

## Factors related to the achievements of the three pillars of higher education practice

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### Abstract

**Purpose:** Quality higher education will be realized if it has practiced the values of the Tridharma of Higher Education. This study aims to analyze the lecturer's factors related to the achievement of the three pillars of higher education. **Methods:** This study used a cross-sectional with a population and sample of all permanent lecturers in six Health Higher Education Institutions in Medan City, North Sumatra Province, Indonesia which were selected purposively (N=121). Data were collected using a questionnaire and analyzed using the chi-square statistical test. **Results:** There is a significant relationship between commitment (p-value 0.013), continuous improvement (p-value 0.032), innovation (p-value 0.037), collaboration (p-value 0.036), and technology (p-value 0.030) with the achievement of the three pillars of higher education. **Recommendations:** This research provides a foundation for the development of higher education quality through the development of the quality of lecturers by improving lecturer commitment, continuous improvement, innovation, collaboration, and technology.

**Keywords:** achievement; lecturer; higher education; three pillars; quality of lecturer

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## 1. Introduction

Universities have a great influence on the life of the nation and state through the achievement of the three duties of higher education (the three pillars of higher education). Three obligations are in tertiary institutions, namely education and teaching, research and development, and community service. Universities that are qualified and have competitiveness are those that have fulfilled the achievement indicators starting from input, process, and output as well as carried out the three obligations of these tertiary institutions. The quality of tertiary institutions is important for increasing visibility to the public. The quality of university will be realized if the three pillars of higher-education are supported by information-technology and an entrepreneurial system as well as reliable human resources. The achievement of the three pillars of higher education can be realized through improving indicators of academic implementation process, internal management, sustainability, efficiency, and productivity (Yulmaini et al., 2018).

The multidimensional concept of quality in higher education includes all of its functions and activities, namely academic lecturers and programmers, research and scholarships, personnel, students, buildings, faculties, equipment, community service, and an integrated academic environment in a quality assurance system (Rohida, 2018), (Wardani et al., 2017). The implementation of good education management will focus on encouraging the achievement of higher education performance through the achievements of the three pillars of higher education (Muktiyanto et al., 2020). The success of higher education is influenced by the high commitment of lecturers and the ability to carry out the three obligations of lecturers. However, there are still many lecturers who carry out the main tasks of the three pillars of tertiary institutions who are inadequate in carrying out their duties due to low lecturer satisfaction. Lecturer job satisfaction is a positive and negative emotional response that affects feelings and thoughts about pleasant attitudes and loves his work so that it will create lecturer performance in carrying out the three duties of university (Gunawan et al., 2018).

Lecturers are the life center of higher-education. Lecturers determine the 'quality of education' through graduates produced tertiary institutions, lecturer research findings and community service carried out by lecturers (Wardani et al., 2017). The quality of the lecturers is directly proportional to the quality of the tertiary institution. If the lecturers are of high quality, the higher education will also be high quality. Saltmarsh & Randell-Moon (2015) states that lecturers have stuck with many roles such as giving lecturers, researchers, administrators, counselors, and many others (Saltmarsh & Randell-Moon, 2015). Some literature proves that a common consequence of poor multiple teacher roles is depression and distress, which lead to lower productivity, poorer quality of work, and higher absenteeism (Husin et al., 2018).

In the 1970s, Indonesia started a program to improve the quality of lecturers. The program implemented in Indonesia which is implemented in several tertiary institutions is conducting lecturer development through training, especially for new lecturers. Several universities have also set up training centers for teaching staff. This lecturer development program is also carried out in remote areas (Wahab & Kurniady, 2020). Based on PDDIKTI data as of June 29, 2021, 50% of active lecturers in Indonesia still have undergraduate qualifications (Saing et al., 2021). The results of research conducted (Rabiah, 2019) regarding the problem of the quality of higher education in Indonesia found that one of the causes of the problem of the quality of higher education was the low quality of lecturers. The problem of low-quality lecturers is related to inadequate qualifications and competence of lecturers, lack of interest in reading lecturers, low work ethic and commitment of lecturers, lack of lecturers' role in applied research, low scientific publications, and lack of lecturer professionalism in carrying out the learning process. Newly appointed lecturers at tertiary institutions do not have teaching competence (Fahmi & Muzaki, 2021).

In carrying out his duties as a quality lecturer, he is influenced by several factors that can make a positive contribution to the performance of lecturers in achieving the characteristics of quality lecturers, namely: leadership, organizational culture, lecturer competence, and achievement

motivation (Baharun & Fawa'iedah, 2020). Zulfakar, 2020 also stated the same thing in his research that the role of higher education leaders, supporting regulations, and individual commitment can improve lecturer competence in implementing higher education tri dharma. (Zulfakar, 2020). The problems above show that there is still a wide gap between ideal ideals and real conditions to achieve the three pillars of higher education. This condition is, of course, influenced by various lecturer factors. Several studies have proven that there is a relationship between good university governance such as the success of higher education management, quality control, and organizational performance with the achievement of the three pillars of higher education. Our article presents the results of the analysis of lecturer variables related to the achievement of the three pillars of higher education. Our research will provide a basis for the development of higher education quality through the development of the quality of lecturers by knowing the lecturer factors related to the achievement of the three pillars of higher education.

## **2. Method and Materials**

### **2.1. Research Model**

We conducted a cross-sectional study to analyze the factors associated with the achievement of the three pillars of higher education. The study was conducted in six Health Higher Education Institutions in Medan City, North Sumatra Province, Indonesia which were selected purposively.

### **2.2. Participants**

The population is all permanent lecturers at the research locus (N=121). The entire population is used as a sample. The dependent variable of this research is the achievement of the three pillars of 'higher education'. The achievement of the three pillars of higher education is the achievement of lecturer activities including teaching education activities, research, community service, and publications which are assessed based on the study program accreditation assessment guidelines. The independent variables are commitment, continuous improvement, innovation, collaboration, and technology.

### **2.3. Data Collection Tools**

A structured questionnaire was used to assess commitment, continuous improvement, innovation, collaboration, and technology. There are ten commitment statements, 14 continuous improvement statements, eight innovation statements, ten collaboration statements, and seven technology statements. The panel of innovation technology experts determined content validity, while groups of lecturers at different locations with selected research locations with the same characteristics (n = 30) were used to assess the validity of the instrument before data collection. The questionnaire instrument was tested on lecturers at the Medan Sumatera Utara Health Institute and the Mitra Husada Medan College of Health Sciences. Data analysis used product moment and SPSS (Statistical Package for Social Science) version 25.

Cronbach alpha value of each variable, namely:

#### **a. Commitment validity and reliability test.**

This validity and reliability test was carried out on respondents consisting of eleven statements. The results of the analysis using Cronbach's Alpha, in this section there is one statement that is not reliable so there are ten statements that meet the test requirements. Internal consistency (Cronbach's alpha) for the commitment part Alpha value of 0.892.

#### **b. Test the validity and reliability of continuous improvement.**

This validity and reliability test was carried out on respondents consisting of 14 statements. All statements are reliable. Cronbach Alpha value of the continuous improvement is 0.862.

#### **c. Test the validity and reliability of innovation.**

This validity and reliability test was carried out on respondents consisting of eight statements. All statements are reliable with an innovation Cronbach Alpha value of 0.757.

d. Test the validity and reliability of collaboration.

This validity and reliability test was carried out on respondents consisting of 10 statements. All statements are reliable with a collaborative Cronbach Alpha value of 0.757.

e. Test the validity and reliability of the technology.

This validity and reliability test was carried out on respondents consisting of eight statements. The results of the analysis using Cronbach's Alpha, in this section there is one statement that is not reliable so there are seven statements that meet the test requirements. Cronbach Alpha value of technology 0.757.

The dependent variable of higher education the three pillars of achievement was assessed by making observations using a checklist with appropriate or inappropriate criteria.

## 2.4. Data Collection Process

Research data was collected using research instruments. The research instruments used for data collection were observation sheets and questionnaires. The questionnaire instrument used a questionnaire consisting of 49 statements with a Likert scale with five answer choices, divided into statements supporting (favorable) and statements not supporting (unfavorable).

## 2.5. Data Analysis

Data were analyzed using the IBM SPSS version 25 program. Characteristic data were analyzed with univariate frequency distribution statistics. Lecturer factors related to the achievement of higher education tri dharma were analyzed by chi-square statistical test with the significance level set at  $p$ -value  $< 0.05$ .

## 3. Result

### 3.1. Characteristics of Respondents

Table 1. Characteristics of Respondents

Variable	N	Percentage (%)
<b>Gender</b>		
Man	14	11,6
Woman	107	88.4
<b>Age</b>		
<30	16	13.2
30-40	52	43.0
40-50	32	26.4
50-60	15	12.4
>60	6	5.0
<b>Education</b>		
Master	117	96.7
Doctor	4	3.3

<b>Major</b>		
Midwifery	18	14.9
Health of both mother and child	2	1.7
Reproduction health	26	21.5
Public Health	34	28.1
etc.	41	33.9
<b>Masa Kerja</b>		
≤ 5	29	24.0
6-10	31	25.6
11-15	23	19.0
16-20	19	15.7
> 20	19	15.7
<b>Total</b>	<b>121</b>	<b>100</b>

Table 1. The majority of respondents are women (88.4%), the majority are in the age group of 30-40 years (43.0%), the majority are in the latest Masters education (96.7%), and the majority have years of service with 6-10 years of service years (25.6%).

### 3.2. Achievement of the Three Pillars of Higher Education

Table 2. Distribution of Suitability of Achievement the Three Pillars of Higher Education

<b>Variable</b>	<b>N</b>	<b>Percentage (%)</b>
<b>Achievement the Three Pillars of Higher Education</b>		
in accordance	61	50,4
it is not in accordance with	60	49,6
<b>Total</b>	<b>121</b>	<b>100</b>

Table 2 shows that 50.4% of higher education's three pillars achievements are not appropriate.

### 3.3. Relationship of Commitment, Continuous Improvement, Innovation, Collaboration, and Technology with Three Pillars Achievement Variables

Table 3. Relationship of Commitment Variables, Continuous Improvement, Innovation, Collaboration and Technology with the Achievement of the Three Pillars of Higher Education (n = 121)

<b>Variable</b>	Achievement of the Three Pillars of Higher Education		$\chi^2$	<b>p</b>	<b>RP</b>	<b>95% CI</b>
	in accordance %	it is not in accordance with %				
Commitment						
High	64,2	35,8	6,17	0,013*	2,7	1,29-5,70
Low	39,7	60,3				

Variable	Achievement of the Three Pillars of Higher Education		$\chi^2$	p	RP	95% CI
	in accordance %	it is not in accordance with %				
<b>Continuous improvement</b>						
Good	63,3	36,7	4,61	0,032*	2,4	1,14-5,08
Not good	41,7	58,3				
<b>Innovation</b>						
Good	60,7	39,3	4,36	0,037*	2,3	1,11-4,79
Not good	40,0	60,0				
<b>Collaboration</b>						
Good	61,4	38,6	4,40	0,036*	2,3	1,11-4,82
Not good	40,6	59,4				
<b>Technology</b>						
High	63,8	36,2	4,69	0,030*	2,4	1,15-5,19
Low	41,9	58,1				

Exp :

$\chi^2$  = Chi-Square

p = p-value

\* = significantly

RP = Ratio Prevalens

CI = Confidence Interval

Table 3 above presents data on the relationship between the variables of commitment, continuous improvement, innovation, collaboration, and technology with the achievement of three obligations of lecturers in implementation higher-education. The percentage of achievement of the three pillars of higher-education that has a high-commitment is 64,2%. The achievement of the three pillars of higher education with high commitment has a 2,7 times greater chance than respondents with low commitment. Statistical test results show that lecturer commitment is significantly related to the achievement of the three pillars of higher-education (p-value = 0,013).

The percentage of respondents' achievement of the three pillars of tertiary institutions that have good continuous improvement is 63,3%. The achievement of the three pillars of higher education with good continuous improvement has a 2,4 times greater chance than those with poor continuous improvement. Chi square p value test p = 0,032, indicating that Lecturer continuous improvement is related to the achievement of the three pillars of higher education. The percentage of achievement of the three pillars of higher education with good innovation is 60,7%. The achievement of the three pillars of higher education with good innovation has a 2,3 times greater chance than respondents with less innovation. There is a significant relationship between innovation and the achievement of the Tridharma of Higher Education with a value of p=0,037.

The percentage of the achievements of the three pillars of higher education that have good cooperation is 61,4%. The achievement of the three pillars of higher education with good cooperation has a 2,3 times greater chance than respondents with less cooperation. Cooperation has a relationship with the achievements of the three pillars of higher-education with values of p=0,036. The percentage of respondents who have good technical skills in the three pillars of higher education is 63,8%. The achievement of the three pillars of higher education with good technology has a 2,4 times greater chance than respondents who lack technology. The results of the statistical test obtained a value of p = 0.030, indicating that technology has a relationship with the achievement of the three pillars of higher education.

#### 4. Discussion

The achievement of higher education tri dharma in this study is still low. Our research findings show that there is a significant relationship between commitment, continuous improvement,

innovation, collaboration, and technology. This finding is not by the mandate contained in Law no. 12 of 2012 concerning Higher Education in Indonesia. This law states that the main duties of lecturers are to carry out three obligations in 'higher education', namely providing education to students, conducting research, and carrying out community service. The duties and obligations of a lecturer are also contained in the Decree of the Director General of Higher Education and the Ministry of Education and Culture of the Republic of Indonesia Number 12/E/KPT/2021 concerning Guidelines for Implementing Lecturer Workload, in Chapter (1) it is stated that as professional educators, lecturers are required to (a) conducting educational teaching to students, conducting research, and carrying out community service; (b) implementing learning management and learning outcomes well; (c) developing competencies in accordance with developments in science, art, and technology. Johan & Ahmalia, 2019 states that the main duties of lecturers based on the 2019 Lecturer Work Guidelines are the pillars of higher education in terms of implementing educational teaching, the lecturer's workload is a minimum of twelve credits and a maximum of sixteen credits. Its implementation in each semester must also be in accordance with the academic qualifications possessed by the lecturer. (Johan & Ahmalia, 2019)

The low level of work commitment, continuous improvement, innovation, collaboration, and technology in our research further strengthens the research results of Akhiruddin et al., (2021), that the low quality of lecturers is caused by low work commitment, and the problem of lecturer quality, in general, is that teachers are comfortable with teaching methods. old age, and low innovation behavior so lecturers have not done self-reflection to improve performance on an ongoing basis (Akhiruddin et al., 2021). The results of research on the lack of collaboration are in line with the opinion of (Mulyanto, 2012), that a lecturer has a negative perception of the urgency of sharing knowledge through collaborative activities, and lecturers will be reluctant to share knowledge if that knowledge is misused and commercialized. In addition to these factors, Simanjuntak and Wahyanti (2021) stated that the problem of low collaboration among lecturers was also influenced by the limitations of lecturers in the use of information technology that hindered teaching, research, and community service (setting work schedules and completing work) (Simanjuntak & Wahyanti, 2021).

We also found in our research that there is a correlation between commitment and achievement of the three pillars of higher education and the prevalence of the achievement of the three pillars of higher education by respondents who have high commitment to have a 2.7 times greater chance than those with less commitment. Our findings regarding the variable of lecturer commitment also support the findings of Widawati, et al (2020), regarding the effect of commitment to the three pillars task at universities, the results show that lecturer commitment as one of the stakeholders in the scope of education has a significant influence in building effective universities (Widawati, 2020). Commitment is a fundamental thing that must be realized by a psychologically healthy human being to achieve a goal, aware of what he is doing and why he is doing it. Thus, the commitment of lecturers to their work is shown by consciously carrying out the pillars of higher education tasks, which can be realized by effective, sustainable, and normative commitments. These three components of commitment must be owned by every lecturer. These commitments will result in good behavior in carrying out their work (Harsasi et al., 2017; Syakur et al., 2020).

Our research also shows a significant relationship between continuous improvement and the achievement of higher education tri dharma. Lecturers with good continuous improvement have a 2,4 times greater chance of having good tertiary tri dharma achievements compared to lecturers with poor continuous improvement. Our research findings are relevant to the stated research that there is an effect of continuous improvement on implementation of the three obligations in higher-education. A lecturer is required to always present his duties and his best work on an ongoing basis. The consistency of work from time to time continues to show progress by the mandate of the law on the teaching profession, by institutional expectations, as well as by the expectations of the personal ideals of the lecturers themselves (Fikri, 2017). Our research also proves the theory which states that one of the efforts to improve the quality of lecturers is through continuous improvement. Both individuals

(lecturers), and organizations (universities) can improve quality repeatedly, by making continuous process improvements (Ilyasin & Zamroni, 2017).

Our research also proves the correlation between innovation and achievement of the three pillars of higher education with the prevalence of the achievement of three obligations of lecturers at the university with 2.3 times greater opportunity than the lack of innovation. The findings our research support previous research Yulianti et al., 2016, which found the influence of lecturers' innovative behavior on implementation of the of the three pillars of university. In his findings, it was stated that the higher the innovation produced by a lecturer, the better the achievement of the three pillars will be. Through innovative behavior, a lecturer consciously improves and realizes new ideas in work, work groups, and workplaces (organizations) to provide benefits to individual and organizational performance (Yulianti et al., 2016). A lecturer is required to have innovation, because innovation is always related to new ideas, practices or processes that are adopted. Innovation is not only limited to objects or goods produced, but also includes attitudes, behavior, or movements towards a process of change in all forms of social life (Bower, 2017).

This research also supports the findings research of Dasmadi, 2021 that the better creativity and innovation, the higher the performance (Dasmadi, 2021a). The results of this research reinforce the theory of Creativity and Innovation (creativity and innovation), which is the ability to convey and develop new ideas to other parties, be responsive, and openly accept new and different perspectives (Indrašienė et al., 2021). Creativity has become a watchword in contemporary times. Being creative is the only way to do anything and the most effective mode of survival. Individuals who will be able to survive are those who have intellectual-based capital, have strategic intellectual resources can form social networks; have knowledge exchange, have creativity and high innovation power (Hussain et al., 2018).

This research also tests innovative theories according to (Robbins et al., 2017) that innovation is a process of renewal, discoveries in the form of ideas, methods, or others. Innovative behavior does not just appear, but innovative behavior at work will appear if employees are faced with challenges in their work and get broad authority in carrying out their duties and responsibilities. The results of this study found that there was a significant relationship between collaboration and the achievement of the tri dharma of higher education with a 2.3 times greater opportunity than the lack of collaboration. The findings of this study are in line with the research results of (Dasmadi, 2021b), that one of the determinants of improving lecturer performance is the ability to build collaboration. The better the collaboration, the higher the performance. In carrying out the main tasks of the three pillars of higher education, a lecturer is required to collaborate with lecturers through team teaching (in the field of education), and group research (in the field of research and community service).

The results of this study are by the needs of entering a new world in the 21st century, the characteristics of teaching in this era are performance in critical thinking and problem solving, innovative and creative, collaborative and cooperative learning, teamwork, leadership, building cross-cultural understanding, communication and information, media and literacy, and career and learning independence (Akib & Muhsin, 2019). Based on the theory of Quality from Edward Deming (1982), lecturer quality is defined as a process of self-development that starts from an individual's commitment to making continuous improvements by creating, collaborating by utilizing technology effectively and efficiently. A professional and qualified lecturer must also be aware of what and why he becomes a lecturer. Must know his goals as a lecturer and his organizational goals.

The results of this study at the same time test the collaboration theory according to Charles Horton Cooley in that someone wants to collaborate with other people because 1) People realize that they have the same interests and at the same time have sufficient knowledge and control over themselves to fulfill these interests, 2) Awareness of the existence of the same interests, 3) the existence of organizational goals for the common good. This finding is by the opinion of Johnson,

Elaine B (2012) which states that each part of the group is interconnected in such a way that the knowledge one has will be output for others, and this output can be input for others.

Our research proves the significant relationship between technology and the quality of lecturers in implementing the obligations of the three pillars of higher education. This means that the higher the technological ability of the lecturer, the better the achievement of the three pillars of higher education. Our research strengthens findings from Hutasuhut & Palahi, 2021 that the use of Information technology affects Lecturer Performance for achievement of the three pillars task. Utilization of Information Technology can affect Lecturer Performance by 0.407 (40.7%) and the rest is influenced by other factors. From the findings of this study, it can be said that this study succeeded in confirming several theoretical concepts described by several experts (Hutasuhut & Palahi, 2021).

Information technology has an effect and is closely related to the level of performance produced by individuals in an organization. Bower (2017) further states that through technological advances, a lecturer will more quickly and easily access the information needed, as a medium for consulting with experts according to their expertise, facilitating the learning process with the development of learning media such as e-learning innovations, the development of virtual classes, or teleconference-based classes so that lecturers and students do not have to be in the same room, and education administration will be easier and smoother (Bower, 2017; Mahat et al., 2019; Rahmadi, 2019; Taufikurrahman, n.d.).

Our research also confirms the findings (Saing et al., 2021), which also found that the challenge faced by lecturers in the era of the Industrial Revolution 4.0, Society 5.0, and during the COVID-19 outbreak was to increase the ability to use technology. This event is a challenge for the importance of increasing the creativity of every lecturer in utilizing technology to develop educational success.

## **5. Conclusion and Recommendations**

There is a significant relationship between commitment, continuous improvement, innovation, collaboration, and technology with the achievement of the three pillars of higher education. This research provides a foundation for the development of higher education quality through the development of the quality of lecturers in terms of commitment improvement, continuous improvement, innovation, collaboration, and technology. This research is only cross-sectional, it is necessary to conduct research that studies more deeply and contextually about the variables related to the lecturer.

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### **Ethics Declaration**

Informed Consent is conveyed to prospective respondents. The researcher explains the aims and objectives of the research. The researcher guarantees the confidentiality of all information provided and is only used for research purposes. Prospective respondents who are willing to sign the consent form. And respondents are not willing, researchers do not come and respect the rights of respondents.

### **Conflict of Interest**

The author states there is no conflict of interest.

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