THE INFLUENCE OF INFORMATION SYSTEM, ACADEMIC INFRASTRUCTURES, AND LECTURER PROFESSIONAL COMPETENCE ON THE QUALITY OF ACADEMIC SERVICES TO IMPROVE COLLEGE STUDENTS' SATISFACTION

Imanuel Damasar, Mardji,
Eddy Sutadji, Isnandar
Universitas Negeri Malang

Abstract:

This study aims to examine the influence of academic information system, academic infrastructure, professional competence of lecturer on the quality of academic service and student satisfaction. This research is a type of evaluation research. This research used survey method with quantitative approach. The population is a student of Engineering Faculty of Manado State University with a sample of 157 people. Data collecting technique was using questionnaire instrument with Likert scale and Data analysis using Structural Equation Modeling - Partial Least Square (SEM PLS) The results of the study found that: (1) Academic Information System affects the quality of academic services and student satisfaction, (2) The academic infrastructure affects the quality of academic service and student satisfaction, (3) Professional lecturer competence affects the Quality of Academic Service and Student Satisfaction. (4) The quality of academic service has no effect on student satisfaction. Recommendations: In order to increase student satisfaction, it is necessary to improve the quality of academic information system and academic facilities as well as professional competence of lecturers and academic service quality, since the students' perception categorized as average.

Keywords: academic information system, academic infrastructure, lecturer professional competence, quality of academic service, students' satisfaction

1. Introduction

Educational services provided by educational institutions nowadays begin to become the focus of education service users, therefore educational institutions that provide services in the intellectual life of the nation need to be sensitive to the situation and conditions and expected to be able to see the needs and desires of consumers as service users. The demands of society and government and increasingly fierce competition resulted in educational institutions should maximize the quality of services provided in the form of academic and administrative services oriented to service users, how to ensure the satisfaction of the service users with the services provided.

In response to this, the government seeks to increase the opportunity to obtain education by paying particular attention to the education sector. Some efforts have been made, such as increasing the education budget to 20% of the state budget, expanding opportunities for access to education, equitable development of infrastructure in each region , Improving the competence of teachers and lecturers through postgraduate and post-graduate studies and training or upgrading of competency fields and others. However, the policy has not been able to solve the quality of education problems.

Student satisfaction is the result that has been achieved by a student in conducting academic activity, is a skill or concrete result that can be achieved at a certain time or period, the result of measurement to learners covering cognitive factor, the result of knowledge, ability and intellectual ability, affective, the learning outcomes related to feelings of attitudes, interests, and values, as well as Psychomotorics, physical abilities such as motor skills and nerves, object manipulation, and neural coordination. In order to support the increase of student satisfaction, it is necessary to examine several factors such as the existence of a reliable academic information system, adequate academic facilities, as well as improvement of professional competence of lecturers as well as the quality of academic services provided. This research will explore the potential of academic quality improvement in accordance with the above-mentioned issued.

The efforts to improve the quality of education remains facing a numerous obstacles, therefore the target of efforts to improve the quality of education cannot be achieved optimally. According to Kasim (2009), there are seven main obstacles encountered in the context of quality improvement: 1), low quality of facilities and infrastructure, 2) low quality of teachers, 3) low teacher welfare, 4) low learning achievement, 5) low opportunity of education distribution, 6) the low relevance of education to the needs, and 7) the high cost of education. This obstacle is experienced

by all levels of education from elementary school to university level throughout the country.

It is undeniable that the quality of a college is determined by the academic information system existing in the college. Academic Information System is a system in universities that meet the needs of academic transaction processing, supporting academic operations, providing information to all parties with the necessary academic reports as well as supporting academic infrastructures. Academic Infrastructure is all facilities needed in teaching and learning process, whether moving or not moving, completeness in conducting academic in university in the form of media, space, and teaching and learning instrument and equipment.

Higher Education is a service provider institution in the field of education, although in its operation does not prioritize profit as the main goal, providing excellent service to students is a necessity such as profit-oriented institutions. Universities in providing services maintain special characteristics that cannot be equated with other service institutions outside of college. The quality of universities in this case, is imperative to ensure student satisfaction and cannot be separated from how the college is able to display maximally the quality of academic services. The quality of academic services (lectures) is the value given by the college to the extent that the academic services are provided in accordance with the expectations of the users; the specific service is the result of academic services shown by various faculty members, administrative staff and even janitor.

Several previous studies have partially examined the influence of academic information systems, academic facilities, student satisfaction, and professional competence of lecturers, and the quality of academic services. Some diantarnaya is Astuti (2014), Susan (2014), Parasuraman (1998), Mark and Peter (2000), Ruth (2000), Gerport and Lee (2001), Utomo (2010), Utami (2011), Derrick (2010), Jackson (2009), Noermijati (2010), Hu (2011), Giantari (2008), Prihantoro (2012), Sahyar (2012) and Wibowo (2009) shows the influence of Academic Information Systems and Academic Infrastructure on the Professional Competence of Lecturer and the Quality of Academic Service, and its implication to student's satisfaction. From the above-mentioned explanation, this research objective is to study the factors of academic information system and academic facilities to improve student's satisfaction, and also the influence of professional competence of lecturers and the quality of academic services that support student's satisfaction.

2. Literature Review

2.1. Academic Information System

In recent days the use of systemized instrument is increasingly widespread and encompasses various fields, resulting in various definitions and terms about the system, each moving from the point of view and the scope of understanding itself. Drucker (2008) state information system is a system within an organization reconcile the needs of daily transaction processing, support operations, are managerial and activities of an organization and provide certain outside parties with the reports in the report need. Based on the description of the meaning above, it can be explained that Information Systems is an integrated human or machine system to present information to support the functions of operations, management, and decision making within an organization. The system uses computer hardware and software, guiding procedures, management and decision models, and a database.

2.2. Academic Infrastructure

Learning equipment and facilities are a complementarity of student learning which is owned by students either at home or on campus. To support an effective learning process, learning equipment and facilities should be sufficient. Student learning equipment include stationery, notebooks, calculators, and so on. Facilities such as the availability of adequate space both at home and on campus, the availability of campus library, teaching aids in learning and so forth. Crown (1989) states that facilities and infrastructure are something that can facilitate and expedite the implementation of a business. In this case, learning facilities is a facilities commonly used for studying, or studying stuffs. The possibility of learning facilities and infrastructure is a factor that has a significant share in improving learning outcomes. Teaching and learning activities is a two-way communication between educators and learners, and then the necessary facilities and infrastructure to support them are like media, classrooms, and book sources.

According Mulyasa (2012) education facilities are equipment and apparatus directly used and support the educational process, particularly the teaching and learning process such as buildings, classrooms, tables, chairs, as well as tools and learning media. Stoops and Johnson (1967) argue that measures educational facilities and infrastructure management that includes needs analysis, budget analysis, selection, definition of needs, purchasing, receiving, storage, distribution, usage, inventory and maintenance. While other education management experts conclude that the

management of the educational infrastructure of higher education includes analysis and preparation of needs, procurement, distribution, use and maintenance, inventory and deletion.

2.3. Professional Competence of Lecturer

According to Makmun (1996), the lecturer as an educator has a strategic position and a significant contributive role in the success of development efforts aimed at improving the quality of civilization and the dignity of life of the people, the nation, and mankind in general. Lecturer as organizer in Higher Education is closely related to the managerial (human resources). Drucker (2008) states that the resources the organization has will remain a resource. It is its management that will make these resources have value in supporting the achievement of sustainable competitive advantage of the company.

According to Littrell (2001), competence is the mental and physical force to perform the tasks or skills learned through practice and exercise. Meanwhile, according to Kenezevich (2005), competence is the abilities to achieve organizational goals. Ability according to Kenezevich is the result of the incorporation of abilities that kind, can be knowledge, skills, leadership, intelligence, and others owned by someone to achieve organizational goals.

2.4. Academic Services Quality

Lockhart in Wijaya (2012), stating that educational services marketing is a way to do something where students, parents, school employees and the public consider the school as an institution which are dedicated to provide community support to serve the needs of customers of educational services. Marketing education services of the activity and educational services marketing tool because it is a way of thinking *(mindset)*.

Kotler (2006) states that service quality is a model that describes the customer's condition in terms of expectations of service from past experience, word-of-mouth promotion, and advertising by comparing the services they expect with what they receive or feel. The quality of service is the level of excellence expected and control over the level of excellence to meet customer desires (Nasution 2004). Goesth and Davis (in Tjiptono, 2007) argue that quality or quality can be defined as a dynamic condition associated with products, services, people, processes and environments that meet and exceed expectations. The quality is concerned with achieving the expected standards, which must really understand what the consumer needs for a product to be produced.

2.5. Students' Satisfaction

Student satisfaction is the result which has achieved by individual in doing the activity. Student satisfaction is a skill or a concrete result that can be achieved at a certain time or period. Catharina (2004) says that learning is an important process for the change of human behavior and includes everything that is thought and done. That is, that learning is a process of behavioral change that includes knowledge, skills, thoughts, attitudes and habits, intelligence that all is derived from experience.

The purpose of learning is a form of expectation which is communicated through a statement by describing the desired change in the self-learner, a statement of what is desired in self-learners after completing studying. In addition, Winkel (1996) argues that the student satisfaction in studying is a testament to the success of learning or ability in their learning activities in accordance with the weight achieved. Satisfaction of students studying in education is the result of measurement to the learners after following the learning process which is measured by using test instrument or relevant instrument. Thus, the satisfaction of student learning is the result of measurement from the learning effort assessment expressed in the form of symbols, letters and sentences that tell the results that have been achieved by each child in a certain period.

Crown (1989) states that academic competence is equal with academic potential. It is related with intelligence of the individual. Individual intelligence consists of general ability which works hand in hand with special ability. The basis of the entire intelligence function as a former of academic competence is an influence from general factor which is indicated by the letter of "G", however due to the diverse special ability, which is indicated by the letter of "S", hence it creates a relationship within exposed ability in particular for example an ability of individual in terms of mathematic, language ability, or any specific ability. Guilford (1967) argues that competence in the form of special abilities which equated to cells intellect structure, which tries to provide a systematic overview of the intellectual abilities specific.

3. Material and Methods

This research is designed as an evaluation research with quantitative approach. The population in this research is all an active student of Faculty of Engineering Universitas Negeri Manado. Based on the calculation of Slovin formula, the sample of this study set as many as 157 people. The analysis of quantitative data was analyzed with Structural Equation Modeling (SEM) based Partial Least Square (PLS) with the help of a computer program *WarpPLS* package. The tiered analysis model and the structural equation

model meet the recursive model. This study wanted to know the influence of academic information system (X1), academic facilities (X2), professional competence of lecturer (X3), academic service quality (Y), and student satisfaction (Z). The research framework is illustrated in Figure 1 below.
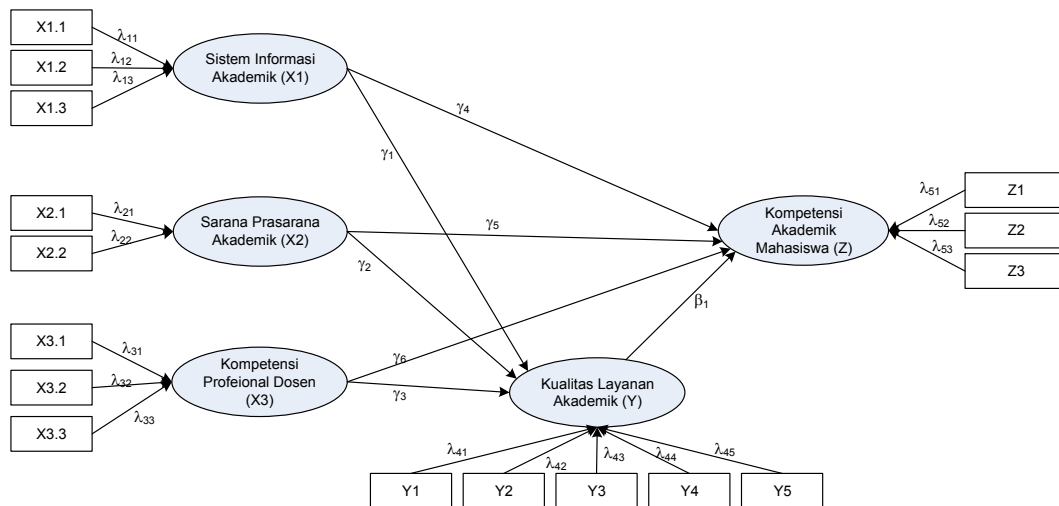

Figure 1: Conceptual Framework of Research

4. Result

4.1 Validity and Reliability Testing

This study used questionnaires to obtain data. Some parts of the questionnaire are perceptions using likert scale. Therefore, it is necessary to test whether the data of the questionnaire has been valid and reliable. The testing instrument validity of this research was Pearson Correlation analysis tool. If the correlation value of pearson (r) is greater than 0.30, it indicates the item is valid and eligible for exclusion at a later stage. Conversely, if the correlation value of pearson (r) less than 0.30 indicates the item is invalid. While the reliability of the instrument was tested with Alpha Cronbach analysis tool. If the value of alpha cronbach coefficient above 0.60 indicates a reliable instrument, otherwise if the coefficient value of alpha cronbach below 0.60 indicates the instrument is not reliable.

4.2 Goodness of Fit Testing

Goodness of Fit testing in this research used *predictive value-relevance* (Q^2). The value of R^2 in each endogenous variable in this study is presented in the following Table 1.

Table 1: R-Square dependent variable

Variable	R-Square
Quality of Academic Service (Y)	0.337
Students Satisfaction (Z)	0.665
Predictive-relevance (Q²)	0.778

Table 2 shows the results of calculation showed *predictive value-relevance* of 0778, or 77.8%, therefore, the models is confirmed possessing relevant score. *Relevance predictive* value of 77.8% indicates that the diversity of data that can be explained by the model amounted to 77.8% or in other words, the information contained in the data 77.8% can be explained by the model. While the remaining 22.2% is explained by other variables (which are not contained in the model) and *error.*

4.3 Measurement Model

Table 2: Measurement Model of Each Variable Indicator

Variable	Indicator	Loading Factor	p-value
Academic Information System (X1)	Quality of Information System (X1.1)	**0.436**	< 0.001
	Accessibility Information System (X1.2)	0.425	< 0.001
	Quality of HR Manager (X1.3)	0.403	< 0.001
Academic Infrastructure (X2)	Quality of Academic Infrastructure (X2.1)	**0.569**	< 0.001
	Quantity of Academic Infrastructure (X2.2)	**0.569**	< 0.001
Professional Lecturers Competence (X3)	Mastery of Material (X3.1)	0.414	< 0.001
	Application of the Applicative Concept (X3.2)	**0.423**	< 0.001
	National Cultural Preservation (X3.3)	0.420	< 0.001
Quality of Academic Service (Y)	Reliability (Reliability) (Y1)	**0.311**	< 0.001
	Responsiveness (Power Response) (Y2)	0.265	< 0.001
	Assurance (Guarantee) (Y3)	0.274	< 0.001
	Empathy (Empathy) (Y4)	**0.311**	< 0.001
	Tangible (physical evidence) (Y5)	0.305	< 0.001
Student Satisfaction (Z)	Cognitive (Z1)	**0.424**	0.005
	Affective (Z2)	0.420	0.011
	Psychomotor (Z3)	0.418	0.013

Based on Table 2, the results of the measurement model showed that all the indicators significantly measure the research variables. The test result also showed the most dominant indicator in measuring variable of Academic Information System (X1) is Information System Quality (X1.1) with loading factor value equal to 0.436. In the Academic Infrastructure variable (X2), the strongest indicator is Quality of Academic

Infrastructure (X2.1) and Quantity of Academic Infrastructure (X2.2) with loading factor value of 0.569. In Professional Lecturer Competency variable (X3), the most dominant measuring indicator is Application of Applied Concept (X3.2) with loading factor value of 0.423. In Academic Service Quality (Y) variable, the most dominant measuring indicator is Reliability (Reliability) (Y1) and Empathy (Empathy) (Y4) with loading factor value of 0.311. In Student Satisfaction variable (Z), the most dominant measuring indicator is Cognitive (Z1) with loading factor value of 0.424.

4.4 Partial Least Square Analysis Result

The testing of inner models (structural model) is essentially test the hypothesis. Hypothesis testing is done by t test (T-Statistics) on each lane partial direct effect. The results of complete analysis, contained in the results of WarpPLS analysis, can be seen in Table 4 below presents the results of hypothesis testing.

Table 3: The Result of Inner Model in WarpPLS: Direct Influence

Relationship	Coeficient Path	p-value	Note
Academic Information System à Academic Service Quality	0,255	<0,001	Significant
Academic Infrastructure à Academic Service Quality	0,462	<0,001	Significant
Professional Competence à Lecturer Academic Service Quality	0,160	0,020	Significant
Academic Information System à Student Satisfaction	0,279	<0,001	Significant
Academic Infrastructure→Student Satisfaction	0,480	<0,001	Significant
Lecturer Professional Competence→Student Satisfaction	0,260	<0,001	Significant
Academic Service Quality → Student Satisfaction	0,257	<0,001	Significant

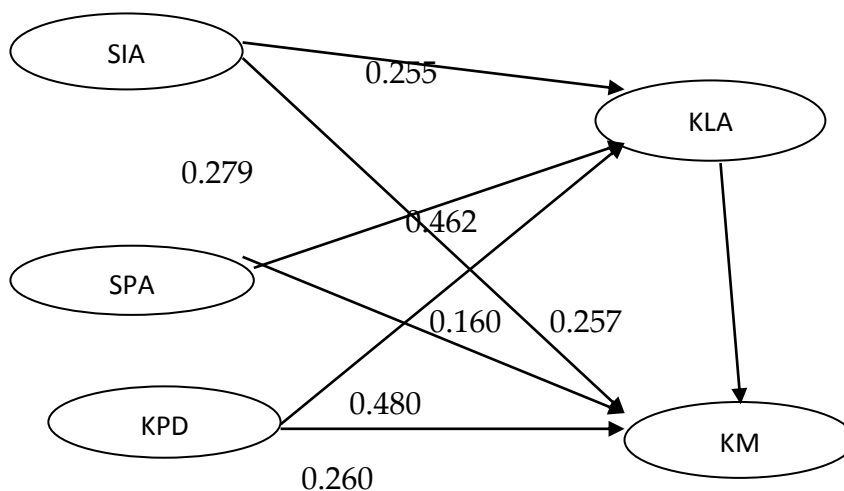Graphically, the test results of Inner Model WarpPLS are as follows:

Figure 2: Hypothesis Testing Results in Inner Model WarpPLS

5. Discussion

According to the analysis of WarpPLS analysis in Table 4:14 and Figure 4.16, on testing the direct influence between Academic Information System on Academic Service Quality, it obtained the value of inner weight coefficient of 0.255, with p-value of <0.001. Because p-value <0,05, there is a significant direct influence between Academic Information System on Quality of Academic Service. Since the inner weight coefficient is positive, it indicates that both are positive. Meaning that the higher the Academic Information System, will result in the higher Quality of Academic Services.

On direct influence between Academic Infrastructure to Academic Service Quality, it was obtained the value of inner weight coefficient of 0,462, with p-value equal to <0,001. Since p-value <0.05, there is a significant direct influence between Academic Infrastructures on the Quality of Academic Services. Since the inner weight coefficient is positive, it indicates that both are positive. That is, the higher Academic Facilities, will result in higher Quality of Academic Services.

On direct influence between Lecturer Professional Competence on Quality of Academic Service, it was obtained the value of inner weight coefficient of 0 ,, deng160an p-value equal to 0,020. Because p-value <0,05, there is significant direct influence between Lecturer Professional Competence toward Academic Service Quality. Since the inner weight coefficient is positive, it indicates that both are positive. Thus, it means that the higher the Professional Competence of Lecturers, will result in the higher Quality of Academic Services.

On direct influence between Academic Information System on Student Satisfaction, the value of inner weight coefficient is 0,279, with p-value equal to <0,001. Because p-value <0,05, there is significant direct influence between Academic Information System on Student Satisfaction. Since the inner weight coefficient is positive, it indicates that both are positive. Therefore, the higher the Academic Information System, will result in higher Student Satisfaction.

On direct influence between Academic Infrastructure to Student Satisfaction, we get the value of inner weight coefficient of 0,480, with p-value equal to <0,001. Because p-value <0,05, there is a significant direct influence between Academic Infrastructure on Student Satisfaction. Since the inner weight coefficient is positive, it indicates that both are positive. Hence, the higher the Academic Infrastructure, will result in higher Student Satisfaction.

On direct influence between Lecturer Professional Competence and Student Satisfaction, the value of inner weight coefficient is 0,260, with p-value equal to <0,001.

Because p-value <0,05, there is significant direct influence between Lecturer Professional Competence to Student Satisfaction. Since the inner weight coefficient is positive, it indicates that both are positive. Hence, the higher the Professional Competence of Lecturers, will result in higher Student Satisfaction.

On direct influence between Quality of Academic Service to Student Satisfaction, the value of inner weight coefficient is 0,257, with p-value equal to <0,001. Because p-value <0,05, there is a significant direct influence between Quality of Academic Service to Student Satisfaction. Since the inner weight coefficient is positive, it indicates that both are positive. Hence, the higher the Quality of Academic Service, will result in higher Student Satisfaction.

6. Conclusions

In accordance with the results of data analysis, it can be concluded that there is a significant direct influence between Academic Information System on Academic Service Quality, Academic Infrastructure of Academic Service Quality, and Professional Competence of Lecturers to Quality of Academic Service. In addition, there is a significant direct influence between the Academic Information System on Student Satisfaction, Academic Infrastructure of Student Satisfaction, Professional Competence of Lecturers to Student Satisfaction, and there is a relationship between endogenous variable that is significant influence between Quality of Academic Service to Student Satisfaction.

References

1. Astuti, W, Sumarno, W. 2014 Pengaruh Kualitas Pelayanan Akademik Terhadap Kepuasan Mahasiswa di Jurusan Terapi Wicara Poltekes Kemenkes Surakarta.
2. Catharina 2004. Psikologi Belajar. Semarang: Unnes Press.
3. Gerpott, T. J., Rams, W. & Schindler, A. 2001. Customer retention, loyalty and satisfaction in the German mobile cellular telecommunications market. Telecommunications Policy, 25(4): 249-269.
4. Giantari. 2008. Analisis Kepuasan Mahasiswa Terhadap Proses Belajar Mengajar Program Diploma III FE Unud.
5. Jackson. 2009 Comparing different approach and avoidance models of learning and personality in the prediction of work, university, and leadership outcomes

6. Kasim, A. 2009. Pengukuran Efektivitas Organisasi. Jakarta: Fakultas Ekonomi. Universitas Indonesia

7. Kenezevich, S. M. 2005. Customer Switching Behavior in Service Industries: An Exploratory Study. Journal of Science, 29(4):374-390.

8. Kotler, 2006. Marketing Management 9th Edition. New Jersey. Prentice Hall International, Inc.

9. Littrell 2001. Consumers conceptualization of apparel attribute. Clothing and Textiles Reasearch Journal. Vol 13. No. 2, pp. 65- 74

10. Makmun. 1996. Anasisi Posisi Pendidikan. Jakarta: Biro Perncanaan Pendidikan. Depdikbud

11. Mark & Peter. 2000. Pengaruh implementasi Strategi Relasional terhadap Loyalitas dan Kepuasan Pelanggan.

12. Mulyasa. 2012. Standar Kompetensi dan Sertifikasi Guru. Bandung: Remaja Rosdakarya.

13. Neufeld, Derrick J., Wan, Z. & fang, Y. 2010 Remote Leadership, Communication Effectiveness and Leader Policy. Group Decis Negot, 19:227-246.

14. Noermijati 2010 Kinerja dosen dan kepuasan mahasiswa pada berbagai tingkat

15. Parasuraman, A.,V. A. Zeithamel, dan Berry L. L. 1998. SERVQUAL: A Multiple Item Scale For Meassuring Cunsumer Perceptions of ServiceQuality. Journal Of Retailing, Vol 64.

16. Prihantoro. 2012. Analisis Dimensi Kualitas Pelayanan Jasa Terhadap Kepuasan Mahasiswa di sekolah Tinggi Agama Islam Negeri Tulungagung.

17. Ruth, 2000. Pola pengambilan keputusan berdasarkan pengalaman saat berinteraksi dengan perusahaan dan dengan pesaing perusahaan.

18. Sahyar. 2012. Pengaruh Kompetensi Dosen dan Proses Pembelajaran Terhadap Kepuasan Mahasiswa.