

## A Framework Study of Service Quality on Higher Education Institution (HEI) Facilities Services in Indonesia

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**Abstract:** Higher Education Institution (HEI) becomes a decisive factor to determine economic growth and social life in the global competition. Currently, service quality presented by HEI turn into strategic advantage for the HEI to obtain success and persistence on the market competitiveness. In order to provide the service excellence, HEI is required to have a substantial infrastructure including building and facilities services to support academic activities. Thus, the study on the service quality in HEI facilities services context is substantial in order to improve HEI service function. This study aims to develop framework of service quality in HEI facilities services in Indonesia. The service quality and facilities services in higher education context become initial approaches to develop the framework. The proposed framework is structured through questionnaire distributed for student as the main client in public university in Indonesia in order to investigate student's expectation and perception of service quality in HEI. The level of service quality on facilities services to be ordered from very poor to excellent. This result is expected to become an initial assessment of service quality on HEI facilities services in Indonesia and concurrently contributed to enhance the quality of education.

**Key words:** Service quality, facilities, Higher Education Institution, infrastructure, framework

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### INTRODUCTION

Higher Education Institution (HEI) across the world have experienced on the process of quality assurance. Education sector of a country needs a special attention from the government as a quality of education brings the wealth of nation. Currently, quality has become strategic advantage for the HEI to gain success and remain competitive in the market by delivering excellence service or product based on customer requirements. Service quality which is important to all organization as it is regarded as a driver of corporate marketing and financial performance (Buttle, 1996) it is now become a strategic option for many institution of higher education around the globe and becomes critical to the success of an organization (Sohail *et al.*, 2003). Now a days, higher education is being driven toward commercial competition imposed by economic forces resulting from the development of global market (Joseph *et al.*, 2005). Thus, to face world of global competition, rendering service quality becomes a key factor for the success of HEI.

In HEI, like any other organization, in order to provide the service excellence, HEI need to have a substantial infrastructure, this often includes an extensive estate, building and facilities services provided by HEI

(Sapri *et al.*, 2009). In fact, most universities experienced on facilities services deficiencies are likely to be occurring at any time (Mohamed, 2013). This phenomenon contradicts with the gauge of the importance on providing excellence service quality as the strategic advantage for HEI. As HEI is facing pressure to improve value in its activities, the subject of service quality performance has received increasing attention. Never the less, in the university environment, the concept of service quality on facilities services is not clearly defined (Navarro *et al.*, 2005). Therefore, it needs to seek the appropriate model of service quality which meets the facilities services demand on HEI.

HEI in Indonesia is expanding very rapidly within the last two decades. Both private and public university put some efforts to provide superior service quality to its stakeholder, nevertheless, HEI in Indonesia not yet to put attention particularly on service quality approaches on facilities services which is contributed mainly to success factor HEI. Therefore, in order to compete with the HEI around the globe and striving to provide excellence service quality to its stakeholder, it needs to initiate on developing service quality model as a measurement scale on facilities services for HEI in Indonesia.

**Literature review:** It is admitted that HEI are recently facing the competition globally through competitive advantage and high service quality (Cardona and Bravo, 2012). The information on the quality of academic and non-academic services in HEI becomes prominent element to enhance its strategic planning. It also provided them to determine kinds of priorities for resources allocation and to strengthen its existence. In the response that students are becoming primary clients of educational services (Hill, 1995; Jones *et al.*, 2003; Lee and Tai, 2008), it is sensible to find out to what extent student perceive the academic and administrative they receive. Likewise concern on student's satisfaction, HEI should also consider on the output of university activities such as research and innovation which drive HEI to serve with superior service quality. Yeo (2008) confirmed that higher education in the service industry as the primary focus of tertiary institution is to provide quality learning experiences to the students. Therefore, the assessment of service quality in higher education can provide the imperative contribution and input which might be effective for HEI management in order to extend improvements of the quality of education.

**Service quality in higher education institution:** Quality in a service organization such as HEI is a measure of the range to which the service delivered meets the customer's expectation. Quality as defined for higher education institution has been identified by Harvey and Knight (1996) reflects exceptional, consistency, fitness for purpose, value for money and transformative. Quality in education is also determined by the extent to which student's need and expectations are satisfied (Tan and Kek, 2004).

The research on service quality in Higher Education Institution has become popular in the literature. It reveals 2 main approaches to measure service quality: SERVQUAL (Parasuraman *et al.*, 1988) and SERVPERF (Cronin and Taylor, 1992). SERVQUAL has its theoretical foundations in the gaps model and defines services quality in terms of the difference between customer expectations and performance perceptions on a number of 22 items. While SERVPERF explained more of the variance in an overall measure of service quality than SERVQUAL (Cronin and Taylor, 1994). More recently, a new industry-scale, called HEdPERF was developed comprising a set of 41 items. This instrument aims at considering not only the academic components but also aspects of the total service environment as experienced by the student. The researcher identified 5 dimensions of the service quality concept:

- Non-academic aspects: items that are essential to enable students to fulfill their study obligations and relate to duties carried out by non-academic staff
- Academic aspects. Responsibilities of academics
- Reputation: importance of higher learning institutions in projecting a professional image
- Access: includes issues as approachability, ease of contact, availability and convenience
- Program issues: importance of offering wide flexible structures and health services

Several studies have pursued to develop and examine kinds of service quality model in Higher Education Institution. Some of the works are briefly summarized. Hill (1995) confirmed the expectation and perceptions about university service of under graduate students in a United Kingdom University. It described about stability of the student's expectation during the time in the university experience. Then, student's perceptions of service experienced proved less stable overtime. In this case, he proposed to measure student before they enter a university and not during their stay.

With regard to the diverse approaches on the measurement of the service quality in Higher Education Institution (HEI), Owlia and Aspinwall (1996) proposed six quality dimension in higher education from student's perspective: tangibility (adequate equipment and facilities) competences (teaching expertise, practical and theoretical knowledge) attitude (understanding student's need, courtesy, personal attention, willingness to help, etc.) content (practical relevance of curriculum, being cross-disciplinary, flexibility of knowledge, etc.) delivery (effective presentation, feedback from students, encouraging students, etc.) reliability (trustworthiness, handling complaints, solving problems). These dimensions explained highly relationship on student and teacher experiences. It is not explicitly described other elements of the university such as an administrative support and communication approach (Cardonna and Bravo, 2012). Despite this, some institutions consider this framework appropriate for measuring the quality of university service.

Wright (1996) employed factor analysis to determine factors associated with student's perception of service quality at university based on SERVQUAL model. He adjusted the questionnaires with students, graduates, lecturers and principals. In this research, it signed the following factor such as diversity of the educational experience: diversity of courses and student body, ease of access and use of facilities: location and environment, personalized interactions: interactions between students and teachers, student quality, average scores of students

accepted, educational process: specific requirements and ability to meet these requirements, faculty quality: academic and professional training of teachers, computing facilities: technological capabilities of the university and professor's teaching experience. This research described the experience only for student and lecturer point of view within the university.

Cook (1997) examined nursing student's perception on quality of British University. It found the following factors which lead to the good quality in university: academic staff factor, study factor (library and private study facilities, computer access and an atmosphere conducive to the study) general welfare factors, practice factors and extra-curricular factors. It concluded that the most significance factor that influence the service perception is the interaction between academic staff and the students did not described comprehensively the process occurred in the administrative activities between student and teachers. Brenders *et al.* (1999) executed the study on Australian University student's perception toward university's services and on the successes and constraints perceived during their study, excluding the academic experience. It revealed that bureaucratic issues and misuse of communication are factor that negatively influence student perception of university service quality.

Tan and Kek (2004) conducted research on overall student's satisfaction in the engineering faculty in university in Singapore using SERVQUAL instrument. The result confirmed that students expected a higher service level with respect to the availability of channels to disclose their ideas to management and the eagerness of the university to consider their opinion. Walter (2006) conducted research to determine the factors related with student's loyalty and satisfaction in Catholic University of Parana, Brazil. It concurred that a number of uncontrollable variables exist which influence the level of satisfaction such as the economic level of student and family, employment status and marital status.

Mostafa (2006) carried out the research on measuring service quality with SERVQUAL tool combined with Importance-Performance (IP) analysis at four private universities in Egypt. This research focused on student perception thus confirmed that the five dimensions proposed by the SERVQUAL instrument are not met. However, it found that there are 3 factors contributed to service quality in those universities: actual-service oriented procedures associated with student registration, fee payment and enrolment, university's staff and their service orientation toward the student body, physical evidence and the importance of the physical service environment. Oliveira and Ferreira conducted the

adaptation of SERVQUAL scale for higher education service sector in Sao Paulo State University, Brazil. The result is seemingly satisfactory. While the extensive research in order to measure service quality in higher education by using SERVQUAL have been done around the globe. Legcevic (2010) examined student's expectation and perceptions of service quality in Osijek University in Croatia and found that student's expectation exceeded their perceptions and the differences between perception and expectation in service quality dimensions were significant. Zeshan *et al.* (2010) conducted study to measure service quality among business schools in Pakistan. It revealed that students perceived all five dimensions of service quality (tangibles, reliability, responsiveness assurance and empathy) at the low level. Hasan *et al.* (2010) assessed service quality in private higher education institution and concluded that five dimensions of service quality had meant full relationship with the level of student's satisfaction.

Khodayari and Khodayari (2011) conducted the study on the perception and expectation of Islamic Azad University in Iran. It explained that the gap between student's expectation and perception was found in five dimensions of service quality. Students considered that all five dimensions of service quality (reliability, tangible, responsiveness assurance and empathy) were the imperative factors for the students. Al-Alak and Alnaser conducted research on examining undergraduate student's perception and expectation toward five dimensions (reliability, tangible, responsiveness assurance and empathy) of service quality in the business school at University of Jordan. It implied that 2 dimensions of service quality (assurance and reliability) become 2 most significant factors to improve the image of university. Amelia *et al.* (2011) examined the quality of information technology and information system service at private higher education in Palembang, Indonesia. The finding showed that the gap between expectation and perception existed. The reliability dimension found as the highest gap and the assurance became the lowest gap among 5 dimensions to measure service quality performance. Thus, the improvement of service quality at this university would drive the increasing of student's satisfaction.

Since facility management has the role in facilitating organizational performance, service quality in facilities services higher education institution context is about facilities ability to satisfy the objective of teaching and learning within universities (Amaratunga and Baldry, 2000). In terms of facilities services, Sirvanci classifies HEI's services into two categories, namely academic program and facilities. Its model describes student's flow

in higher education, from admission to graduation. In this context, it showed that those services will give an impact on student's teaching and learning experience.

Based on those literature approaches above, the further step to develop framework on service quality as measurement scale on facilities services could be adopted with regards to the interest of this research. In order to develop an appropriate service quality framework on facilities services of HEI in Indonesia, the analyses called Structural Equation Model will be applied in terms of verifying variables related to service quality on facilities services.

## MATERIALS AND METHODS

**Proposed framework:** Proposed framework is designed based on the previous research with respect to service quality in HEI and facilities services in the HEI context. These previous researches are beneficial in order to develop the framework for service quality in HEI facilities services in Indonesia.

**HEI facilities services:** University facilities services is one of the key factors which enable students to know what to expect from their university experience. Facilities services are important resources to higher educational institutions in providing its core business. From the learning and teaching aspects Hakim found that facilities play a significant role on teaching and learning process. Suitable and sufficient facility will assist the students to be more focus on learning process and also to increase the quality as a student (Hakim, 2005). Hakim described five important components identified in providing learning facilities in order to create the optimal teaching and learning environment:

- Size and lay out related to flexibility and adjustment flexibility in the classroom can support teaching
- The acoustic system
- Good lighting system expected providing an optimum learning environment
- Climate and ventilation
- Colour establishes a pleasing learning environment

According to Maimunah, there are six factors in higher education sectors that influence student's experience for higher educational services. Those factors are teaching and learning delivery, support services facilities, accommodation and social facilities, course administration, teaching and learning facilities, teaching and learning service.

**Teaching and learning delivery:** Course content, teaching staff quality, examination method, teaching staff attitude, teaching style assignment method, course organization, extent and distribution of subject, coordination between subject expertise, library.

**Support service facilities:** Outside activities, recreation and sport services, student union building, recreation and sport, student union services, career service.

**Accommodation and social facilities:** On-campus accommodation, on-campus accommodation services, off-campus accommodation services, off campus accommodation, child care.

**Course administration:** Form of payment, enrolment period, registration process, the enrollment process.

**Teaching and learning facilities:** Laboratory science service, library services.

**Teaching and learning services:** Size of classroom, the condition of lecture room, teaching appearance and visual equipment.

While Mohamed (2013) categorized facilities services in university such as construction services; facilities maintenance, facility buildings and ground services; facility administration, utilities and facilities engineering; work control services, architecture, engineering and construction services, public safety services, parking and transportation services. He also described common facility services in universities particularly in Table 1.

**The framework:** The prior research on service quality in HEI context put much attention on the quality of educational services (Chua, 2004; Jie and Huaiyuan, 2008; Price *et al.*, 2009). While, it also found the research which exercised on service quality with respect to the relationship between student and teacher (Hill, 1995; Owlia and Aspinwall, 1996; Wright, 1996; Cook, 1997; Brenders *et al.* 1999). However, the research on facilities services are much more demonstrated solely aside from an attempt to combine the service quality and facilities services in HEI context (Hakim, 2005; Mohamed, 2013).

The previous section has been discussed on the element pertinent to service quality in HEI and factors of facilities services influenced the student's expectation and perception of service quality in HEI. In this study, the main focus attempt to put forward the elements of facilities services provided by higher education institution

Table 1: Facilities services in university (Mohamed, 2013)

Facilities services in universities installation and repair services	Details
Plumbing	Providing all plumbing works related to building renovations
Carpentry	All carpentry related works for building renovations
Painting	Provided services: spray painting, furniture refinishing, graffiti removal, electrostatic painting and exterior and interior painting
Cabinetry	A shop produces different types of furniture
Furniture repair	Wood furniture repair, reupholster services, sport and therapy equipment, transportation materials, auditorium seating
Signage	Providing signage and windows films
Glass works	Skylight repairs, mirrors, screen replacement, entrance system/doors, windows replacement
<b>Facilities maintenance services</b>	
HVAC	Heating, Ventilation, Air Conditioner
Plumbing maintenance	All preventive and corrective plumbing works for building maintenance
Roofing	Installation, maintenance, repair and seasonal cleaning
Elevators	Maintenance and repair of elevators and escalators
Metal shops	Heating service, sheetmetal shop, machine shop, welding shop, millwright shop
Fire system	Including all firefighting system
Electrical systems	Including preventive and corrective electrical works related to building maintenance
<b>Facilities custodial and ground services</b>	
Custodial services	Involves cleaning, trash removal, bulb changing and other related works
Pest control	Preventive and corrective actions regarding extermination of all pests
Ground services	Street and sidewalk sweeping, snow removal and trash removal
Landscape design	Landscape renovations, develop landscape plans, provide project management during installation
<b>Facilitative administrative services</b>	
Financial services	Budget administration and general accounting
Information technology services	Preparing plans for providing facilities related building and services with latest and proper information technology including internet systems and sources for accessing facilities related data and information
Preventive maintenance plans	Preparing plans for scheduled preventive maintenance for building
Quality assurance inspections	Follow up and control all facilities related activities to ensure a quality provided services to customers
Utility and facilities engineering services	Minimize energy consumption, creating awareness about energy and resource conservation, coordinating strategies for improving energy efficiency and providing end efficient electrical distribution system
Energy consumption awareness	
Work control services	
Customer contact office	Serve as the single point of contact for facilities operations with customers
Preventive maintenance sector	Provides preventive maintenance planning and quality assurance inspections as well as coordination for estimates, shutdowns and project
<b>Occupational safety and environmental health service</b>	
Biological and laboratory safety	Promoting research safety and assuring sound laboratory management by providing services such as: certification services, hazardous procedure manual and safety training development, research facility planning and design
Environmental protection	Provide these services to all university departments in this area: storage tank management program, chemical use compliance, research activities, property redevelopment, reduce waste generation, pollution prevention and recycling activities
Emergency preparedness	Provides resources, guidance and training of the university community in matters related to emergency preparedness, response and recovery
Fire safety services	Responsible for ensuring compliance with applicable fire safety regulations
Hazardous materials management	Responsible for the collection and proper disposal of chemical, radioactive and biological waste generated during teaching, research and clinical operations
Industrial hygiene and safety	Protects university staff from workplace injury and illness by assisting departments in anticipating, evaluating and controlling potential health and safety hazard
Operational safety and community health	Provides community health support for food service establishments on campus, drinking water issues, pesticide usage and swimming pool issues
Radiation safety services	Provides the radiological safety training, professional guidance and technical support necessary to establish and implement an effective radiation safety program at the university
Public safety	Provides information about police services as well as parking enforcement, communication centers, criminal investigation and other units
Parking and transformation services	Provides maps, bus routes, schedules, parking permit and vehicle lease options as well as brief construction updates that may affect the university community
<b>Public safety services</b>	
Providing information regarding safety to customer	It provides information about police services as well as parking enforcement, communication center, criminal investigations and other unit

toward perception and expectation of student as the core client in higher education. The following framework seeks to combine the globe approaches

on service quality in HEI facilities services concepts to be applied in public university in Indonesia (Fig. 1).

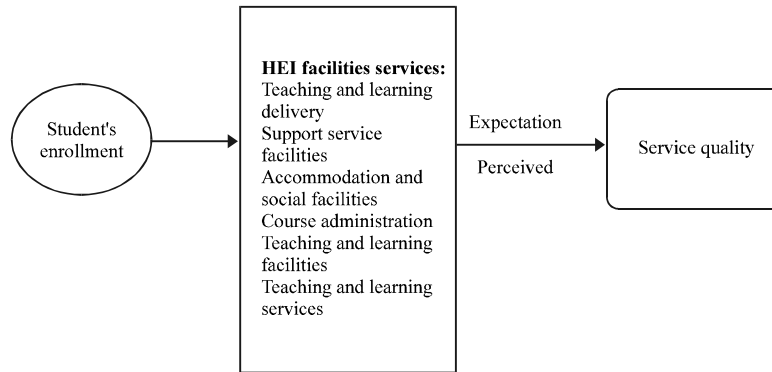


Fig. 1: Framework of service quality on HEI facilities services

## RESULTS AND DISCUSSION

The proposed framework is intended to examine to what extent the level of service quality on facilities services provided by higher education institution. This framework covered facilities services elements and service quality approaches which mainly inform expect and perceived of student's perception, accordingly demonstrate the level of service quality on HEI facilities services from very poor to excellent scale. In this research, service quality defines as a gap between student expectation and perception of service quality provided by higher education institution. Thus, the elements of the proposed framework are composed in the questionnaire distributed for the students as the main client of HEI. The data is expected to obtain the score and the gap of perceived and expected service quality on HEI facilities services. Meanwhile, the relation among the facilities services elements which might be significantly contribute towards service quality provided by HEI is disclosing through correlation analysis.

The result of this research is expected to become prominent information for university to take an initial step in order to improve the image of university. With respect to the competition among higher education around the globe is undeniable, this research enable to be consideration factors for university to take an action regarding leading university in the competitiveness.

## CONCLUSION

Higher Education Institution (HEI) is a service organization. The endurance of HEI to provide service excellence in a competitive global market is imperative because it drives the ability of university to offer program and retain student's satisfaction. Higher Education Institution (HEI) in search of competitive advantage persisted to strive for appropriate strategies with respect

to retain its main clients. In this study, we attempt to propose framework of service quality on HEI facilities services. The extensive research with respect to this study provided guidance to develop this framework. It is expected to become an initial step on enhancement of quality of delivery service in HEI in Indonesia.

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