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Factors Affecting Human Resource and Infrastructure in the Universities of Indonesia

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Abstract

This study aims to test whether the expertise of human resources and the availability of infrastructure, can improve the reputation of universities. The variables were developed from the theory of Resources Based View (RBV). Furthermore, the development of these variables is described with infrastructure, human resource skills, and reputation in increasing the competitiveness of universities.

The data collection method used was questionnaires and interviews. The questionnaire was prepared using the three variables in the study, namely human resources skills, infrastructure, and university reputation. The respondents of this study were 230 people. The respondent's profession as a whole is a lecturer. The questionnaire in this study used a measurement scale called the Likert scale. Subsequently, the data from the questionnaire was processed using Partial Least Square (PLS).

Based on data collection, the results found human resources skills related to the reputation of the university. Infrastructure affects the strength of reputation and human resources skills. The results of this study show human resources skills and infrastructure greatly affect the reputation of universities. This is due to the ability of human resources supported by infrastructure will increase the competitiveness of the university.

Keywords: Human Resources Skills; Infrastructure; Reputation; RBV

Introduction

Indonesia must be able to have competent human resources in their respective fields of work to face the ASEAN Economic Community. To do that, universities must be able to manage internal resources to be able to create a competitive advantage (Anderson & Birrer, 2011; Maket, 2017; Williams, 2014).

A good university can be seen from its reputation (Larsen, 2003). Measurement of reputation by indexing institutions has certain criteria in determining the reputation of universities. QS World University Rankings determine academic reputation based on the quality of research and teaching. In line with this, The World University Rankings (THE) determine the reputation of teaching and research conducted. Furthermore, the quality of the research is determined by the number of citations from the publications. It shows that reputation becomes one of the determinants of university rankings. These factors are very important in the college

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marketing strategy and as a deciding point for students to choose their favorite college (Munisamy, Jaafar, & Nagaraj, 2014). In the previous study, it was stated that the gap in reputation is related to differences in perceptions between employees and consumers (Davies & Chun, 2002; Davies, Chun, & Kamins, 2009) . Thus, measuring reputation becomes difficult due to different views of customers' perceptions of the reputation (Lafuente-Ruiz-de-Sabando, Zorrilla, & Forcada, 2018; Nguyen & LeBlanc, 2001). Reputation based on student perceptions is determined by the staff and facilities owned by the faculty (Nguyen & LeBlanc, 2001), while external aspects are seen from customer perceptions and internal aspects are seen from employees (Davies & Chun, 2002). Based on consumer perceptions, what determines consumer satisfaction in universities is measured by several factors including physical facilities and the quality of teachers (Andoh, Appiah, & Agyei, 2020). In line with this, the factors that determine students choosing colleges are determined by the infrastructures they have (Agrey & Lampadan, 2014). It can be said that infrastructure is one of the determining factors for students in choosing universities as well as the quality of teachers (Shah, Nair, & Bennett, 2013). These two aspects are very important in responding to the reputation desired by consumers. Based on this, the factor of human resources expertise and also the factor of infrastructure must be studied more deeply to be able to equalize perceptions between universities and stakeholders, in this case, students, considering they will choose universities regarding their reputation.

Reputation will not only provide market benefits, but will provide a sustainable competitive advantage for the company (Smith, Rupp, & Motley, 2013). On the other hand, reputation is part of the intangible assets associated with the Resources Based View (RBV) (Veh, Göbel, & Vogel, 2018; Williams, 2014). To fill this discrepancy, reputation must be improved by having excellence in the fields of research, teaching, and social responsibility to society (Kakar, Mansor, & Saufi, 2021). These skills are very necessary because they are included in the application of the Tridharma of Higher Education in Indonesia. The reputation of the faculty based on the publication of research will support its valuable resources (Boyd, Bergh, & Ketchen, 2010). In line with this, several factors support the reputation of universities in general, including the quality of research, the quality of graduates, and the resources (the ability to obtain research grants, and research and development grants) (Larsen, 2003). Since the implementation of research, and teaching, coupled with community service and owned infrastructure are already listed in the Law on National Education Standards, this means that every lecturer at the university must have the ability to conduct research, teaching, and community service. These three aspects are known as the Tridharma of Higher Education. In addition, universities must have the infrastructure to support the implementation. This research is important considering that students will choose the college based on its reputation. The importance of this research will see how important the expertise of human resources and infrastructure shall shape the reputation among students in choosing the college. Thus, when reputation has a relationship with performance, further research needs to be done (Boyd, Bergh, & Ketchen, 2010).

To answer this, measurements were made to unify consumer perceptions by implementing RBV in universities, namely internal resources consisting of tangible resources and intangible

resources. The implementation of RBV has an important role to fill the gap between internal and external perceptions. RBV can improve its reputation and create sustainable advantages through its resources (Barney, 2001). This is in line with this study where the reputation and expertise of human resources are included in intangible assets because the organizational capability between resources and expertise possessed by (Grant, 1991) becomes important to equalize the perception of both internal and external reputation. In addition, the process of implementing learning and research is the expertise of a lecturer that must be possessed and it must be supported by infrastructure (Mayer et al. 2014). Infrastructure which is part of tangible assets bolsters the achievement of competitive advantage. Supported by complete physical assets, universities will be able to create value for customers (Bakutyte & Grundey, 2012). In addition to infrastructure, the expertise of teaching staff in higher education is part of an intangible asset, because their abilities will be directly related to improving the quality of graduates. The teaching staff is one of the internal resources that will improve the performance of higher education institutions. To create value and improve university performance, the role of the teaching staff is very necessary (Ho & Peng, 2016). The expertise of human resources and infrastructure in this study will enhance the reputation of the university. Competitive advantage is related to the resources it has (Barney, 1991a). Then, tangible and intangible resources are integrated into organizational capabilities (Williams, 2014). The implementation of RBV will create a sustainable competitive advantage which will directly improve the reputation of the university. Reputation will determine the future of the college (Eryilmaz, 2016). Students choose colleges based on their reputations (Ming, 2010). Increasing the competitiveness of universities can be seen in their reputation because it has an impact on customer loyalty (Nguyen & LeBlanc, 2001). Furthermore, the reputation of the university is significant information for students who are consumers in universities in making their choices based on the reputation of the college (Sataøen & Wæraas, 2016). Reputation is directly related to college performance (Ho & Peng, 2016). Reputation is very important because it can retain consumers and stakeholders (Feldman, Bahamonde & Bellido, 2014). With a good reputation, universities can collaborate with the industrial world (Eryilmaz, 2016).

Literature Review

Resources Based View (RBV) in Higher Education

The application of RBV can increase the competitive advantage of universities sustainably by developing organizational capabilities (Bobe & Kober, 2015). Then the application of RBV can show how effective it is in managing existing resources and will create a competitive advantage (Anderson & Birrer, 2011). Competitive advantage can be achieved by using the RBV theory by focusing on its resources (Bridoux, 2004). Competitive advantage is influenced by human resources in universities (Siregar, Lumbanraja, & Salim, 2016). Then, the competitive advantage in higher education is influenced by market orientation and human resource competence (Herlambang, T, Sudiro, & Noermijati, 2013). The implementation of RBV in universities is largely determined by its internal resources. Internal resources consist of tangible and intangible resources (Borchert, 2008; Wernerfelt, 1984). Tangible resources in universities are the existing infrastructure of universities. Furthermore, we can classify tangible assets (facilities, physical, and laboratory) and then intangible assets (eg workforce expertise,

reputation, and brand) that are relevant to the universities (Kostopoulos, Spanos, & Prastacos, 2002; Williams, 2014). To improve sustainable competitiveness four indicators must be met, namely Valuable, Rareness, Immitable, and Organizational (VRIO) (Barney, 1991a). Based on this, a valuable organization is determined by the ability of its internal resources (Wernerfelt, 1984). The strength of internal resources is the basis of creating valuable, rare, and non-replicable resources so that they can create a competitive advantage (Saqib & Rashid, 2013). Creating a competitive advantage in higher education requires reputation, teaching, and research (Lynch & Baines, 2004).

Internal resources in universities are core expertise and reputation (Prahalad & Hamel, 1990). These components of core expertise and reputation fall into the category of intangible assets. The university's internal resources are an important factor in increasing the university's competitiveness. To improve the competence of human resources, infrastructure is needed (Prahalad & Ramaswamy, 2004). The role of infrastructure will support the transfer of knowledge and technology (Halawi, Aronson, & McCarthy, 2005) because the role of infrastructure (e.g., classrooms, laboratories) is very important in supporting the research and teaching fields (Karmakar, 2014). The next resource in the application of RBV is the tangible resources that exist in universities called infrastructure Fields (Barney, 1991b). The implementation and development of human resource expertise in tertiary institutions are highly dependent on the tangible resources available at the university. The existing infrastructure in universities can support the implementation and development of expertise and reputation in universities. (Barney, 1991a).

Reputation

Reputation is a good or pleasant perception felt by stakeholders (Lafuente-Ruiz-de-Sabando, Zorrilla, & Forcada, 2018). Reputation can also be interpreted as an organization's ability to match its planning and what it does (Nguyen & LeBlanc, 2001). Reputation is the difference that an organization has to improve its performance (Boyd, Bergh, & Ketchen, 2010). A good college reputation will affect students' intentions to choose the college (Eryilmaz, 2016). It can be concluded that reputation can be stated to be the performance of the college felt by stakeholders so that it can influence students' intentions to choose the college.

Furthermore, the reputation of universities can be seen in the number of patents obtained by (Lynch & Baines, 2004). The reputation of the university is also determined by the research it does and the number of publications it produces (Bobe & Kober, 2015). The more publications produced, the higher the ranking of the universities would be because creating a sustainable competitive advantage is measured by the number of publications produced (Merkt, 2017). The results of the research carried out will then be patented so that the patents produced by universities will increase their reputation of universities. These patents resulting from research cannot be copied/duplicated by other universities. This is following the RBV theory which states that resources cannot be imitated or inimitable (Soko, 2014).

Human Resources Skill

Core expertise is the ability possessed by human resources within the company to be able to achieve a competitive advantage (Prahalad & Hamel, 1990). The ability to know is the

expertise of company employees in acquiring knowledge through cognitive and experiential learning processes (Smith, 2007). The capabilities possessed will be able to develop the organization to increase its competitiveness (Kostopoulos, Spanos & Prastacos, 2002). Commitment to developing core competencies by the company is very important in creating a sustainable competitive advantage.

The expertise of a lecturer in conducting research will add value to the university since it contributes to the success of research innovation at the university. Based on Law No. 14 of 2005 concerning teachers and lecturers states that professional lecturers can carry out education and teaching, research, and community service. Furthermore, Law No. 37 of 2009 states that lecturers as scientists and professional educators must disseminate knowledge through research, service, education, and teaching. These three aspects are abilities that must be possessed by a lecturer. Core abilities in higher education consist of learning, research (Secundo et al. 2010), and community service (Bratianu & Pinzaru, 2015) so that higher education performance can be seen in research, service, and teaching (Ho & Peng, 2016). Competitive advantage is created in the research, teaching, and collaboration (Bobe & Kober, 2015). These three aspects can create a competitive advantage for universities because performance in the field of research, the number of research grants obtained, and services are part of the measurement of the universities (Hamid et al. 2012). Furthermore, the development of learning and knowledge will improve the performance of the universities (Fahy et ai. 2009).

In addition to teaching and research, community service is one of the core skills that need to be developed. Community service is one of the applications of knowledge possessed in solving problems that occur in society (Clinton & Thomas, 2011). Solving the problems faced by the community carried out by lecturers is a social competence in the higher education field (Gedviliene et al. 2014). The skills that must be possessed by human resources in universities are research, the teaching (Bobe & Kober, 2015; Hamid et al. 2012; Lynch & Baines, 2004), and the service (Hamid et al. 2012). So, the indicators for human resource competence consist of teaching, research, and community service.

Human resource expertise is related to performance improvement to develop the skills needed in the job (Mulder et al. 2009). To achieve organizational performance, expertise is needed from the internal side (Abubakar, 2017). Performance directly affects reputation (Boyd, Bergh, & Ketchen, 2010). Product reputation can be developed through strategic assets so that it will improve company performance (Smith, Rupp & Motley, 2013). Strategic assets in RBV theory include intangible assets (eg, reputation, employee skills) and tangible assets (eg, buildings, machines). Then, to build a reputation strategy there are four methods, namely (1) exploiting owned resources, (2) developing core employee skills, (3) managing image, or (4) strategic alliances (Goldberg, Cohen & Fiegenbaum, 2003). So it can be concluded that to build a reputation, the expertise possessed by human resources has a very important role.

H1 = Human Resources Expertise Affects the Reputation of Higher Education

Infrastructures

The existing infrastructure in universities is classrooms and laboratories (Karmakar, 2014; Kostopoulos, Spanos & Prastacos, 2002). Infrastructure is included intangible assets that can

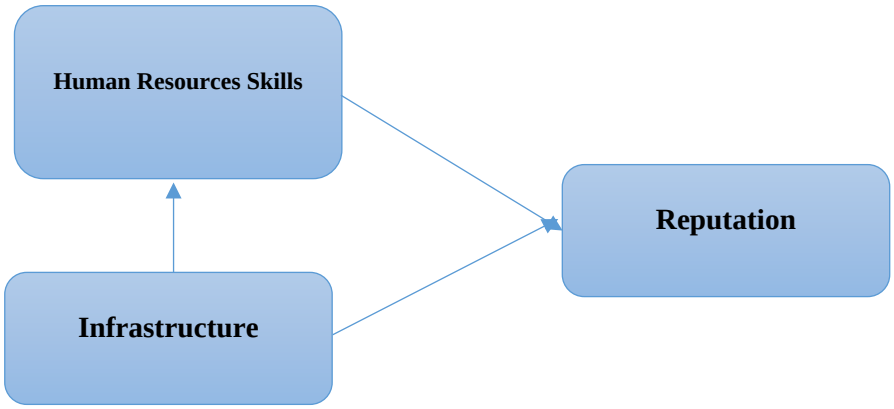
improve organizational performance (Barney, 2001). Tangible assets are physical assets that can be imitated by (Smith, 2007). Tangible assets in universities can be in the form of campus locations, buildings, seminar facilities, and laboratories for research in the medical field (Lynch & Baines, 2004). Based on this, research using infrastructure variables consists of laboratory and classroom indicators. Good infrastructure can support student performance (Fagbohunka, 2017). Furthermore, infrastructure will have a very important role, because students will choose based on the existing infrastructure (Taylor et al. 2002). The reputation of the university is seen from the facilities with the best standards which will have an impact on the student's decision to choose the university (Price et al. 2003) because facilities owned by educational institutions will build a reputation among students (Martín-Miguel et al. 2020). So, it can be concluded that higher education facilities will improve their reputation. Students' decisions in choosing a college are determined by the educational facilities and reputation they have (Ming, 2010). However, effective teaching during the Covid-19 outbreak uses multimedia and digital technology in the process (Gamage et al. 2020). Based on this, it can be concluded that the reputation of the university is determined by the facilities it has.

H2 = Infrastructure affects the reputation of universities

Furthermore, in the implementation of the three of higher education, facilities are needed to support it. The Tridharma of higher education which has been stipulated in the Law on National Education Standards consists of learning and teaching, research, and service. With complete facilities in universities, it shall be used as a medium for the learning and teaching process in the transfer of knowledge and technology (Halawi, Aronson & McCarthy, 2005), wherein supporting the learning and teaching process, facilities that support the teaching expertise of the teaching staff are needed. The relationship between the quality and value of existing university facilities is seen from the development of the education sector, learning and teaching methods, and user expectations (Vidalakis, Sun, & Papa, 2013). Based on the results of the study it was found that students who study by using laboratories will improve learning outcomes compared to those not using laboratories (Forcino, 2013). Learning and teaching using laboratories will produce good skills and will provide benefits to students (Yadav & Mishra, 2013). To carry out the learning and teaching process, expertise is needed in the implementation of the process. It is because developing teaching skills by the national standards, will be relevant to the careers of lecturers in the higher education field (Yadav & Mishra, 2013). A good university can be seen from the quality of its graduates and research results (Siregar, Lumbanraja & Salim, 2016). This means that to apply the tri dharma of higher education, every lecturer must have the ability to implement it. Moreover, to be able to carry out these three aspects, good infrastructure (eg, classrooms, laboratories) is needed. Thus, it is necessary to accordance with the expertise possessed by a lecturer with the facilities owned by the college where the combination will improve the performance of the university.
H3 = Infrastructure affects Human Resource Skills in universities

Based on this hypothesis, the conceptual framework in this study can be seen as follows:

Figure 1: Conceptual Framework



Research Methodology

Questionnaire Development

The research questionnaire was divided into three statement items for each variable. For the variable of human resource expertise in this study, it is very difficult to be imitated competitors' fields (Prahalad & Hamel, 1990). Based on that, this variable will be measuring teaching and learning, research and dedication carried out by a lecturer. According to Lynch & Baines (2004), the reputation of a university can be measured by the results of research that obtain a patent. Patents are related to the publication-quality (Fisch et al. 2015). Therefore, publication quality is determined by the quality of the research conducted. This can be seen from the criteria set by the QS World University Ranking stated that one of the criteria for measuring academic reputation is the quality of research conducted at the university. Then, one of the factors of academic reputation is getting research funding (Larsen, 2003). The measurement technique used in this research questionnaire is the Likert scale where 1 = Strongly disagree until 5 = Strongly agree.

Data Collection and Analysis Data

Sampling in this study is using the minimum method R^2 with the number of constructs 3, so the minimum sample is 124 respondents (Kock & Hadaya, 2018). Then the research conducted at universities in North Sumatra, Indonesia, collected 230 respondents from 250 questionnaires distributed using the accidental sampling method. The respondents of this research are lecturers who teach in universities. Data collection was carried out using a questionnaire where respondents directly filled out the given questionnaire. Furthermore, the data collected from the respondents were tested using Partial Least Square (PLS). This method can be used to predict a theory based on the perspective of (Hair et al. 2019).

RESULT

Based on 230 respondents, the data obtained are as follows:

Table 1: Research Respondents Profiles

		Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Man	128	55.7	55.7	55.7
	Woman	102	44.3	44.3	100.0
Age	24 -30 Years Old	53	23.0	23.0	23.0
	31 - 37 Years Old	65	28.3	28.3	51.3
	38 - 44 Years Old	44	19.1	19.1	70.4
	45 - 52 Years Old	45	19.6	19.6	90.0
	52 – 60	13	5.7	5.7	95.7
	Greater than 60	10	4.3	4.3	100.0
Education	Master’s degree	148	64.3	64.3	64.3
	Doctoral Degree	82	35.7	35.7	100.0
Working Period	5 - 10 Years	80	34.8	34.8	34.8
	11 - 15 Years	85	37.0	37.0	71.7
	Greater Than 15 Years	65	28.3	28.3	100.0
	Total	230	100.0	100.0	

Research Respondents profiles based on the data above, the number of respondents who answered the questionnaire was 230 people. Their educational backgrounds are 82 Doctoral graduates and 148 Master's graduates. The respondents already can carry out teaching, research, and community service. This can be seen from the average respondent's tenure being greater than five years. Experience in teaching will create thinking skills, self-confidence, and the ability to deal with students (Mackenzie, Hemmings, & Kay, 2011). In addition, this period of service will enable them to create the ability to conduct research and serve the community. The longer the employee's working period will be accompanied by an increase in work experience so the more it will affect employee performance (Chu & Lee, 2012). Then the results of the model from this study can be seen in table 2 below:

Table 2: Model Measurement

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Human Resource Skill	0.882	0.882	0.927	0.810
Reputation	0.896	0.895	0.935	0.828
Infrastructure	0.777	0.778	0.900	0.818

The Model measurement in Partial Least Square (PLS) is using reflective model measurement. The reflective model measurement seen from Cronbach's Alpha and Composite Reliability with values between 0.7 and 0.9 is declared to have good reliability (Hair et al. 2014). Furthermore, to see the convergent validity of this study can be seen from the Average Variance Extracted (AVE). The value of Convergent validity to see the reliability of indicators in this study must be more than 0.5 (Hair et al. 2014). The results of this study show that the values of Cronbach's Alpha and Composite Reliability are already in the predetermined category. Then the value of Average Variance Extracted (AVE) in this is greater than 0.5, which is the smallest value in Human Resources Skill with an AVE value of 0.810. Then a good model can be seen from its Fornell – Larcker value. More details can be seen in the following table 3:

Table 3: Fornell – Larcker

	Competitiveness University	**Human Resources Skill**	**Infrastructure**
Competitiveness University	0.910		
Human Resources Skill	0.557	0.900	
Infrastructure	0.637	0.554	0.904

The Fornell – Larcker value shows a value that meets the criteria of a good reflective model. The connection between indicators and variables is called outer loading. The conditions specified in the study of the outer loading value must be greater than 0.7 (Hair et al. 2014). It can be seen that the value of the connection between the indicator and the variable has a T - Statistics value greater than 1.96, which means that the indicator value correlates with the variable. These results can also be seen from the *P*-Values which are smaller than 0.05. More details can be seen in table 4 below:

Table 4: Outer Loading

	Original Sample (O)	**Sample Mean (M)**	**Standard Deviation (STDEV)**	**T Statistics (|O/STDEV|)**	***P* Values**
Classroom <- Infrastructure	0.900	0.900	0.011	83.913	0.000
Community Services <- Human Resource Skill	0.921	0.920	0.012	79.001	0.000
Laboratory <- Infrastructure	0.909	0.908	0.009	103.154	0.000
Patent <- Reputation	0.936	0.936	0.005	177.471	0.000
Publication <- Reputation	0.872	0.871	0.012	74.887	0.000
Research <- Human Resource Skill	0.927	0.926	0.010	89.772	0.000

Research Funding <- Reputation	0.921	0.921	0.006	150.017	0.000
Teaching <- Human Resource Skill	0.850	0.849	0.021	40.230	0.000

The next step is to see the hypothesis test from this research which can be seen in table 5 below:

Table 5: Uji Hypothesis

	Original Sample (O)	**Sample Mean (M)**	**Standard Deviation (STDEV)**	**T Statistics (|O/STDEV|)**	***P* Values**	**Hypothesis**
Human Resource Skill -> Reputation	0.294	0.294	0.038	7.704	0.000	Accepted
Infrastructure -> Human Resource Skill	0.554	0.555	0.033	16.601	0.000	Accepted
Infrastructure -> Reputation	0.474	0.475	0.038	12.497	0.000	Accepted

Based on the table above, it can be seen that the hypothesis of Human Resources Skill on Reputation has a significant correlation. It can be seen that the value of the T-Statistic is 8.070 where this value is greater than the predetermined value of 1.96. Then the next hypothesis tangible assets to reputation have a positive and significant correlation. This can be seen from the T-statistic value of 13.218 where the value is greater than 1.96. The effect of tangible assets on human resources skills in this study has a significant relationship where the T - statistics value is 17.089 and this value is also greater than 1.96. For more details, the results of this study can be seen in the path diagram in figure 2 below:

Figure 2: Path Diagram

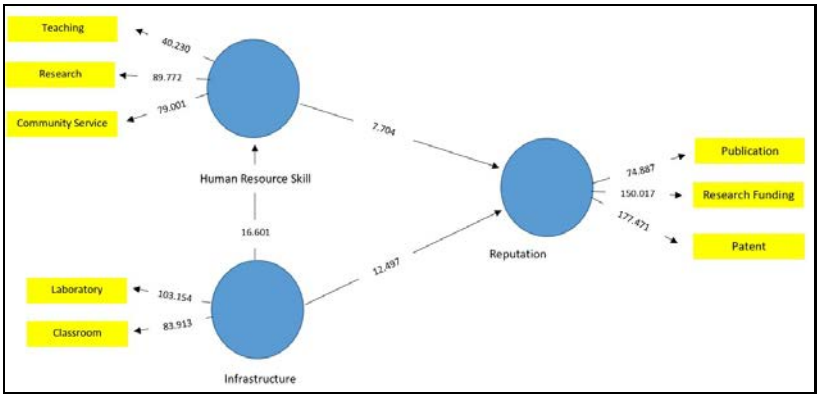


Table 6: Indirect Effects

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Human Resource Skill -> Reputation					
Infrastructure -> Human Resource Skill					
Infrastructure -> Reputation	0.163	0.163	0.021	7.922	0.000

The results of this study also show that competitive universities will indirectly be affected by Tangible Assets through human resources skills. This can be seen from the T – statistics which has a value of 7.922 where this value is greater than 1.96, and the P values by 0.000 - smaller than 0.005.

DISCUSSION

The results show that the reputation of a university is determined by the infrastructure and expertise of its human resources. This human resource expertise has an important role to boost the reputation of the university. Within these three indicators, are the research indicators as well. This indicator is very important when viewed with reputation indicators related to grant financing by external parties and patents owned by the university where expertise in carrying out the research will be a selling point for universities to improve their reputation.

In addition to the quality of research, the quality of teaching is also very important in improving the reputation of universities. This is in line with the criteria set by the QS World University Rankings which states that academic reputation is measured by the quality of research and teaching. To achieve this, the infrastructure that supports the research is very important for the university, since good research quality can participate in the selection to obtain funding from both the government and industry. Research funding is an important part of making an impact on academic research, and the results will have a positive impact on the reputation and income of the university (Reddy, Xie, & Tang, 2016). In line with this, research evaluation indicators are determined from patents, spin-offs, contracts with third parties, and Intermediation (Frondizi et al. 2019) in other words, the better the quality of research will directly have an impact on increasing the number of patents at the university and also enable the university to receive grants from third parties. Thus, the quality of the research will affect the reputation of the university which can be measured by the number of patents and grants from third parties. Reputation is supported by the resources owned by the university (Larsen, 2003). Resources in this research consist of human resources and infrastructure owned to support the implementation of quality research. To make quality research, it is necessary to have human resources who have expertise in conducting research. This expertise shall provide a competitive advantage in the global competition (Bratianu & Pinzaru, 2015). Because the skill of expertise possessed greatly determines reputation, where core expertise will relate to the strategic process and will ultimately create a competitive advantage (Long & Vickers-Koch, 1995). The expertise of human resources in terms of improving organizational performance, where the results of the research will improve the reputation of the university which can be seen from the number of publications, research funding, and the number of patents obtained. Then, to improve the reputation of universities, it is necessary to encourage lecturers and students in the

faculty to publish in international journals correlating with their fields, and an award will be given to those who are successful in publishing in international journals (Wang, Wang & Liu, 2012).

In addition to the quality of research, the teaching and learning process is also an important part of determining the reputation of a university, since the learning environment is one of the measurement criteria set by THE World University Rankings. The measurement method used by the institution is to conduct a survey based on student perceptions which are also related to the infrastructure owned by the university. The implementation of learning must be supported by adequate infrastructure such as classrooms and laboratories that support the learning process. It is the university's authority to ensure that the learning environment supports students (Akareem & Hossain, 2016). Furthermore, to improve the reputation of universities to become world-class universities, it is necessary to develop infrastructure to support learning, teaching, and research (Wang, Wang & Liu, 2012). Next, human resource expertise has a central role in improving the reputation of universities. The teaching staff has an important role in determining the quality of education by preparing good training to improve the competence of the teaching staff and supported by adequate infrastructure (Crissien-Borrero et al. 2020).

The expertise of the teaching staff in the teaching and learning process is very important if it is to create relationships with the community. Relations with the community in the implementation of the Tridharma of Higher Education can be carried out with community service. This will make the university better known by the public based on its scholars' knowledge. Thus, the reputation of the university increases. With the fulfillment of the university's tri dharma criteria, the accreditation value will also be good. These three components are major points in determining the value of accreditation. The accreditation value is the main point for students in choosing a college. The better the accreditation, the greater the chances of being chosen by prospective students. In line with this, the owner of the job stated that research and community relations would improve reputation, which is very important for companies to look for graduates who can do research well (Al-Amri et al. 2020). This ability is inseparable from the learning and teaching process that is accepted at the university. The research ability will be owned by lecturers who have done the research and can be taught to students as the development of the ability to conduct research. Thus, research capabilities, teaching abilities, and the ability to cooperate with industry will improve the performance of the universities (Bobe, 2012). The linkages of the college will be largely determined by its reputation. A better reputation it can make create industries to cooperate with the university and it will be able to create income for universities and research members.

The results of this study found that infrastructure correlates with the reputation of universities. The complete facilities that exist in the classrooms will make the learning process more enjoyable and create comfort for students. In addition, a complete laboratory will make learning more interesting and will motivate lecturers in conducting research. Complete educational facilities will make the college the student's choice (Ming, 2010). Students will choose the college because of the facilities it has and compare the tuition fees paid with the facilities provided by the college. This comparison will make them the basis for choosing a university. In addition, the infrastructure owned will also be the basis for determining the accreditation of

the university. To have a good accreditation score, the standard of facilities owned by the university must be following the assessment standards set by the higher education accreditation institution in Indonesia.

It can be seen from the results of the study that the relationship between infrastructure and the reputation of universities is indirectly influenced by the expertise of human resources. The relationship between infrastructure and reputation is determined by the expertise of its human resources. Previously stated that human resource expertise (research) and infrastructure have an important role in developing a good academic atmosphere (Fagbohunka, 2017). With the capabilities possessed by its human resources and complete lecture facilities and laboratories, it can be used to develop the learning process, develop science in research and serve the community. The infrastructure linkage will support the expertise of human resources (lecturers) in conducting scientific development (research and community service) and learning methods (learning and teaching processes) carried out in universities. Later this development will have an impact on increasing the reputation of the university. For research and community service, it will affect the increase in the number of publications, the number of grants, and patents obtained. The reputation will be able to increase the ranking of universities to compete with other universities. In addition, with complete facilities and the expertise of lecturers at the university, it will be a choice for students because of its reputation.

Conclusion

The results of this study can be concluded that infrastructure affects the expertise of human resources and affects reputation. Thus, the combination of human resource expertise and infrastructure will improve the reputation of universities because reputation will affect the ranking of universities. To achieve this ranking, it is necessary to improve the quality of research, teaching, and services. The linkages between infrastructure, human resource expertise, and the university's reputation will affect the university's academic condition. Thus, the development of capabilities in conducting research, teaching, and networking with the industrial world will create a sustainable competitive advantage for the universities. This capability will improve the reputation of universities because the expertise of human resources possessed will be able to increase the number of publications, increase revenue through research funding and increase the number of patents in universities. Furthermore, with the support of campus facilities with adequate laboratories and classrooms, it will better improve teaching skills which will have an impact on improving the reputation of universities. With the increase in teaching ability, it will be following the increase in a career as a teacher in the universities.

Then the measurement of university rankings carried out by indexing institutions including research and teaching will determine the ranking of these universities. The greater the number of studies, the greater the number of publications. Furthermore, new ideas in research will increase the number of patents for researchers. This will have an impact on increasing the reputation of the university, which in turn will also allow opportunities for universities to obtain research funds from stakeholders. That is, developing the expertise of human resources and infrastructure owned will improve the reputation of universities to be able to create a sustainable competitive advantage. In addition, the development of expertise in human

resources and infrastructure will affect the accreditation of higher education institutions. The better the expertise and facilities owned will provide a good accreditation value for the university, and will increase the reputation of the university.

Limitations of the Study

This research has limitations because this research only looks at the aspect of human resource expertise and infrastructure on the reputation of universities as measured from internal aspects. Preferably, further research is measured from the perspective of students since it is they who will choose colleges based on their reputation. Then further research should measure the influence of the university's reputation on the quality of graduates from these universities.

Conflict of Interests

The author declares that he has no conflict of interests.

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