

Ratna Sari Dewi¹
Melinda Roza
Muhamad Taridi
Alekk Alek
Fahrurrozi

NEXUS BETWEEN QUALITY OF EDUCATION, STUDENT SATISFACTION AND STUDENT LOYALTY: THE CASE OF DEPARTMENT OF ENGLISH TEACHER EDUCATION AT UNIVERSITAS ISLAM NEGERI IN INDONESIA

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Abstract: *The objective of the study is to examine the effect of quality of education on the students' satisfaction and loyalty in the universities of Indonesia. The study has collected 384 responses from the students of Indonesian HEIs using five-point Likert scale self-administered questionnaire. The sample was gathered using nonprobability convenience sampling technique and analysis was based on PLS-SEM using SmartPLS version 3.2.8. The results have shown that quality of education has significant effect on student satisfaction while student satisfaction has significant effect on student loyalty. From a practical point of view, as a cumulative body work arises on the quality of educational service, but this study's conceptual model provides greater acknowledgement if such improvement of image and ranking are addressed by the institution of tertiary level. A strong understanding of the relationship between program quality, industrial link, student satisfaction, image and service quality that allows to make better policy and strategic decisions, as well as finding ways to be strengthened by organization management. This makes it possible to recruit high-quality foreign students in the world's leading universities for academic research and development.*

Keywords: *Quality of education; Student satisfaction; Student loyalty; Higher Education Institutes; Indonesia.*

1. Introduction

One of the preconditions for the student's social psychological and academic growth is getting safe and comfortable at school. In their schools, that prepare individual for their well-groomed schooling, the implementation of this liability is linked with different factors (Cenkseven-Onder & Sari, 2009). Currently, the achievement of the school target is also debated. Along with these debates, Turkey is trying to create the

standardized elements of the education system to strengthen its current international presence and is introducing numerous development programs for that purpose (Akgün, Yılmaz, & Seferoğlu, 2011; Gelen & Beyazıt, 2007; Kurt, Kuzu, Dursun, Güllüpinar, & Gültekin, 2013). Though there are some efforts the countries will move towards a big step towards enhancing the education standard for the international standard of education index. (Akyüz, 2014; Erberber, 2010; Sezer, Güner, & Ispir, 2012;

¹ Corresponding author: Ratna Sari Dewi
Email: ratna@uinjkt.ac.id

Toker, 2010; YILDIRIM, DEMİRTAŞLI, & AKBAŞ, 2012). The quality concept in education is similar to its quantity. Quality is the name of different features that are effective to something, based on the satisfaction level with clear needs (Y. C. Cheng & Cheung, 2004). The researchers of first-generation who took this knowledge also introduced quality concepts as the best educational feature. Education quality is the schooling innovation that involves how teaching is organized; its planning, the content; quality of performance; and the results achieved (Alawamleh, Bdah, & Alahmad, 2013; Burbules, 2004; Chester, Tracy, Earp, & Chauhan, 2002; Chin & Chye, 1992; UNESCO, 2004; Yusof & Ghouri, 2013).

In the past, service quality and associated business concepts, including customer satisfaction and loyalty, were seldom utilized in the higher education industry. Mostly they were taken as the informal modules that contributed with some features for the schools but did not provide a survival prerequisite. The past few years have shown in the higher education field (Chong & Ahmed, 2015; Dennis, Papagiannidis, Alamanos, & Bourlakis, 2016). In the period when there is a stable market for universities for the facilities have gone. Institutes traditionally only open to social insiders now they must make students' selection and increase their share in the market. Although some universities still accept students of their choosing, the others will deal with a variety of choices in a competitive market (Latif, Latif, Farooq Sahibzada, & Ullah, 2019). Post-secondary internationalization Harvey and Williams (2010); Sultan and Wong (2010), private university development Halai (2013), and a decline in public universities' funding are among the factors that lead to such a competitive climate (Quinn, Lemay, Larsen, & Johnson, 2009). These also strengthened the idea of privatization of higher education plus a benefit for the general public, followed by a general rise in tuition fees (East, Stokes, &

Walker, 2014; Marginson, 2011; Nixon, Scullion, & Hearn, 2018).

'When there is a great competition in the system of higher education, topic like the service quality, customer retention, organization identification, and student's engagement that were not present in traditional university strategies soon became crucial ingredients for their sustainability (Dennis et al., 2016; Manatos, Sarrico, & Rosa, 2017; Psomas & Antony, 2017). Research on this subject, primarily inspired by marketing literature, has generally focused on the quality of service to higher education and other topics like the satisfaction of students, image and value perceived (Alves & Raposo, 2007; Bassi, 2019; Brown & Mazzarol, 2009; Chong & Ahmed, 2012; Latif et al., 2019; Pham & Lai, 2016). Yet adapting quality and management principles to the education at a higher level is in the period of infancy, that brings gaps in knowledge, the service level in higher education encompasses both dimensions, which are practical and transformational (Teeroovengadam, Kamalanabhan, & Seebaluck, 2016). The practical dimension of quality of service is the process of implementation Brady and Cronin Jr (2001), the technological element of service quality is transformational quality is developed in education by (Harvey & Green, 1993; Teeroovengadam et al., 2016). Given this, the first problem of the current studies is that they overlooked the transformational service quality concept in most surveys on the assessment of service quality, the satisfaction of studies, and the models of loyalty educational centers. Learner growth through teaching-learning is a major priority of educational institutions. (Leibowitz & Bozalek, 2015). While the universities' market-oriented approaches yield several good results like profit margin growth and increased performance of finances, a great focus of these earnings is given to the processes of education to concentrate on the concept of quality transformation for service (Zachariah, 2007).

It is required that the researchers must study the aspect of transformation in the service quality in education as a segment of exercise for quality assurance. Researchers unexpectedly ignored this element, in completing and hypothetically restricting current measurement items and service quality models for higher education.

Research and criteria on the evaluation of the standard of education are focused on the learners' creative, cognitive, and effective progress, and also their public attitude learning and beliefs during their life-training. The education of high quality is the average amount of learners showing the required behavior, attitude, skill, and knowledge; they system of education is of greater quality to the level that it generates these characteristics (Crossley, 2005; Okpala, Okpala, & Smith, 2001; UNESCO, 2004).

Indonesia has the fourth largest education sector in the world and the largest in South East Asia with over 60 million students and 565,000 schools. The quality of education in Indonesia is still in the development phase even when compared to its South East Asian neighbors. The education sector contributed about 3.6% to GDP (WES, 2020). The president Joko Widodo appointed a digital tycoon as the minister of education 2019 and is expected to change the dynamics with new ideas and innovation. The number of governmental scholarship has also been doubled from 2016 to 2017 from \$105 USD to \$225 million as the government is now focusing on the education sector for the country to develop (Post, 2020).

2. Literature Reviews

The Nordic paradigm is the leading business quality-measuring initiative (Ghotbabadi, Baharun, & Feiz, 2012). Grönroos (1982, 1984) constructed that initial conceptualization. Grönroos (1982, 1984) defines the quality of service by two variables: technical and functional quality; technical quality explains what consumers receive; and functional quality explains how

consumers receive the service, which is mediated by the image factor. This concept is assumed to be a universal framework and is not limited to only two design systems since there is no specific definition of the properties or elements of the measurements of service quality (Brady & Cronin Jr, 2001). However, there is a broad perception that the quality of service is a multi-faceted or multi-attributed structure (Grönroos, 1990; Kang & James, 2004; Anantharathan Parasuraman, Zeithaml, & Berry, 1985; Ananthanarayanan Parasuraman, Zeithaml, & Berry, 1988). Although the recent studies on service quality are obviously based on the service delivery process, European scholars are proposing that other additional factors be considered as well. Grönroos (1990), for example, and Brady and Cronin Jr (2001) have notified this according to customer perception.

By examining the quality of service, Anantharathan Parasuraman et al. (1985) defined quality of service as the comparative analysis between customer expectations and service perceptions. Based on previous service reports, they further proposed that SERVQUAL is a particular framework for determining the standard of service (Ananthanarayanan Parasuraman et al., 1988). Regarding the utility of SERVQUAL Izah and Wan Zulqurnain (2005), it (SERVQUAL) was found to have been effectively applied in different environments. Ananthanarayanan Parasuraman et al. (1988) announced that they had modeled SERVQUAL models in such a way thus, this model should be adapted according to different specifications, so that it is accessible across the broad spectrum of services. SERVQUAL is considered among other similar models to be the most persistent, admired, highly cited and top research method for assessing service quality (M. G. Ashraf, 2014; Waugh, 2002). SERVQUAL 's advantage is that it is a proven tool that can be used for benchmarking purposes in comparison (Brysland & Curry, 2001).

Quality of service is characterized as "a type of attitude similar but not equal to satisfaction, which results from a comparison of expectations with performance perceptions" (Anathanarayanan Parasuraman et al., 1988). The most known service quality model is the SERVQUAL Anathanarayanan Parasuraman et al. (1988), which was implemented in the higher education sector's quality assurance exercises (Galeeva, 2016). SERVQUAL is not without limitations, though despite its popularity. SERVQUAL insists mainly on the practical dimensions of standard of service, neglecting the technological issues and disregarding the complexities of the higher education field (Ladhari, 2009). Another model that influenced study of quality of service in higher education is that of (Harvey & Green, 1993; Harvey & Knight, 1996). In this model, which concerns the enhancement and advancement of students, the researchers conceptualize quality in education as transformative quality. The researchers claim that schooling is not about providing a consumer service, but rather a constant phase of development of the students. Empirical studies strongly support their views on the subject (Zachariah, 2007). However, this quality dimension has been neglected in most of the higher education quality service studies (Alves & Raposo, 2010; Helgesen & Nettet, 2007). Following Harvey and Green (1993), as technical service quality refers to the performance of a program Grönroos (1984, 1988), this research conceptualizes technical service quality as a revolutionary factor of higher education. Using these measurements, Teeroovengadum et al. (2016) created the HESQUAL scale which is a quantitative and hierarchical measure of the efficiency of the higher education sector. Under HESQUAL's scale, the basic qualities corresponding to the functional (outcome) dimension of service quality are based on Harvey and Green (1993); Harvey and Knight (1996) conceptualizing transformative efficiency.

The HESQUAL scale incorporates the practical as well as the technological dimension of the standard of the higher education sector and thus takes into account the Brady and Cronin Jr (2001); Grönroos (1984, 1988) proposals. This study uses the HESQUAL scale to conceptualize quality in higher education as composed of both functional and technical (transformative) quality of service.

Value or program framework consistency is an essential feature of student service education as well as higher education institutional identity through which meritorious students from overseas are involved in receiving this academic service. (M. A. Ashraf, Osman, & Ratan, 2016; Osman & Ashraf, 2014). The best ranking universities round the world offer the great fantastic schooling programs and hold organizational collaborations which are influential for individual's choice making about admission in the precise software (Kazoleas, Kim, & Moffitt, 2001). Thus, higher education institutions need to ensure that the educational service they provide is in line with the expectations of the students (Henard & Roseveare, 2012). However, because high-quality curriculum program in higher education is essential for the success of students, the farseeing vision of higher education institutions and effective approach must be compatible with research and creativity in teaching and learning (M. A. Ashraf, Ibrahim, & Joarder, 2009; Osman & Ashraf, 2014). The affiliation between the quality and image of the study-program has scant research evidence. Helgesen and Nettet (2007) have studied precisely the effect of program quality on the Scandinavian region's university college image. The findings of this research showed that the correlation between these two variables was strong. There was also comprehensive research into the function of service efficiency as a significant determinant of value experience (Andreassen & Lindestad, 1998; Brady, Cronin Jr, & Brand, 2002; Cronin Jr, Brady, & Hult,

2000; Hellier, Geursen, Carr, & Rickard, 2003). Evidence supports a positive relation between the two constructs. Such a relationship has rarely been investigated in a higher education context, with the exception of the studies by Alves and Raposo (2007); Clemes, Cohen, and Wang (2013) which validated a positive relationship between quality of service and perception of value. Nevertheless, neither study conceptualized the quality of service as technical and functional in higher education.

Consumer satisfaction can be defined as a general assessment of the facilities being offered on the basis of the feedback acquired through the service delivery (Andreassen & Lindestad, 1998). It is a composite term embedded in a decision taken on the basis of a service-to-standard analysis (Richard, 1997; Rojas-Méndez, Vasquez-Parraga, Kara, & Cerda-Urrutia, 2009). Empirical findings indicate that a major determinant of consumer satisfaction is quality of service (Brady et al., 2002; Cronin Jr et al., 2000; Wu, 2014). In a context of higher education, a number of studies have tested the relationship between quality of service and student satisfaction and found supporting evidence for this (Brown & Mazzarol, 2009; Dericks, Thompson, Roberts, & Phua, 2019). However, the findings are far from definitive, possibly owing to the various service quality conceptualizations and the associated measurement problems (Bassi, 2019; Chong & Ahmed, 2012; Clemes et al., 2013).

In general, the reality is that the satisfaction of the students is closely related to the prestige and identity in line with perceived standard of service in the higher education sector (Osman & Ashraf, 2014). I. S. Weerasinghe and Fernando (2017) recently described the satisfaction of the students as: "a temporary solution arising from an assessment of the learning environment, resources and facilities of the students." Satisfaction is an cognitive similarity to know-how of a good or service (Spreng & Singh, 1993). At present, awareness of

satisfaction in respect of higher research has been overstretched. It has been advocated in just a few studies that student satisfaction is a difficult concept, embracing several items (Richardson, 2005). Student satisfaction is measured by the students' perspective and observations on the level of service they provide (Babaei, Karimpour, & Hadidi, 2015). Students create positive feelings about the academic institution and feel honored to recommend the same to new students once they are content.

Various reports indicate a beneficial association between quality and satisfaction. An prominent research on the topic is that of McFarland and Hamilton (2005), which was performed through four separate business industries, namely dental services, auto service, hairstyle, and restaurant. The study concluded that perceived value was one of the key explanatory variables in a model relating service efficiency, perceived value, happiness and behavioral intentions. A variety of other experiments in many similar business environments have showed that perceived value has a major direct beneficial effect on consumer satisfaction (Chen, 2008; Choi, Cho, Lee, Lee, & Kim, 2004; Hutchinson, Lai, & Wang, 2009). Empirical work on the impact of perceived value has been restricted in the sense of higher education, and not definitive. Findings from Clemes et al. (2013) indicate that the expected value has no important impact on student satisfaction. Corroborating the observations of the conventional literature, Alves and Raposo (2007); Brown and Mazzarol (2009), Nevertheless, note that the perceived value directly affects student satisfaction in higher education. Since the results are still inconclusive to date, more research on the relationship between perceived importance and student satisfaction is required. The paper then embraced the hypothesis, on the basis of the aforementioned debate:

H1: Quality of education has a significant effect on students' satisfaction.

Customer loyalty is "a deeply held commitment to consistently rebuy or repatriate a preferred product or service in the future, despite situational influences and marketing efforts that may cause switching behavior" (Richard, 1997). Student loyalty in the higher education sense includes activities such as offering the university a good word-of-mouth, promoting universities to others, and selecting the same institution again in the future (Dado, Taborecka-Petrovicova, Cuzovic, & Rajic, 2012).

Following the principle of the coping method suggested by Bagozzi and Yi (1988), the greater the degree of constructive consumer feedback, the more beneficial their attitudes towards the services would be. Fornell (1992) suggested that individual satisfaction is a principal predictor of customer loyalty. Thereafter, several empirical studies were performed about consumer loyalty and beneficial behavioral expectations through different service industries (Brady & Cronin Jr, 2001; Cronin Jr et al., 2000; Hutchinson et al., 2009; Ladhari, 2009; Lai & Chen, 2011; Wu, 2014; Zeithaml, Berry, & Parasuraman, 1996). Many longitudinal research show that student satisfaction positively affects student loyalty within the higher education framework (Alves & Raposo, 2007; Brown & Mazzarol, 2009; Chong & Ahmed, 2012; Clemes et al., 2013; Eskildsen, Dahlgaard, & Norgaard, 1999; Helgesen & Nettet, 2007).

Cronin Jr et al. (2000) has evaluated the

beneficial effect of quality on consumer loyalty through various service environments, suggesting that incorporating the idea of perceived value into models of statistical measures of satisfaction and loyalty is important in order to achieve a more systematic view of the interrelationships between these distinct but linked variables. Their research found that understanding of interest, independent of the service background, had a strong and substantial effect on behavioral intent. Much of the research that explored the relationship between perceived importance and behavioral intent in various service environments demonstrated a close correlation between the two concepts (Chen, 2008; Choi et al., 2004; Kuo, Walker, Belland, & Schroder, 2013; Ryu, Han, & Kim, 2008). In the context of higher education, the relationship between perceived value and loyalty was not well studied. A study that addressed this issue is that of (Brown & Mazzarol, 2009). The study concluded that the perceived value affects loyalty only moderately positively. Consequently, based on the above discussion, the paper adopted the assumptions that:

H2: Quality of education significantly affects student's loyalty

H3: Student's satisfaction significantly affects the student's loyalty (figure 1)

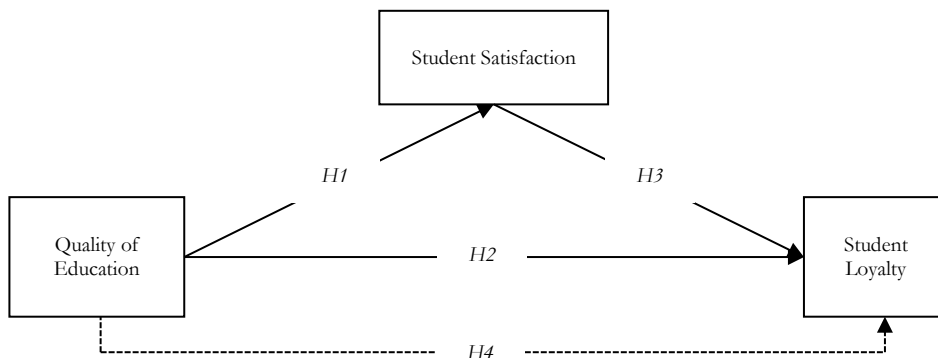


Figure 1. Conceptual Framework

3. Research Methods

The research methods are the types of techniques used by the researcher for research purposes. It includes various choices. The researcher has to choose a research approach. There are two types of research approaches used by the researcher known as deductive approach and inductive approach (Murphy & Poist, 2003). The deductive approach is where the researcher first develops hypothesis based on an existing theory for the research and then collects the data to test those hypothesis and confirm the theory (Bahari, 2010). The paper used the deductive approach as the study has developed hypothesis first and aimed to collect and analyze the data for theory confirmation.

Also, there are research choices that the researcher selects from. The research choice includes the mono-method, mix method and multi method. The mono-method is where only one type is adopted from the qualitative and quantitative researches (Dörnyei, 2007). The quantitative research is where the researcher collects data that is not detailed however, is quantifiable. This type of data is collected from the target population and is applicable on them after the conclusions are found using the statistical data analysis technique (Araoye, 2003). The mono-method quantitative research was used as the study aimed to collect numerical data for the research purposes.

There are further strategies that the researcher uses while conducting the research. These strategies include survey, case study, action research etc. The survey strategy is a type of strategy where surveys are conducted by the researcher for the collection of data from the target population (Noor, 2008). The surveys can be conducted using calls, email, online, etc. The data that is collected is then analyzed statistically by the researcher to derive meaningful conclusions for the study (Patzer, 1996). The paper used the survey strategy as the study

aimed to collect meaningful data and analyze it for conclusions.

The sampling technique is where the data is collected by the researcher on the using the probability theory or without using the theory of probability. The non-probability does not use the probability theory for samples and it results in the people or groups in the sample population not having proper chances of representation (Uprichard, 2013). The non-probability sampling has many types including the convenience sampling, purposive sampling, snowball sampling etc.

The non-probability convenience sampling is where the researcher collects data from people that are conveniently available due to their nearness to the researcher hence the name convenience sampling (Etikan, Alkassim, & Abubakar, 2016). The paper used the non-probability convenience sampling as it allowed significant amounts of data to be collected in lesser time.

Total number of respondents was 384, of them, 248 (64.6%) were males and 136 (35.4%) were females. In age group, 89 (23.2%) were 18 to 25 years old, 269 (70.1%) were 26 to 33 years old and 26 (6.8%) were 34 to 45 years old. Also, in education program enrollment, 146 (38%) were undergraduates, 186 (48.4%) were graduates and 52 (13.5%) were post-graduates. In university category, 212 (55.2%) were in private sector and 172 (44.8%) were in public sector.

A structured questionnaire was used to collect the data where the five-point Likert scale was used as it allows more responses and lesser confusion among the respondents. The questionnaire included close-ended questionnaires. The study collected 384 samples from the target population. The PLS-SEM, also known the partial least squares structural equation modeling is a type of data analysis technique that is used when the sample size is smaller however, it is used to evaluate typical cause and effect relationship of research factors (Gefen & Straub, 2005). The PLS-SEM was used in

the study as it allows easy and accurate data analysis for the association of research factors.

4. Data Analysis

The table 1 shows the measurement model.

As recommended by (Hair, Hollingsworth, Randolph, & Chong, 2017), the values over 0.70 can be perfectly retained whereas the values below 0.40 should be removed. However, the values between 0.40 and 0.70 can be retained on the basis of convergent

validity. Hence, the table showed that the highest value belonged to SL2 (0.918) and lowest value belonged to SS5 (0.653), therefore, construct validity has been achieved using outerloadings. Also, it recommended (Sarstedt, Ringle, & Hair, 2014) that the value of CR should be over 0.70 and value of AVE should be over 0.50. The above table showed that all the constructs were greater than 0.70 and 0.50 for composite reliability and AVE respectively.

Table 1. Measurement Model

Variables	Items	Loading	Composite Reliability	Average Variance Extracted (AVE)
Quality of Education	QOE1	0.768	0.887	0.612
	QOE2	0.792		
	QOE3	0.819		
	QOE4	0.662		
	QOE5	0.858		
Student Loyalty	SL1	0.685	0.789	0.656
	SL2	0.918		
Student Satisfaction	SS1	0.814	0.851	0.591
	SS2	0.810		
	SS3	0.785		
	SS5	0.653		

The table 2 shows the Fornell-Larcker criterion for discriminant validity.

Table 2. Fornell-Larcker Criterion

	Quality of Education	Student Loyalty	Student Satisfaction
Quality of Education	0.783		
Student Loyalty	0.474	0.810	
Student Satisfaction	0.765	0.417	0.769

The above table showed that the bold values present in diagonal were greater than values in vertical and horizontal settings as

recommended by (Fornell & Larcker, 1981). Thus, discriminant validity is obtained using Fornell-Larcker criterion.

The table 3 shows the discriminant validity using crossloadings.

The above table showed that the values of factors were greater in their own constructs in contrast to their values in other constructs, hence as recommended (Hair, Black, Babin, & Anderson, 2010), discriminant validity was obtained was cross loadings.

The table 4 shows the discriminant validity using HTMT ratio.

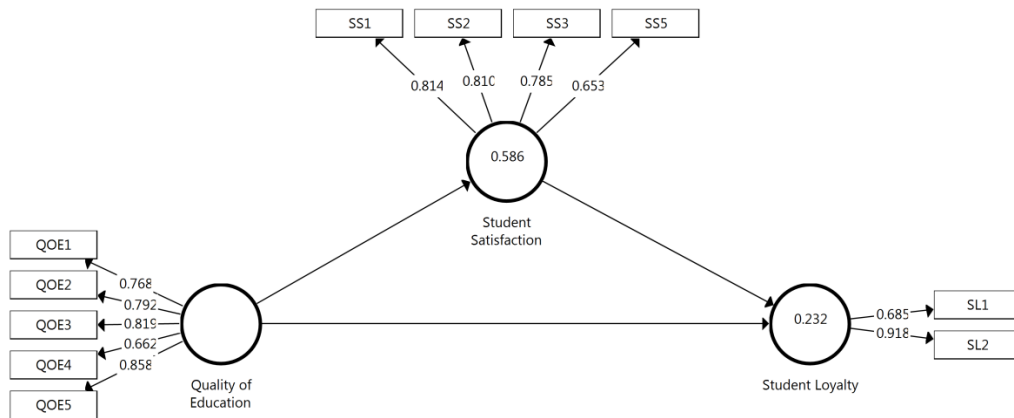


Figure 2. PLS Algorithm using SmartPLS version 3.2.8

Table 3. Cross Loadings

	Quality of Education	Student Loyalty	Student Satisfaction
QOE1	0.768	0.349	0.551
QOE2	0.792	0.370	0.528
QOE3	0.819	0.468	0.741
QOE4	0.662	0.173	0.352
QOE5	0.858	0.405	0.700
SL1	0.286	0.685	0.142
SL2	0.457	0.918	0.461
SS1	0.727	0.224	0.814
SS2	0.619	0.340	0.810
SS3	0.455	-0.005	0.785
SS5	0.473	0.584	0.653

Table 4. Heterotrait-Monotrait Ratio (HTMT)

	Quality of Education	Student Loyalty	Student Satisfaction
Quality of Education			
Student Loyalty	0.668		
Student Satisfaction	0.876	0.590	

The above table showed that the values of constructs were smaller than the threshold cutoff value of 0.90 as recommended (Henseler et al., 2014), therefore, discriminant validity is obtained using HTMT ratio.

Path Analysis

The table 5 shows the path coefficients.

Table 5. Path Analysis

	Estimate	S.D.	T-Stats	Prob.
Quality of Education -> Student Loyalty	0.375	0.075	4.998	0.000
Quality of Education -> Student Satisfaction	0.765	0.015	51.736	0.000
Student Satisfaction -> Student Loyalty	0.130	0.080	1.636	0.051

The above table showed that the quality of education was significantly affecting the student loyalty (0.375, P < 0.10). Also, the quality of education was significantly affecting the student satisfaction (0.765, P < 0.10). Moreover, student satisfaction was significantly affecting the student loyalty

(0.130, P < 0.10). There are several results that the study found with the help of the examination of data. It was found in the data analysis that the quality of education positively affects the student's satisfaction. This result was supported in the study by (I. Weerasinghe & Fernando, 2018). The result

was also found to be insignificant in the study by (M. Cheng, Taylor, Williams, & Tong, 2016). It was also found in the data analysis that the quality of education positively affects the student's loyalty. This result was supported in the study by (Ali, Zhou, Hussain, Nair, & Ragavan, 2016). The result was also found to be insignificant in

the study by (Ng, 2018). Also, it was found in the data analysis that the student's satisfaction positively affects the student's loyalty. This result was supported in the study by (Ali et al., 2016). The result was also found to be insignificant in the study by (Chandrashekar, Rotte, Tax, & Grewal, 2007).

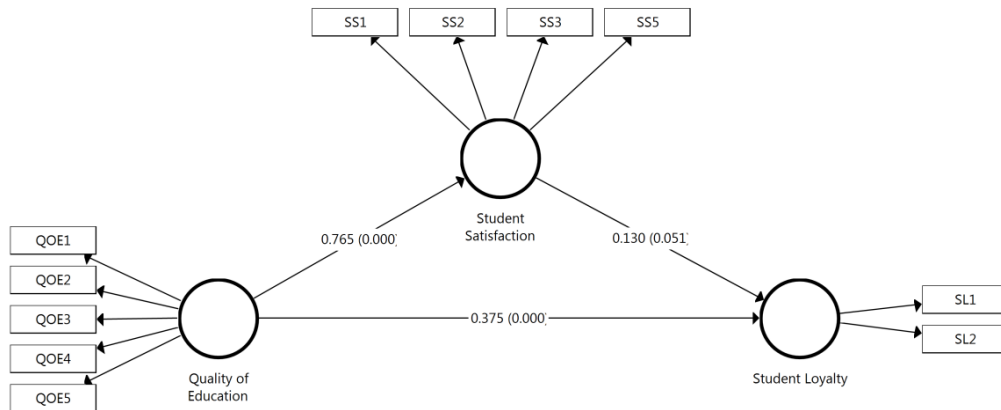


Figure 3. PLS Bootstrapping using SmartPLS version 3.2.8

Predictive Relevance

The table 6 shows the predictive relevance.

Table 6. Predictive Relevance

	R Square	R Square Adjusted	Q Square
Student Loyalty	0.232	0.228	0.142
Student Satisfaction	0.586	0.585	0.315

The above table showed that the student loyalty was affected 23.2% and student satisfaction 58.6% as shown by the R-square values. Also, the Q-square values were also greater than perfect zero.

5. Conclusion

The study aimed at validating the scale of HESQUAL first introduced by Teeroovengadum et al. (2016) and analyzing the improved structural model of the standards of service quality and the

satisfaction of students and their loyalty with the higher education. Though some shortcomings have been addressed in the study, by testing the properties of the psychometrics of the scale of HESQUAL and by presenting objective proof of reliability and validity through the confirmatory method, this work adds to the current literature. We assume, therefore, that the measuring tool will be used with confidence to analyze the quality of service delivered to the institutions of higher education. Further, this research improves the capacity of prediction by the model of HESQUAL and it has its nomological relevance by analyzing the structural model related with the service quality to the output like the satisfaction of students, their perceived value, loyalty, and identity but it empirically shows the significance of quality of technology as originally suggested by Gronroos. The key aim of this endeavor is to understand the factors that affect the quality of educational services that mediate

institutional image from an educational perspective. Research suggests that identity having a mediating effect on the association between an institutional association and the efficiency of the education service. The quality program and the satisfaction of students have a positive and significant effect on the reputation of the institution and the quality of the education services. Virtually, industrial links will be the priority of higher education leaders, as they have a huge positive influence on the institution's reputation and can have an indirect effect on the quality of education service. To maintain the service quality of education, academic authorities must earnestly cultivate Quality of the program, industrial relations, satisfaction of students and the image of institutions for the prosperity of institutions.

6. Managerial Recommendations

The research has major policy consequences for Higher Education managers as well as educational planners. Competition in higher education shows the survival of universities to sustain loyalty to students (Pham & Lai, 2016). Results indicate that the management of the university can encourage habits of loyalty by enhancing the understanding of students of their institution's image, value, and satisfaction. Further the analysis reveals that perceptions of the image, satisfaction of students, and perceptions of values are greatly based on the functional and transformational service quality. The results showed great information for the process of policymaking in higher education. At first, good perceptions of the changes in quality of service may bring improvements in the views of students regarding the image of institutions and their perceived value. Further the institutions must confirm that the required internal processes are utilized in place to satisfy students' satisfaction regarding the outcomes of higher education learning. Recognizing that the development of the students is fundamental to learn Harvey and Green (1993); Mezirow (2007),

institutions must work on developing the service quality's technical ways. Managers of higher education must make sure that the institution and its academic programs have an important goal of promoting the change in learners from students to the scholars and the people who should be ready to perform. Organizations have to ensure that the programs of academics must deliver the instruments that enable the students to further re-examine the assumptions that help to restructure their thoughts, feelings, and attitudes, and that helps to promote their academic as well as personal development. As Mezirow (1981) suggests, the transformational learning objective via reflective contemplation is to establish the "a crucial sense of agency for ourselves and our lives" in adult learners.

To ensure the usage knowledge discipline that sustains university education's core competency Johnes (2006), universities must take care to create the meta-cognitive skills of graduates that involves intelligence of emotion, self-efficacy and the students' self-confidence that give them power (Harvey & Knight, 1996; Knight & Yorke, 2002; Pool & Sewell, 2007). Improving the generic, disciplinary, and metacognitive skills of graduates demands that universities continually improve their pedagogy and academics. As discussed by Barnett (2009), claiming that the changes in students need a reconsideration of their pedagogies as well as the curricula. The managers of higher education must understand that the satisfaction of students with the image of institutions also depends on the level of functional service quality. Therefore, universities should introduce quality management strategies such as benchmarking to constantly increase the quality of service delivery systems.

From a practical point of view, as a cumulative body of work arises on the quality of educational service, but this study's conceptual model provides greater acknowledgment if such improvement of image and ranking are addressed by the

institution of tertiary level. A strong understanding of the relationship between program quality, industrial link, student satisfaction, image and service quality that allows to make better policy and strategic decisions, as well as finding ways to be strengthened by organization management. This makes it possible to recruit high-quality foreign students in the world's leading universities for academic research and development.

7. Future Research Direction

With the certain consideration of some keen methodological perspective adopted in the current study, the results and findings should be taken into consideration with its limitations. Utmost importantly, the study has gathered data from the students of higher education institutes of Indonesia i.e. developing country with education infrastructure was less advanced in comparison to those HEIs in the developed countries. In this manner, the attitude and behavior of the students in such developing countries have also been largely affected by lack of educational infrastructure and institutions' quality of education. Hence, the

study has recommended to future studies to replicate the structural model in different other countries in order to enable its generalizability and validity of the theoretical perspective of the research. Furthermore, the study has used cross-sectional time horizon i.e. the data was gathered at single point of time and therefore, the effect of time horizon was not taken into consideration in the current research. Herein, future research should focus on conducting longitudinal studies to enable their findings with the time-effect. The study has considered the effect of quality of education on students' satisfaction and loyalty while other conceptualized factors that affect satisfaction and loyalty may not be taken into consideration in the study. Henceforth, the study has recommended that future studies should also include larger perspective of quality of education using different scales and other aspects such as behavioral intention, satisfaction with different university facilities and study load etc. In such considerations, the horizon of the current problem may provide some viable solutions that help HEIs of Indonesia to develop their strategies in effective manner.

References:

- Akgün, E., Yılmaz, E. O., & Seferoğlu, S. S. (2011). Vizyon 2023 strateji belgesi ve fırsatları artırma ve teknolojiyi iyileştirme hareketi (fatih) projesi: Karşılaştırmalı bir inceleme. *Akademik Bilişim*, 2(4), 115-122.
- Akyüz, G. (2014). The effects of student and school factors on mathematics achievement in timss 2011.
- Alawamleh, H. S., Bdah, A., & Alahmad, N. (2013). The impact of planning on the quality of educational programs at al-balqa'applied university. *International Journal of Business Administration*, 4(5), 38.
- Ali, F., Zhou, Y., Hussain, K., Nair, P. K., & Ragavan, N. A. (2016). Does higher education service quality effect student satisfaction, image and loyalty? *Quality assurance in education*.
- Alves, H., & Raposo, M. (2007). Conceptual model of student satisfaction in higher education. *Total Quality Management*, 18(5), 571-588.
- Alves, H., & Raposo, M. (2010). The influence of university image on student behaviour. *International Journal of Educational Management*.
- Andreassen, T. W., & Lindestad, B. (1998). Customer loyalty and complex services. *International Journal of service Industry management*.

- Araoye, M. O. (2003). Research methodology with statistics for health and social sciences. *Ilorin: Nathadex Publisher, 115*(9).
- Ashraf, M. A., Ibrahim, Y., & Joarder, M. (2009). Quality education management at private universities in bangladesh: An exploratory study. *Journal of Educators & Education/Jurnal Pendidik dan Pendidikan, 24*.
- Ashraf, M. A., Osman, A. Z. R., & Ratan, S. R. A. (2016). Determinants of quality education in private universities from student perspectives. *Quality Assurance in Education*.
- Ashraf, M. G. (2014). Include the position of islamic banking, service quality, satisfaction, trust and loyalty in the context of an integrated model for islamic finance. *European Journal of Business and Management, 6*(17), 156-169.
- Babaei, H., Karimpour, J., & Hadidi, A. (2015). A survey of approaches for university course timetabling problem. *Computers & Industrial Engineering, 86*, 43-59.
- Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the academy of marketing science, 16*(1), 74-94.
- Bahari, S. F. (2010). Qualitative versus quantitative research strategies: Contrasting epistemological and ontological assumptions. *Sains Humanika, 52*(1).
- Barnett, R. (2009). Knowing and becoming in the higher education curriculum. *Studies in higher education, 34*(4), 429-440.
- Bassi, F. (2019). Students' satisfaction in higher education: The role of practices, needs and beliefs of teachers. *Quality Assurance in Education*.
- Brady, M. K., & Cronin Jr, J. J. (2001). Some new thoughts on conceptualizing perceived service quality: A hierarchical approach. *Journal of marketing, 65*(3), 34-49.
- Brady, M. K., Cronin Jr, J. J., & Brand, R. R. (2002). Performance-only measurement of service quality: A replication and extension. *Journal of business research, 55*(1), 17-31.
- Brown, R. M., & Mazzarol, T. W. (2009). The importance of institutional image to student satisfaction and loyalty within higher education. *Higher education, 58*(1), 81-95.
- Brysland, A., & Curry, A. (2001). Service improvements in public services using servqual. *Managing Service Quality: An International Journal*.
- Burbules, N. C. (2004). Ways of thinking about educational quality. *Educational Researcher, 33*(6), 4-10.
- Cenkseven-Onder, F., & Sari, M. (2009). The quality of school life and burnout as predictors of subjective well-being among teachers. *Educational Sciences: Theory and Practice, 9*(3), 1223-1235.
- Chandrashekar, M., Rotte, K., Tax, S. S., & Grewal, R. (2007). Satisfaction strength and customer loyalty. *Journal of Marketing Research, 44*(1), 153-163.
- Chen, C.-F. (2008). Investigating structural relationships between service quality, perceived value, satisfaction, and behavioral intentions for air passengers: Evidence from taiwan. *Transportation Research Part A: Policy and Practice, 42*(4), 709-717.
- Cheng, M., Taylor, J., Williams, J., & Tong, K. (2016). Student satisfaction and perceptions of quality: Testing the linkages for phd students. *Higher Education Research & Development, 35*(6), 1153-1166.
- Cheng, Y. C., & Cheung, W. M. (2004). Four types of school environment: Multilevel self-management and educational quality. *Educational Research and Evaluation, 10*(1), 71-100.
- Chester, D. R., Tracy, J. A., Earp, E., & Chauhan, R. (2002). Correlates of quality educational programs. *Evaluation review, 26*(3), 272-300.
- Chin, Y. Y., & Chye, T. T. (1992). Quality control in the education service-a singapore experience. *International Journal of Quality & Reliability Management*.

- Choi, K.-S., Cho, W.-H., Lee, S., Lee, H., & Kim, C. (2004). The relationships among quality, value, satisfaction and behavioral intention in health care provider choice: A south korean study. *Journal of Business Research*, 57(8), 913-921.
- Chong, Y. S., & Ahmed, P. K. (2012). An empirical investigation of students' motivational impact upon university service quality perception: A self-determination perspective. *Quality in Higher Education*, 18(1), 35-57.
- Chong, Y. S., & Ahmed, P. K. (2015). Student motivation and the 'feel good' factor: An empirical examination of motivational predictors of university service quality evaluation. *Studies in Higher Education*, 40(1), 158-177.
- Clemes, M. D., Cohen, D. A., & Wang, Y. (2013). Understanding chinese university students' experiences: An empirical analysis. *Asia Pacific Journal of Marketing and Logistics*.
- Cronin Jr, J. J., Brady, M. K., & Hult, G. T. M. (2000). Assessing the effects of quality, value, and customer satisfaction on consumer behavioral intentions in service environments. *Journal of retailing*, 76(2), 193-218.
- Crossley, M. (2005). Comparative perspectives on the quality of education. *Comparative Education*, 385-387.
- Dado, J., Taborecka-Petrovicova, J., Cuzovic, S., & Rajic, T. (2012). An empirical examination of the relationships between service quality, satisfaction and behavioral intentions in higher education setting. *Serbian Journal of Management*, 7(2), 203-218.
- Dennis, C., Papagiannidis, S., Alamanos, E., & Bourlakis, M. (2016). The role of brand attachment strength in higher education. *Journal of Business Research*, 69(8), 3049-3057.
- Dericks, G., Thompson, E., Roberts, M., & Phua, F. (2019). Determinants of phd student satisfaction: The roles of supervisor, department, and peer qualities. *Assessment & Evaluation in Higher Education*, 44(7), 1053-1068.
- Dörnyei, Z. (2007). *Research methods in applied linguistics: Quantitative, qualitative, and mixed methodologies*: Oxford University Press.
- East, L., Stokes, R., & Walker, M. (2014). Universities, the public good and professional education in the uk. *Studies in Higher Education*, 39(9), 1617-1633.
- Erberber, E. (2010). Analyzing turkey's data from timss 2007 to investigate regional disparities in eighth grade science achievement. *The impact of international achievement studies on national education policymaking (international perspectives on education and society, Volume 13)*, Emerald Group Publishing Limited, 119-142.
- Eskildsen, J. K., Dahlgard, J. J., & Norgaard, A. (1999). The impact of creativity and learning on business excellence. *Total Quality Management*, 10(4-5), 523-530.
- Etikan, I., Alkassim, R., & Abubakar, S. (2016). Comparison of snowball sampling and sequential sampling technique. *Biometrics and Biostatistics International Journal*, 3(1), 55.
- Fornell, C. (1992). A national customer satisfaction barometer: The swedish experience. *Journal of marketing*, 56(1), 6-21.
- Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of marketing research*, 18(3), 382-388.
- Galeeva, R. B. (2016). Servqual application and adaptation for educational service quality assessments in russian higher education. *Quality Assurance in Education*.
- Gefen, D., & Straub, D. (2005). A practical guide to factorial validity using pls-graph: Tutorial and annotated example. *Communications of the Association for Information systems*, 16(1), 5.
- Gelen, İ., & Beyazıt, N. (2007). Comparing perceptions of the new primary school curriculum with the former curriculum. *Educational Administration: Theory and Practice*, 51, 457-476.

- Ghotbabadi, A. R., Baharun, R., & Feiz, S. (2012). *A review of service quality models*. Paper presented at the 2nd International Conference on Management.
- Grönroos, C. (1982). Strategic management and marketing in the service sector', Swedish school of economics and business administration, Helsingfors, Finland, (published in 1983 in the us by Marketing science institute and in the UK by studentlitteratur/chartwell-bratt).
- Grönroos, C. (1984). A service quality model and its marketing implications.
- Grönroos, C. (1988). New competition in the service economy: The five rules of service. *International Journal of Operations & Production Management*.
- Grönroos, C. (1990). *Service management and marketing: Managing the moments of truth in service competition*: Jossey-Bass.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis a global perspective* (Vol. 7). New Jersey: Pearson Education.
- Hair, J. F., Hollingsworth, C. L., Randolph, A. B., & Chong, A. Y. L. (2017). An updated and expanded assessment of pls-sem in information systems research. *Industrial Management & Data Systems*, 117(3), 442–458.
- Halai, N. (2013). Quality of private universities in pakistan. *International Journal of Educational Management*.
- Harvey, L., & Green, D. (1993). Defining quality. *Assessment & evaluation in higher education*, 18(1), 9-34.
- Harvey, L., & Knight, P. T. (1996). *Transforming higher education*: ERIC.
- Harvey, L., & Williams, J. (2010). Fifteen years of quality in higher education (part two): Taylor & Francis.
- Helgesen, Ø., & Nettet, E. (2007). What accounts for students' loyalty? Some field study evidence. *International Journal of Educational Management*.
- Hellier, P. K., Geursen, G. M., Carr, R. A., & Rickard, J. A. (2003). Customer repurchase intention. *European journal of marketing*.
- Henard, F., & Roseveare, D. (2012). Fostering quality teaching in higher education: Policies and practices. *An IMHE Guide for Higher Education Institutions*, 7-11.
- Henseler, J., Dijkstra, T. K., Sarstedt, M., Ringle, C. M., Diamantopoulos, A., Straub, D.W., ... Calantone, R. J. (2014). Common beliefs and reality about pls: Comments on rönkkö and evermann (2013). *Organizational Research Methods*, 17(2), 182-209.
- Hutchinson, J., Lai, F., & Wang, Y. (2009). Understanding the relationships of quality, value, equity, satisfaction, and behavioral intentions among golf travelers. *Tourism management*, 30(2), 298-308.
- Izah, M., & Wan Zulqurnain, W. (2005). Service quality in the financial services industry in malaysia: The case of islamic banks and insurance. *International Review of Business Research Papers*, 1(2), 10-21.
- Johnes, J. (2006). Data envelopment analysis and its application to the measurement of efficiency in higher education. *Economics of education review*, 25(3), 273-288.
- Kang, G. D., & James, J. (2004). Service quality dimensions: An examination of grönroos's service quality model. *Managing Service Quality: An International Journal*.
- Kazoleas, D., Kim, Y., & Moffitt, M. A. (2001). Institutional image: A case study. *Corporate Communications: an international journal*.
- Knight, P. T., & Yorke, M. (2002). Employability through the curriculum. *Tertiary education and management*, 8(4), 261-276.
- Kuo, Y.-C., Walker, A. E., Belland, B. R., & Schroder, K. E. (2013). A predictive study of student satisfaction in online education programs. *The International Review of Research in Open and Distributed Learning*, 14(1), 16-39.

- Kurt, A., Kuzu, A., Dursun, Ö., Güllüpinar, F., & Gültekin, M. (2013). Evaluation of the pilot application process of fatih project: Teachers' views. *Journal of Instructional Technologies & Teacher Education*, 1(2), 1-23.
- Ladhari, R. (2009). A review of twenty years of servqual research. *International journal of quality and service sciences*.
- Lai, W.-T., & Chen, C.-F. (2011). Behavioral intentions of public transit passengers—the roles of service quality, perceived value, satisfaction and involvement. *Transport policy*, 18(2), 318-325.
- Latif, K. F., Latif, I., Farooq Sahibzada, U., & Ullah, M. (2019). In search of quality: Measuring higher education service quality (hieduqual). *Total Quality Management & Business Excellence*, 30(7-8), 768-791.
- Leibowitz, B., & Bozalek, V. (2015). Foundation provision-a social justice perspective: Part 1-leading article. *South African Journal of Higher Education*, 29(1), 8-25.
- Manatos, M. J., Sarrico, C. S., & Rosa, M. J. (2017). The integration of quality management in higher education institutions: A systematic literature review. *Total Quality Management & Business Excellence*, 28(1-2), 159-175.
- Marginson, S. (2011). Higher education and public good. *Higher education quarterly*, 65(4), 411-433.
- McFarland, D., & Hamilton, D. (2005). Factors affecting student performance and satisfaction: Online versus traditional course delivery. *Journal of Computer Information Systems*, 46(2), 25-32.
- Mezirow, J. (1981). A critical theory of adult learning and education. *Adult education*, 32(1), 3-24.
- Mezirow, J. (2007). Transformative learning. *Athens: Metaichmio*.
- Murphy, P. R., & Poist, R. F. (2003). Green perspectives and practices: A “comparative logistics” study. *Supply chain management: an international journal*.
- Ng, M. N.-M. (2018). The effect of service quality on student satisfaction and student loyalty: An empirical study. *Journal of Social Studies Education Research*, 9(3), 109-131.
- Nixon, E., Scullion, R., & Hearn, R. (2018). Her majesty the student: Marketised higher education and the narcissistic (dis) satisfactions of the student-consumer. *Studies in Higher Education*, 43(6), 927-943.
- Noor, K. B. M. (2008). Case study: A strategic research methodology. *American journal of applied sciences*, 5(11), 1602–1604.
- Okpala, C. O., Okpala, A. O., & Smith, F. E. (2001). Parental involvement, instructional expenditures, family socioeconomic attributes, and student achievement. *The Journal of Educational Research*, 95(2), 110-115.
- Osman, A., & Ashraf, M. A. (2014). A quality probe of the private mba program: Evidence from Bangladesh. *Journal of Education and Practice*, 5(23), 58-66.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *Journal of marketing*, 49(4), 41-50.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). Servqual: A multiple-item scale for measuring consumer perc. *Journal of retailing*, 64(1), 12.
- Patzer, G. L. (1996). *Experiment-research methodology in marketing: Types and applications*: Greenwood Publishing Group.
- Pham, H.-H., & Lai, S. L. (2016). Higher education as an extended duration service: An investigation of the determinants of vietnamese overseas student loyalty. *Journal of Studies in International Education*, 20(5), 454-471.
- Pool, L. D., & Sewell, P. (2007). The key to employability: Developing a practical model of graduate employability. *Education+ Training*.

- Post, J. (2020). Game changing indonesia's education sector. 2020
- Psomas, E., & Antony, J. (2017). Total quality management elements and results in higher education institutions. *Quality Assurance in Education*.
- Quinn, A., Lemay, G., Larsen, P., & Johnson, D.M. (2009). Service quality in higher education. *Total Quality Management*, 20(2), 139-152.
- Richard, L. O. (1997). Satisfaction: A behavioral perspective on the consumer. *New York*.
- Richardson, J. T. (2005). Instruments for obtaining student feedback: A review of the literature. *Assessment & evaluation in higher education*, 30(4), 387-415.
- Rojas-Méndez, J. I., Vasquez-Parraga, A. Z., Kara, A., & Cerda-Urrutia, A. (2009). Determinants of student loyalty in higher education: A tested relationship approach in latin america. *Latin American Business Review*, 10(1), 21-39.
- Ryu, K., Han, H., & Kim, T.-H. (2008). The relationships among overall quick-casual restaurant image, perceived value, customer satisfaction, and behavioral intentions. *International Journal of Hospitality Management*, 27(3), 459-469.
- Sarstedt, M., Ringle, C. M., & Hair, J. F. (2014). *Pls-sem: Looking back and moving forward*: Elsevier.
- Sezer, R., Güner, N., & Ispir, O. (2012). Teachers' perspective on whether the mathematics reform will change turkey's ranking in timss. *Education*, 133(2), 391-411.
- Spreng, R. A., & Singh, A. (1993). An empirical assessment of the servqual scale and the relationship between service quality and satisfaction. *Enhancing knowledge development in marketing*, 4(1), 1-6.
- Sultan, P., & Wong, H. (2010). Performance-based service quality model: An empirical study on japanese universities. *Quality Assurance in Education*.
- Teeroovengadam, V., Kamalanabhan, T., & Seebaluck, A. K. (2016). Measuring service quality in higher education. *Quality Assurance in Education*.
- Toker, T. (2010). Cognitive diagnostic assessment of timss-2007 mathematics achievement items for 8th graders in turkey.
- UNESCO. (2004). United nations educational, scientific and educational organisation. In Global & monitoring report (Eds.). New York: UNESCO.
- Uprichard, E. (2013). Sampling: Bridging probability and non-probability designs. *International Journal of Social Research Methodology*, 16(1), 1-11.
- Waugh, R. F. (2002). Academic staff perceptions of administrative quality at universities. *Journal of Educational Administration*.
- Weerasinghe, I., & Fernando, R. (2018). Critical factors affecting students' satisfaction with higher education in sri lanka. *Quality Assurance in Education*.
- Weerasinghe, I. S., & Fernando, R. (2017). Students' satisfaction in higher education. *American Journal of Educational Research*, 5(5), 533-539.
- WES. (2020). World education services.
- Wu, H.-C. (2014). The effects of customer satisfaction, perceived value, corporate image and service quality on behavioral intentions in gaming establishments. *Asia Pacific Journal of Marketing and Logistics*.
- Yildirim, Ö., Demirtaşlı, N. Ç., & Akbaş, U. (2012). The opinions of mathematics teachers on homework and in-class assessment: Timss 1999 and timss 2007 periods. *Education & Science/Egitim ve Bilim*, 37(163).
- Yusof, A., & Ghouri, A. (2013). Educational service quality and customer satisfaction index at public higher educational institution. *Indian Journal of Commerce and Management Studies*, 4(1), 43-49.

Zachariah, S. (2007). *Managing quality in higher education: A stakeholder perspective*.
Zeithaml, V.A., Berry, L.L., & Parasuraman, A. (1996). The behavioral consequences of service quality. *Journal of marketing*, 60(2), 31-46.

Ratna Sari Dewi

Universitas Islam Syarif
Hidayatullah,
Jakarta,
Indonesia
ratna@uinjkt.ac.id

Melinda Roza

Universitas Islam Raden
Intan,
Lampung,
Indonesia
melindaroza@radenintan.ac.id

Muhamad Taridi

Universitas Islam Negeri
Sultan Thaha Saifuddin,
Jambi,
Indonesia
taridi@uinjambi.ac.id

Alek Alek

Universitas Islam Syarif
Hidayatullah,
Jakarta,
Indonesia
alek@uinjkt.ac.id

Fahrurrozi

Universitas Negeri Jakarta,
Jakarta,
Indonesia
fahrurrozi@unj.ac.id
