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Perspective of Decision Making Based on Factor Analysis in Choosing A College (Case Study at University of Nias)

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ABSTRACT: This research is a survey study with a descriptive approach. The population consists of students at University of Nias. The sampling technique is random sampling, conducted on 185 students. Data were collected using a questionnaire and Likert scale for each statement. The data analysis techniques used in this research are descriptive analysis and t-test with the assistance of SPSS 24. The research results indicate that: out of 30 factors considered by students in choosing a place for study, 16 factors form 2 variables. The Main Variable consists of P1 Type of University, P2 University Status (Public/Private), P4 Accreditation of Study Program (Department), P5 Tuition Fees, P6 Scholarships, P7 Quality/Profile of Lecturers, P8 Service of Educational Personnel (Staff). The Supporting Variable includes P12 Student Activity Units / Student Organizations, P13 Campus Location, P14 Campus Work Partnerships, P15 University Entrance Exams, P16 Campus Brochures/Promotion, P17 Transportation Access, P18 Residential Access (Boarding House), P19 Classification of Regular and Special Classes, and finally, P20 Degree and Professionalism of Graduates.

KEYWORDS: Perspective, Decision Making, Factor Analysis, Choosing a College

INTRODUCTION

Every year, high school graduates are destined to decide on the course of study they will take. Students have to make this choice, because they have to decide what they want to do in the future. Since the courses they decide on determine their future careers, the decision will put pressure on students. Although some are confident in his decision, there are also those who feel distressed. There are many factors that must be included in the decision-making process. Balindong, Abdulraffi et.al. (2018)

Nawawi in Sonmez Cakir, F., & Adiguzel, Z. (2020) tertiary other both public and private, will not be spared from problems, especially problems related to management. If viewed from everyday life, problems can be caused by internal or external parties. Many parties think that problems coming from external parties are more dangerous, so they are prioritized to be resolved immediately. Meanwhile, problems that come from within (internal) are not too dangerous. This is a wrong view and can lead to the downfall of a company or an institution. Because of the problems that we have to face, every company and government agency will not escape problems, especially problems related to management.

The problem experienced by Unversity of Nias, where the number of prospective students from the previous year reached 2000 people but decreased or decreased in 2023 to 1200 people or around 60%. If viewed from everyday life, problems can be caused by internal or external parties. Because the problems we have to be aware of and have to solve immediately are problems that come from within. Higher Education Management in making decisions facing the Transformational Era towards smart education is inseparable from the interests and considerations of prospective students in choosing what factors are important and not important to them. So that management requires the right strategy in determining the attitude of what factors are more prioritized to be developed in the future. The factors in question consist of the main factors and supporting factors.

An effective leader or manager is a leader or manager who is able to make policies and make relevant decisions. Nawawi (1993: 55-56) in Sonmez Cakir, F., & Adiguzel, Z. (2020) says that the organization will only function if the leaders have the ability to make decisions and order their implementation to members of the organization in accordance with the areas of duties and responsibilities. Decision making is a leader's activity that can be found at all levels and all areas of management, including in the field of education management.

In general, a decision is made in other to resolve/solve a problem or issue (problem solving). Making decisions is very urgent for everyone, especially for leaders or managers. The existence of a leader in his leadership can be seen from the various forms of policies and decisions he takes. Therefore, it can be said that this article was written with the aim that higher education leaders can find out what factors can influence a person, especially prospective students, in making a decision in choosing a college so that in

the future these factors need to be considered and developed as a strategy in making decisions facing global competition in the world of education.

LITERATUR REVIEW

Decision Making

Decision making can be considered as an outcome or an output of a mental or cognitive process that leads to the selection of a course of action among several available alternatives. Every decision-making process always gets one final choice. The output can be an action (action) or an opinion on the choice. Decision making choosing the best alternative. This stage requires the same skills as the first step, namely good judgment. A comparison of the alternatives and the preferred course of action prompts an administrator's view of philosophy.

Based on the decision-making stages mentioned above followed by the strengths identified by Kreitner and Kinicki (1998) ("decision-making strategy,"2012) is divided into two groups, namely:

a. External forces (coming from outside the organization)

External forces that have the support of global influence cause organizations to think about the core and business processes by which products and services are produced. External forces are divided into four factors:

1) Demographic Characteristics, demographic elements include age, education, skill level, gender, migration, etc.,
2) Technological advancements.

Both manufacturing and service organizations are increasingly using technology as a tool to improve productivity. Those who are lagging behind in technology, especially information technology will experience difficulties in competition such as:

1) Market changes; The importance of the global economy is forcing companies to change the way they do business because of increasing international competition. Market changes occur due to mergers and acquisitions, changes in domestic and international competitive forces, or occur due to economic recessions.
2) Social and political pressures (social and political pressure); Social and political pressure can grow from war, values that must be defended, and leadership typologies.

b. Internal strength (sourced from within the organization)

Internal strength comes from within the organization. These strengths may be of a more malleable nature, such as low job satisfaction, or in token forms such as low productivity and conflict. Internal strength for change comes from the following: Human resources problems/prospects (HR problems/prospects).

According to Dinklage (Sharf, 1992) there are eight types of decision-making strategies. The four strategies are ways that do not result in a decision, namely typesdelaying, fatalistic, compliant, and paralytic types. The other four types are seen as effective ways of making decisions, namely typesiintuitive, impulsive, agonizing, and planful types.

TYPES OF DECISION MAKING

a. Strategic decisions are decisions to respond to environmental challenges and changes and are usually long-term in nature. This decision is taken by top management. Strategic decisions contain special characteristics that distinguish strategic decisions from other decisions. The overall objective of strategic decision making is to select alternative strategies so that a long-term competitive advantage can be achieved. Following are the special characteristics contained in a Strategic Decision:

   1) Rare, strategic decisions that are unusual and special, which cannot be imitated by other organizations, companies or agencies.
   2) Consequential, strategic decisions that include important resources and require a lot of commitment from related agencies.
   3) Directive, strategic decisions that determine decisions that can be imitated for other decisions and tifuture actions for the organization as a whole.

b. Administrative/Tactical Decisions are decisions relating to the management of resources (financial, engineering). This decision is taken by middle management. Tactical decision making consists of selecting among alternatives with immediate or limited observable results. Accepting a special order at a lower than normal selling price to capitalize on idle capacity and increase this year's profit is an example. Some tactical decisions tend to be short term and often have long term consequences.

   Qthe overall goal of strategic decision making is to select alternative strategies so that a long-term competitive advantage can be achieved. Tactical decision making must support this overall goal, even if the immediate goal is short term (accepting a special order to increase profits) or small scale (producing itself rather than buying components).

c. Operational decisions are decisions related to daily operational activities. This decision is taken by lower management. Operational decisions greatly determine the effectiveness of strategic decisions taken by top managers (Drummond, 1995). These operational decisions are made to carry out daily organizational activities or are carried out in organizational routines

for the sake of the organization's operations. This decision is usually made without asking for the opinion of the leadership first, so it is made immediately on the spot. Example: customer service that has to serve every customer complaint and provide solutions right away.

Factors Influencing Decision Making

According to Teerry, the factors that influence decision making are:

a. Things that are tangible or intangible, emotional or rational, need to be taken into account in decision making.
b. Every decision must be used as material to achieve the goal of each decision, do not be oriented towards personal interests, but must be more concerned with interests.
c. Satisfactory choices are seldom, so develop counter-alternatives.
d. Decision making is this action must be converted into physical action.
e. Effective decision-making takes time
f. Practical decision making is needed to get better results.
g. Every decision should be institutionalized so that it is known that the decision was correct.
h. Each decision is an initial action in terms of the next link in the chain.

Principles of Decision Making in Organizations

The principles of decision making according to Piet Saher Tian are as follows (Piet Saher Tian, 1994)

a. Can clearly distinguish between decision making and problem solving;
b. Confessionmif decisions must always be seen in relation to the goals to be achieved;
c. Because decision making often contains their own factors, supporting data and comprehensive analysis are always needed in making a decision.
d. Leaders are not only willing to make decisions, but are also responsible for all the actions of those decisions.

Basis in Decision Making

George R. Terry in Nasution (2021) mentions 5 bases (bases) in decision making, namely: intuition, experience, facts, authority, and rational.

a. Intuition based decision making is decision making based on subjective feelings. In decision-making based on this intuition, even though the time spent making decisions is relatively short, the resulting decisions are often relatively poor because they often ignore other basic considerations.
b. Experience. Decision-making based on experience has benefits for practical knowledge, because with the experience one has, one can estimate the situation of something, can calculate the pros and cons and the pros and cons of the decisions that will be produced.
c. Authority. Decision-making based on authority is usually carried out by leaders against their subordinates, or by people with a higher position to people with a lower position. The results of the decisions can last for a long time and have authenticity (authentic), but can lead to routine nature, associate with dictatorial practices and often skip the problem that should be solved so that it can cause confusion.
d. Fact. Decision-making based on empirical data and facts can provide sound, solid and good decisions. With facts, the level of trust in decision makers can be higher, so that people can accept the decisions made willingly and gracefully.
e. Rational. In ratio-based decision-making, the resulting decisions are objective, logical, more transparent and consistent in order to maximize results or value within certain constraints, so that it can be said to be close to the truth or in accordance with what is desired.

This rational decision-making is fully valid under ideal circumstances. In rational decision making there are several things as follows:

1) Clarity of matter: there is no doubt and fuzziness of matter.
2) Goal orientation: unity of understanding of the goals to be achieved.
3) Knowledge of alternatives: all alternatives are known for their types and consequences.
4) Clear preferences: alternatives can be sorted according to criteria.
5) Maximum results: selection of the best alternative based on maximum economic results.

Basic concept of decision making

Decisions or decision making can be interpreted as the process of choosing one alternative among many alternatives, according to (Siagian, p.24) defines decision making as the process of choosing an alternative way of acting with an efficient method according to the situation to find and solve organizational problems. Meanwhile, according to Handoko, 2011, p.11) defining decision

making is the process of selecting a series of activities to be selected as a solution to a particular problem. The function of decision making is:

1. Base the beginning of all human activities that are basic and directed individually or in groups
2. Sesomething that is futuristic, that is related to the future, a future whose effect or influence lasts quite a long time

The purpose of decision making according to (Rusdiana, 2016, p.204)

a. It is singular, that is, if the resulting decision only concerns one problem, it means that once it is decided, it will have nothing to do with other problems
b. Qa dual purpose, which occurs when the decision taken simultaneously solves two or more problems that are contradictory or non-contradictory.

Factors that influence decision making Which comes from outside or external

1. Position
   A person's position or position can be seen based on his rank whether as a leader or subordinate, so that it can be determined whether or not it is appropriate to make a decision. Because if the leader takes the decision, of course he has experience in making a decision, otherwise like the subordinates, of course they are inexperienced and not good at making a decision so that this position or position plays an important role in making a decision.
2. Trouble
   Is something that becomes a barrier to achieving goals that is a deviation from things that are expected or planned.
3. Situation
   It is all the factors in a situation that are related to each other and together they influence us and what we want to do.
4. Influence from other groups
   Other groups can also influence a decision because other groups or organizations have decisions that can be considered by other organizational leaders in addressing problems and the influence of other groups can also bring down the organization and prioritize the group.

The manager's style in making a decision is also very influential in making a decision because this manager's style will be based on a lot of background knowledge, behavior, experience and the like. Leaders usually have a style in making a decision, namely by avoiding problems, ignoring information that points to a problem, the second is problem solving and the third is problem finding. So it can be said that the style of the leader is also very influential in making a decision because it can be seen that the style he has each varies in making a decision.

Internal factors that influence decision making include:

1. Personality
   The behavior or character of a person in making a decision also greatly influences where this human nature varies, there are those who are in a hurry and also are careful in making a choice so that this personality is also very influential in making a decision. And also in this case what is needed is one's wisdom and firmness in making a decision.
2. Experience factor
   The more a person makes decisions, the more courageous he will be in making decisions and this is also related to the expertise possessed by the leader or the skills he has because of the experience he has experienced.

METHODS

AScientific articles should be compiled with systematic methods and steps to make it easier to do research. In this article, the author uses the quantitative method by collecting questionnaires from 185 students at Nias University semester 1 via Google form and processing them using SPSS 24. The population and sample are students of the management study program at the Faculty of Economics, Nias University.

Table 1. Factors in the Analysis.

Code	Factor	Code	Factor
P1	Type of College	P16	Decent Environment
P2	University Status (State/Private)	P17	Easily Obtainable Information
P3	College Accreditation	P18	College Entrance Selection
P4	Study Program Accreditation (Department)	P19	Campus Brochures/Promotions
P5	Tuition fee	P20	Campus Partners
P6	Scholarship Facility	P21	Transportation Access
P7	Lecturer Quality Meets Standards	P22	Access the Boarding Place

P8	Lecturer Profile	P23	Class Classification
P9	Campus History	P24	Course Schedule
P10	Education Personnel Services (Employee)	P25	Title
P11	Adequate Campus Facilities	P26	Alumni prospects
P12	Lecture Period	P27	Hobby Distribution
P13	Relationship (Relationship)	P28	Friend Suggestions
P14	Image (Reputation) of Campus	P29	Many Acquaintances
P15	Campus Location	P30	Work Demands

Author's source, 2023.

Using a Likert scale of 5, namely: (1=very low, 2=low, 3=moderate, 4=high, 5=very high)

Table 2. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measures of Sampling Adequacy.		,949
Bartlett's Test of Sphericity	approx. Chi-Square	6007,754
	df	120
	Sig.	,000

Source: Processed Data (2023)

The results showed that the value of the Kaiser Meyer Olkin Measure of Sampling 0.949 > 0.50, meaning that factor analysis can be carried out.Thus the KMO requirements meet the requirements because it has a value above 0.5.

Table 3. Component Matrixa

	Components	
	1	2
Type of College	,526	,576
University Status (State/Private)	,667	,506
Study Program Accreditation (Department)	,556	,611
Tuition fee	,603	,624
Scholarship	,619	,546
Lecturer Quality / Profile	,507	,615
Education Personnel Services (Employee)	,607	,474
SMEs / student organizations	,742	-,171
Campus Location	,825	-,254
Campus Partners	,857	-,337
College Entrance Selection	,872	-,334
Campus Brochures/Promotions	,839	-.345
Transportation Access	,830	-,317
Residential Access (Kost)	,852	-,368
Classification of Regular Class and Special Class	,848	-,241
Graduate degrees and professions	,843	-,363

Source: Processed Data (2023)

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

The table above shows how much a variable is correlated with the factor that will be formed. For example: P1 Higher Education Type correlates 0.526 with a factor of 1, 0.576 with a factor of 2.Rotated Component Matrix

In detail, you can look at the Rotated Component Matrix table below to determine which variables will be included in which factors.

Table 4. Rotated Component Matrixa

	Components	
	1	2
Type of College	,130	,769
University Status (State/Private)	,288	,786
Study Program Accreditation (Department)	,136	,815
Tuition fee	, 169	,851
Scholarship	,224	,794
Lecturer Quality / Profile	,093	,792
Education Personnel Services (Employee)	,254	,727
SMEs / student organizations	,716	,257
Campus Location	,831	,233
Campus Partners	,904	,180
College Entrance Selection	,914	, 191
Campus Brochures/Promotions	,893	, 164
Transportation Access	,870	, 183
Residential Access (Kost)	,916	,152
Classification of Regular Class and Special Class	,844	,256
Graduate degrees and professions	,905	, 151

Source: Processed Data (2023)

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Table of Rotated Component Matrix

The determination of which factor enters the variable is determined by looking score correlation biggest. The table above has been sorted from the largest to the smallest value per factor. Component Transformation Matrix, The final step for determining the factors is to look at the Component Transformation Matrix table.

Tabel 5. Component Transformation Matrix

Components	1	2
1	,841	,541
2	-,541	,841

Source: Processed Data (2023)

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Transformation Matrix table

The table next to shows that in component 1 the correlation value is 0.841 > 0.5, and component 2: 0.841 > 0.5 Because all components are > 0.5, the two factors formed can be said to be appropriate in summarizing the sixteen existing variables.

RESULTS AND DISCUSSION

Analysis :

1. The rotation process does not change the number of Communalities
2. Total Variances Explained

With the rotation process, the sixteen variables are best reduced to just two factors. This can be seen in the rightmost column (rotation), where it is still recommended to have two factors even with a different amount of variance, namely 7 for the main variable factor and 9 for the supporting factors.

3. Scree Plots

The scree plot is also the same as before the rotation process, which still shows two factors is the right amount to reduce the sixteen existing variables.

4. Component Matrix

There are two component matrices, the first of which has been discussed previously, namely the distribution of variables into factors if there is no rotation (unrotated). It can be seen that now the loading factors which used to be small are getting smaller and the large loading factors are getting bigger.

Net variable: the correlation between the net variable and factor 2 before rotation was 0.576 (quite strong), with rotation further strengthened to 0.769. On the other hand, the correlation between the variable P1 type of higher education and factor 1 is weak (0.526, with reduced rotation to 0.130). Thus it can be said that the variable P1 type of higher education can be included as a component of factor 2, but with clearer evidence.

Thus, the sixteen variables have been reduced to consist of only two factors:

Table 6. Factor 1 consists of supporting factor variables

P12 UKM / student organizations
P13 Campus Location
P14 Campus Work Partners
P15 College Entrance Selection
P16 Brochure/Campus Promotion
P17 Transportation Access
P18 Residential Access (Kost)
P19 Classification of Regular Class and Special Class
P20 Graduate degree and profession

Source: Processed Data (2023)

Table 7. Factor 2 consists of the main factor variables

P1 Type of College
P2 Higher Education Status (State/Private)
P4 Study Program Accreditation (Department)
P5 Tuition Fees
P6 Scholarship
P7 Lecturer Quality / Profile
P8 Service of Education Personnel (Employee)

Source: Processed Data (2023)

5.Component Plot In Rotated MatrixThe results of factor rotation can also be shown graphically, where it appears that there is a real grouping of two factors.

X Axis (Component/Factor 1)

The number for component 1, which starts with -1 on the far left, goes to +1 on the far right. From the rotated matrix number (correlation number) it can be seen that the variable belonging to factor 1 will approach the number +1, or means it is located to the right of the center of the graph. It can be seen that the variables P12, P13, P14, P15, P16, P17, P18, P19 and P20 are in the area.

Y axis (Component/Factor 2)

The number for Component 2, which starts with -1, at the bottom , to the number +1 at the top. From the rotated matrix number (correlation number) it can be seen that the variable belonging to factor 2 will approach the number +1, or means it is located above the middle of the graph. It can be seen that the variables P1, P2, P4, P5, P6, P7 and P8 are in the area.

CONCLUSIONS

From the results of this study, it can be concluded that of the 30 factors that are considered by students in choosing a place to study, there are 16 factors divided into 2 variables, namely: Main Variables consist of P1 Type of Higher Education, P2 Status of Higher Education (State/Private), P4 Study Program Accreditation (Department), P5 Tuition Fees, P6 Scholarship, P7 Lecturer Quality/Profile, P8 Education Personnel Services (Staff) while the supporting variables are P12 UKM/student organizations, P13 Campus Locations, P14 Campus Partners, P15 College Entrance Selection, P16 Campus Brochures/Promotions, P17 Access to Transportation, P18 Access to Residence (Kost), P19 Classification of Regular Classes and Special Classes, and lastly P20 Graduate degrees and professions. Therefore, in making decisions, campus management can focus on the main variables or factors, for example the type of tertiary institution is adjusted to the interests of prospective students, minimum study program accreditation meets BAN-PT standards, tuition fees are affordable, lecturer quality needs to be improved and developed. Meanwhile, supporting factors or variables can be obtained in the form of support or collaboration with parties outside the tertiary institution, for example establishing partners with various educational and non-educational institutions.

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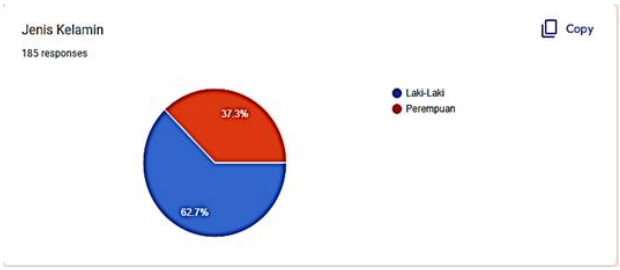
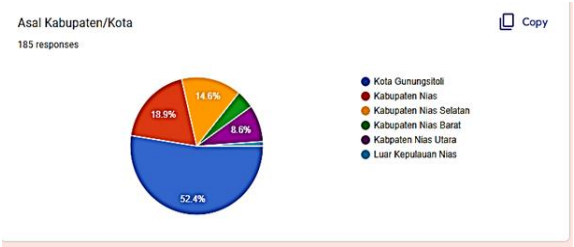
Appendices of the Research Document

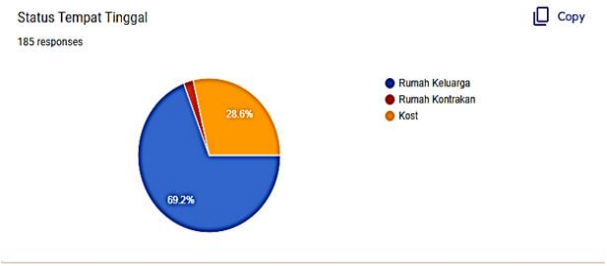
a. Characteristics of respondents



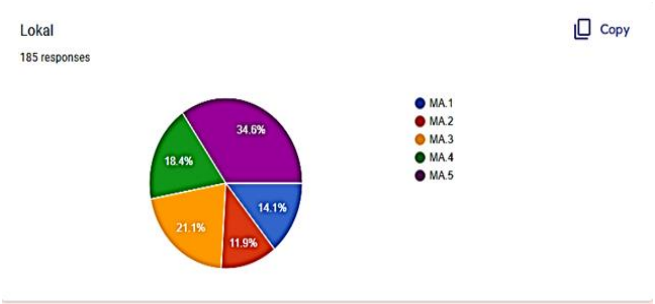
Male = 116 (62,7%)
Female = 69 (37,3%)

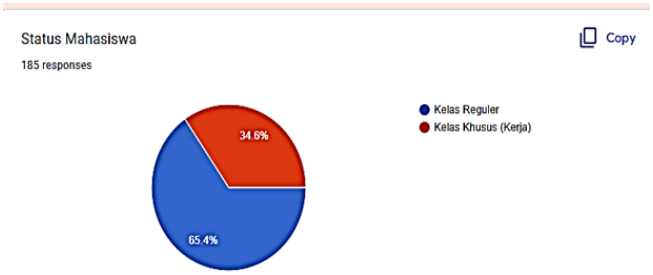


Gunungsitoli = 97 (52,4%),
Nias= 35 (18,9%),
South Nias = 27 (14,6%),
West Nias = 8 (4,3%),
North Nias = 16 (8,6%),
Outside of Nias Island = 2 (8,6%)



Family House = 128 (69,2%),
Rent House = 4 (2,2%),
Boarding = 53 (28,6%),





MA1= 26 (14,1%),
MA2= 22 (11,9%),
MA3= 39 (21,1%),
MA4=34 (18,4%),
MA5=64 (34,6%)
Amount = 185 (100%)

Reguler Class = 121 (34,6%)
Special Class = 64 (65,4%)

Table Anti-image Matrices

		P1	P2	P4	P5	P6	Q7	Q8	Q12	Q13	P14	P15	Q16	Q17	P18	P19	P20
Anti-image Correlation	P1	,939a	-,275	-,069	-,099	-,071	-,206	-,055	-,069	-,012	,029	,036	,073	-,097	,011	,060	-,061
	P2	-,275	,947a	-,074	-,248	-,029	-,114	-,150	-,019	-,068	,032	-,025	-,095	-,005	,024	-,097	,073
	P4	-,069	-,074	,936a	-,305	-,235	-,106	-,119	-,003	,028	-,087	,079	-,021	,022	-,056	,042	,021
	P5	-,099	-,248	-,305	,918a	-,312	-,159	,035	-,014	-,080	,071	-,014	-,012	,014	,006	-,079	,060
	P6	-,071	-,029	-,235	-,312	,939a	-,036	-,197	-,014	,055	-,012	-,042	-,051	,008	,088	-,008	-,079
	Q7	-,206	-,114	-,106	-,159	-,036	,944a	-,222	,024	,053	,021	-,040	,048	,011	,013	-,016	-,041
	Q8	-,055	-,150	-,119	,035	-,197	-,222	,947a	-,045	-,065	-,079	-,003	,084	,043	-,072	-,084	,096
	Q12	-,069	-,019	-,003	-,014	-,014	,024	-,045	,973a	-,234	-,129	,098	,035	-,110	-,069	-,045	-,070
	Q13	-,012	-,068	,028	-,080	,055	,053	-,065	-,234	,959a	-,159	-,329	-,003	-,063	-,072	,043	,052
	P14	,029	,032	-,087	,071	-,012	,021	-,079	-,129	-,159	,956a	-,363	-,219	-,092	-,064	,052	-,086
	P15	,036	-,025	,079	-,014	-,042	-,040	-,003	,098	-,329	-,363	,943a	-,250	-,039	-,080	-,149	-,073
	Q16	,073	-,095	-,021	-,012	-,051	,048	,084	,035	-,003	-,219	-,250	,966a	-,119	-,192	-,043	-,045
	Q17	-,097	-,005	,022	,014	,008	,011	,043	-,110	-,063	-,092	-,039	-,119	,975a	-,167	-,238	-,040
	P18	,011	,024	-,056	,006	,088	,013	-,072	-,069	-,072	-,064	-,080	-,192	-,167	,946a	,008	-,477
	P19	,060	-,097	,042	-,079	-,008	-,016	-,084	-,045	,043	,052	-,149	-,043	-,238	,008	,953a	-,390
	P20	-,061	,073	,021	,060	-,079	-,041	,096	-,070	,052	-,086	-,073	-,045	-,040	-,477	-,390	,928a

a. Measures of Sampling Adequacy(MSA)
The MSA values in the table above are indicated in the Anti Image Correlation row with an “a” mark. all of them meet the MSA requirement because their value is greater than 0.5.

Table Anti-image Matrices

Components	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variances	cumulative %	Total	% of Variances	cumulative %	Total	% of Variances	cumulative %
1	8,678	54,241	54,241	8,678	54,241	54,241	7,049	44,058	44,058
2	3,117	19,479	73,720	3,117	19,479	73,720	4,746	29,661	73,720
3	,557	3,484	77,204						
4	,502	3,138	80,342						
5	,490	3,065	83,406						
6	,407	2,543	85,949						
7	,378	2,365	88,314						
8	,342	2,136	90,451						
9	,323	2.019	92,469						
10	,250	1.565	94,035						
11	,224	1,398	95,433						
12	,208	1,300	96,732						
13	, 179	1.117	97,850						
14	, 147	,917	98,767						
15	, 103	,642	99,409						
16	.095	,591	100,000						

Extraction Method: Principal Component Analysis.

Eigenvalue table

Based on the table above, look at the "Component" column which shows that there are 16 components that can represent variables. The "Initial Eigenvalues" column with SPSS we set the value to 1 (one). The variance explained by factor 1 is 8.678/16 x 100% = 54.241. By factor 2 of 3.117/16 x 100% = 19.479. So that the total of the two factors will be able to explain the variable equal to 54.241% + 19.479% =73,720%.