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Elasticity of Demand for State Universities: Measuring the Excellence of State Universities in East Java

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ABSTRACT: The Government of the Republic of Indonesia annually announces a list of the most superior and quality universities. This is intended to encourage every university to become a superior university that contributes for improving the quality of life, social and economic conditions in the country. Apart from the government, various international institutions such as Webometrics and Times Higher Education also release a list of top universities in Indonesia every year. In fact, assessing the superiority of a university can also be done by evaluating how interested people are in studying at a university. In this regard, the government and each university need to measure the elasticity of public demand for a university. In principle, if public demand for a university is inelastic, then the university is included in the excellent category. If public demand for a university is elastic, then the university is included in the non-excellent category. This research aims to identify the elasticity of demand for state universities in East Java. This research reveals that state universities in East Java have demand elasticity in the inelastic category. This research also identifies 8 indicators that influence the elasticity of demand for institutions. The size of the tuition fees charged by state universities does not reduce students' interest in studying. A university is said to be superior if the high tuition fees does not reduce public interest in the institution. It is suggested the government and each university should carry out regular measurements regarding the elasticity of public demand for institutions. The results of measuring elasticity can be used to measure the level of excellence of each university.

KEY WORD: elasticity of demand, higher education, excellence

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I. INTRODUCTION AND LITERATURE REVIEW

The existence of superior and quality universities greatly influences the socio-economic development of the country. Therefore, the government through related departments and agencies needs to encourage all universities to be able to contribute optimally to the progress of the country. Various developed countries generally have world-class quality universities. Various developed countries in Asia with high economic performance such as Singapore, Japan, South Korea and China; all supported by the existence of world-class universities. Higher education is one of the key drivers of growth in economic performance, prosperity and competitiveness between countries. Universities not only provide higher education services and competency training for educated workers, but also create an environment that can spur the growth of research to encourage innovation that has commercial value (Edwards and McCluskey, 2019). This proves that there is an interdependent relationship between the existence of superior universities and the level of progress of a nation. In other words, for a nation and state that aspires to achieve a level of progress in various fields, it is necessary to facilitate all universities to become world-class universities.

A superior university is a high-quality university that is trusted by the public. Therefore, superior universities usually have a strong reputation, characterized by enormous public trust. For this reason, superior universities are generally in demand by the wider community, which is indicated by the large number of students currently studying. Superior universities are always in demand and are the main choice for students who are currently studying. The expensive tuition fees do not reduce students' interest in registering as students (Prianto, et al., 2022).

There are several indicators commonly used by various ranking agencies to assess the excellence of a university. The Directorate General of Higher Education, Ministry of Education and Culture, uses 4 indicators,

namely: (a) input related to aspects of human resources which include the presence of lecturers and students, (b) process, related to the quality management of a higher education institution, such as accreditation ranking, (c) output, which is shown by the performance of lecturers in the fields of teaching, research and community service, student performance and departmental accreditation rankings, (d) outcome, related to higher education achievements, such as innovative products, patents, number of citations for each lecturer, community service performance, and the number of alumni who immediately found work after graduating (Arlinta, 2019).

Currently, in general; state universities are considered by the public to be superior to private universities. The lag behind private universities compared to state universities is partly due to very unequal funding support from the government. The operational activities of private universities are mostly covered by tuition fees and budget resources managed by foundations through charitable business activities. Meanwhile, the operations of state universities are fully supported by the state budget.

State universities in Indonesia are currently divided into 3 categories, namely: first, state universities as state institutions, where all operational budgets are supported by the state (in Indonesia popularly called "PTN Satker"), (b) second, state universities as the government public service agency (in Indonesia popularly called "PTN BLU"), and (c) third, state universities with legal status (in Indonesia popularly called "PTNBH"). The three types of state universities have differences regarding the management of their financial resources. "PTN Satker" does not have autonomy in managing finances. Therefore, for "PTN Satker" the source of funding and operational financing is fully supported by the government budget (Inspektorat Jenderal Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi, 2023).

"PTN BLU" has autonomy in managing its finances, especially financial sources that come from non-state revenues. Meanwhile, for "PTNBH" it has full authority in managing broader finances. Based on Government Regulation (PP) Number 26 of 2015 Jo. PP number 8 of 2020 concerning the "PTNBH" Funding Mechanism, the funding source for "PTNBH" comes from 2 sources, namely the government budget and the non-government budget. In this Government Regulation, PTNBH is given the freedom to seek funding sources other than the government budget.

In the past, people differentiated between PTN and PTS mostly based on the amount of tuition fees (Napatupulu, 2023). In the past, when all state universities still had the status of "PTN Satker", all operational costs were determined and taken over by the government. Tuition fees at state universities are only additional financing. That is why, in the past, tuition fees at state universities were lower than tuition fees at private universities. However, in the last few decades, along with the change in the form of state universities from "PTN Satker" to "PTN BLU" and "PTNBH", each state university has been given autonomy to finance its operational activities independently. State universities then create cross-subsidy policies. Some students from low economic backgrounds are charged low tuition fees. Meanwhile, students with high economic backgrounds are charged expensive tuition fees. Currently, the public believes that tuition fees at state universities are more expensive than tuition fees at private universities.

Even though tuition fees at state universities are increasingly expensive, data reveals that state universities are still the main choice for parents and prospective students, regardless of socio-economic background. Parents and prospective students from low socio-economic groups still make state universities their main choice, because they think that state university graduates are perceived to have a more secure future (Arlinta, 2019).

The public thinks that state universities are superior to private universities. Therefore, state universities are always the first choice for prospective students. For those who are not accepted at state universities, they will choose private universities. Data shows that superior state universities are always the first choice for prospective students. It is perceived by students that superior state universities can provide future security for students after they graduate from college. That is why, various non-regular selection routes organized by state universities are always in demand by prospective students, even though the tuition fees are very expensive (Napatupulu, 2023).

The high interest of prospective students to study at superior state universities is what encourages the enactment of market law. As the number of people interested in state universities continues to increase, tuition fees at state universities are increasingly expensive. At this point, the term favorite state university emerged, even though it was expensive, it was still in demand by prospective students. The relationship between the amount of tuition fees and the interest of prospective students actually explains the level of elasticity of demand for state universities.

Various previous studies have examined the elasticity of demand for state universities, and the results show that the amount of tuition fees has a significant effect on students' decisions to study at a state university (Gallet, 2007; Hemelt & Marcotte, 2011; Dwenger, Sick, & Wrohlich, 2011; Hubner, 2012; Bruckmeier & Wigger, 2013; Sa, 2014; Chen, 2016; Kiiashko, 2016). In the context of higher education in Indonesia, a study conducted by Hapsari and Hascaryani (2012) revealed that students view education as an investment in the

future, so that the tuition fees determined by the university do not hinder their interest in studying at their target state university. For students who enter through the non-regular route, they even follow whatever tuition fees are determined by the university.

A study conducted by Kartini and [Awati \(2022\)](#) revealed that the elasticity of demand for state universities is inelastic, which shows that the tuition fees do not hinder students' interest in studying at the state universities they are interested in. Meanwhile, the results of research conducted by Arfan, Arifulyah, and Bhayangkara ([2023](#)) revealed that the amount of tuition fees greatly influences students' decisions to study at state universities. Based on the results of previous research, it has not yet been revealed what the elasticity of demand is for state universities in Indonesia, both "PTN Satker", "PTN BLU", and "PTNBH" [\(5\)](#).

The latest study conducted by Prianto et al. (2022) regarding community access to state universities in East Java. The results of the study reveal that on average parents have to allocate between 52% to 68% of their total income to finance 1 student who is studying at a state university in East Java. Furthermore, a study conducted by Prianto et al. (2022) revealed that if the cost of education is only seen from the tuition fees alone, then people's access to state universities is in the very high category. However, if you include aspects of living costs and other costs as components of total costs, then community access is in the medium category (48.95%), low category (30.20%), and very low category (5.21%). There are only 2.08% of parents with very high access and 14.58% with high access. This study shows that as many as 85.48% of the community feel that the cost of education at state universities is very expensive. Even though it is expensive, people's interest in studying at state universities continues to show an increasing trend from year to year.

The phenomenon of increasing tuition fees at state universities on the one side, and the increasing public interest in studying at state higher education on the other side, seems to confirm that studying at state universities is considered very important for the wider community. In this regard, this research aims to analyze the elasticity of demand for state universities in East Java. This study is expected to reveal various indicators that influence the elasticity of demand for state universities. This study also aims to identify whether a state university is included in the category of superior state universities or not, as well as to complete the 4 indicators of superior state universities as proposed by the Directorate General of Higher Education, Ministry of Education and Culture of the Republic of Indonesia.

So far there has not been much research on the elasticity of demand for state universities in Indonesia. In fact, the results of studies with this theme can be used to map whether a state university is included in the superior state university category or not according to society's perspective. The public is one of the parties who determines whether a state university is worthy of being called a superior state university so that they are willing to study there. Theoretically, superior state universities will be students' first choice. In short, because of its superior nature, superior state universities cannot be replaced by other state universities that are not superior.

In the realm of microeconomic theory, demand elasticity analysis can be used to detect whether a state university is superior or not. Theoretically, elasticity of demand describes whether there is a reduction in the number of products and services consumed when the price of these products and services increases (Mankiw, 2001; Mankiw, [2020](#)). In the context of higher education services, the elasticity coefficient of demand for state universities can be determined by comparing the number of prospective students who register and the amount of tuition fees paid by students. [\(1\)](#)

A quantitative comparison between the number of prospective students registering and the tuition fees is not the only measure that can be used to detect the elasticity of demand for a higher education institution. There are many qualitative measures that can be used to detect the elasticity of demand for higher education. Some of these qualitative measures are: (a) whether the goods and services have equivalent substitutes. Higher education institutions that have equivalent substitutes tend to be elastic, and vice versa; (b) whether studying at a university is considered very urgent or not. If studying at a university is considered urgent, then the elasticity of demand for that university tends to be inelastic, and vice versa; (c) whether the student is willing to pay tuition fees regardless of the tuition fees determined by the university. If students are willing to pay tuition fees determined by the university, then the elasticity of demand for that university tends to be inelastic, and vice versa; (d) popularity of the college. Popular universities tend to be students' first choice. Therefore, popular universities tend to be inelastic, and vice versa; (e) student loyalty to higher education. Universities that have loyal students tend to be inelastic, and vice versa; (f) parties involved in education financing. If there are other parties involved in financing education, for example due to subsidies or educational student scholarships, then the elasticity of demand for higher education tends to be inelastic, and vice versa; (g) the uniqueness and excellence of higher education. Universities that have uniqueness and excellence tend to be inelastic, and vice versa; (h) community views regarding the education costs that have been paid. If the public believes that tuition fees are equivalent to the quality of a university's educational services, then the elasticity of demand for that university tends to be inelastic; vice versa (Mankiw, 2008; Prianto, 2006; Walter, 1995).

Based on the microeconomic theory, if the following conditions are met, then the elasticity of demand for goods or services becomes inelastic. These various conditions include: (a) Goods and services do not have

equivalent substitutes, (b) goods and services have a high urgency value, (c) the income allocated by consumers to consume certain goods and services is large, (d) goods and the services consumed are considered important, (e) goods and services that are unique and of high quality, (f) goods and services that have loyal customers, (g) goods and services that are booming and popular (Walter, 1995; Silberberg & Ellis, 1995 ; Mankiw, 2008; Gans, King & Mankiw, 2011; Prianto, 2016).

Regarding the elasticity of demand for state universities, the results of previous research reveal that the amount of tuition fees is the main consideration for white Americans, Asian-Americans, African-Americans and Mexican-Americans to study at state universities in the United States. The elasticity of demand for public universities for African-Americans and Mexican-Americans is in the very elastic category, so that the increase in tuition fees makes them delay studying there. Meanwhile, for white Americans and Asian Americans, the elasticity of demand for state universities is in the inelastic category, so that increasing tuition fees does not reduce their interest in studying (Whyte, 2012).

Another research conducted by Carter & Curry (2011) Menzies III (2017) revealed that for high-income groups, increasing tuition fees did not have a significant effect on their interest in studying at university. Meanwhile, for low-income groups, increasing tuition fees will reduce their interest in studying at university. In other words, the elasticity of demand for higher education is greatly influenced by the economic capabilities of students.

Meanwhile, studies conducted by Spence (2006) and Gallet (2007) show that the demand for higher education by Americans is inelastic. This means that increasing tuition fees does not change Americans' decisions to study at college. However, a study conducted by Gallet revealed that there are many other variables besides income variables that influence the elasticity of demand for higher education in America.

More than two decades ago, Ehrenberg (2000) reported that there was a trend of increasing tuition fees from year to year at elite universities in America. One of the triggers is the high level of public interest in studying. This shows an increase in public trust in higher education. Higher education leaders then determined to improve the quality and service, as a consequence the cost of education continued to increase. As a result, educational costs charged to students also increase.

Based on theoretical studies and previous research, it is revealed that there are many factors that influence the elasticity of demand for higher education. This research intends to reveal various variables that influence the level of elasticity of demand for state universities in East Java, Indonesia.

This research examines the elasticity of demand for state universities as measured by the following 8 indicators: (a) students' perceptions that their target state universities do not have equivalent substitutes, (b) students' perceptions about the level of urgency to study at their target state universities, (c) student perceptions about tuition fees at the target state university, (d) student perceptions about the popularity of the target state university, (e) student loyalty to only study at the target state university, (f) financing facilities that can be accessed by students, such as fee discounts, scholarships, and the like, (g) student perceptions about the uniqueness and advantages of the targeted state universities, (h) the perception that the tuition fees paid by students are equivalent to the service quality of state universities.

Research Question

Referring to the various problems discussed in this study there are several questions asked in this research, as follows: (1) What is the elasticity of demand for state universities in East Java? (2) What is the correlation between various factors forming elasticity on students' interest in studying at state universities in East Java? (3) Is the elasticity of demand for state universities related to the university's excellence status? It is hoped that the findings of this research can be used as a reference by the Government and the public to determine whether a state university is included in the category of superior universities or not. For university leaders, the results of this study can be considered in making higher education development policies, especially related to strategies for determining the amount of tuition fees that will be charged to students.

Research Objectives

The objective of the research is to identify first, various factors that influence the elasticity of demand for state universities in East Java; second, the elasticity of demand for state universities in East Java; third, identifying the relationship between the elasticity of demand for higher education and the superiority status of state universities in East Java.

II. RESEARCH METHOD

This research was carried out using a quantitative descriptive research approach. This research aims to describe the elasticity of demand for state universities in East Java. The population in this study are active students from 8 state universities in East Java Class of 2023, and are currently active students at college. The

determination of the class of 2023 students is based on considerations that these students can provide the latest information regarding their various considerations when deciding to study at a university.

The sample size was determined using the Lemeshow technique because it took into account the very large population spread across various universities in East Java (Lwanga and Lemeshow, 1991). By setting the value $z = 1.96$; maximum estimate = 50%, and sampling error = 10%, so the sample size is 192 students. The research sample was proportionally taken from 8 state universities in East Java, namely: Surabaya Institute of Technology (ITS), Airlangga University Surabaya (UNAIR), Surabaya State University (UNESA), Surabaya State Islamic University (UINSA), Brawijaya University Malang (UNIBRAW), Malang State University (UM), Malang State Islamic University (UIN Malang), and Jember State University (UNEJ). Thus, each PT was represented by 24 active students from the Class of 2023. Sample determination was carried out using accidental sampling technique. The first 24 students from each university who had filled out the questionnaire via Google Form were designated as sample members.

The various data used in this research are data regarding students' considerations in choosing state universities, which includes 8 indicators determining elasticity levels, as described in this article. Students are asked to determine the urgency weight of each elasticity indicator, using a questionnaire developed by researchers using semantic difference techniques, with the lowest score being 1 and the highest score being 5 (Azwar, 2007; Azwar, 2015).

By using a 5-level scale, guidelines for interpreting the level of demand elasticity for state universities can be formulated, as follows:

Table 1. Guidelines for interpreting the level of elasticity of demand for state universities

Number	Score Range	Level of Elasticity of Demand for State Universities
1	1.00 – 1.80	Very elastic
2	1.81 – 2.60	Elastic
3	2.61 – 3.40	Moderate
4	3.41 – 4.20	Inelastic
5	4.21 – 5.00	Very inelastic

An example of a questionnaire item using a semantic difference technique with a lowest score of 1 and a highest score of 5, as follows:

"The state university where I studied is the best university that cannot be replaced by other universities." Students are invited to give a score to this statement, starting from the lowest score of 1, up to the highest score of 5. If a student gives a very low score, it means that the university is very easy to replace with another university. This means that the university has a very elastic demand elasticity. On the other hand, if a student gives a very high score, it means that the university cannot be replaced by another university. This means that the elasticity of demand for these universities is in the very inelastic category.

Thus, the higher the score given by students, the more inelastic the level of demand elasticity for state universities. This means that the state university is a superior state university because it fulfills 8 elasticity indicator requirements, including: state universities do not have equivalent substitutes, studies at state universities are considered very urgent, the tuition fees are not an obstacle to studying, state universities has high popularity, state universities have loyal customers, state universities have many sources of financing that can be accessed by students, state universities are unique and of high quality, the education costs paid by students are equivalent to the quality of state university services.

In other words, state universities with inelastic demand are state universities that are students' main choice. This also illustrates that students consider the state universities they are studying to be superior state universities. The lower the score given by students indicates the more elastic level of demand for state universities. This means that students really take tuition fees into consideration when studying at their target state university. Thus, students assume that there are many other state universities that can be used as study options. This illustrates that the university is not a leading state university. This research describes the level of elasticity of demand for state universities. Data on the elasticity of demand for state universities can be used to assess the level of excellence of state universities in East Java.

III. FINDING AND INTERPRETATION

This research reveals the relationship between demand elasticity indicators and student interest in studying at state universities in East Java, as presented in table 2.

Table 2. Relationship between demand elasticity indicators and students' interest in studying at the state universities in East Java

Indicator	1	2	3	4	5	6	7	8	9
1	-	.820*	.921**	.950**	.936**	-.578	.925**	.764*	.953**
2	.820*	-	.878*	.836*	.831*	-.466	.772*	.744*	.925**
3	.921**	.878*	-	.481	.837*	-.306	.867*	.751*	.898*
4	.950**	.836*	.481	-	.968**	-.652	.950**	.756*	.987**
5	.936**	.831*	.837*	.968**	-	.726*	.989**	.757*	.888*
6	-.578	-.466	-.306	-.652	.726*	-	.751*	-.234	.765*
7	.925**	.772*	.867*	.950**	.989**	.751*	-	.708*	.988**
8	.764*	.744*	.751*	.756*	.757*	-.234	.708*	-	.875*
9	.953**	.825*	.898*	.987**	.888*	.765*	.988**	.875*	-

Source: data processed by researchers

*) Significant, $\alpha = 5\%$ **) Significant, $\alpha = 1\%$

Notes:

1. Students' perceptions that their target state universities do not have equivalent substitutes
2. Students' perceptions about the level of urgency to study at their target universities
3. Student perceptions about tuition fees at the target state university
4. Student perceptions about the popularity of the target state university
5. Student loyalty to only study at the target state university
6. Financing facilities that can be accessed by students, such as fee discounts, scholarships, and the like
7. Students' perception about the uniqueness and advantages of the targeted state universities
8. The perception that the tuition fees paid by students are equivalent to the service quality of state universities.
9. Students' interest in studying at state universities

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Based on the data as shown in table 2, various facts can be explained, as follows:

First, the student's perception that the target state university is an irreplaceable state university is closely related to the student's perception of the urgency to study at that university, the perception that tuition fees determined by the state university are not a problem, the popularity of the state university, loyalty to state universities, the perception of the uniqueness and superiority of state universities, and the assumption that the tuition fees paid by students are equivalent to the quality of services at state universities.

Second, students' perception of the urgency to study at state universities is closely related to students' perceptions of state universities as irreplaceable universities, students' assumptions that tuition fees set by state universities are not a problem, the popularity of state universities, loyalty to state universities, the uniqueness and advantages of state universities, and the assumption that the tuition fees paid by students are equivalent to the quality of services at state universities.

Third, students' perception that tuition fees set by state universities is not a problem is related to students' perception of state universities as irreplaceable universities, the urgency of studying at state universities, the popularity of state universities, loyalty to state universities, uniqueness and the superiority of state universities, and the assumption that the tuition fees paid by students are equivalent to the quality of state university services.

Fourth, the popularity of state universities is related to students' perception of state universities as irreplaceable universities, students' perceptions of the urgency of studying at state universities, student loyalty to state universities, the uniqueness and superiority of state universities, and the perception that costs The tuition fees paid by students are equivalent to the quality of public university services.

Fifth, student loyalty to state universities is related to students' perception that the state university they are targeting is an irreplaceable university, students' perception of the urgency of studying at a state university, the assumption that tuition fees determined by state universities are not a problem, the popularity of state universities, the perception of the uniqueness and superiority of state universities, and the assumption that the tuition fees paid by students are equivalent to the quality of state university services.

Sixth, accessible financing facilities are related to loyalty to state universities, the uniqueness and excellence of state universities.

Seventh, the uniqueness and superiority of state universities is related to students' perception that state universities are irreplaceable universities, students' perceptions of their urgency to study at state universities, the perception that the tuition fee determined by state universities is not a problem, the popularity of the university ,

loyalty to state universities, alternative financing facilities that can be accessed by students, and the assumption that the tuition fees paid by students are equivalent to the quality of services at state universities.

Eighth, the assumption that the tuition fees paid by students is equivalent to the quality of state university services is related to students' assumptions that the state universities they are studying for are irreplaceable universities, students' perceptions about the urgency of studying at state universities, and the assumption that tuition fees are low. determined that higher education is not a problem, the popularity of state universities, loyalty to state universities, and the uniqueness and superiority of state universities.

This research reveals that the 8 elasticity indicators as explained in table 2 are factors that influence the inelastic elasticity of demand for state universities. How do these eight indicators cause the elasticity of student demand for state universities to become inelastic; can be explained as follows:

First, the elasticity of demand for state universities in the inelastic category is shown by the existence of state universities as the main choice that cannot be replaced. This shows the large demand of students for state universities, thus triggering high tuition fees charged by state universities. When tuition fees at state universities are getting higher, and at the same time the number of students interested in studying at state universities is increasing, the amount of tuition fees has no effect on student interest in state universities. In other words, the elasticity of demand for state universities becomes inelastic.

Second, the elasticity of demand for state universities in the inelastic category is shown by the students' opinion that studying at state universities is a very urgent choice. The high urgency to study at state universities will increase students' willingness to pay the tuition fees set by state universities. Students will tend to accept state universities' decisions regarding the amount of tuition fees they have to pay. In other words, the elasticity of demand for state universities becomes inelastic.

Third, this research reveals that for students the tuition fees imposed at state universities are not considered a problem. This proves that students have the willingness to pay educational costs at state universities in a very high category. Students' willingness to pay tuition fees as imposed by state universities is basically a student's recognition of the superiority of a state university. The high cost of education at state universities does not reduce students' interest in studying at state universities. In other words, the elasticity of demand for state universities is in the inelastic category.

Fourth, this research reveals that the popularity of state universities is at a very high level. The high popularity of state universities has a positive influence on students' confidence in choosing state universities as their first choice, so that demand for universities is at a high level. The high demand of students for state universities causes the elasticity of demand for state universities to become inelastic.

Fifth, student loyalty to state universities makes state universities the main choice for students. This causes demand for state universities to be at a very high level. The high demand for state universities causes the elasticity of demand for state universities to become inelastic.

Sixth, alternative financing facilities that students can access, such as the availability of various student scholarships, have caused student demand for state universities to be at a very high level. The high demand for state universities causes the elasticity of demand for state universities to become inelastic.

Seventh, the uniqueness and superiority of state universities means that state universities have strong bargaining power, which cannot be replaced by other universities. This causes student demand for state universities to be at a very high level. The high demand for state universities causes the elasticity of demand for state universities to become inelastic.

Eighth, students' perceptions that the tuition fees paid by students are considered equivalent to the quality of public university services. This condition triggers a growing willingness to pay tuition fees in higher education at a very high level. A high willingness to pay causes the elasticity of demand for state universities to become inelastic.

The data in table 2 also shows that the tuition fees paid by students are considered equivalent to the quality of services provided by state universities. This indicator is inversely proportional to the indicator of financing facilities provided by state universities. This phenomenon shows that if state universities do not provide alternative financing, then whatever education costs must be paid by students is considered equivalent to the quality of services provided by state universities.

This research also reveals that the amount of tuition fees charged by state universities is not considered a problem by students. This research reveals that this indicator is inversely proportional to the indicator of financing facilities provided by state universities. This means that whatever tuition fees are charged by state universities, and whether or not there are alternative financing options provided by state universities does not hinder students' interest in studying state universities. Theoretically, the elasticity of demand for goods or services is in the inelastic category if the percentage change in price is much higher than the percentage change in goods and services demanded (Mankiw, 2001, Prianto, 2016). Thus, if student demand for state universities is inelastic, then the increase in tuition fees will not greatly reduce students' interest in studying at those universities.

The data in table 2 also reveals that all indicators forming the elasticity of demand for state universities are positively correlated with students' interest in studying at state universities. Students' perceptions about the state universities they are studying are irreplaceable with other universities, the popularity of state universities, and the uniqueness and superiority of state universities have a very high correlation with students' interest in studying at state universities.

The findings of this research prove that student demand for state universities is inelastic. The high cost of education set by state universities does not hinder students' decisions to choose state universities as their main choice. This is public recognition of state universities as superior educational institutions. With their superior status, state universities have the freedom to set education costs. Whatever the educational costs set by state universities, the public will be willing to pay them. That is why, until now the education fees charged by state universities are in the very expensive category, even though the operational activities of state universities are largely borne by the government.

The data in table 3 shows that the elasticity of demand for the 3 main state universities in East Java is in the "very inelastic" category, namely: ITS, UNIBRAW, and UNAIR. This shows that these three state universities are the most popular with prospective students. The elasticity of demand for ITS and UNIBRAW is very inelastic, measured from 4 indicators, namely loyalty to state universities, popularity of universities, uniqueness and superiority of state universities, and students' perception of state universities as irreplaceable universities. The elasticity of demand for UNAIR is very inelastic, mainly measured from 4 indicators, namely the amount of tuition fees which is considered equivalent to the quality of university services, the uniqueness and excellence of the university, the popularity of the university, and students' perception of the university as an irreplaceable university.

Table 3. Elasticity of demand for state universities in East Java

University/ Indicator	UNAIR (U)	UNESA (U)	UINSA (A)	UNIBRAW (U)	UM (U)	UINMLG (U)	UNEJ (U)
1	4.8	4.4	4.35	4.8	4.5	4.3	4.6
2	4.6	4.35	4.4	4.75	4.6	4.45	4.55
3	4.5	4.5	4.4	4.3	4.5	4.35	4.6
4	4.9	4.4	4.25	4.9	4.6	4.3	4.5
5	4.95	4.35	4.3	4.9	4.75	4.2	4.55
6	4.6	4.7	4.8	4.5	4.5	4.9	4.6
7	4.88	4.35	4.25	4.85	4.7	4.2	4.55
8	4.75	4.3	4.25	4.75	4.3	4.25	4.25
Mean score	4.75	4.42	4.37	4.72	4.56	4.37	4.52

Source: Data processed by researchers

Notes:

U = Accredited "Excellent" level by BAN-PT

A = Accredited "A" level by BAN-PT

Overall, the elasticity of demand for 8 state universities in East Java is in the "very inelastic" category. All indicators forming the elasticity of demand for state universities also show the "very inelastic" category. This indicates that the amount of tuition fees does not affect students' interest in studying at state universities. The high cost of education is not a consideration for students to postpone their decision to study at state universities. The results of this research are in line with the study conducted by Prianto, et al. (2022) who revealed that despite the high costs, people's interest in studying at major state universities in East Java shows an increasing trend from year to year. This research reveals various new variables that influence the elasticity of demand for state universities, complementing various previous studies such as those conducted by Ehrenberg (2000), Spence (2006), Gallet (2007), Carter & Curry (2011), Whyte (2012), and Menzies III (2017). Various new variables that influence the elasticity of demand for state universities, namely: (a) students' perceptions about the existence of state universities which cannot be replaced by other universities, (b) students' views about the urgency of studying at state universities, (c) students' views on whether the education fees charged by state universities are a problem that can hinder them from studying, (d) students' views about the popularity of state universities, (e) students' loyalty to state universities, (f) financing facilities that can be accessed by students, such as access to scholarships, (g) students' perceptions about the uniqueness and superiority of state universities, and (h) students' views on whether the tuition fees paid are considered equivalent to the quality of service of state universities.

IV. CONCLUSION AND SUGGESTION

The research found various new variables that influence the elasticity of demand for state universities, thereby answering various research questions in this study, namely:

First, overall, the elasticity of demand for 8 state universities in East Java is in the "inelastic" category. This means that the high tuition fees do not reduce students' interest in studying at state universities. The elasticity of demand for state universities in the inelastic category provides freedom for state universities, especially state universities in the "PTN-BLU" and "PTNBH" categories, to set education costs according to institutional needs.

Second, there are 8 indicators that influence the elasticity of demand for higher education, and have a strong correlation with students' interest in studying at state universities, namely: (a) Students' perception that their target state universities do not have equivalent substitutes, (b) Students' perceptions about the level of urgency to study at their target universities, (c) Student perceptions about tuition fees at the target state university, (d) Student perceptions about the popularity of the target state university, (e) Student loyalty to only study at the target state university, (f) Financing facilities that can be accessed by students, such as fee discounts, scholarships, and the like, (g) Students' perceptions about the uniqueness and advantages of the targeted state universities, (h) The perception that the tuition fees paid by students are equivalent to the service quality of state universities. There are 3 indicators forming elasticity that have a very strong correlation with students' interest in studying at state universities, namely: students' perception that state universities cannot be replaced by other universities, the popularity of state universities, and the uniqueness and superiority of state universities. This shows that the uniqueness, excellence and popularity of a university are the main variables that increase students' interest in studying at state universities.

Third, there are 3 state universities in East Java that have the most inelastic demand elasticity, namely: ITS, UNAIR, and UNIBRAW. State universities that are in the highest ranking as released by the World University Rankings have the most inelastic demand elasticity. The more superior a state university is, the more inelastic the demand for that state university is.

Based on the conclusions of this research, several suggestions are proposed as follows:

First, the government should supervise state universities, especially regarding the amount of tuition fees charged by state universities. The tuition fees charged by state universities should not prevent low-income people from accessing educational services at state universities. However, most of the operational costs of state universities are supported by the government budget. Don't let students from high socio-economic groups dominate in state universities compared to those from low socio-economic groups. Therefore, state universities should continue to provide opportunities for low-income groups to study at state universities.

Second, every state university should continue to improve its excellence, improve its public image as a university that is irreplaceable, unique, increases popularity, provides alternative financing facilities, and improves service quality so that it can continue to maintain demand elasticity at the most inelastic level; so that it becomes the main reference for prospective students.

Third, assessing the superiority of a university can be done by measuring the elasticity of demand for state universities. There are 8 indicators that can be used to measure the elasticity of demand for state universities. The superiority of higher education should be measured by the level of elasticity of public demand for the institution.

Fourth, the government and each higher education institution should measure the elasticity of public demand for their institutions. Therefore, other researchers need to conduct studies related to the elasticity of demand for higher education. For private universities, measuring the elasticity of public demand for institutions is needed as a basis for determining strategies to promote their institutions. For private university managers, the results of this research can be used as a reference to improve their public image, so that the existence of private universities will become the main alternative for those who are not accepted at state universities.

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