying key constructs, adapting (modifying, adopting scales for the current research settings) and validating the scales, dimensions and items. The education services sector is heavily skewed toward Western economy brands, as their knowledge infrastructure is superior to emerging economy brands. Western brands have achieved global recognition with superior research-oriented pedagogy, world-class teaching methods (Ilie *et al.*, 2020), best-in-class knowledge management processes (Adeinat and Abdulfatah, 2019) and management systems and strategies (Cheng, 2017; Khaldoon *et al.*, 2018). As per Dao and Thorpe (2015) and Gatfield *et al.* (1999), academic instruction, recognition, campus life and knowledge guidance play a vital role in defining international promotional strategies. This study extends the research of Gatfield and Chen (2006) to focus on attributes

that significantly influence international students' behavioral motivations while choosing global education brands.

Western living standards attract students, better employment prospects, the institution's brand image, global recognition of educational qualification, superior Western pedagogies, better learning experiences and word of mouth (WOM) (Ahmad *et al.*, 2016). These key factors are critical in migrating students' minds while selecting an international institute. Western education brands such as Harvard Business School, Stanford, London Business School, INSEAD (France, Abu Dhabi and Singapore), Wharton, MIT, HEC Paris, University of Chicago, EU Business School (Barcelona, Geneva, Montreux and Munich) and UIBS (Zurich, Antwerp, Barcelona and Brussels) have attracted a majority of the global student talent pool as highlighted in QS Global MBA Rankings 2019. Students' motivations to study in international branches of global institutes are based on global brand power, academic credibility, marketability of the degrees, scholarships, cost of programs, safety, security and cultural attractions (Ahmad and Buchanan, 2015). The authors' research work focuses on identifying key constructs and their scales to aid researchers in building branding models for the education services sector. Authors have selected management higher education as the key focus area to validate the scales for building a knowledge brand or education services brand.

Research objective

The study aims to identify key constructs that play a critical role in education services brand building. The study's objective is also to cover wider aspects of globalization of knowledge, student intent, perception, attitude, academics, infrastructure, campus culture, campus events at the campus and brand recognition. The authors aim to identify student-related factors that impact the globalization of education services brands. Another key objective of the study is to identify the impact of campus culture and event design on global brand recognition. The study aims to adapt scales from established scale development articles. The authors decided to adopt, modify, purify and validate (adapt) the scales along with measures, dimensions and items.

Problem statement

The education services sector enables the globalization of knowledge. The spreading of knowledge needs the right recognition, culture, academic environment and campus infrastructure. Recognition of such efforts needs global attention, which can happen through branding. Most of the current research in higher education and knowledge management focuses on limited aspects of global recognition. The creation of knowledge infrastructure needs a global scale to enable superior knowledge management. Further, research is needed on aspects of education services' global branding and factors that impact globalization.

Research questions

This study aims to address below research questions:

RQ1. What factors play a critical role in the globalization of knowledge?

RQ2. Which student-related constructs play a major role in the global recognition of education services brands?

RQ3. What factors impact the globalization of education services brands?

Research design

Authors conducted extensive literature research (LR) to delve into various perspectives on the education services sector, higher education, management education, knowledge infrastructure, higher education branding, student perceptions, campus experiences and students' post-graduating experiences. Authors adopted the approach suggested by Justin and Alex (2020) for building bibliographic databases by selecting most journals from Web of Science and Scopus. Literature searches were conducted using journal aggregators such as OpenAthens, EBSCO, Elsevier and Emerald. Authors adopted structured literature review (SLR), which is shown in Table 1, to select peer-reviewed Australian Business Dean Council journals (ABDC), Association of Business Schools (ABS) and Journal Quality List-3-star rank (JQL) between 1902 and 2020. Structured selection of journals based on relevance and quality resulted in the identification of 206 journals and 170 research-oriented academic peer-reviewed articles, as shown in Table 1. An in-depth analysis of the above-mentioned select articles resulted in a deeper analysis of 80 research articles.

Research begins with curiosity about identifying unique problems, understanding the theoretical background for such problems and finding ways of solving such identified problems. SLR and expert interviews identified key issues, constructs and measures for such identified constructs. A scientific approach to "measure" using quantitative studies should carefully assess the methods and measurements' reliability and validity. This study uses a mixed methodology approach which is discussed in detail in the following section. This article focuses on adapting scales for the education services sector and proposes a comprehensive list of validated constructs, measures and dimensions. Theoretical validation focuses on the idea of theory translated into the operationalization of measures known as face validity (FV) and content validity (CV) (Ruchi *et al.*, 2014; Churchill, 1979; Azmi and Mushtaq, 2013). FV and CV were validated with 18 expert interviews and a panel of 5 business school executives. Experts rated each item on how well they indicated fit for the conceptual definition of construct, measures and dimensions. Construct validity should be assessed using both theoretical and empirical validation approaches. Authors have also proposed various hypotheses to test the validity. A qualitative Q-sort was conducted to select items (Bussing *et al.*, 1999). An empirical assessment of construct validity can also be called criterion validity, wherein authors use convergent and discriminant validity; specifics are discussed in detail in the latter part of the article.

Research methodology

Authors have adopted a mixed methodology approach with a specific focus on quantitative studies. Exploratory research focused on student-related factors, knowledge-based services and the globalization of brands. A qualitative study using unstructured interviews and focus group discussions with 18 subject matter experts resulted in the identification of key

Table 1. Structured literature review

Concepts searched	*N*	Select journals	Select research articles
Knowledge management infrastructure	225	56	32
Higher education	278	32	17
Student attitude and perception	385	24	21
Academic activities, Academic environment	498	39	39
Selection process	847	39	24
Knowledge management culture and events	899	16	37
Branding parameters	3132	206	170

concepts. The experts were drawn from the higher education, knowledge management and education branding areas. In-depth interviews with vice-chancellors, marketing professors, academicians and administrators resulted in the identification of key constructs. The expert interviews also validated the results emerging from the structured literature review. The constructs that emerged from SLR and in-depth interviews are listed in Table 2, along with their definitions and theoretical background. CV and FV assessments were conducted with the select five experts to identify and validate the dimensions and list of items (Churchill, 1979).

A structured questionnaire was launched for pilot testing and administered to 390 Indian students. The sample size was calculated based on the random sampling method, wherein the calculated response size was above 2,000 (Hair *et al.*,2008, 2009). Further, the questionnaire was administered to 5,112 students from India, southeast Asian countries (Thailand, Malaysia, Indonesia, Singapore, Vietnam and Philippines) and some eastern European countries. However, the majority of respondents were from India. The respondents were selected based on competitive examinations they had taken. Students were selected randomly within the GMAT, CAT, XAT, MAT, PGCET and migrating student databases. Initially, the questionnaire was administered using physical methods; however, because of COVID-19 factors, the administering moved to virtual platforms such as Survey Monkey and Google survey forms. The authors also used the services of third-party service providers to collect data from southeast Asian countries. The uniqueness of data collection is that the information was collected before COVID-19, during the first lockdown, after COVID-19 first wave, during the second wave of COVID-19 and after the second wave. The authors have tried to analyze the responses during these phases in the discussion section.

The total response was 3,670, considered as the complete final data set; however, 426 exited the interviews in between; hence, the valid data set stood at 3,244. The study received a 63% response rate; such a high response rate resulted from multiple follow-ups on WhatsApp and SMS to respondents with a link in SMS to respond. The authors also acknowledge that each bulk SMS blast with a personal message resulted in at least 20–30 responses within 24 h. The response rate is sizable enough to generate relevant statistical analysis. The response size of 3,244 was acceptable according to Hair *et al.* (2008, 2009) and Lindquist *et al.* (2001). The authors deemed fit to go ahead with statistical analysis, construct reliability (CR) and construct validity (CV).

Authors also tried to ensure correlated biases do not creep in with reasons for non-responses. The authors also qualitatively analyzed that no responses or missing data were not related to the topics of the questionnaire. The authors also validated that the non-response rate is randomly distributed. The responses need to be analyzed to eliminate irrelevant items based on listwise and pairwise deletions. Incomplete 426 respondents' data was deleted entirely based on the listwise deletion method. Only two cases were temporarily deleted from the analysis using the pairwise deletion method or cross-tabulation method (Ruchi *et al.*, 2014); however, it did not impact any result analysis and conclusions. As the loss of cases is not substantial, bias creeping in is also small; however, inadvertent bias might have been introduced. Based on cross-correlation and inter-correlations, the authors calculated the correlation coefficient between variables (Azmi and Mushtaq, 2013). As there is hardly any missing data between variables, the authors observed that most of the data set with 3,244 responses are assumed to be good to go ahead. The authors in the results analysis section have discussed the statistical significance of the correlation coefficient to analyze the responses such that researchers can draw inferences.

Constructs	Definitions with measures of scale	Academic sources (Scale and theoretical base)
Student loyalty (SL)	Student loyalty describes student behavior towards education institutions based on measures of scale such as switching behavior aspects, word of mouth, cost of, core service failures or successes, service encounters at campus, satisfaction and competitive intensity in education sector	Rojas-Mendez *et al.* (2009), Zeithaml *et al.* (1996), Ohmae (1982) and Jiani (2017)
Brand recognition (BR)	BR is a concept that describes the strength of the offerings like institution, service, product to get recognized in market place based on visual and verbal identities. Awareness, attitude and usage metrics, known as AAU metrics are used to measure brand recognition. Some of the key dimensions based on AAU are brand salience, memory or brand awareness, brand attitudes, brand usage, aided and unaided recall. Unaided recalls sub dimensions could be brand association, brand image, brand dominance, brand value, brand health	Farris *et al.* (2010) and Aaker (1991)
Student perception (SP)	Student perception can be defined based on student recipients measures such as learning, memory, expectation, attention and dimensions such as input quality, curriculum, academic facilities, industry interaction, interaction quality, support facilities and non-academic processes) of service quality	Gregory (1987), Gregory and Zangwill (1963) and Rajani *et al.* (2013)
Student attitude (SA)	Can be defined as students' approach or tendency to respond in a certain way either willingly, knowingly or unknowingly to a situation. Student attitude can be measured using MODE Framework (Motivation and Opportunity) and bases its theoretical background on Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB) and Reasoned Action Approach (RAA). Some of key dimensions are affective engagement, cognitive engagement, behavioral engagement, social awareness	Fazio (1986), Fishbein and Ajzen (1975), Fazio and Petty (2007), Oppenheim (1966, 1992), Radmila *et al.* (2020), Thurstone (1928), Likert (1932) and Seyda (2017)
Student satisfaction (SS)	Student satisfaction is the prime indicator of attitude resulting from students own evaluation of academic service quality, knowledge and academic infrastructure, events, experiences and services provided by the institution. Can be measures using satisfaction Models table referred in Weerasinghe *et al.* (2017), GAP model and model of service quality with theoretical base from SERVQUAL	Weerasinghe *et al.* (2017), Bhamani (2012), Oliver (1993), Parasuraman *et al.* (1988) and Alves and Raposo (2009)
Campus culture (CC)	Campus culture is defined by eight dimensions such as innovation at campus, supportiveness among peers and educators, respect for all, team orientation, stability at campus, attention to details in every aspect, aggressiveness at campus, outcome orientation at institution	Crispen and Bulelwa (2017) and O'Reilly *et al.* (1991)

Table 2.
Construct definitions and academic sources

(*continued*)

Constructs	Definitions with measures of scale	Academic sources (Scale and theoretical base)
Academic stimulus or academic environment eco system (AS)	Academic stimulus can be referred to intellectual engagement of various activities to stimulate brains of students at various stimulation levels. Measures of academic stimulus are activities, intelligence and knowledge environment, experience, academic performance and personality. Authors have tried to adapt from the TIE scales developed by Goff and Ackerman (1992). Some of time key dimensions were also adapted from CIPP model are context, input, process and product wherein they reflect, components, reaction, learning, behavior of academic environmental eco system	Goff and Ackerman (1992), Chamorro-Premuzic *et al.* (2006), Von *et al.* (2011), Woo *et al.* (2007), Ackerman and Maynard (1994), Drewes and Michael (2006) and Chinta *et al.* (2016)
Campus infrastructure scalability (CIS) (Infrastructure ecosystem)	Campus infrastructure scalability can be defined in multiple dimensions such as facilities and ability to expand (administrative and load), academic scalability (functional), place (geographic presence), intake of newer generation of students, heterogeneous campus	Hesham and Mostafa (2005)
Selection mechanism (SM)	Student selections play vital role in defining quality at institutions, equally selection mechanism which is selection process is key to knowledge management services sectors. Selection mechanism has adapted scales, measures and dimensions such as personality, cognitive ability, scholarly and reasoning, psychometric, biographical historical data, physical ability, skills and work Sample, aptitude and knowledge and interviews from well-established scholarly works	Teng (1943), Neal and Chan (1998), US Department of Labor Employment and Training Administration (1999)
Student intent (SI)	Student intent adapts from key scholarly works as mentioned in adjacent column and ITPSC, KSA, KSAO wherein the dimensions are knowledge-learning, social acceptance, accomplishment-satisfaction, motivation awareness, opportunity-profession-career and values-ethics	Seyda (2017), Peltier *et al.* (2014), Radmila *et al.* (2020) and Teng (1943)
Student brand loyalty (SBL)	Students and alumni are becoming more brand loyal who offers relevance, opportunity, quality, competitive advantage and brand power wherein the dimensions are adapted such as student behavioral aspects, word of mouth, verbal brand identity, cost, core service quality, experiences, satisfaction and competitive intensity	Rojas-Mendez *et al.* (2009), Zeithaml *et al.* (1996), Liu *et al.* (2016), Ohmae (1982), Jiani (2017), Darren (2010) and Mei *et al.* (2014)
Pedagogical content knowledge (PCK)	Pedagogical content knowledge defines teaching guidelines, methods, processes, relational knowledge of pedagogy contents, technology adoption in teaching, critical reflections of educators. PCK draws inspiration from Lee Shulman in 1980 and scales, measures and dimensions such as pedagogical knowledge, pedagogical teaching, technology knowledge, critical reflection, content knowledge and technological knowledge from Koh *et al.* (2010) and Farhad *et al.*. (2017)	Koh *et al.* (2010) and Farhad and Abolfazl (2017)

(*continued*)

Table 2.

Constructs	Definitions with measures of scale	Academic sources (Scale and theoretical base)
Brand identity (BI)	Brand identity is defined by visual identity (including service facilities, employee service, product/core service, price, culture, employee development, and system/process) and verbal identity (including distribution channel, word of mouth, public relations, and promotion) and draws measures from scale development and validation articles as mentioned in the source	Darren (2010) and Mei *et al.* (2014)
Student expectation opportunity (SEO)	Can be defined as diverse set of expectations based on prior experiences, word of mouth experiences, opportunities at campus and beyond. The measures and dimensions adapted are behavioral engagement, perception of value, perception of opportunity, affective engagement with students, effective engagement experiences from past students and social engagements at campus learnt from alumni and existing students	Richard (2002), Gülsen *et al.* (2020), Singleton and Chen (1996) and Sjanett de *et al.* (2015)
Student satisfaction loyalty (SSL)	Student satisfaction loyalty can be defined as the attitude of students resulting from loyalty factor towards institutions and own evaluation of various parameters. The adapted measures and dimensions are student switching behavior aspects reflecting loyalty, word of mouth to reflect satisfaction, program cost, core service failure, service encounters, infrastructure. Construct theoretical background came from GAP model, model of service quality and SERVQUAL	Zeithaml *et al.* (1996), Parasuraman *et al.* (1988), Weerasinghe *et al.* (2017), Bhamani (2012), Oliver (1993) and Rojas-Mendez *et al.* (2009)
Events experience (EE)	Events experiences are wide range of phenomena ranging from academic conferences, workshops, cultural events, sports festivals, world fairs, community events that provides students, educators with intra personal, social, cultural, leisure opportunities. EE dimensions are derived from well-established scale development and validation articles with dimensions, namely, affective engagement, cognitive engagement, physical engagement and experiencing newness	Sjanett de *et al.* (2015)

Table 2.

Authors aim to determine whether items measure each identified construct accurately using convergent validity (CV) to measure how closely constructs converge. Similarly, discriminant validity (DV) tests how unrelated items are between measures that are not supposed to be converging (Hair *et al.*,2008, 2009). In DV, the low correlations define the accuracy of items for the measures. However, measuring validity alone is not enough, as researchers need to verify the consistency of items for the measures; hence, the reliability of the measure needs to be tested. Composite reliability (CR) defines the consistency or dependability of the degree of measure of an identified construct (Hair *et al.*,2008, 2009). CR is also used to test how dependable the "measure" of an identified construct is when the scale is used multiple times. The results should be the same every time to verify the underlying phenomenon when testing composite reliability.

Reliability analysis was conducted using IBM SPSS with descriptive as both item and scale. Similarly, reliability analysis was run with inter-item as correlations to obtain results. Reliability statistics with Cronbach's alpha were obtained for all variables. To obtain statistics to test validity, bivariate correlations with the selection of Pearson correlation coefficient and test of significance were two-tailed. Analysis of the correlation matrix resulted in convergent validity testing (Darren, 2010). Principal component analysis (PCA) with rotation method as Promax and normalization as Kaiser (Hair *et al.*,2008, 2009) with convergence in seven iterations resulted in a pattern matrix. Average loadings of the factors were calculated along with variance between all items. Based on the component score coefficient matrix, both correlation and correlation square were calculated. It was verified that the variance extracted and variance of all variables are significantly higher than the correlation square percentage. Such a scenario ensured construct validity; later sections discuss the results.

Authors adopted factor analysis with the method as a principal component, rotation as none and a fixed number of factors as 1 to test common method bias (Chin *et al.*, 2012). As per the total variance table, the percentage of the variance of the extraction sums of squared loadings was 35.35%. As the percentage of variance is below 50%, there is no common method bias; thus, the data is ready for further analysis. Researchers can infer that composite reliability implies consistency and construct validity indicates accuracy, which removes stakeholder subjectivity as far as possible. The study also conducted structured equation modeling (SEM) using IBM AMOS to calculate the discriminant validity assessment test, path coefficient (β), t-values, p-value and significance levels of each variable impacting the construct (Hair *et al.*, 2017, 2019; Chin, 2010). The authors have stated the hypotheses for each identified construct in the following sections. The study also tests the hypothesis using path coefficient (β), t-values, p-value and significance level values which are discussed in the findings section. The authors have adopted the research approach as shown in Figure 1 by conducting CR, DV and CV on the complete data set of the research to check for both consistency and accuracy.

Scale adaption

Scale for any construct can be developed in two ways; the first approach is to develop and validate a scale right from the beginning. Considering the vast amount of knowledge, researchers need not reinvent the wheel; another approach is scale adaption (Bulent, 2015) from different research settings, cultures, countries, industries and social settings. Adopting measuring instruments from different settings by making relevant changes to measures, dimensions and items as per the new research scenario is called adapting of scale (Lim and Chapman, 2015). Cultural differences, nation-specific articles, industry-specific research papers and language translations may call for adaption rather than developing scale from the beginning. Any adaption will result in errors that call for the validation of such adapted measures (Tugsal, 2020). Any measure may be reliable based on its results; however, it may not be valid, thus needing to validate consistency. Similarly, consistency alone may not be measuring the right construct. Thus, the need arises for a comprehensive validation strategy discussed in the following sections.

Item adaption and validation process

One of the key steps in the scale validation process is generating a list of items for each identified construct. Items were adopted from well-established scale development articles with strong theoretical backgrounds and modified to suit this study. Identifying key measures and dimensions are discussed in the subsections of "measures aiding the

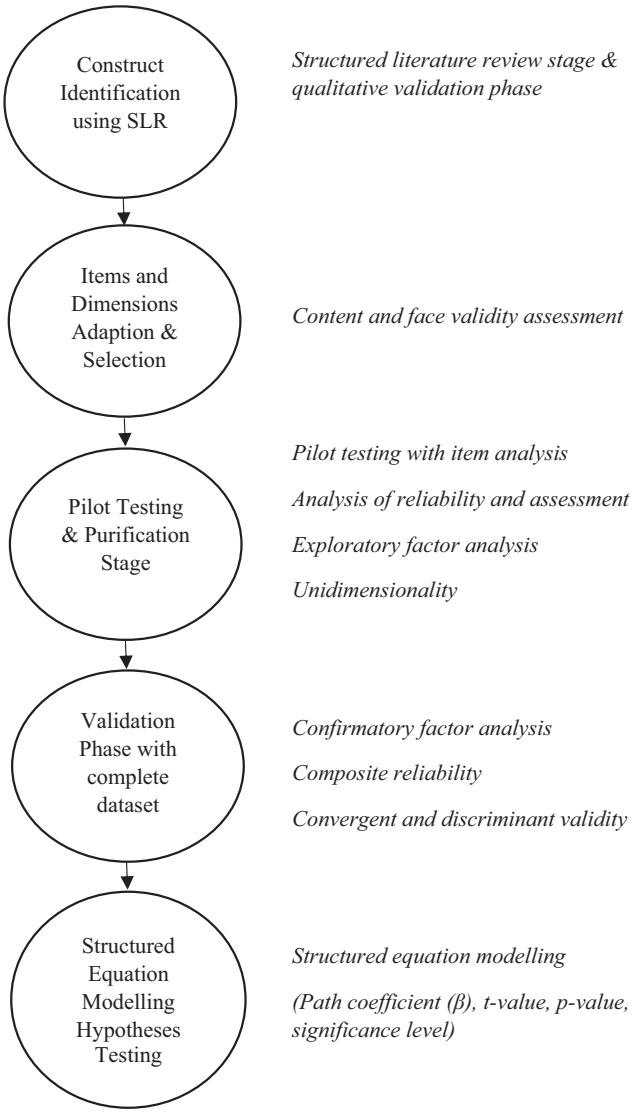

Figure 1.
Research approach for scale adaption and validation

Source: Based on Ruchi *et al*. (2014), Churchill (1979), Azmi and Mushtaq (2013), Hair *et al.* (2017, 2019)

development of research instrument". The validation of items on the sample and the complete data set was performed with a series of checkpoints before the statistical analysis (Bulent, 2015). The authors wanted to eliminate the obvious errors which might have crept in during various stages before validation. Complete data set frequency distribution analysis was tested with sampling variables to ensure errors were identified

(Oppenheim,1966, 1992). The coded Likert 1–5 scale has to be validated with the complete data set to ensure no entries for 6,7,8, 9 or 0 or any negative value. Further internal consistency checks need to be conducted to ensure errors are removed.

Measures aiding the development of research instrument

A structured literature review resulted in the identification of broad concepts, constructs and various branding attributes. Further, an in-depth analysis of 80 peer-reviewed academic research articles identified key student-related constructs: student loyalty, student perception, student attitude, student satisfaction, student intent, student expectation opportunity, student satisfaction loyalty and student brand loyalty. The academic management-related constructs which emerged are pedagogical content knowledge (PCK), academic stimulus, academic environment and academic ecosystem. Other key constructs emerged: campus culture, campus infrastructure scalability, infrastructure ecosystem, selection mechanism, events experience, brand identity and brand recognition. The following sections discuss the identified constructs' scales, theoretical background, literature support, measures of scales and their dimensions.

Theoretical background and literature review

Academic knowledge is a state of belief that enhances students' cognitive capability that can be viewed from perspectives of state of mind, object, process, access to information and condition (Maryam and Dorothy, 2001). Knowledge is a key contributor to a globalized education-based environment (Fattah *et al.*, 2020). Education services providers expand students' knowledge to apply to solve issues surrounding them. Higher education institutes need to nurture knowledge-sharing behavior among students to create friendly learning culture (Rahman *et al.*, 2020). Student attitude significantly impacts student subjective norms, intent and knowledge-sharing behavior to build a knowledge-sharing culture (Fattah *et al.*, 2020). Theory of Planned Behavior (TPB), multi-attribute model (Fishbein and Ajzen, 1975) and Student Motivations Model (Ahmad and Buchanan, 2015) act as theoretical background for knowledge-sharing behavior, student attitude and student motivations (as highlighted in Table 3). The study by Chen and Zimitat (2006) and Rudd *et al.* (2012) highlights Taiwanese and Chinese students' intent to study in the UK, the USA and Australia because of the knowledge infrastructure, culture and opportunities provided at the campus.

Student-related factors such as intent, attitude, behavior and involvement significantly impact satisfaction, culture, event design and experience at the campus. Student loyalty has two key determinants: university image and student satisfaction (Jiani, 2017), wherein the article establishes that student satisfaction leads to student loyalty. Education services providers' brand image and academic knowledge service delivery lead to student satisfaction, loyalty and student involvement (Jiani, 2017), leading to brand recognition. Student intent plays a key role in students' eagerness to migrate to Western cities for higher education. The same is highlighted in the research of Ahmad *et al.* (2016) and Dao and Thorpe's (2015) article on Vietnamese students' selection criteria. Context, input, process and product (CIPP model) are key to the knowledge service delivery performance of higher education institutions (Chinta *et al.*, 2016). Academic knowledge service delivery quality is defined by four key dimensions (Jiani, 2017): Physical environment and infrastructure quality, interaction quality, social factor quality and outcome quality measuring student perception, which leads to student intent and involvement and brand recognition. The institution's campus infrastructure, online presence, students' satisfaction and alumni WOM play a critical role in forming a brand of higher education or education services.

Concepts and constructs	Theoretical base/ Theoretical background	Author, Year
Student intent and student-related factors	KSA, KSAO, KASE	US Federal Government recruitments early 1900s, University of London
	MODE (Motivation and Opportunity)	Fazio (1986)
	Theory of attitude behavior evaluation	Fazio (1986)
	ITPSC Framework	Peltier *et al.* (2014)
	Actions and behavioral intents	Oppenheim (1966, 1992)
	Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB) and Reasoned Action Approach (RAA)	Fishbein and Ajzen (1980, 1975) Fishbein, (1967)
	Student Motivations Model	Ahmad and Buchanan (2015)
	Model of perception, Social identity theory	Alan and Gary (2011)
	Perception – "perceiver", "target", "being" Framework	
	International Universities Benchmark Framework, CIPP	Chinta *et al.* (2016)
Student Expectations, Opportunities	Rational Expectations Theory and Hypothesis	Muth (1961)
	Student Expectancy Theory	Unda and Ramos (2016)
Campus Infrastructure	Infrastructure Scalability	Hesham and Mostafa (2005)
Pedagogy, curriculum, learning	Pedagogical Content Knowledge	Shulman (1986), Koh *et al.* (2010), Farhad and Abolfazl (2017)
	Students' Orientation Evaluation Matrix (OEM)	Muncy (2008)
Academic stimulus, environment	Knowledge triangle	Jurse (2011)
	Evaluation Model	Chinta *et al.* (2016), Kirkpatrick and Kirkpatrick (1994)
	TIE scales	Goff and Ackerman (1992), Ackerman and Maynard (1994)
	Rank-ordered "logit model"	Drewes and Michael (2006)
	Academic Service Delivery	Jiani (2017)
	CIPP model	Chinta *et al.* (2016), Drewes and Michael (2006)
Choice making, selection process, mechanism	Selection mechanism	Panchatantra, 200BCE, Teng (1943)
	International Universities Benchmark Framework	Chinta *et al.* (2016)
	international students' behavioral motivations	Gatfield and Chen (2006)
Campus culture, events, experience	OCP (Organizational Cultural Profile)	O'Reilly *et al.* (1991)
	Knowledge Exchange Culture	Hamid *et al.* (2017)
	Events Experience	Sjanett de *et al.* (2015)
Branding concepts, brand equity	Brand Visual Identity	AMA (2017)
	Brand Building in Higher Education	Chapleo (2015)
	Basic Branding Concepts	Aaker (1991)
	Branding Foundations	Cova (1997)

(*continued*)

Table 3. Theoretical background and theories behind constructs

Concepts and constructs	Theoretical base/ Theoretical background	Author, Year
Brand identity	Brand Identity Prism	Kapferer (1992)
	Brand Identity scale, Brand Verbal Identity	Darren (2010), Mei *et al.* (2014)
	Brand Image	Kuvykaite and Mascinskiene (2010)
	Brand identity multi-dimensional factors model	Wong (2010)
Brand awareness, recall	Awareness, Attitudes and Usage (AAU)	Farris *et al.* (2010)
	Brand Awareness success theory	Ya-Hsin *et al.* (2014)
Brand promise, brand trust	Brand Promise-Vision-Strategy	Kavaratzis (2007)
	Brand Trust Theory	Chaudhuri and Holbrook (2001), Lau and Lee (1999)
	Brand Promise Delivery	Pringle (2014)
Brand loyalty	Customer Brand Relationship	Aaker (1991)
	Customer Brand Loyalty	
	Brand Loyalty Theory	Reichheld (1996)
	Loyalty Attributes	Fabio *et al.* (2012)
	Repurchase Intentions	Zeithaml *et al.* (1996)
	Brand Loyalty Scale	Tina (2016)
Brand recognition, recall	Salience, Aided, Unaided Recall Tests	Hsia (1988)
	AAU metrics	Aaker (1991), Farris *et al.* (2010)
	Student WOM	Jillapalli and Wilcox (2010), Ahmad *et al.* (2016)
	Remarketing Products Theory (WOM)	Kotler (1979)
Student satisfaction, loyalty	Student loyalty determinants	Jiani (2017
	GAP Models, SERVQUAL	Berry and Parasuraman (1991), Parasuraman *et al.* (1988), Alves and Raposo (2009)
	Satisfaction Models	Weerasinghe *et al.* (2017)
	Satisfaction, Service Quality	Parasuraman *et al.* (1988)
	Student Loyalty Scale	Rojas-Mendez *et al.* (2009)
	Student Satisfaction-Delivery Quality	Chadwick and Ward (1987), Hampton (1993)
	Cognitive and Affective Aspects	Cronin and Taylor (1992, 1994), Parasuraman *et al.* (1988)
	Satisfaction Scales	Bhamani (2012), Oliver (1993), Kessler (2003)
	Loyalty theory, Student loyalty intention	Zeithaml *et al.* (1996)
Research methods, approach	Scientific research methods	Chalmers (1976)
	Lee Cronbach's alpha model	Cronbach (1951)
	Structured Literature Review, Structured reviews, Bibliographic approach and bibliometric analysis	Justin and Alex (2020), Ruggeri *et al.* (2019), Dabic *et al.* (2020)
	Shared variance-Observed-Latent Constructs	Fornell and Larcker (1981)
	Sample size, Sampling	Oppenheim (1966, 1992), Hair *et al.* (2008, 2009), Lindquist *et al.* (2001)

Table 3.

Brand identity is defined by verbal and verbal identities from activities such as WOM, public relations, channel partners, international relations and alumni relations (Mei *et al.*, 2014). Student and knowledge management-related factors are integral to building a knowledge brand. Brand recognition can be measured by awareness among prospective students, students' satisfaction, alumni satisfaction, WOM, brand associations and the quality of service the brand delivers (Aaker, 1991; Farris *et al.*, 2010). This article focuses on key constructs which play a vital role in building a knowledge brand. Scales are critical to properly measuring such constructs to enable the development of models.

The scale development and validation literature and marketing literature in select areas, as shown in Table 1, have shown slow progress; based on SLR, researchers can conclude that literature is scattered (Churchill, 1979). There is not much literature on education services branding on knowledge brands. Current academic research does not comprehensively cover wide-ranging scales, measures, dimensions and items to build branding models. Based on SLR and expert interview validation, most educators highlight that academic environment, knowledge infrastructure, student perception, attitude, student experience, campus infrastructure, satisfaction, loyalty, knowledge culture and events play a vital role in building a knowledge brand. Table 2 showcases key construct definitions with established academic research literature sources. The theoretical background and theories behind each construct are shown in Table 3. The following sections of the article discuss each key construct, its theoretical background and scale adaption sources.

Academic stimulus or academic environment or knowledge environment stimulus

The academic stimulus can encourage students to share knowledge by organizing open discussion forums, seminars or colloquiums. Such stimulus creates a collaborative learning environment by applying communities of practice, thus building an institutional knowledge environment through processes, procedures and strategies (Marcello *et al.*, 2020; Valmohammadi and Ahmadi, 2015). Knowledge management is enabling, accumulating, organizing and using historical information to achieve organizational objectives and improve performance (Valmohammadi and Ahmadi, 2015). Authors have adapted scales or measures developed by Goff and Ackerman (1992), wherein typical intellectual engagement (TIE) acts as the theoretical base (as highlighted in Table 3). Academic stimulating performance was defined by Stumm *et al.* (2011) and Woo *et al.* (2007). TIE defines the need for cognition as positively correlated with openness to academic experience (Chamorro-Premuzic *et al.*, 2006; Ackerman and Maynard, 1994).

The evaluation model brings out an academic outcome-based approach for measuring the effectiveness of higher education brands (Chinta *et al.*, 2016; Kirkpatrick and Kirkpatrick, 1994). The authors' study uses four components from the aforementioned research works: reaction, learning, behavior and results. This study has also used the "CIPP" model for evaluating the academic environment in higher education institutes (Drewes and Michael, 2006) and the rank-ordered "logit model" to explore how a student makes choices between institutions. Logit model demonstrated that prospective students appear to be more attracted to institutions with higher academic quality and environment levels. After analyzing the research works of Anil and Icli (2013), the authors propose dimensions (academic stimulus scale) as pedagogy, teaching quality, curriculum, learning rigor, career opportunities and student readiness. Hence, the authors hypothesize that:

H1. Academic activities at campus positively influence academic stimulus.

H2. Outcome-based performance-oriented academic approach positively correlates with an academically stimulating environment.

Pedagogical content knowledge

Knowledge-based society needs a modern education system based on curriculum reform, marketization and sustainable development with an efficient knowledge management infrastructure (Cheng, 2017). PCK can be defined as the knowledge and ability of the teaching community to define teaching content (content knowledge), teachers' perception of pedagogy or subject matter or teachers' ability to impart knowledge and make it accessible and interesting to students (Shulman, 1986). PCK adapts scales from Shulman (1986), Koh *et al.* (2010) and Farhad and Abolfazl's (2017) research works. The dimensions are pedagogical knowledge, pedagogical teaching, technology knowledge, critical reflection, content knowledge and technological knowledge. PCK defines teaching guidelines, methods, processes, relational knowledge of pedagogical contents, teaching technology adoption and educators' critical reflections. The study, therefore, hypothesizes that:

H3. The gap between pedagogical content delivery and student expectation of academic performance is positively related to content-driven knowledge.

Student selection mechanism

The student selection mechanism can be defined as per Table 2. This study has adopted the selection mechanism scale and measures from the field of human resources and is based on the research works of Teng (1943), Neal and Chan (1998) and the US Department of Labor Employment and Training Administration (1999). The theoretical base (as highlighted in Table 3) for the scale comes from KSAO-knowledge, skills, ability and other characteristics modified by Teng (1943) from the USDOL proposed model of KSA. Thus, the "selection mechanism" scale dimensions are personality, cognitive ability, scholarly reasoning, psychometric, biographical historical data, physical ability, skills-work sample, aptitude knowledge and interviews. Therefore, the authors hypothesize that:

H4. Students' knowledge, skills and attitudes are positively related to the selection mechanism.

Student perception

Perception is identifying, interpreting and organizing what is observed through sensory organs to understand the presented information (Schacter *et al.*, 2011). Three components of perception are "perceiver", "target" and "being". Three factors influencing perceptions are experience, motivational state and emotional state based on Jerome Bruner's proposed model of perception and social identity theory (Alan and Gary, 2011). Adapted perception scale measures are learning, memory, expectation, attention and situation. Student perceptions are measured using learning, memory, expectation and attention. Adapted dimensions are input quality, curriculum, academic facilities, industry interaction, interaction quality, support facilities and non-academic processes and service quality (Gregory, 1987; Gregory and Zangwill, 1963). The student perception bases its theoretical background (as shown in Table 3) on Orientation Evaluation Matrix (James, 2008) with a cross-tabulation matrix with headings being faculty teaching input, student learning input, stakeholder input, knowledge content, pedagogical content, curriculum, the rigor of academic activities, events experiences and use of student evaluations. Therefore, the authors hypothesize that:

H5. The gap between performance expectation and student experience positively influences student perception.

Student intent

Student intent is learners' plan to accomplish a certain objective by gaining knowledge to have a sense of satisfaction and accomplishment. Student intent adapts scales from scholarly works of Peltier *et al.* (2014), Seyda (2017), Radmila *et al.* (2020) and Teng (1943). The measures and dimensions are adapted from the ITPSC, KSA and KSAO frameworks. The theoretical background is highlighted in Table 3. Peltier *et al.* (2014) also highlight that the student intent scale captures perceptual and attitudinal changes as the student becomes more familiar with the options, thus impacting intention. Student intent can also be defined by intention towards gaining knowledge, following procedures in information gathering and building capabilities to enhance skills. Other key characteristics of student intent could be cognitive, sensory and physical abilities to gain knowledge, skills, values and personality. Thus, the key dimensions of the student intent scale are knowledge-learning, social acceptance, accomplishment-satisfaction, motivation awareness, opportunity-profession-career and values-ethics. The study hypothesizes that:

H6. Accomplishment achieved while gaining knowledge is positively associated with student intent.

H7. Opportunity to migrate positively influences student intent.

Student attitude

Attitudes are abstractions, determinants of behavior real to the person who holds them. Attitudes are reinforced by cognitive components such as "beliefs" while attracting emotional components (feelings) that may lead to tendencies such as actions and behavioral intents (Oppenheim,1966, 1992). Authors have adapted the "MODE" framework and theory of attitude-behavior evaluation proposed by Fazio (1986) for the "Attitude" or "Student Attitude" scale. MODE can be defined as motivation and attitude as determinants of student attitude. The theory of attitude evaluation says student behaviors are deliberate when motivation and opportunity are present; however, student behavior will be spontaneous when either is absent. Student attitude can also be defined as explicit and implicit measures, wherein explicit measures are articulated with clear intentions at conscious levels.

Implicit measures of student attitude will be involuntarily at unconscious or subconscious levels of persons. The other theoretical base (as shown in Table 3) was derived from the Theory of Reasoned Action (TRA), which Fishbein (1967) developed. TRA was further improved in 1975 based on social psychology, attitude theories and persuasion models. TRA was later improved to TPB and Reasoned Action Approach by Fishbein and Ajzen (1980, 1975). Likert was used to scale attitude by ensuring all items measure the same thing, eliminating the need for judgment factors (Oppenheim,1966, 1992; Likert, 1932). The item pool was generated based on Fishbein and Ajzen (1975), Radmila *et al.* (2020), Thurstone (1928) and Seyda (2017) research works wherein adapted items are motivation, opportunity, affective engagement, cognitive engagement, behavioral engagement and social awareness. Therefore, the authors hypothesize that:

H8. Student motivation is driven by expectation, opportunities and performance at campus and positively influences student attitude.

Infrastructure scalability

Infrastructure scalability, knowledge management infrastructure or campus infrastructure scalability (CIS) can be defined as per Table 2. CIS can also be defined as the ability of institutions to expand in geography based on brand position to cater to growing student demand. CIS should also address selecting a newer generation of students to build heterogeneous campuses. Knowledge management infrastructure scalability needs to include values such as nurturing institutional intelligence and knowledge-sharing culture to address organizational objectives in the contemporary knowledge-based world (Hamid *et al.*, 2017). This study has adapted measures of infrastructure scalability from the works of Hesham and Mostafa (2005) in the information technology infrastructure field, which was most relevant in the authors' field of study. The five different dimensions are, namely, "administrative scalability", "functional scalability", "geographic scalability", "load scalability" and "generation scalability". This study has combined the first and fourth scales while adapting to the research objective. The authors hypothesize that:

H9. Scalability of academic infrastructure, geographic presence and administrative facilities are positively related to campus infrastructure scalability.

Campus culture

Culture in the education services sector or institution depends upon the bonding, belief and practices among students nurtured over a long period at the campus. Culture derives from ancient values and belief systems that help build and preserve heritage in traditions. Culture is reflected in student encounters, faculty work patterns, events on campus, campus environment (Kushwaha and Rao, 2015) and visionary intent (Hasan and Rosli, 2020). Creating campus culture leads to satisfaction among faculty and students, leading to better academic environment adjustment in a developing context (Crispen and Bulelwa, 2017). This study has adapted campus culture scale items from Organizational Cultural Profile (OCP) model developed by O'Reilly *et al.* (1991). The theoretical background is highlighted in Table 3. Adapted dimensions are innovation at the campus, supportiveness among stakeholders, stability at the campus, respect for everybody, outcome orientation, attention to detail, team orientation among students and aggressiveness towards actions. The study hypothesizes that:

H10. Values, ethics, respect, safety, stability and experience at campus positively influence campus culture.

Events experience

Events experiences (EE) are a wide range of phenomena ranging from academic conferences, workshops, cultural events, sports festivals, world fairs and community events that provide students and educators with intrapersonal, social, cultural and leisure opportunities. EE dimensions are derived from well-established scale development articles: affective engagement, cognitive engagement, physical engagement and experiencing newness (Sjanett de *et al.*, 2015). Authors hypothesize that:

H11. Students' emotional feelings driven by campus events positively influence events experience.

Student satisfaction

Student satisfaction is a key indicator of academic service quality (Chadwick and Ward, 1987; Hampton, 1993). Attitude resulting from evaluation, knowledge infrastructure, academic environment, events, experiences and services provided by the institution results in varied student satisfaction (Alves and Raposo, 2009). Satisfaction models, satisfaction gap (GAP) model, SERVQUAL and model of service quality act as a theoretical base for the student satisfaction scale (Weerasinghe *et al.*, 2017). The authors' study referred to the research articles on works "satisfaction" to adapt the measures, items from Berry and Parasuraman (1991), Bhamani (2012), Oliver (1993) and Parasuraman *et al.* (1988) (as highlighted in Table 3). The adapted scale provides GAP between students' objective and quantitative measurements of satisfaction. A survey for student satisfaction measures was based on the "Likert scale" proposed by Kessler (2003). As mentioned, the research adapted dimensions are gap, attitude and perception. The study hypothesizes that:

H12. The gap between perceived performance and experience at the campus is positively related to student satisfaction.

Student loyalty

Student loyalty (alumni loyalty) describes student word-of-mouth behavior directly related to student satisfaction (Riccardo *et al.*, 2017). Student loyalty towards institutions depends upon support services at the campus; as service quality improves, student satisfaction and loyalty increase. Educators need not assume that all satisfied students are loyal; however, most students who are loyal could be satisfied. Student loyalty enumerates students' behavior towards education institutions based on measures of scale such as switching behavior aspects, WOM, cost of the program, core service encounters successes or failures, satisfaction and competitive intensity in the education sector (Rojas-Mendez *et al.*, 2009; Zeithaml *et al.*, 1996; Ohmae, 1982; Jiani, 2017).

Students look for flexibility in pedagogy, curriculum, academic rigor, fair evaluation and liberal grading, resulting in improved satisfaction and student loyalty. Loyal students create positive vibrations on the campus and in the donor ecosystem, promoting the institution's image (Ehigie and Taylor, 2009). Long-term relationships with students and alumni result in reduced promotional cost because of satisfied, loyal students, as retaining existing students are more cost-effective than attracting new prospective students (Hennig-Thurau *et al.*, 2001). The theoretical background of student loyalty is highlighted in Table 3. Based on all these factors, student loyalty scale dimensions are customer switching behavioral aspects, WOM, program cost, core service failure, service encounters, competition, service response and ethical issues:

H13. Word of mouth arising out of perceived service outcomes at the campus is positively associated with student loyalty.

Student satisfaction loyalty

As most academic literature describes that satisfaction leads to loyalty (Alves and Raposo, 2009; Bhamani, 2012; Riccardo *et al.*, 2017), authors have combined satisfaction and loyalty scales to aid researchers in building models. As a researcher of customer satisfaction, while developing a pattern matrix to develop models, most would have faced the situation of satisfaction and loyalty dimensions overlapping with each other. Hence, authors have combined student satisfaction and student loyalty scales to develop a unified scale called

"student satisfaction loyalty". Student satisfaction loyalty dimensions are the gap between expectation of performance and outcome orientation, affective aspects of WOM, affective aspects of perceived performance (perception) and motivational aspects leading to trust. Therefore, the study hypothesizes that:

H14. The gap between performance expectation and experience of knowledge-oriented events is positively related to student satisfaction loyalty.

Student expectation opportunity

Rational expectations hypothesis theory (Muth, 1961) asserts that student expectations depend upon the structure of the entire system; the average expectation of students depends upon cross-sectional differences of opinions in students about opportunities and their expectations. Student expectancy opportunity theory extends from Unda and Ramos's (2016) works to explain students' satisfaction levels after consuming the services provided at campus compared to initial expectations or promises made by institutes. Student expectations and opportunities can be combined to define the "student expectation opportunity" scale, which can also be defined in Table 2 based on the research works of Richard (2002), Gülsen *et al.* (2020), Singleton and Chen (1996) and Sjanett de *et al.* (2015). The theoretical base of student expectation opportunity is highlighted in Table 3. The key dimensions of the student expectation opportunity scale are behavioral engagement, perception of value and opportunity, affective engagement, effective engagement and social engagement adapted from the research mentioned above. Therefore, the study hypothesizes that:

H15. The smaller gap between student expectation and institution performance positively correlates with student opportunities.

H16. Student emotional feelings towards education brand is positively related to student expectation opportunity at the campus.

Brand identity

Brand identity can be defined as the combination of multi-dimensional factors like brand logo design, symbols representing a brand, packaging, product performance, service quality, brand image and brand associations with student consumers (Wong, 2010). Brand image can be referred to as how students perceive education brand; however, brand identity is defined by student needs and wants that can explain how students desire to perceive education services brand. Brand identity forms an important instrument of brand awareness based on brand image formation (Kuvykaite and Mascinskiene, 2010). Kapferer (1992) proposed that the brand identity prism is one of the most accepted models for brand identity. Brand identity prism proposes six aspects of brand identity: physique, personality, culture, self-image, reflection and relationship for brands. The authors hypothesize that:

H17. Visual and verbal identities of products positively influence brand identity.

Student brand loyalty

Students as consumers help create value (Bowden, 2011) and build a brand image based on multi-sensory brand experience (Hulten, 2017). Wide-ranging literature brings out concepts and antecedents for understanding student loyalty towards institution brands, such as the

reputation of the institution, campus facilities, social interaction (Helgesen and Nesset, 2007), the perceived value of service (Bowden and D'Alessandro, 2011), service quality (Hennig-Thurau *et al.*, 2001; Zeithaml *et al.*, 1996); Parasuraman *et al.*, 1988; Gregory, 1987; Gregory and Zangwill, 1963; Chadwick and Ward, 1987; Hampton, 1993), student satisfaction and brand image (Helgesen and Nesset, 2007; Nguyen and Leblanc, 2001). The student brand loyalty scale was adapted from the loyalty scales based on marketing studies of brand loyalty (Tina, 2016) and research work by the thought leader of brand loyalty (Reichheld, 1996). Student consumers (Bowden, 2011) are loyal to higher education institutes based on parameters such as perceived quality, satisfaction, emotional commitment and trust (Fabio *et al.*, 2012). Student brand loyalty depends on effective communication from knowledge brands, the institution's legacy, a culture-building model and the sustenance of practices that engage stakeholders. The adapted dimensions of student brand loyalty scales are student perceived value, brand trust, student satisfaction, WOM, repeat purchase behavior and commitment. Hence, the study hypothesizes that:

H18. Word of mouth among students positively influences student brand loyalty.

H19. Student satisfaction with the perceived value of a brand is positively related to student brand loyalty.

Brand recognition

Recognition of a brand in education services sectors like education depends upon the choice of the opinion of students. Most of the marketing research literature focuses on students studying in western countries rather than emerging economies, though higher education brands from emerging countries show signs of significant growth in attracting students from overseas (Cova, 1997; Ahmad *et al.*, 2016). Brand recognition is critical to attracting talent, the institute's global ranking, student community satisfaction (Ahmad, 2014), WOM marketing by students and repurchase intentions (Zeithaml *et al.*, 1996); alumni (Jillapalli and Wilcox, 2010; Seyda, 2017) also improves brand recognition.

Western higher education brands have implemented various innovative pedagogical contents (Bodo, 2020) and superior facilitation and learning methods (Anderson *et al.*, 2018). Western brands focus on outcome-based learning, technology-assisted teaching, global standard systems and processes and curriculum delivery as per expectations (Bodo, 2020). Western brands also focus on the design of programs, execution of events at the campus (Seyda, 2017; Swati, 2015) and international standard campus infrastructure (Jurse, 2011) to achieve global brand recognition (Iqbal *et al.*, 2020). Authors have adapted scales for brand recognition from various peer-reviewed scale development articles in the marketing field. Aaker (1991) defines the measures of brand recognition as brand strength, student consumer satisfaction, brand loyalty and consumer–brand relationships. Authors have also adapted from the AAU scale (Farris *et al.*, 2010), defined as awareness, attitude and usage metrics used to measure brand recognition. Brand salience is also one of the key measures of brand recognition that brings out two types of tests: aided recall and unaided recall tests (Hsia, 1988). Brand recognition can also be measured using brand effect tests that use brand association tests, brand attitude, brand image, brand dominance, brand value and brand health tests used to define scale dimensions. Hence, the authors hypothesize that:

H20. Brand recall positively influences global brand recognition.

H21. Brand image is positively related to brand recognition.

Findings

The study started with testing for scale unidimensionality (SU), wherein the validation was whether items were loading heavily on one factor (Hair *et al.*,2008, 2009). SU was assessed using exploratory factor analysis with the IBM SPSS tool. Kaiser–Meyer–Olkin (KMO) Bartlett test reveals the sphericity appropriateness of data for factor analysis. Most KMO values were above 0.5; hence, scale unidimensionality of SL, BR, SP, SA, SS, CC, AS, CIS, SM, SI, SBL, PCK, BI, SEO, SSL and EE (abbreviations as per Table 2) was found to be accepted for respective dimensions. Authors selected eigenvalues as 1, as it is the criteria for factor analysis (Ritter *et al.*, 2001). Exploratory factor analysis on each scale resulted in one principal component with majority variance, reiterating that all scales are unidimensional (Hair *et al.*,2008, 2009). As all scales were adapted (modified to suit the study) from well-established scale development theoretical research articles, no item needs to be deleted after the CV and FV assessment. Further, confirmatory factor analysis (CFA) was conducted to assess SEM-based composite reliability using IBM AMOS and IBM SPSS tool-based validity of unidimensional scales, which is discussed in the following sections of the article.

Convergent validity

Authors established convergent validity by demonstrating the correlation coefficient (r) between measures within the construct (Azmi and Mushtaq, 2013; Darren, 2010). By analyzing the correlation coefficients between other measures of different constructs, authors also acknowledge that rarely measures will be perfectly convergent (a perfect score of r will be 1 in the range of −1 to 1); hence the range would be between 0.3 and 0.7 with no correlation score being 0 for r. Authors had to split the correlation coefficient matrix into Tables 4 and 5 for representation, as it was a complex matrix; however, for analysis, it was a common matrix. For convergent validity, the authors highlighted the matrix pertaining to the construct; by analyzing the highlighted section in grey in the correlation coefficient

Correlation Matrix		Student Loyalty - Perceived performance	Global Recognition	Academic Performance-Outcome Orientation	WoM- Perception Learning	Brand Trust	Brand Recall	Brand Association	Brand Image	Brand Dominance	Brand Value	Gap: Expectation of performance	Gap: Perceived experience of performance	Affective aspects: Perception	Perception - Learning	Perception - Memory	Peception - Attention –FIT	Perception - Situation	Gap: Expectation of performance	Affective aspects: Attitude	Affective aspects: Perception	Expect Attitutde Motivation
Student loyalty	Student Loyalty - Perceived performance	1	0.754	0.600	0.667	0.763	0.182	0.240	0.161	0.197	0.248	−0.216	−0.195	−0.185	−0.172	−0.175	−0.208	−0.160	0.477	0.460	0.457	0.475
	Global Recognition	0.754	1	0.571	0.704	0.771	0.173	0.224	0.149	0.198	0.245	−0.206	−0.201	−0.171	−0.173	−0.183	−0.171	−0.185	.460	0.457	0.446	0.464
	Academic Performe-Outcome Orientation	0.600	0.571	1	0.492	0.568	0.122	0.147	0.102	0.150	0.162	−0.185	−0.184	−0.167	−0.144	−0.153	−0.127	−0.168	.417	0.417	0.406	0.404
	WoM- Perception Learning	0.667	0.704	0.492	1	0.706	0.181	0.267	0.184	0.211	0.238	−0.193	−0.202	−0.166	−0.178	−0.206	−0.174	−0.165	.0455	0.446	0.431	0.450
	Brand Trust	0.763	0.771	0.568	0.706	1	0.177	0.237	0.145	0.198	0.250	−0.208	−0.199	−0.178	−0.186	−0.190	−0.177	−0.174	0.458	0.450	0.455	0.464
Brand Recognition	Brand Recall	0.182	0.173	0.122	0.181	0.177	1	0.519	0.216	0.262	0.567	−0.275	−0.251	−0.257	−0.247	−0.258	−0.218	−0.250	0.297	0.298	0.299	0.298
	Brand Association	0.240	0.224	0.147	0.267	0.237	0.519	1	0.395	0.572	0.765	−0.275	−0.273	−0.273	−0.251	.286	−0.317	−0.232	0.314	0.315	0.306	0.313
	Brand Image	0.161	0.149	0.102	0.184	0.145	0.216	0.395	1	0.244	0.434	−0.212	−0.202	−0.219	−0.234	−0.198	−0.232	−0.195	0.266	0.254	0.242	0.240
	Brand Dominance	0.197	0.198	0.150	0.211	0.198	0.262	0.572	0.244	1	0.592	−0.266	−0.288	−0.286	−0.278	−0.290	−0.241	−0.268	0.304	0.303	0.302	0.308
	Brand Value	0.248	0.245	0.162	0.238	0.250	0.567	0.765	0.434	0.592	1	−0.270	−0.271	−0.270	−0.278	−0.272	−0.288	−0.245	0.327	0.329	0.304	0.305
Perception	Gap: Expectation of performance	−0.216	−0.206	−0.185	−0193	−0.208	−0.275	−0.275	−0.212	−0.266	−0.270	1	0.303	0.298	0.309	0.341	0.349	0.310	−0.343	−0.322	−0.327	−0.337
	Gap: Perceived experience of performance	−0.195	−0.201	−0.184	−0.202	−0.199	−0.251	−0.273	−0.202	−0.288	−0.271	0.303	1	0.302	0.305	0.298	0.359	0.295	−0.331	−0.342	−0.329	−0.345
	Affective aspects: Perception	−0.185	−0.171	−0.167	−0.166	−0.178	−0.257	−0.273	−0.219	−0.286	−0.270	0.298	0.302	1	0.295	0.294	0.323	0.299	−0.312	−0.324	−0.315	−0.315
	Peception- Learning	−0.172	−0.173	−0.144	−0.178	−0.186	−0.247	−0.251	−0.234	−0.278	−0.278	0.309	0.305	0.295	1	0.305	0.372	0.299	−0.342	−0.325	−0.339	−0.321
	Perception - Memory	−0.175	−0.183	−0.153	−0.206	−0.190	−0.258	−0.286	−0.198	−0.290	−0.272	0.341	0.298	0.294	0.305	1	0.347	0.305	−0.316	−0.305	−0.313	−0.311
	Peception - Attention –FIT	−0.208	−0.171	−0.127	−0.174	−0.177	−0.218	−0.317	−0.232	−0.241	−0.288	0.349	0.359	0.323	0.372	0.347	1	0.332	−0.322	−0.313	−0.316	−0.316
	Perception - Situation	−0.160	−0.185	−0.168	−0.165	−0.174	−0.250	−0.232	−0.195	−0.268	−0.245	0.310	0.295	0.299	0.299	0.305	0.332	1	−0.311	−0.325	−0.320	−0.329
Student Satisfaction	Gap: Expectation of performance	0.477	0.460	0.417	0.455	0.458	0.297	0.314	0.266	0.304	0.327	−0.343	−0.331	−0.312	−0.342	−0.316	−0.322	−0.311	1	0.865	0.856	0.838
	Affective aspects: Attitude	0.460	0.457	0.417	0.446	0.450	0.298	0.315	0.254	0.303	0.329	−0.322	−0.342	−0.324	−0.325	−0.305	−0.313	−0.325	0.865	1	0.847	0.848
	Affective aspects: Perception	0.457	0.446	0.406	0.431	0.455	0.299	0.306	0.242	0.302	0.304	−0.327	−0.329	−0.315	−0.339	−0.313	−0.316	−0.320	0.856	0.847	1	0.844
	Expect Attitutde Motivation	0.475	0.464	0.404	0.450	0.464	0.298	0.313	0.240	0.308	0.305	−0.337	−0.345	−0.315	−0.321	−0.311	−0.316	−0.329	0.838	0.848	0.844	1

Table 4.
Correlation matrix-1 for construct validity

matrix, most of the values were between 0.3 and 0.7. However, few brand recognition scale coefficients were at the border of 0.3. The brand recall had a correlation score on the border with brand image and brand dominance. By analyzing the importance of the items, brand recall, brand image and brand dominance were retained as valid items to measure brand recognition (Farris *et al.*, 2010). The correlation coefficients of student brand loyalty had a similar low correlation coefficient score in the border of 0.3, between 0.21 and 0.25. The analysis shows that items of brand recall, brand image and brand dominance were

Correlation Matrix		Academics Activities	Academic Performance-Outcome Orientation	Student Loyalty - Perceeved performance	Academic Freedom & Opportunity	Academic Stimulus - Intellectual	InfrastructureFacilityAbilitytoExpand	Place City Migration	Global Opportunity - New Gen	Diversity-Hetrogenous systems	Selection - Personality	Selection - Cognitive Ability	Selection - psychometric evaluations	Selection - scholarly performance	Selection - biographical data	CampusCulture-OO-TO	Campus-Culture-Support-Stability	CampusCulture-OO-Attention-Details	Campus-Culture-AgressiveInnovate	Campus-Culture-Respect-Trust
Academic Stimulus	Academics Activities	1	0.574	0.596	0.575	0.535	0.239	0.184	0.231	0.215	0.254	0.238	0.210	0.206	0.209	0.121	0.111	0.099	0.105	0.111
	Academic Performance-Outcome Orientation	0.574	1	0.595	0.577	0.499	0.225	0.189	0.223	0.195	0.252	0.246	0.219	0.211	0.211	0.109	0.144	0.126	0.111	0.101
	Student Loyalty - Perceeved performance	0.596	0.595	1	0.636	.0473	0.217	0.194	0.230	0.206	0.259	0.244	0.219	0.220	0.220	0.078	0.120	0.130	0.120	0.120
	Academic Freedom & Opportunity	0.575	0.577	0.636	1	0.538	0.213	0.189	0.213	0.206	0.253	0.237	0.218	0.204	0.205	0.120	0.157	0.138	0.131	0.087
	Academic Stimulus - Intellectual	0.535	0.499	0.473	0.538	1	0.259	0.217	0.258	0.233	0.281	0.277	0.241	0.234	0.244	0.163	0.163	0.167	0.157	0.136
Campus Infra Scalability	InfrastructureFacilityAbilitytoExpand	0.239	0.225	0.217	0.213	0.259	1	0.716	0.915	0.732	0.550	0.543	0.468	0.450	.471	0.306	0.302	0.236	0.302	0.310
	Place City Migration	0.184	0.189	0.194	0.189	0.217	0.716	1	0.750	0.427	0.469	0.467	.0390	0.390	0.384	0.245	0.230	0.193	0.239	0.244
	Global Opportunity - New Gen	0.231	0.223	0.230	0.213	0.258	0.915	0.750	1	0.765	0.529	0.522	0.448	0.441	0.455	0.293	0.296	0.231	0.306	0.302
	Diversity-Hetrogenous systems	0.215	0.195	0.206	0.206	0.233	0.732	0.427	0.765	1	0.449	0.445	0.392	0.378	0.407	0.272	0.272	0.210	0.275	0.266
Selection Mechanism	Selection - Personality	0.254	0.252	0.259	0.253	0.281	0.550	0.469	0.529	0.449	1	0.944	0.729	0.722	0.727	0.277	0.270	0.249	0.268	0.283
	Selection - Cognitive Ability	0.238	0.246	0.244	0.237	0.277	0.543	0.467	0.522	0.445	0.944	1	0.744	0.740	0.740	0.276	0.269	0.251	0.273	0.282
	Selection - psychometric evaluations	0.210	0.219	0.219	0.218	0.241	0.468	0.390	0.448	0.392	0.729	0.744	1	0.464	0.470	0.228	.0225	0.204	0.234	0.228
	Selection - scholarly performance	0.206	0.211	0.220	0.204	0.234	0.450	0.390	0.441	0.378	0.722	0.740	0.464	1	0.455	0.239	0.238	0.199	0.232	0.242
	Selection - biographical data	0.209	0.211	0.220	0.205	0.244	0.471	0.384	0.455	0.407	0.727	0.740	0.470	0.455	1	0.243	0.241	0.219	0.248	0.249
Campus Culture	CampusCulture-OO-TO	0.121	0.109	0.078	0.120	0.163	0.306	0.245	0.293	0.272	0.277	0.276	0.228	0.239	0.243	1	0.753	0.602	0.695	0.752
	Campus-Culture-Support-Stability	0.111	0.144	0.120	0.157	0.163	0.302	0.230	0.296	0.272	0.270	0.269	0.225	0.238	0.241	0.753	1	0.562	0.695	0.751
	CampusCulture-OO-Attention-Details	0.099	0.126	0.130	0.138	0.167	0.236	0.193	0.231	0.210	0.249	0.251	0.204	0.199	0.219	0.602	0.562	1	0.504	0.586
	CampusCulture-AgressiveInnovate	0.105	0.111	0.120	0.131	0.157	0.302	0.239	0.306	0.275	0.268	0.273	0.234	0.232	0.248	0.695	0.695	0.504	1	0.704
	Campus-Culture-Respect-Trust	0.111	0.101	0.120	0.087	0.136	0.310	0.244	0.302	0.266	0.283	0.282	0.228	0.242	0.249	0.752	0.751	0.586	0.704	1

Correlation Matrix–3		SI-Awareness	SI-Knowledge-Learning	SI-Social-Acceptance	SI-Accomplishment-Satisfaction	SI-Values-Ethics	SI-Attitude-Motivation	SI-Attitude-Opportunity-Migration-to-city	SBL-Brand-Recall-WOM-PL-RepeatPurchase	Brand-Association-Student-Loyalty-PP-SS	Brand-Image-PerceivedValue	BrandDominance-AP-OO-Commitment	SBL-BrandValue-Trust	PCK-PK-Gap-Expectation-perform	PCK-PTTK-Perceived	PCK-Content-KnowledgeAffective	PCK-Tech-Know-Learning	PCK-CK-Memory	PCK-PTTK-FIT	PCK-Critical-Reflection-Situation	Brand-Identity-WOM	Brand-Identity-Visual-Product-Service	Brand-Identity-Visual	Brand-Identity-Verbal-Performance	Brand-Identity-Verbal
Student Intent	SI-Awareness	1	0.946	0.731	0.721	0.728	−0.342	−0.315	0.334	0.365	0.313	0.338	0.371	−0.375	−0.380	−0.383	−0.396	−0.377	−0.400	−0.363	1.000	0.946	0.731	0.721	0.728
	SI-Knowledge-Learning	0.946	1	0.745	0.741	0.741	−0.350	−0.306	0.334	0.364	0.312	0.330	0.370	−0.367	−0.383	−0.374	−0.392	−0.363	−0.393	−0.349	0.946	1.000	0.745	0.741	0.741
	SI-Social-Acceptance	0.731	0.745	1	0.467	0.473	−0.403	−0.264	0.273	0.309	0.259	0.295	0.316	−0.303	−0.314	−0.333	−0.332	−0.299	−0.340	−0.308	0.731	0.745	1.000	0.467	0.473
	SI-Accomplishment-Satisfaction	0.721	0.741	0.467	1	0.459	−0.277	−0.270	0.294	0.326	0.270	0.285	0.325	−0.321	−0.320	−0.328	−0.312	−0.326	−0.346	−0.285	0.721	0.741	0.467	1.000	0.459
	SI-Values-Ethics	0.728	0.741	0.473	0.459	1	−0.278	−0.270	0.289	0.312	0.269	0.294	0.327	−0.326	−0.328	−0.310	−0.346	−0.313	−0.330	−0.323	0.728	0.741	0.473	0.459	1.000
	SI-Attitude-Motivation	−0.342	−0.350	−0.403	−0.277	−0.278	1	0.324	−0.275	−0.272	−0.180	−0.280	−0.278	0.279	0.291	0.295	0.278	0.292	0.238	0.270	−0.342	−0.350	−0.403	−0.277	−0.278
	SI-Attitude-Opport-Migration-to-city	−0.315	−0.306	−0.264	−0.270	−0.270	0.324	1	−0.233	−0.251	−0.173	−0.232	−0.264	0.280	0.244	0.275	0.271	0.280	0.243	0.260	−0.315	−0.306	−0.264	−0.270	−0.270
Student brand loyalty	SBL-Brand-Recall-WOM-PL-RP	0.334	0.334	0.273	0.294	0.289	−0.275	−0.233	1	0.522	0.212	0.256	0.554	−0.268	−0.261	−0.257	−0.243	−0.260	−0.211	−0.254	0.334	0.334	0.273	0.294	0.289
	Brand-Association-StuLoyalty-PP-SS	0.365	0.364	0.309	0.326	0.312	−0.272	−0.251	0.522	1	0.424	0.566	0.774	−0.263	−0.276	−0.275	−0.265	−0.271	−0.308	−0.242	0.365	0.364	0.309	0.326	0.312
	Brand-Image-PercievedValue	0.313	0.312	0.259	0.270	0.269	−0.180	−0.173	0.212	0.424	1	0.234	0.454	−0.181	−0.205	−0.217	−0.210	−0.189	−0.236	−0.210	0.313	0.312	0.259	0.270	0.269
	BrandDominance-AP-OO-Commit	0.338	0.330	0.295	0.285	0.294	−0.280	−0.232	0.256	0.566	0.234	1	0.596	−0.270	−0.283	−0.286	−0.281	−0.294	−0.244	−0.270	0.338	0.330	0.295	0.285	0.294
	SBL-BrandValue-Trust	0.371	0.370	0.316	0.325	0.327	−0.278	−0.264	0.554	0.774	0.454	0.596	1	−0.275	−0.275	−0.278	−0.278	−0.278	−0.289	−0.244	0.371	0.370	0.316	0.325	0.327
Pedagogy content knowledge	PCK-PK-Gap-Expectation-perform	−0.375	−0.367	−0.303	−0.321	−0.326	0.279	0.280	−0.268	−0.263	−0.181	−0.270	−0.275	1	0.305	0.304	0.307	0.340	0.349	0.301	−0.375	−0.367	−0.303	−0.321	−0.326
	PCK-PTTK-Perceived	−0.380	−0.383	−0.314	−0.320	−0.328	0.291	0.244	−0.261	−0.276	−0.205	−0.283	−0.275	0.305	1	0.298	0.317	0.286	0.371	0.292	−0.380	−0.383	−0.314	−0.320	−0.328
	PCK-Content-KnowledgeAffective	−0.383	−0.374	−0.333	−0.328	−0.310	0.295	0.275	−0.257	−0.275	−0.217	−0.286	−0.278	0.304	0.298	1	0.293	0.290	0.334	0.296	−0.383	−0.374	−0.333	−0.328	−0.310
	PCK-Tech-Know-Learning	−0.396	−0.392	−0.332	−0.312	−0.346	0.278	0.271	−0.243	−0.265	−0.210	−0.281	−0.278	0.307	0.317	0.293	1	0.316	0.385	0.312	−0.396	−0.392	−0.332	−0.312	−0.346
	PCK-CK-Memory	−0.377	−0.363	−0.299	−0.326	−0.313	0.292	0.280	−0.260	−0.271	−0.189	−0.294	−0.278	0.340	0.286	0.290	0.316	1	0.338	0.307	−0.377	−0.363	−0.299	−0.326	−0.313
	PCK-PTTK-FIT	−0.400	−0.393	−0.340	−0.346	−0.330	0.238	0.243	−0.211	−0.308	−0.236	−0.244	−0.289	0.349	0.371	0.334	0.385	0.338	1	0.323	−0.400	−0.393	−0.340	−0.346	−0.330
	PCK-Critical-Reflection-Situation	−0.363	−0.349	−0.308	−0.285	−0.323	0.270	0.260	−0.254	−0.242	−0.210	−0.270	−0.244	0.301	0.292	0.296	0.312	0.307	0.323	1	−0.363	−0.349	−0.308	−0.285	−0.323
Brand Identity	Brand-Identity-WOM	1.000	0.946	0.731	0.721	0.728	−0.342	−0.315	0.334	0.365	0.313	0.338	0.371	−0.375	−0.380	−0.383	−0.396	−0.377	−0.400	−0.363	1	0.946	0.731	0.721	0.728
	Brand-Identity-Visual-Product-Service	0.946	1.000	0.745	0.741	0.741	−0.350	−0.306	0.334	0.364	0.312	0.330	0.370	−0.367	−0.383	−0.374	−0.392	−0.363	−0.393	−0.349	0.946	1	0.745	0.741	0.741
	Brand-Identity-Visual	0.731	0.745	1.000	0.467	0.473	−0.403	−0.264	0.273	0.309	0.259	0.295	0.316	−0.303	−0.314	−0.333	−0.332	−0.299	−0.340	−0.308	0.731	0.745	1	0.467	0.473
	Brand-Identity-Verbal-Performance	0.721	0.741	0.467	1.000	0.459	−0.277	−0.270	0.294	0.326	0.270	0.285	0.325	−0.321	−0.320	−0.328	−0.312	−0.326	−0.346	−0.285	0.721	0.741	0.467	1	0.459
	Brand-Identity-Verbal	0.728	0.741	0.473	0.459	1.000	−0.278	−0.270	0.289	0.312	0.269	0.294	0.327	−0.326	−0.328	−0.310	−0.346	−0.313	−0.330	−0.323	0.728	0.741	0.473	0.459	1

Table 5.
Correlation matrix-2 for construct validity

(*continued*)

Correlation Matrix–4		SGEP	PValue	AffEng	EffEng	BehEng	Opp	SocilEng	Att-Mot	Exp-Att-Mot	SL-PerPerf	Acta-Free-Opp	AFreOpp	AttOppTech	MigCity	PlaCaOppAtt	AttStudNoFor	SatAttOpp	GapExpPerA	AffAttWOM	AffAspPerPe	ExpAttMotTr	EECulAffEng	EEExpNew	CogEng	EEExpNewI	EEPhyEngS	EEPhyEngSaf	EEAffEngO
Student Expectation Opportunity	Student-Gap-ExpectPerf	1	0.305	0.304	0.307	0.340	0.349	0.301	0.290	0.348	0.312	0.294	0.323	0.279	0.284	0.284	0.301	0.338	-0.331	-0.340	-0.336	-0.344	-0.420	-0.351	-0.340	-0.398	-0.396	-0.400	-0.404
	Perceived-Value	0.305	1	0.298	0.317	0.286	0.371	0.292	0.275	0.312	0.263	0.262	0.325	0.305	0.233	0.277	0.260	0.314	-0.353	-0.350	-0.350	-0.345	-0.391	-0.328	-0.334	-0.370	-0.388	-0.384	-0.379
	AffectiveEngagement	0.304	0.298	1	0.293	0.290	0.334	0.296	0.288	0.321	0.275	0.276	0.321	0.295	0.271	0.268	0.291	0.320	-0.314	-0.306	-0.311	-0.307	-0.377	-0.329	-0.324	-0.377	-0.385	-0.393	-0.394
	EffectiveEngagement	0.307	0.317	0.293	1	0.316	0.385	0.312	0.274	0.340	0.269	0.287	0.329	0.286	0.263	0.269	0.307	0.330	-0.333	-0.324	-0.323	-0.323	-0.399	-0.351	-0.329	-0.380	-0.385	-0.395	-0.400
	BehaviouralEngagement	0.340	0.286	0.290	0.316	1	0.338	0.307	0.303	0.332	0.294	0.270	0.331	0.288	0.281	0.274	0.274	0.330	-0.309	-0.314	-0.301	-0.318	-0.409	-0.349	-0.366	-0.402	-0.409	-0.413	-0.401
	Opportunity	0.349	0.371	0.334	0.385	0.338	1	0.323	0.244	0.249	0.225	0.227	0.269	0.262	0.227	0.237	0.269	0.293	-0.340	-0.312	-0.304	-0.320	-0.308	-0.258	-0.262	-0.302	-0.298	-0.311	-0.306
	SocialEngagement	0.301	0.292	0.296	0.312	0.307	0.323	1	0.273	0.314	0.269	0.262	0.325	0.306	0.265	0.274	0.279	0.321	-0.315	-0.330	-0.309	-0.323	-0.392	-0.345	-0.336	-0.396	-0.410	-0.406	-0.402
Student Attitude	Attitude-Motivation	0.290	0.275	0.288	0.274	0.303	0.244	0.273	1	0.489	0.330	0.330	0.510	0.355	0.336	0.336	0.338	0.502	-0.307	-0.298	-0.288	-0.296	-0.413	-0.346	-0.342	-0.395	-0.395	-0.412	-0.412
	Expect Attitutde Motivation	0.348	0.312	0.321	0.340	0.332	0.249	0.314	0.489	1	0.481	0.509	0.818	0.496	0.461	0.498	0.491	0.819	-0.322	-0.337	-0.317	-0.342	-0.536	-0.457	-0.450	-0.495	-0.497	-0.518	-0.523
	Student Loyalty –Perd	0.312	0.263	0.275	0.269	0.294	0.225	0.269	0.330	0.481	1	0.304	0.491	0.295	0.318	0.302	0.363	0.502	-0.288	-0.287	-0.292	-0.301	-0.424	-0.355	-0.353	-0.398	-0.387	-0.406	-0.411
	Academic FreedomOpp	0.294	0.262	0.276	0.287	0.270	0.227	0.262	0.330	0.509	0.304	1	0.506	0.337	0.321	0.333	0.318	0.511	-0.282	-0.279	-0.276	-0.270	-0.422	-0.364	-0.334	-0.397	-0.389	-0.409	-0.408
	Academic FreOpportunity	0.323	0.325	0.321	0.329	0.331	0.269	0.325	0.510	0.818	0.491	0.506	1	0.500	0.467	0.494	0.496	0.825	-0.337	-0.338	-0.325	-0.327	-0.516	-0.448	-0.438	-0.498	-0.501	-0.511	-0.522
	Attitude –Opportunity –Tech	0.279	0.305	0.295	0.286	0.288	0.262	0.306	0.355	0.496	0.295	0.337	0.500	1	0.298	0.329	0.342	0.491	-0.289	-0.302	-0.273	-0.285	-0.415	-0.329	-0.355	-0.395	-0.406	-0.404	-0.408
	Migration to city	0.284	0.233	0.271	0.263	0.281	0.227	0.265	0.336	0.461	0.318	0.321	0.467	0.298	1	0.294	0.305	0.454	-0.269	-0.274	-0.276	-0.272	-0.393	-0.319	-0.338	-0.367	-0.366	-0.384	-0.388
	Placement, Career, OppoAtt	0.284	0.277	0.268	0.269	0.274	0.237	0.274	0.336	0.498	0.302	0.333	0.494	0.329	0.294	1	0.335	0.482	-0.284	-0.298	-0.297	-0.285	-0.413	-0.338	-0.342	-0.391	-0.396	-0.401	-0.401
	Attitude –Student – No force	0.301	0.260	0.291	0.307	0.274	0.269	0.279	0.338	0.491	0.363	0.318	0.496	0.342	0.305	0.335	1	0.499	-0.290	-0.295	-0.280	-0.298	-0.390	-0.346	-0.333	-0.380	-0.372	-0.388	-0.392
	Satisfaction –Attitude–Opp	0.338	0.314	0.320	0.330	0.330	0.293	0.321	0.502	0.819	0.502	0.511	0.825	0.491	0.454	0.482	0.499	1	-0.328	-0.331	-0.320	-0.342	-0.541	-0.439	-0.441	-0.506	-0.499	-0.524	-0.513
Student Satisfaction Loyalty	Gap: ExpectationPerfAPOO	-0.331	-0.353	-0.314	-0.333	-0.309	-0.340	-0.315	-0.307	-0.322	-0.288	-0.282	-0.337	-0.289	-0.269	-0.284	-0.290	-0.328	1	0.857	0.845	0.850	0.412	0.347	0.366	0.413	0.424	0.425	0.420
	AffectiveAspAttWOM PL	-0.340	-0.350	-0.306	-0.324	-0.314	-0.312	-0.330	-0.298	-0.337	-0.287	-0.279	-0.338	-0.302	-0.274	-0.298	-0.295	-0.331	0.857	1	0.847	0.840	0.430	0.360	0.369	0.415	0.441	0.423	0.428
	AffectiveAspPercePercPerf	-0.336	-0.350	-0.311	-0.323	-0.301	-0.304	-0.309	-0.288	-0.317	-0.292	-0.276	-0.325	-0.273	-0.276	-0.297	-0.280	-0.320	0.845	0.847	1	0.866	0.429	0.344	0.354	0.408	0.406	0.413	0.418
	Expect Attitutde MotTr	-0.344	-0.345	-0.307	-0.323	-0.318	-0.320	-0.323	-0.296	-0.342	-0.301	-0.270	-0.327	-0.285	-0.272	-0.285	-0.298	-0.342	0.850	0.840	0.860	1	0.446	0.361	0.369	0.412	0.427	0.426	0.439
Events Experience	EE-Culture-Affective-Eng	-0.420	-0.391	-0.377	-0.399	-0.409	-0.308	-0.392	-0.413	-0.536	-0.424	-0.422	-0.516	-0.415	-0.393	-0.413	-0.390	-0.541	0.412	0.430	0.429	0.446	1	0.699	0.709	0.815	0.830	0.838	0.850
	EE-Experience-Newness	-0.351	-0.328	-0.329	-0.351	-0.349	-0.258	-0.345	-0.346	-0.457	-0.355	-0.364	-0.448	-0.329	-0.319	-0.338	-0.346	-0.439	0.347	0.360	0.344	0.361	0.699	1	0.431	0.777	0.764	0.741	0.743
	Congnitive-Engagement	-0.340	-0.334	-0.324	-0.329	-0.366	-0.262	-0.336	-0.342	-0.450	-0.353	-0.334	-0.438	-0.355	-0.338	-0.342	-0.333	-0.441	0.366	0.369	0.354	0.369	0.709	0.431	1	0.781	0.766	0.745	0.739
	EE-Experience-NewInnov	-0.398	-0.370	-0.377	-0.380	-0.402	-0.302	-0.396	-0.395	-0.495	-0.398	-0.397	-0.498	-0.395	-0.367	-0.391	-0.380	-0.506	0.413	0.415	0.408	0.412	0.815	0.777	0.781	1	0.882	0.871	0.869
	EE-Physical-EngSuppCult	-0.396	-0.388	-0.385	-0.385	-0.409	-0.298	-0.410	-0.395	-0.497	-0.387	-0.389	-0.501	-0.406	-0.366	-0.396	-0.372	-0.498	0.424	0.441	0.406	0.427	0.830	0.764	0.766	0.882	1	0.887	0.874
	EE-PhysEngSafStab-Cam	-0.400	-0.384	-0.393	-0.395	-0.413	-0.311	-0.406	-0.412	-0.518	-0.406	-0.409	-0.511	-0.404	-0.384	-0.401	-0.388	-0.524	0.425	0.423	0.413	0.426	0.838	0.741	0.745	0.871	0.887	1	0.891
	EE-AffEng-Outcomes	-0.404	-0.379	-0.394	-0.400	-0.401	-0.306	-0.402	-0.412	-0.523	-0.411	-0.408	-0.522	-0.408	-0.388	-0.401	-0.392	-0.513	0.420	0.428	0.418	0.439	0.850	0.743	0.739	0.869	0.874	0.891	1

Note: **Correlation is significant at the 0.01 level (one-tailed)

Table 5.

important for the study (Hsia, 1988); hence, the authors decided to retain the variables though the value was below 0.3.

The correlation coefficients of the student satisfaction scale were above 0.799, which may indicate the risk of multicollinearity issues. The coefficients between gap-expectation of performance, affective aspects-attitude, perception and attitude-motivation were in the range of 0.8 to 086. The authors conducted linear regression with collinearity diagnostics selection in IBM SPSS to obtain variation inflation factor (VIF). The VIF was calculated for each variable where there was a suspected case of high correlation coefficients leading to suspected multicollinearity issues. The VIF scores were below the accepted value of 10 (Senaviratna and Cooray, 2019). Hence, the authors decided to accept all four variables. The analysis of these four items shows that they had few similarities, and items did not have any overlaps. Hence, the authors decided to retain all four items of the student satisfaction scale. As the authors wanted to combine student loyalty and student satisfaction, the combined scale of student satisfaction loyalty had similar comparable correlation coefficients. A similar analysis and conclusion can be drawn for the student satisfaction loyalty scale and items. Hence, the authors decided to retain all four items of student satisfaction loyalty. Authors also highlight that student satisfaction and student loyalty scales can be used in a single study; however, the student satisfaction loyalty scale should not be mixed with the satisfaction or loyalty scale in a single model.

Analysis of correlation coefficients of the selection mechanism scale shows that "selection based on personality variable" and "selection based on cognitive ability" have a high correlation (> 0.8) between both variables; authors decided to drop the "selection-personality" variable, as there is a conceptual overlap. However, the authors also calculated VIF values for each variable to rule out multicollinearity issues (Senaviratna and Cooray, 2019). The VIF values for variables were below the acceptable value of 10. Hence, all items were accepted (Neal and Chan, 1998); however, while adopting for their research setting, researchers can omit some of the items based on their context. Analysis of correlation

coefficient values (> 0.9) of campus infrastructure scalability shows that the "ability to expand campus infrastructure" variable highly correlates with the "global opportunity-new generation" of students' variable. To rule out multicollinearity issues, either researchers can omit the "global opportunity-new generation" variable or qualitative analysis of both variables shows that both distinctly cover aspects of campus scalability. One of the variables covers physical infrastructure, while the other covers the scalability of attracting a diverse new generation of students. Hence, the authors decided to retain both variables. However, researchers can also retain both variables based on the context of the study.

The authors also observed a similarly high correlation between "SI-awareness" and "SI-knowledge-learning" variables of the student intent scale. The authors decided to retain both awareness and knowledge building through learning variables as both do not have higher levels of conceptual overlaps (Peltier *et al.*, 2014). The study also highlights the higher correlation coefficients between the "word of mouth" variable and "visual identities of product or service" of the brand identity scale. However, the authors decided to retain both variables based on the VIF score. The authors also validated the VIF values of each of the variables mentioned above against respective scales; all the scores were below acceptable limits (Bagheri and Midi, 2009). Hence, the study concludes that there are no multicollinearity issues.

Convergent validity analysis of events experience scale shows that "cultural-affective engagement" variable, "experience of newness", "physical engagement-support", "physical engagement-safety-stability", "affective engagement-outcomes" variables had a high correlation of above 0.8. Hence, the authors decided to combine the "affective engagement" variable and the "physical engagement variable" (Sjanett de *et al.*, 2015). The VIF values were below 10; hence, researchers can decide based on the context whether to combine or retain the items. The study also highlights variables of student intent scale, "attitude-motivation" and "attitude due to migration opportunity to western city" had a negative relationship. It implies that students looking for education institutes for migration purposes have a different attitude than a student with a positive attitude and motivation for gaining knowledge (Ahmad *et al.*, 2016; Dao and Thorpe, 2015). Though both variables have a negative correlation, they are in the acceptable range of 0.3 and 0.79. As both variables cover vital aspects of the study, the authors have decided to retain both variables. Researchers can drop one of the items based on the context of the study. Thus, convergent validity was established for SL, BR, SP, SA, SS, CC, AS, CIS, SM, SI, SBL, PCK, BI, SEO, SSL and EE scales.

Discriminant validity

Discriminant validity should be established based on no correlation between most items outside the measures (Hair *et al.*,2008, 2009). By reading Tables 4 and 5, the right, left, top and bottom of the grey highlighted section; it was observed that most values were below 0.399 or on 0.3 or well below 0.3. Hence, the authors concluded that discriminant (divergent) validity is established. This study also reports that some brand loyalty items had a little higher correlation with a few items of perception. One of the items in the campus culture was removed, as it had a higher correlation with brand recognition and student loyalty. A similar approach was adopted wherever the correlation coefficient score was higher than 0.5 with items other than its measure. Authors also wanted to ensure CFA (Brown, 2015) is conducted to ensure discriminant validity is established; hence, factor analysis was conducted using IBMS SPSS with PCA using extraction method and rotation method being Promax with Kaiser normalization (Ritter *et al.*, 2001). Rotation converged within seven iterations with factor groupings.

Further to that component score, the coefficient matrix was analyzed to obtain the average correlation coefficient score. Table 6 demonstrates the factor groupings, average

Factor grouping name	Average loading	Variance extracted	Variance between all (%)	Correlation	Correlation square (%)
Student loyalty	0.848	0.720	64	0.247	6.1
Brand recognition	0.735	0.540		0.331	11.0
Perception	−0.582	0.339		0.048	0.2
Attitude	0.666	0.443		0.203	4.1
Student satisfaction	0.928	0.861		0.267	7.1
Campus culture	0.899	0.808		0.169	2.9
Academic stimulus	0.800	0.640		0.257	6.6
Campus infrastructure scalability	0.856	0.734		0.316	10.0
Selection mechanism	0.849	0.721		0.268	7.2
Student Intent	0.771	0.595		0.256	6.6
Student brand loyalty	0.737	0.543		0.330	10.9
Pedagogical content knowledge	0.694	0.482		0.251	6.3
Brand identity	0.737	0.543		0.256	6.6
Student expectation opportunity	0.744	0.553		0.251	6.3
Student satisfaction loyalty	0.941	0.886		0.257	6.6
Events experience	0.912	0.831		0.251	6.3

Table 6.
Discriminant validity scores

loading, variance extracted and correlation square scores (Audrain-Pontevia and Garnier, 2021). By analyzing Table 6, discriminant validity is established, as each variance extracted (based on average loading on factors) is higher than correlations and variance extracted between all factors (constructs or variables) is higher than correlation square score or percentage. Hence, it can be concluded that SL, BR, SP, SA, SS, CC, AS, CIS, SM, SI, SBL, PCK, BI, SEO, SSL and EE scales are valid.

Reliability

Reliability or composite reliability, also known as construct reliability, is used to measure the internal consistency of all scale items based on alpha Cronbach's (1951) model to establish reliability (Netemeyer, 2003). The authors extracted the standard loadings λ from the factor groupings. The latent variables are the constructs of the study, and indicator variables are the items-dimensions as in Table 7 (Audrain-Pontevia and Garnier, 2021). The measurement error (ME) 1- λ was calculated by calculating the square of standard loadings. The sum of ME and the square of the sum of ME are used to calculate composite reliability, as shown in Table 7. It can be observed by analyzing Table 7 that the amount of average variance extracted (AVE) of all are above 0.5 and also the total amount of true score variance relative to the total scale score variance (Brunner and Sub, 2005). Further analysis led the authors to state that the shared variance of observed variables indicates the latent construct (Fornell and Larcker, 1981). Cronbach alpha scores are all above 0.7, which is the preferred score for establishing the composite reliability of scales. Thus, the authors can say that SL, BR, SP, SA, SS, CC, AS, CIS, SM, SI, SBL, PCK, BI, SEO, SSL and EE scales are reliable.

Test of hypotheses

The data ($\beta = 0.99$, $t = 43.061$ and $p < 0.001$) shows that academic activities at campus significantly influence academic stimulus (Marcello *et al.*, 2020). Hence, hypothesis *H1* is proven. Similarly, data ($\beta = 0.96$, $t = 42.063$ and $p < 0.001$) proves hypothesis *H2* wherein outcome-based performance-oriented academic approach stimulated the academic environment on campus. The data ($\beta = 0.93$, $t = 22.161$ and $p < 0.001$) demonstrates that the lesser the gap between pedagogical content delivery and student expectation of academic

Table 7.
Composite reliability analysis

Indicator variables	Latent variables	Standardized loadings (λ)	Square of standard loadings (λ^2)	Measurement error (ME = 1−λ^2)	Sum of ME	Sum standard loadings (B)	Square-sum standard loadings (C)	C + ME	Composite reliability CR = C/(C + ME)	n	AVE = B/n	Cronbach's alpha
Infrastructure Facility Ability to Expand	Campus Infrastructure Scalability	0.946	0.89	0.11	0.99	3.01	9.03	10.03	0.90	4	0.75	0.904
Place City Migration	Campus Infrastructure Scalability	0.758	0.57	0.43								
GlobalOpportunityNewGen	CampusInfrastructureScalability	0.968	0.94	0.06								
DiversityHetrogenoussystems	CampusInfrastructureScalability	0.774	0.60	0.40								
SelectionPersonality	SelectMechanism	0.962	0.93	0.07	1.43	3.57	12.73	14.16	0.90	5	0.71	0.902
SelectionCognitiveAbility	SelectMechanism	0.983	0.97	0.03								
Selectionscholarlyperformance	SelectMechanism	0.745	0.56	0.44								
Selectionpsychometricevaluations	SelectMechanism	0.750	0.56	0.44								
Selectionbiographicaldata	SelectMechanism	0.747	0.56	0.44								
AcademicStimulusIntellectual	AcademicStimulus	0.674	0.45	0.55	2.20	2.80	7.86	10.06	0.78	5	0.56	0.863
AcademicPerformanceOutcomeOrientation	AcademicStimulus	0.749	0.56	0.44								
AcademicFreedomampOpportunity	AcademicStimulus	0.783	0.61	0.39								
AcademicsActivities	AcademicStimulus	0.758	0.57	0.43								
StudentLoyaltyPerceevedperformance	AcademicStimulus	0.775	0.60	0.40								
ExpectAttitutdeMotivation	Attitude	0.896	0.80	0.20	4.85	5.15	26.48	31.33	0.85	8	0.64	0.876
AttitudeMotivation	Attitude	0.571	0.33	0.67								
StudentLoyaltyPerceevedperformance	Attitude	0.758	0.57	0.43								
AcademicFreedomampOpportunity	Attitude	0.762	0.58	0.42								
AcademicFreedomampOpportunity	Attitude	0.903	0.82	0.18								
AttitudeOpportunityTech	Attitude	0.562	0.32	0.68								
Migrationtocity	Attitude	0.538	0.29	0.71								
PlacementCareerOpportunityAttitude	Attitude	0.556	0.31	0.69								
AttitudeStudentNoforce	Attitude	0.564	0.32	0.68								
SatisfactionAttitudeOpportunity	Attitude	0.902	0.81	0.19								
SupportCampusCulture	CampusCulture	0.936	0.88	0.12	1.44	5.56	30.87	32.32	0.96	7	0.79	0.959
InnovationCampusCulture	CampusCulture	0.928	0.86	0.14								
CultureValueEthics	CampusCulture	0.792	0.63	0.37								
ExperienceatCampusampCulture	CampusCulture	0.785	0.62	0.38								
SafetyampStabilityatcampus	CampusCulture	0.941	0.89	0.11								
CultureatCampusOverperiodoftimeTeam	CampusCulture	0.897	0.80	0.20								
OutcomesCampusCulture	CampusCulture	0.941	0.89	0.11								
PerceptionLearning	Perception	0.662	0.44	0.56	3.33	3.67	13.46	16.79	0.80	7	0.52	0.755
PerceptionMemory	Perception	0.659	0.43	0.57								
GapExpectationofperformance	Perception	0.666	0.44	0.56								
GapPerceivedexperienceofperformance	Perception	0.651	0.42	0.58								
AffectiveaspectsPerception	Perception	0.730	0.53	0.47								
PeceptionAttentionFIT	Perception	0.829	0.69	0.31								
PerceptionSituation	Perception	0.842	0.71	0.29								
AffectiveaspectsPerception	StudentSatisfaction	0.656	0.43	0.57	1.88	2.12	4.49	6.37	0.70	4	0.53	0.958
ExpectAttitutdeMotivation	StudentSatisfaction	0.643	0.41	0.59								

(*continued*)

Table 7.

Indicator variables	Latent variables	Standardized loadings (λ)	Square of standard loadings (λ^2)	Measurement error (ME = $1-\lambda^2$)	Sum of ME	Sum standard loadings (B)	Square-sum standard loadings (C)	C + ME	Composite reliability CR = C/(C + ME)	n	AVE = B/n	Cronbach's alpha
AffectiveaspectsAttitude	StudentSatisfaction	0.664	0.44	0.56								
GapExpectationofperformance	StudentSatisfaction	0.913	0.83	0.17								
StudentLoyaltyPerceevedperformance	StudentLoyalty	0.876	0.77	0.23	1.63	3.37	11.35	12.98	0.87	5	0.67	0.904
GlobalRecognition	StudentLoyalty	0.832	0.69	0.31								
AcademicPerformanceOutcomeOrientation	StudentLoyalty	0.686	0.47	0.53								
WoMPerceptionLearning	StudentLoyalty	0.762	0.58	0.42								
BrandTrust	StudentLoyalty	0.926	0.86	0.14								
BrandValue	BrandRecognition	0.922	0.85	0.15	2.10	2.90	8.39	10.49	0.80	5	0.58	0.745
BrandDominance	BrandRecognition	0.637	0.41	0.59								
BrandImage	BrandRecognition	0.656	0.43	0.57								
BrandAssociation	BrandRecognition	0.841	0.71	0.29								
BrandRecall	BrandRecognition	0.709	0.50	0.50								
BrandIdentityWOM	BrandIdentity	0.918	0.84	0.16	1.42	3.58	12.80	14.22	0.90	5	0.72	0.902
BrandIdentityVisualProductService	BrandIdentity	0.925	0.86	0.14								
BrandIdentityVerbalPerformance	BrandIdentity	0.783	0.61	0.39								
BrandIdentityVisual	BrandIdentity	0.793	0.63	0.37								
BrandIdentityVerbal	BrandIdentity	0.798	0.64	0.36								
EEPhysicalEngagementSupportCulture	EventsExperience	0.924	0.85	0.15	1.47	5.53	30.62	32.08	0.95	7	0.79	0.959
EEExperienceNewnessInnovation	EventsExperience	0.921	0.85	0.15								
EECongnitiveEngagement	EventsExperience	0.787	0.62	0.38								
EEExperienceNewness	EventsExperience	0.786	0.62	0.38								
EEPhysicalEngagementSafetyStabilityCampus	EventsExperience	0.943	0.89	0.11								
EECultureAffectiveEngagement	EventsExperience	0.903	0.82	0.18								
EEAffEngOutcomes	EventsExperience	0.943	0.89	0.11								
PCKTechKnowLearning	PedagogicalContentKnowledge	0.761	0.58	0.42	3.39	3.61	13.06	16.45	0.79	7	0.52	0.756
PCKCKMemory	PedagogicalContentKnowledge	0.65	0.42	0.58								
PCKPKGapExpectationperformance	PedagogicalContentKnowledge	0.765	0.59	0.41								
PCKPTTKPerceived	PedagogicalContentKnowledge	0.647	0.42	0.58								
PCKContentKnowledgeAffective	PedagogicalContentKnowledge	0.638	0.41	0.59								
PCKPTTKFIT	PedagogicalContentKnowledge	0.807	0.65	0.35								
PCKCriticalReflectionSituation	PedagogicalContentKnowledge	0.742	0.55	0.45								
SBLBrandValueTrust	StudentBrandLoyalty	0.766	0.59	0.41	2.37	2.63	6.93	9.30	0.75	5	0.53	0.744
BrandDominanceAPOOCommitment	StudentBrandLoyalty	0.761	0.58	0.42								
BrandImagePercievedValue	StudentBrandLoyalty	0.665	0.44	0.56								
BrandAssociationStudentLoyaltyPPStudentSatisfact	StudentBrandLoyalty	0.722	0.52	0.48								
SBLBrandRecallWOMPLRepeatPurchase	StudentBrandLoyalty	0.709	0.50	0.50								
SIAwareness	StudentIntent	0.914	0.84	0.16	2.78	4.22	17.78	20.56	0.86	7	0.60	0.751
SIKnowledgeLearning	StudentIntent	0.899	0.81	0.19								
SIAccomplishmentSatisfaction	StudentIntent	0.772	0.60	0.40								

(*continued*)

Table 7.

Indicator variables	Latent variables	Standardized loadings (λ)	Square of standard loadings (λ^2)	Measurement error (ME = $1-\lambda^2$)	Sum of ME	Sum standard loadings (B)	Square-sum standard loadings (C)	C + ME	Composite reliability CR = C/(C + ME)	n	AVE = B/n	Cronbach's alpha
SISocialAcceptance	StudentIntent	0.714	0.51	0.49								
SIValuesEthics	StudentIntent	0.782	0.61	0.39								
SIAttitudeMotivation	StudentIntent	0.670	0.45	0.55								
SIAttitudeOpportunityMigrationtocityPrfssinCarer	StudentIntent	0.638	0.41	0.59								
EffectiveEngagement	StudentExpectationOppor	0.769	0.59	0.41	3.42	3.58	12.79	16.21	0.79	7	0.51	0.756
BehavioralEngagement	StudentExpectationOppor	0.651	0.42	0.58								
StudentGapExpectationperformance	StudentExpectationOppor	0.659	0.43	0.57								
PerceivedValue	StudentExpectationOppor	0.745	0.56	0.44								
AffectiveEngagement	StudentExpectationOppor	0.647	0.42	0.58								
Opportunity	StudentExpectationOppor	0.781	0.61	0.39								
SocialEngagement	StudentExpectationOppor	0.737	0.54	0.46								
AffectiveaspectsPerceptionPercievedPerf	StudentSatisfactionLoyalty	0.681	0.46	0.54	1.85	2.15	4.61	6.47	0.71	4	0.54	0.958
ExpectAttitutdeMotivationTrust	StudentSatisfactionLoyalty	0.784	0.61	0.39								
AffectiveaspectsAttitudeWOMPL	StudentSatisfactionLoyalty	0.780	0.61	0.39								
GapExpectationofperformanceAPOO	StudentSatisfactionLoyalty	0.679	0.46	0.54								

performance, the greater the PCK will be on campus. Hence, hypothesis *H3* is satisfied. The data (β = 0.95, t = 59.663 and $p < 0.001$) shows that students' knowledge, skills and attitudes positively relate to the student selection mechanism. The greater the thrust on knowledge-oriented students, the better will be the selection mechanism; this is proven in hypothesis *H4*. Similarly, data (β = 0.97, t = 22.561 and $p < 0.001$) demonstrates that student perception changes based on the gap between expectation of performance and perceived experience. Hence, hypothesis *H5* is proven. Student intent is significantly influenced by accomplishments achieved at campus while gaining knowledge; the data (β = 0.96, t = 59.508 and $p < 0.001$) proves this; hence, hypothesis *H6* is accepted.

The data (β = 0.81, t = 36.110 and $p < 0.001$) indicates that student attitude is positively influenced by motivation, expectation, academic performance and opportunities at campus. Hence, hypothesis *H8* is proven. The data (β = 0.94, t = 62.354 and $p < 0.001$) highlights that scalability of academic infrastructure, wider geographic presence and superior administrative facilities positively influence campus infrastructure scalability. Hence, hypothesis *H9* is proven. The data (β = 0.99, t = 65.422 and $p < 0.001$) shows that values imbibed on campus, ethics among stakeholders, respect at the campus, safety, stability and experience at campus positively influence campus culture. Hence, hypothesis *H10* is proven. The data (β = 0.90, t = 88.149 and $p < 0.001$) highlights that students' emotional feelings at campus events positively influence events experienced at the campus, which proves hypothesis *H11*. The data (β = 0.97, t = 89.871 and $p < 0.001$) shows that the lesser the gap between perceived performance and experience at the campus, the greater the student satisfaction will be. Hence, hypothesis *H12* is satisfied. The data (β = 0.73, t = 39.521 and $p < 0.001$) shows that perceived service levels and superior outcomes based on experience at campus create positive WOM, enabling student loyalty. Hence, hypothesis *H13* is proven. The data (β = 0.99, t = 92.240 and $p < 0.001$) shows that the lesser the gap between expectation of performance and experience of knowledge-oriented events, the greater the student satisfaction loyalty. Hence, hypothesis *H14* is proven. Both data (β = 0.74, t = 23.634 and $p < 0.001$) and (β = 0.99, t = 21.538 and $p < 0.001$) show that a smaller gap between student expectation and institution performance enables student opportunities at the campus. Similarly, students' emotional feelings towards education brands are positively related to student expectation opportunities at the campus. Thus, *H15* and *H16* are proven.

The data (β = 0.96, t = 59.249 and $p < 0.001$) demonstrates that education service providers' visual and verbal identities power brand identity. Hence, hypothesis *H17* is proven. Both data (β = 0.72, t = 35.010 and $p < 0.001$) and (β = 0.34, t = 23.360 and $p < 0.001$) show that WOM among students positively influences student brand loyalty and student satisfaction with the perceived value of the brand is positively associated to student brand loyalty. Though the significance level is 0.34, the acceptable level in management sciences is above 0.3 (Hair *et al.*,2008, 2009, 2017). Hence, hypotheses *H18* and *H19* are proven. Both data (β = 0.84, t = 53.187 and $p < 0.001$) and (β = 0.38, t = 26.742 and $p < 0.001$) demonstrate that both brand recall and brand image positively influence global brand recognition. Hence, hypotheses *H20* and *H21* are proven. All the data highlighted in Table 8 shows hypotheses *H1* to *H21*. Hypothesis *H7* is partially proven because of the path coefficient being 0.19. However, the *t-values* are in the acceptable range; the p-value is 0.00; and the significance level is $p < 0.001$. Hence, the hypothesis stating opportunity to migrate to Western countries influences student intent is accepted (Ahmad *et al.*, 2016; Dao and Thorpe, 2015).

Discussions

Factors like academic stimulus, PCK, knowledge culture, academic environment and infrastructure scalability influence knowledge brand building. The study brings out

Table 8. Discriminant validity assessment

Hypothesis	Path coefficient (β)	t-value	p-value	Significance level	Results
H1	0.99	43.061	0.000	$p < 0.001$	Supported
H2	0.96	42.063	0.000	$p < 0.001$	Supported
H3	0.93	22.161	0.000	$p < 0.001$	Supported
H4	0.95	59.663	0.000	$p < 0.001$	Supported
H5	0.97	22.561	0.000	$p < 0.001$	Supported
H6	0.96	59.508	0.000	$p < 0.001$	Supported
H7	0.19	18.850	0.000	$p < 0.001$	Partially supported
H8	0.81	36.110	0.000	$p < 0.001$	Supported
H9	0.94	62.354	0.000	$p < 0.001$	Supported
H10	0.99	65.422	0.000	$p < 0.001$	Supported
H11	0.90	88.149	0.000	$p < 0.001$	Supported
H12	0.97	89.871	0.000	$p < 0.001$	Supported
H13	0.73	39.521	0.000	$p < 0.001$	Supported
H14	0.99	92.240	0.000	$p < 0.001$	Supported
H15	0.74	23.634	0.000	$p < 0.001$	Supported
H16	0.99	21.538	0.000	$p < 0.001$	Supported
H17	0.96	59.249	0.000	$p < 0.001$	Supported
H18	0.72	35.010	0.000	$p < 0.001$	Supported
H19	0.34	23.360	0.000	$p < 0.001$	Supported
H20	0.84	53.187	0.000	$p < 0.001$	Supported
H21	0.38	26.742	0.000	$p < 0.001$	Supported

student-related factors such as student intent, perception, attitude, expectation, satisfaction, loyalty and student brand loyalty that play a key role in global brand recognition. Campus infrastructure, selection mechanism, campus culture and event experience significantly influence student thought processes. Western education services brands focus on pedagogy, learning outcomes, student experience, campus service quality, technology-enabled tools and techniques and campus events (Swati, 2015) to achieve global brand recognition (Iqbal *et al.*, 2012). Thus, these aspects of the study answer research questions *RQ1* and *RQ2*.

Visual and verbal identities of the brand assist education services providers in defining campus events, resulting in student and alumni satisfaction (Mei *et al.*, 2014). Brand identity also impacts loyalty among students. Multi-dimensional knowledge systems, diverse events, campus culture and global standard campus infrastructure significantly influence students' experience of events, student satisfaction and loyalty resulting in global knowledge brand recognition. Awareness among the student community, brand identity, brand associations and brand experience propel student loyalty resulting in word-of-mouth-based global brand recognition (Aaker, 1991; Farris *et al.*, 2010). Student experience of events at campus power campus culture, thus impacting students' loyalty, resulting in global brand recognition of education services brands (Weerasinghe *et al.*, 2017; Ahmad, 2014). Student consumption experiences have driven the globalization of brands as students prefer western education services brands because of pedagogy, academic quality, campus infrastructure, global opportunities and migration to developed cities.

Corporate branding is the visual, verbal expression of the organization's unique positioning in the market place that propagates vision, core values and culture (Kavaratzis, 2007; Knox and Bickerton, 2003). Personal branding reflects people experience, skills, expertise, behavior and appearance reflecting the differentiated aspects (Gander, 2014). The study highlights the need for global knowledge brands so that branding goes beyond corporate branding, place branding and personal branding. Corporate, services, personal

and consumer brands cover narrow aspects of verbal, visual identity and behavioral expressions; however, the concept of knowledge brands covers wider aspects of the knowledge-driven industry. Global knowledge branding covers wider aspects of learner intent, behavior, attitude, perception, expectation and experience along with campus infrastructure, knowledge environment, culture and opportunity through knowledge-oriented mechanisms. Global knowledge brand focuses on knowledge-oriented aspects of a brand and branding. Thus, these aspects of the study answer the research question *RQ3*.

Conclusions

The education services sector is transforming because of various disruptions like globalization, technological advancement and the COVID-19-induced pandemic. This scenario calls for creative thinking in education administration. Educators have to expand their horizons to global markets. The purpose of this study is to provide necessary tools and techniques to researchers to globalize knowledge brands. The study addressed the need for scales in global education services brand building, knowledge branding, management services sector and education consulting. The measurement models for scales (SL, BR, SP, SA, SS, CC, AS, CIS, SM, SI, SBL, PCK, BI, SEO, SSL and EE) highlight that scales are unidimensional. An extensive literature review demonstrated that there are not enough scale development articles in the education branding area.

The author's theoretical contribution to the management sciences field is to introduce the concept of knowledge brands. The study brought out the various theoretical background for each construct resulting in the adaption of scales. Authors also adapted various dimensions and items from well-established research articles. This article proposed various hypotheses to validate the assumptions. PCA was conducted to obtain a pattern matrix. CFA was conducted to assess SEM-based reliability and validity of the scales. Indicator reliability was within the acceptable limit. Scale composite reliability was also achieved to ensure scales are reliable. Convergent and discriminant validity assessment resulted in average variance and Cronbach's alpha within acceptable limits, establishing that all scales are valid. Structured equation modeling was used to calculate discriminant validity scores to test the hypothesis. Through this article, the authors have provided a wide range of scales and dimensions needed to build an education brand or knowledge brand. The scales offered in the study assist brand managers in building knowledge brands by globalizing education to address the education services sector.

Limitations, future research directions and managerial applications

The empirical study focused on scale adaption for the education services sector with limited aspects of the knowledge management sector. However, researchers can expand the current research to wider aspects of knowledge branding. Future researchers can adopt or adapt all or part of scales for their country-specific research; similarly, the study does not cover aspects of Western economies. Researchers focusing on western countries can adapt the scales for their field of study to validate whether the scales proposed to apply to western countries. From a theoretical perspective, this study assists researchers' theory-building efforts with necessary aiding tools. The study covers wider aspects of branding in management sciences rather than limited aspects of brands' visual identities. The results aid education administrators with wide-ranging constructs to develop branding models. Educators and brand managers of higher education can adopt scientifically developed items to understand student behaviors towards education brands. The study also provides public policy-making bodies with necessary aspects of globalizing education and its impact on the local education market. Higher education is a beacon of hope for larger society during tough

times like COVID-19 induced pandemic. The study enables educators to spread knowledge while thinking beyond traditional boundaries.

References

Aaker, D.A. (1991), *Managing Brand Equity: Capitalizing on the Value of a Brand Name*, The Free Press, New York, NY.

Ackerman, P.L. and Maynard, G. (1994), "Typical intellectual engagement and personality, reply to rocklin", *Journal of Educational Psychology*, Vol. 86 No. 1, pp. 150-153.

Adeinat, I.M. and Abdulfatah, F.H. (2019), "Organizational culture and knowledge management processes: case study in a public university", *VINE Journal of Information and Knowledge Management Systems*, Vol. 49 No. 1.

Ahmad, S. (2014), "Evaluating student satisfaction of quality at international branch campuses", *Assessment and Evaluation in Higher Education*, Vol. 40 No. 4, pp. 488-507.

Ahmad, S.Z. and Buchanan, F.R. (2015), "Motivation factors in students decision to study at international branch campuses in Malaysia", *Studies in Higher Education*, Vol. 42 No. 4, pp. 651-668, doi: 10.1080/03075079.2015.1067604.

Ahmad, S.Z., Buchanan, F.R. and Norita, A. (2016), "Examination of students' selection criteria for international education", *International Journal of Educational Management*, Vol. 30 No. 6, pp.1088-1103.

Alan, S. and Gary, J. (2011), "Perception, attribution, and judgment of others", *Organizational Behaviour: Understanding and Managing Life at Work*, Vol. 7, pp. 1-20.

Alves, H. and Raposo, M. (2009), "The measurement of the construct satisfaction in higher education", *The Service Industries Journal*, Vol. 29 No. 2, pp. 203-218.

AMA (2017), "Definitions of marketing", American marketing association, available at: www.ama.org/the-definition-of-marketing-what-is-marketing/(accessed on 8th January 2020).

Anderson, L., Hibbert, P., Mason, K. and Rivers, C. (2018), "Management education in turbulent times", *Journal of Management Education*, pp. 1-18.

Anil, N.K. and Icli, G.E. (2013), "MBA students' satisfaction and loyalty: state vs private universities in Turkey", *Trziste/Market*, Vol. 2, pp. 177-198.

Audrain-Pontevia, A. and Garnier, I. (2021), "Are your customers grateful? How customer gratitude impacts loyalty programme effectiveness", *International Journal of Retail and Distribution Management*, Vol. 49 No. 12, pp. 1660-1679.

Azmi, F.T. and Mushtaq, S. (2013), "Assessing the role of internal and external agents in HRM: scale development and validation", *South Asian Journal of Management*, Vol. 20, p. 3.

Bagheri, A. and Midi, H. (2009), "Robust estimations as a remedy for multicollinearity caused by multiple high leverage points", *Journal of Mathematics and Statistics*, Vol. 5 No. 4, pp. 311-321.

Berry, L.L. and Parasuraman, A. (1991), *Marketing Services: Competing through Quality*, Free Press, New York, NY.

Bhamani, S. (2012), "Development of the student university satisfaction scale: reliability and validity", *Interdisciplinary Journal of Contemporary Research in Business*, Vol. 4, pp. 332-341.

Bodo, B.S. (2020), "Why business schools need radical innovations: drivers and development trajectories", *Journal of Marketing Education*, Vol. 42 No. 2, pp. 93-107.

Bowden, J.L.H. (2011), "Engaging the student as a customer: a relationship marketing approach", *Marketing Education Review*, Vol. 21 No. 3, pp. 211-228.

Bowden, J.L.H. and D'Alessandro, S. (2011), "Co-creating value in higher education: the role of interactive classroom response technologies", *Asian Social Science*, Vol. 7 No. 11, p. 35.

Brown, T.A. (2015), *Confirmatory Factor Analysis for Applied Research*, 2nd ed., Guilford publications, New York, NY.

Brunner, M. and Sub, H. (2005), "Analyzing the reliability of multi-dimensional measures: an example from intelligence research".

Bulent, T.B. (2015), "The positive and negative experience scale adaptation for Turkish University Students", *European Scientific Journal, ESJ*, Vol. 11 No. 14.

Bussing, A., Bissels, T. and Fuchs, V. (1999), "A dynamic model of work satisfaction: qualitative approaches", *Human Relations*, Vol. 52 No. 8, pp. 999-1028, doi: 10.1023/A:1016979523846.

Chadwick, K. and Ward, J. (1987), "Determinants of consumer satisfaction with education: implications for college and university administrators", *College and University*, Vol. 62 No. 3, pp. 236-246.

Chalmers, A.F. (1976), *What Is This Thing Called Science*?, Queensland University Press and Open University Press.

Chamorro-Premuzic, T., Furnham, A. and Ackerman, P.L. (2006), "Ability and personality correlates of general knowledge", *Personality and Individual Differences*, Vol. 41 No. 3, pp. 419-429.

Chapleo, C. (2015), "An exploration of branding approaches in UK universities", *International Journal of Nonprofit and Voluntary Sector Marketing*, Vol. 20 No. 1, pp. 1-11.

Chaudhuri, A. and Holbrook, M.B. (2001), "The chain of effects from brand trust and brand affect to brand performance: the role of brand loyalty", *Journal of Marketing*, Vol. 65 No. 2, pp. 81-93.

Chen, C. and Zimitat, C. (2006), "Understanding Taiwanese students' decision-making factors regarding international higher education", *International Journal of Educational Management*, Vol. 20 No. 2, pp. 91-100.

Cheng, E.C., K. (2017), "Knowledge management strategies for capitalizing on school knowledge", *VINE Journal of Information and Knowledge Management Systems*, Vol. 47 No. 1, pp. 94-109.

Chin, W.W. (2010), "Bootstrap cross-validation indices for PLS path model assessment", *Handbook of Partial Least Squares*, Springer, Berlin, Heidelberg, pp. 83-97.

Chinta, R., Mansureh, K. and Janelle, E. (2016), "A conceptual framework for evaluating higher education institutions", *International Journal of Educational Management*, Vol. 30, p. 6.

Chin, W.W., Thatcher, J.B. and Wright, R.T. (2012), "Assessing common method bias: problems with the ULMC technique", *MIS Quarterly*, Vol. 36 No. 3, pp. 1003-1019, doi: 10.2307/41703491.

Churchill, G.A. (1979), "A paradigm for developing better measures of marketing constructs", *Journal of Marketing Research*, Vol. 16 No. 1, pp. 64-73.

Cova, B. (1997), "Continuity and consumption: towards a detailing of the linking value of product or services", *European Journal of Marketing*, Vol. 31 Nos 3/4, pp. 297-316.

Crispen, C. and Bulelwa, M. (2017), "Organizational culture and job satisfaction among academic professionals at a South African university of technology", *Problems and Perspectives in Management*, Vol. 15 No. 2, pp. 148-161.

Cronbach, L.J. (1951), "Coefficient alpha and the internal structure of tests", *Psychometrika*, Vol. 16 No. 3, pp. 297-334, doi: 10.1007/bf02310555.

Cronin, J.J. and Taylor, S.A. (1992), "Measuring service quality: a re-examination and extension", *Journal of Marketing*, Vol. 56 No. 3, pp. 55-68.

Cronin, J.J. and Taylor, S.A. (1994), "SERVPERF versus SERVQUAL: reconciling performance based and perception based – minus – expectation measurements of service quality", *Journal of Marketing*, Vol. 58, pp. 125-131.

Dabic, M., Vlačić, B., Paul, J., Dana, L.P., Sahasranamam, S. and Glinka, B. (2020), "Immigrant entrepreneurship: a review and research agenda", *Journal of Business Research*, Vol. 113, pp. 25-38, doi: 10.1016/j.jbusres.2020.03.013.

Dao, M.T.N. and Thorpe, A. (2015), "What factors influence Vietnamese students' choice of University?", *International Journal of Educational Management*, Vol. 29 No. 5, pp. 666-681.

Darren, A.C. (2010), "Service brand identity: definition, measurement, dimensionality and influence on brand performance", e-theses repository, University of Birmingham Research Archive.

Drewes, T. and Michael, C. (2006), "How do students choose university, an analysis of applications to universities in Ontario", *Research in Higher Education*, Vol. 47 No. 7, pp. 781-800.

Ehigie, B.Q. and Taylor, M. (2009), "Managing students' loyalty to school after graduation through relationship marketing", *The TQM Journal*, Vol. 21 No. 5, pp. 502-516.

Fabio, V., de, M.B., Antonio, C.G., Silvia, H.C., Ramos, V., de, C., Felipe, Z. and Mateus, C.P. (2012), "Student loyalty based on relationship quality: an analysis on higher education institutions", *Brazilian Business Review (BBR), Vitória, v*, Vol. 9 No. 2, pp. 26-46.

Farhad, K. and Abolfazl, R. (2017), "Developing a scale to measure content knowledge and pedagogy content knowledge of in-service elementary teachers on fractions", *Int J of Sci and Math Educ*, Vol. 16 No. 4, pp. 737-757.

Farris, P.W., Neil, T., Bendle, P.E.P. and David, J.R. (2010), *Marketing Metrics: The Definitive Guide to Measuring Marketing Performance*, Pearson Education, Upper Saddle River, NJ.

Fattah, A., Mohamed, A., Bashir, M.I.A. and Al Alawi, A.M.M. (2020), "Determinants of knowledge-sharing behaviour among students at higher educational institutions in Oman: a planned behaviour theoretical perspective of knowledge sharing", *Global Knowledge, Memory and Communication*, Vol. 70 Nos 6/7, doi: 10.1108/GKMC-07-2020-0104.

Fazio, R.H. (1986), "How do attitudes guide behaviour?", In Sorrentinom, R.M. and Higgins, E.T. (Eds), *The Handbook of Motivation and Cognition: Foundations of Social Behavior*, pp. 204-243.

Fazio, R.H., and Petty, E.R. (2007), *Attitudes Their Structure, Function and Consequences*, Psychology Press, ISBN 9781841690100.

Fishbein, M. (1967), "A behavior theory approach to the relations between beliefs about an object and the attitude toward the object", *Readings in Attitude Theory and Measurement*, John Wiley and Sons, New York, NY, pp. 389-400.

Fishbein, M. and Ajzen, I. (1975), *Belief, Attitude, Intention and Behavior*, Addison-Wesley, Boston.

Fishbein, M. and Ajzen, I. (1980), "Predicting and understanding consumer behavior: attitude-behavior correspondence", in Ajzen, I. and Fishbein, M. (Eds), *Understanding Attitudes and Predicting Social Behavior*, Prentice Hall, Englewood Cliffs, NJ, pp. 148-172.

Fornell, C. and Larcker, D. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50.

Gander, M. (2014), "Managing your personal brand", *Perspectives: Policy and Practice in Higher Education*, Vol. 18 No. 3, pp. 99-102, doi: 10.1080/13603108.2014.913538.

Gatfield, T., Barker, M. and Graham, P. (1999), "Measuring communication impact for university advertising materials", *Corporate Communications: An International Journal*, Vol. 4 No. 2, pp. 73-79.

Gatfield, T. and Chen, C. (2006), "Measuring student choice criteria using the theory of planned behaviour: the case of Taiwan, Australia, UK, and USA", *Journal of Marketing for Higher Education*, Vol. 16 No. 1, pp. 77-95, doi: 10.1300/J050v16n01_04.

Goff, M. and Ackerman, P.L. (1992), "Personality-intelligence relations: assessment of typical intellectual engagement", *Journal of Educational Psychology*, Vol. 84 No. 4, pp. 537-552.

Gregory, R. (1987), "Perception in Gregory", *Zangwill*, Vol. 352, pp. 598-601.

Gregory, R.L. and Zangwill, O.L. (1963), "The origin of the autokinetic effect", *Quart J Exp Psychol*, Vol. 15.

Gülsen, Ö., Işıl, A. and Kaine, G. (2020), "Developing the scale on discipline expectations of students: a validity and reliability study", *International Journal of Evaluation and Research in Education*, Vol. 9 No. 4, pp. 840-846.

Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. and Tatham, R.L. (2008, 2009), "Multivariate data analysis", *Sixth Edition, Seventh Edition*, Pearson Education, London.

Hair, J.F., Jr, Matthews, L.M., Matthews, R.L. and Sarstedt, M. (2017), "PLS-SEM or CB-SEM: updated guidelines on which method to use", *International Journal of Multivariate Data Analysis*, Vol. 1 No. 2, pp. 107-123.

Hair, J.F., Risher, J.J., Sarstedt, M. and Ringle, C.M. (2019), "When to use and how to report the results of PLS-SEM", *European Business Review*, Vol. 31 No. 1.

Hamid, K., Mohammad, R., Esmaili, G. and Mohammad, R.S. (2017), "Knowledge management infrastructures and organizational intelligence in Iranian research centers", *Data Technologies and Applications*, Vol. 52 No. 1, pp. 2-15.

Hampton, G. (1993), "Gap analysis of college student satisfaction as a measure of professional service quality", *Journal of Professional Services Marketing*, Vol. 9 No. 1, pp. 115-128.

Hasan, R. and Rosli, Y. (2020), "Learning university: relationship among UNISEL vision intent and learning processes with job satisfaction", *Journal of Asian Vocational Education and Training*, Vol. 13, pp. 53-73.

Helgesen, O. and Nesset, E. (2007), "What accounts for students' loyalty? Some field study evidence", *International Journal of Educational Management*, Vol. 21 No. 2, pp. 126-143.

Hennig-Thurau, T., Langer, M.F. and Hansen, U. (2001), "modeling and managing student loyalty: an approach based on the concepts of relationship quality", *Journal of Service Research*, Vol. 3 No. 4, pp. 331-344.

Hesham, E. and Mostafa, A. (2005), *Advanced Computer Architecture and Parallel Processing*, John Wiley and Sons, Hoboken, p. 66.

Hsia, H.J. (1988), *Mass Communications Research Methods: A Step-by-Step Approach*, Routledge, London.

Ilie, C., Fornes, G., Cardoza, G. and Quintana, J.C.M. (2020), "Development of business schools in emerging markets: learning through adoption and adaptation", *Sustainability*, Vol. 12, p. 8448, doi: 10.3390/su12208448.

Iqbal, M.J., Rasli, A.B. and Hassan, I. (2012), "University branding: a myth or a reality", *Pakistan Journal of Commerce and Social Sciences*, Vol. 6 No. 1, pp. 168-184.

James, M.A. (2008), "The orientation evaluation matrix (OEM): are students customers or products?", *Marketing Education Review*, Vol. 18 No. 3.

Jiani, Y. (2017), "A comprehensive analysis of student loyalty and its determinants in China's higher education sector", Lincoln University Thesis.

Jillapalli, R.K. and Wilcox, J.B. (2010), "Professor brand advocacy: do brand relationships matter?", *Journal of Marketing Education*, Vol. 32 No. 3, pp. 328-340.

Jurse, M. (2011), "A market perspective of aligning university, business education in transition countries with the emerging globalisation of higher education", *Transformations in Business and Economics*, Vol. 10 No. 2(23), pp. 104-124.

Kapferer, J.N. (1992), *Strategic Brand Management*, Kogan Page, London.

Kavaratzis, M. (2007), "Cities and their brands: lessons from corporate branding", *Place Branding and Public Diplomacy*, Vol. 5 No. 1, pp. 26-37, doi: 10.1057/pb.2008.3.

Kessler, S. (2003), *Customer Satisfaction Toolkit for ISO 9001:2000*, ASQ Quality Press, Milwaukee, Wis.

Khaldoon, J., Samson, O., Fadiya, A. and Hamzah, E.M.A. (2018), "Knowledge management system content quality, perceived usefulness, use for sharing and retrieval: a flock leadership application", *VINE Journal of Information and Knowledge Management Systems*.

Kirkpatrick, D.L. and Kirkpatrick, J.D. (1994), *Evaluating Training Programs*, Berrett-Koehler Publishers, Oakland.

Knox, S. and Bickerton, D. (2003). "The six conventions of corporate branding", *European Journal of Marketing*, Vol. 37, Nos 7/8, pp. 998-1016.

Koh, J.H.L., Chai, C.S. and Tsai, C.C. (2010), "Examining the technological pedagogical content knowledge of Singapore pre-service teachers with a large-scale survey", *Journal of Computer Assisted Learning*, Vol. 26 No. 6, pp. 563-573.

Kotler, P. (1979), "Strategies for introducing marketing into non-profit organization", *Journal of Marketing*, Vol. 43 No. 1, pp. 37-44.

Kushwaha, P. and Rao, M.K. (2015), "Integrative role of KM infrastructure and KM strategy to enhance individual competence: conceptualizing knowledge process enablement", *VINE Journal of Information and Knowledge Management Systems*, Vol. 45 No. 3, pp. 376-396.

Kuvykaite, R. and Mascinskiene, J. (2010), "Transformation of a national brand into an international brand", *Inzinerine Ekonomika-Engineering Economics*, Vol. 21 No. 4, pp. 446-455.

Lau, G.T. and Lee, S.H. (1999), "Consumers trust in a brand and the link to brand loyalty", *Journal of Market-Focused Management*, Vol. 4 No. 4, pp. 341-370.

Likert, R. (1932), *A Technique for the Measurement of Attitudes*, Columbia University Press, New York, NY.

Lim, S.Y. and Chapman, E. (2015), "Adapting the academic motivation scale for use in pre-tertiary mathematics classrooms", *Mathematics Education Research Journal*, Vol. 27 No. 3, pp. 331-357, doi: 10.1007/s13394-014-0140-9.

Lindquist, J.D., Vida, I., Plank, R.E. and Fairhurst, A. (2001), "The modified Cetscale: validity tests in the Czech Republic, Hungary, and Poland", *International Business Review*, Vol. 10 No. 5, pp. 505-551.

Liu, W.L., Lee, Y.S. and Hung, L.M. (2016), "The interrelationships among service quality, customer satisfaction, and customer loyalty: examination of the fast-food industry", *Journal of Foodservice Business Research*, pp. 1-17, doi:10.1080/15378020.2016.1201644.

Marcello, C., Helena, A. and Leonor, T. (2020), "Individual factors affecting attitude toward knowledge sharing: an empirical study on a higher education institution", *VINE Journal of Information and Knowledge Management Systems*. Vol. 52 No. 1, pp. 1-17.

Maryam, A. and Dorothy, E.L. (2001), "Review: knowledge management and knowledge management systems: conceptual foundations and research issues", *MIS Quarterly*, Vol. 25 No. 1, pp. 107-136, doi: 10.2307/3250961.

Mei, T.G., Chai, L.G. and Wong, D. (2014), "Constructing a brand identity scale for higher education institutions", *Journal of Marketing for Higher Education*, Vol. 24 No. 1, pp. 59-74, doi: 10.1080/08841241.2014.906017.

Muncy, J.A. (2008), "The orientation evaluation matrix (OEM): are students customers or products?", *Marketing Education Review*, Vol. 18 No. 3, p. 3.

Muth, J.F. (1961), "Rational expectations and the theory of price movements", *Econometrica*, Vol. 29 No. 3, pp. 315-335.

Neal, S. and Chan, D. (1998), *Personnel Selection: A Theoretical Approach, Foundation for Organizational Science*, Sage publication series, London.

Netemeyer, R. (2003), *Scaling Procedures: Issues and Applications*, Sage, London.

Nguyen, N. and LeBlanc, G. (2001), "Image and reputation of higher education institutions in students' retention decisions", *International Journal of Educational Management*, Vol. 15 No. 6, pp. 303-311.

Ohmae, K. (1982), *The Mind of the Strategist: The Art of Japanese Management*, McGraw-Hill.

O'Reilly, C.A., Chatman, J. and Caldwell, D.F. (1991), "People and organizational culture: a profile comparison approach to assessing person-organization fit", *Academy of Management Journal*, Vol. 34 No. 3, pp. 487-516.

Oliver, R. (1993), "Cognitive, affective, and attribute bases of the satisfaction response", *Journal of Consumer Research*, Vol. 20 No. 3, pp. 418-430.

Oppenheim, A.N. (1966, 1992), *Questionnaire Design and Attitude Measurement*, Basic Books, New York, NY.

Paul, J. and Criado, A.R. (2020), "The art of writing literature review: What do we know and what do we need to know? ", *International Business Review*, Vol. 29 No. 4, p. 101717.

Parasuraman, A., Zeithaml, V. and Berry, L. (1988), "SERVQUAL: a multiple-item scale for measuring customer perceptions of service quality", *Journal of Retailing*, Vol. 9, pp. 12-40.

Peltier, J.W., Shannon, C., Nadia, P., James, C. and Rob, S. (2014), "A parsimonious instrument for predicting students' intent to pursue a sales career: scale development and validation", *Journal of Marketing Education*, Vol. 36 No. 1, pp. 62-74.

Pringle, J. (2014), "Faculty perception of branding: a multi-case qualitative study".

QS Global MBA Rankings (2019), available at: www.qs.com/rankings/ (accessed 20 December 2020).

Radmila, B., Milovanović, B.J., Stojanović, I.R. and Ćirković, M. (2020), "Students' attitudes towards the internationalization of higher education", *Teaching Innovations*, Vol. 33 No. 2, pp. 86-96.

Rahman, M.S., Abdel, F., Fadi, A.M., Hassan, H. and Haque, T. (2020), "An integrated understanding of academics knowledge sharing behaviour", *Global Knowledge, Memory and Communication*, Vol. 70 Nos 1/2, pp. 1-24, doi: 10.1108/gkmc-10-2019-0122.

Rajani, J., Sangeeta, S. and Sinha, G. (2013), "Developing a scale to measure students' perception of service quality in the Indian context", *The TQM Journal*, Vol. 25 No. 3, pp. 276-294.

Reichheld, F. (1996), "The loyalty effect",

Riccardo, R., Lamberto, Z., Massimiliano, M.P. and Cristiano, C. (2017), "Exploring the antecedents of brand loyalty and electronic word of mouth in social-media-based brand communities: do gender differences matter?", *Journal of Global Marketing*, Vol. 30 No. 3, pp. 147-160, doi: 10.1080/08911762.2017.1306899.

Richard, S. (2002), "A student's initial perception of value when selecting a college: an application of value-added", *Quality Assurance in Education*, Vol. 10 No. 1, pp. 37-39.

Ritter, J.M., Boone, W.J. and Rubba, P.A. (2001), "Development of an instrument to assess prospective elementary teacher self-efficacy beliefs about equitable science teaching and learning", *Journal of Science Teacher Education*, Vol. 12 No. 3, pp. 175-198.

Rojas-Mendez, J.I., Vasquez-Parraga, A.Z., Kara, A. and Cerda-Urrutia, A. (2009), "Determinants of student loyalty in higher education: a tested relationship approach in Latin America", *Latin American Business Review*, Vol. 10 No. 1, pp. 21-39.

Ruchi, G., Zillur, R. and Qureshi, M.N. (2014), "Measuring customer experience in banks: scale development and validation", *Journal of Modelling in Management*, Vol. 9 No. 1, pp. 87-117.

Rudd, B., Djafarova, E. and Waring, T. (2012), "Chinese students' decision-making process: a case of a business school in the UK", *The International Journal of Management Education*, Vol. 10 No. 2, pp. 129-138.

Ruggeri, G., Orsi, L. and Corsi, S. (2019), "A bibliometric analysis of the scientific literature on fairtrade labelling", *International Journal of Consumer Studies*, Vol. 43 No. 2, pp. 134-152, 10.1111/ijcs.12492.

Schacter, D.L., Gilbert, D.T. and Wegner, D.M. (2011), *Psychology*, 2nd ed., Worth, New York, NY.

Senaviratna, N. and Cooray, T. (2019), "Diagnosing multicollinearity of logistic regression model", *Asian Journal of Probability and Statistics*, Vol. 5 No. 2, pp. 1-9.

Seyda, G. (2017), "Development of an attitude scale to measure the undergraduate students' attitudes towards nanobiotechnology", *Journal of Science Education and Technology*, Vol. 26 No. 5, p. 533.

Shulman, L.S. (1986), "Those who understand: knowledge growth in teaching", *Educational Researcher*, Vol. 15 No. 2, pp. 4-14.

Singleton, A.F. and Chen, S. (1996), "The medical student expectation scale (MSES): a device for measuring students' expectations of each other's values and behaviours", *Medical Education*, Vol. 30 No. 3, pp. 187-194.

Sjanett de, G., Greg, R. and Vera, T. (2015), "Conceptualization and operationalization of event and festival experiences: creation of an event experience scale", *The Scandinavian Journal of Hospitality and Tourism*, Vol. 16 No. 3, pp. 274-296.

Stumm, V., Hell, S. and Chamorro-Premuzic, T.B. (2011), "The hungry mind: intellectual curiosity is the third pillar of academic performance", *Perspectives on Psychological Science*, Vol. 6 No. 6, pp. 574-588.

Swati, S. (2015), "Brand positioning of management institutes – a study of national capital region", *Amity Business Review*, Vol. 16 No. 1.

Teng, S.-Y. (1943), "Chinese influence on the Western examination system", *Harvard Journal of Asiatic Studies*, Vol. 7 No. 4, pp. 267-312.

Thurstone, L.L. (1928), "Attitudes can be measured", *American Journal of Sociology*, Vol. 33 No. 4, pp. 529-554.

Tina, V. (2016), "An empirical investigation of brand equity: a cross-country validation analysis", *Journal of Global Marketing*, Vol. 29 No. 5, pp. 251-265, doi: 10.1080/08911762.2016.1194508.

Tugsal, T. (2020), "Translation, adaptation, validity and reliability of the sense-making scale: a cross-cultural evidence from India, Malaysia, Romania and Turkey", *Electronic Journal of Social Sciences*, Vol. 19, p. 76.

US Department of Labor Employment and Training Administration (1999), "Labor Employment and Training Administration Report", available at: www.doleta.gov (accessed 20th December 2019).

Unda, L.X. and Ramos, V. (2016), "Expectancy theory applied to an educational context: a longitudinal study applied in postgraduate courses", *Conference: International Conference on Education and New Learning Technologies*.

Valmohammadi, C. and Ahmadi, M. (2015), "The impact of knowledge management practices on organizational performance", *Journal of Enterprise Information Management*, Vol. 28 No. 1, pp. 131-159, doi: 10.1108/JEIM-09-2013-0066.

Von, S., Sophie, H.B. and Chamorro-Premuzic, T. (2011), "The hungry mind: intellectual curiosity is the third pillar of academic performance", *Perspectives on Psychological Science*, Vol. 6 No. 6, pp. 574-588, doi: 10.1177/1745691611421204.

Weerasinghe, I.M., Salinda, F. and Lalitha, R.S. (2017), "Students' satisfaction in higher education literature review", *American Journal of Educational Research. 2017*, Vol. 5 No. 5, pp. 533-539.

Wong, J. (2010), "Using a brand identity index for relevancy in teaching collegiate marketing", *The Journal of Applied Business and Economics*, Vol. 10 No. 5, p. 52.

Woo, S.E., Harms, P.D. and Kuncel, N.R. (2007), "Integrating personality and intelligence: typical intellectual engagement and need for cognition", *Personality and Individual Differences*, Vol. 43 No. 6, pp. 1635-1639.

Ya-Hsin, H., Ya-Hei, H., Suh-Yueh, C. and Wenchang, F. (2014), "Is brand awareness a marketing placebo?", *International Journal of Business and Information*, Vol. 9 No. 1, pp. 29-60.

Zeithaml, V.A., Berry, L.L. and Parasuraman, A. (1996), "The behavioral consequences of service quality", *Journal of Marketing*, Vol. 60 No. 2, pp. 31-46.

Further reading

Paul, J. and Criado, A.R. (2020), "The art of writing literature review: what do we know and what do we need to know?", *International Business Review*, Vol. 29 No. 4, p. 101717.

About the authors

Achutha Jois is currently a Research Scholar (Executive Fellow) at Indian Institute of Management Kashipur (IIM K), India, he has done his postgraduation from Indian Institute of Management Kozhikode. He has master's degree in VLSI system design and Gold Medalist from Coventry University UK and Bachelors in Engineering from Bangalore University. He started as an IT entrepreneur in 1995, has three successful entrepreneurial exits till now. He has more than two decades of experience in Teaching, Education Administration, Strategy, IT, Software, Marketing, Branding, Technology, Business Management and teaching. He has couple of patents in his name along with various white papers and industry research reports. He currently runs a software company, a Business School and is also professor in Marketing and Branding for more than a decade in various global business schools. His research interests are consumer perception, global branding, education branding, strategy and implementation. Achutha Jois is the corresponding author and can be contacted at: achutha.efpm2016@iimkashipur.ac.in

Dr Somnath Chakrabarti is currently serving as an Associate Professor at Indian Institute of Management Kashipur (IIM K). He has teaching and research interests in consumer behavior, marketing of services, international marketing and B2B marketing. He has done Bachelor of Engineering from REC (now NIT), Durgapur, MBA from College of Business, Oklahoma State University, Stillwater, USA (AACSB accredited College of Business in public research University in the USA) and PhD from Department of Management Studies, Indian Institute of Technology Delhi (IIT Delhi). He has published in leading academic journals like *Decision* (IIM Calcutta), *IIMB Management Review* (IIM Bangalore), *Metamorphosis* (IIM Lucknow), *International Journal of Advertising*, the UK (published by World Advertising Research Centre WARC), *International Journal of Consumer Studies*, the UK (published by Wiley Blackwell) and *British Food Journal*, the UK (published by Emerald), *International Journal of Bank Marketing* and among other journals. He has published various case studies in Ivey publishing, Canada, Emerald emerging market case studies. He has attended global colloquium in case writing at Harvard Business School Boston and Chennai campuses.