

**Application of Exploratory Factor Analysis to Identify Factors Affecting Parents' Interest in Choosing SMK 45 Lembang****Sabathino Bansole<sup>1</sup>, Bobby W. Saputra<sup>2</sup>**

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| <b>Keywords</b>                                          | <b>Abstract</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Interest, vocational school, exploratory factor analysis | Vocational High School (SMK) is a form of formal education organized by the government or private sector which is equivalent to Senior High School / Madrasah Aliyah, where Vocational High School has specialization in certain fields or sciences. the purpose of this study is to identify all components that influence parents' interest in choosing SMK 45 Lembang, West Bandung Regency to send their children to school, by applying exploratory factor analysis (EFA). The approach method used in this research is quantitative method. This research focuses on the factors that influence parents' interest in choosing SMK 45 Lembang, West Bandung Regency, as a place of education for their children. This type of research is included in the type of exploratory research. The population in this study amounted to 1607 with a sample of 150. Based on data obtained from the official website of the Central Statistics Agency (BPS), it appears that the number of SMK students has increased every year. National data shows that in West Java Province, with a total of 1,765 schools in the 2011/2011 academic year, it became 2,515 schools in the 2015/2016 academic year. Meanwhile, the number of students in the same academic year increased from 717,362 students to 903,343 students. There are many factors that drive parents' interest in choosing a particular vocational school for their children, including: school facilities, human resources, individual influence (family, friends), products, school performance, cost, learning process, employment opportunities, place/ location, availability of majors of interest, promotion, extracurricular activities, quality of graduates, opportunities to continue higher education. |

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E-mail: [sabathinob@gmail.com](mailto:sabathinob@gmail.com)**INTRODUCTION**

Vocational High School, or SMK, is a type of formal school that offers secondary level vocational education equivalent to SMA/MA level, for students who have an interest in a particular field or science (Ahmadi & Ibda, 2018) . The aim of this education is that vocational school graduates can immediately work where graduates can be accepted according to their abilities and the needs of the job market in the world of work and industry. (Susilo, Witarto, Djennod, & Setiawan, 2020) . To fulfill the vocational education objectives mentioned above, the Ministry of Education and Culture (Kemendikbud) developed the Ministry of Education and Culture's Strategic Plan (Rensra), which was created based on the 2005–2025 RPJPN.

In the Rensra, one of the policies created is a vocational education revitalization program to increase the competitiveness of graduates, especially in the era of industrial revolution 4.0 (Puryati, Ramdani, Maulani, & Prawirasasra, 2019) . This revitalization program is implemented in several ways, including by increasing the number of productive teaching staff (teachers), increasing the competence of productive teachers, adding and improving infrastructure for practicum activities, implementing skills certification for teaching staff and vocational school students, collaborating with the business world, the world of work and industry, and many other activities (Maryanti, 2019) .

The education revitalization program, especially in vocational education, must be implemented in an integrated and integrated manner involving many stakeholders. This Vocational School Revitalization Program has been regulated in Presidential Instruction Number 9 of 2016 concerning Vocational School Revitalization (Subijanto, Sumantri, Martini, Mustari, & Soroeida, 2020) . The education revitalization program carried out by the government has also had an impact on the public's interest, both parents and students, in entering vocational schools (Ahmadi & Ibda, 2019) . Based on West Bandung BPS data, the number of students attending vocational school level is higher than high school students in the Lembang District area in 2021 and 2022. Meanwhile, data for 2020 is not available at BPS.

These data, it can be clearly seen that students' interest in studying at the vocational school level is higher when compared to students' interest in studying at the high school level. This can be seen from existing data from BPS data in West Java Province to the Lembang District Region (Rustiadi et al., 2021). Where every year from 2020 to 2022, the number of students attending vocational school level has increased. The interest in continuing to vocational school can also be seen from information on the number of students attending SMK 45 Lembang which is in the West Bandung Regency, West Java Region (Yahya & Oktaviani, 2022). SMK 45 Lembang is a private school with foundation ownership status which has four expertise programs, namely Online Business and Marketing, Hospitality, Fashion Design and Nursing. SMK 45 Lembang is the school with the largest number of students in the West Bandung Regency area.

SMK 45 Lembang also has the advantage of being the first school in Lembang to be named a School Center of Excellence even at the national level as a pilot project, receiving the 2017 Educational Award from the International Human Resource Development Program (IHRDP) throughout Southeast Asia. Apart from that, SMK 45 Lembang has also been facilitated by infrastructure that supports learning activities such as adequate laboratories for each department, so that students can immediately practice the competencies learned in the laboratory room of each department.

There are many factors that encourage the high desire of the community, both parents and students, to attend vocational school level. A study investigating the issue of interest and the decision to choose a school was carried out by researchers who researched "Factors that Influence the Advantages of Guardians in Choosing SMKN 2 Semarang" (Muller & Kerbow, 2018). Their study revealed that 62.3% of research participants responded to the five variables tested—facilities and infrastructure owned, academic qualifications of teaching staff, graduate competencies, educational products, and educational costs—which had a significant impact on parents' decision to choose SMKN2 Semarang (Silalahi, Meutia, & Andriyansah, 2023). Research conducted by researchers regarding the factors that influence the choice of parents in choosing SD Kasatriyan Surakarta shows that factors such as progress, administration and school certification status influence the choice of parents in choosing SD Kasatriyan for their children's school.

Research directed by researchers which analyzes "factors that influence the decision of parents to send their children to vocational school at SMKN 1 Pandak and SMKN 1 Sewon", which analyzes elements from within the individual (desires, needs, inspiration) and external variables (family support, school climate, extensive communication, community position). With a total sample of 109 individuals, the exploration results show that the innate element that most influences the excellence of student parents is the needs component at 29.6% at SMKN 1 Pandak and 61.9% at SMKN1 Sewon. Meanwhile, social status is the most important extrinsic factor that influences parents' interest, namely SMKN 1 Pandak at 59.3 percent and SMKN 1 Sewon at 37.5 percent (Bagaka's, Badillo, Bransteter, & Rispinto, 2015).

Based on basic education data, the Directorate General of Early Childhood Education, Basic Education and Secondary Education, Ministry of Education and Culture, for data on vocational schools in the Lembang District area there are nine vocational schools. Observing the data and description above, the author is interested in conducting research at SMK 45 Lembang, West Bandung Regency regarding the Application of Exploratory Factor Analysis (EFA) to determine the factors that influence parents' interest in choosing SMK 45 Lembang,

West Bandung Regency. By implementing EFA, it is hoped that we will be able to find out what factors can influence parents' interest in sending their children to SMK 45 Lembang.

Based on the background and problem formulation previously described, the aim of this research is to identify all components that influence parents' interest in choosing SMK 45 Lembang, West Bandung Regency to send their children to school, by applying exploratory factor analysis (EFA).

## RESEARCH METHODS

The approach method used in this research is a quantitative method. This research focuses on the factors that influence parents' interest in choosing SMK 45 Lembang, West Bandung Regency, as a place for their child's education. This type of research is included in the type of exploratory research, where in this research the data and information cannot yet be identified. Meanwhile, to carry out search analysis for factors in this research, factor analysis was used. Based on the latest data obtained from school operators, it is stated that as of the 2022/2023 Even Semester Academic Year there are 1,607 students registered as active students at SMK 45 Lembang. Thus, the population used was 1,607 parents/guardians. The samples used in this research were 150 samples. The sampling method that will be used is quote sampling. This research uses primary data, which was collected directly by researchers through questionnaires given to parents and guardians of students at SMK 45 Lembang. The data collection technique used in this research is primary data and secondary data. Primary data was obtained from interviews and questionnaires. Meanwhile, secondary data used by researchers in this research is data from schools, such as the number of students. This data was obtained from school operators and employees of SMK 45 Lembang. In addition, secondary data collection was carried out by conducting a literature review based on journals, previous research and related articles. This literature will later be used to determine relevant variables according to the research to be conducted. Analysis can be carried out statistically, using statistical principles, or by reading tables or graphs. Test the validity and reliability of the instrument, descriptive statistical analysis, and exploratory factor analysis.

## RESULTS AND DISCUSSION

The steps in factor analysis are as follows:

### 1. Formulating the Problem

The problem in this research is to find out what factors influence parents/guardians' interest in choosing SMK 45 Lembang for their children. To answer this problem, 14 variables were used that were relevant to this research which were then analyzed using factor analysis.

### 2. Creating a Correlation Matrix

The tests carried out in this stage consist of Bartlett's Test of Sphericity, Keiser Meyer Olkin (KMO) and Measure of Sampling Adequacy (MSA) (Effendi, Matore, Khairani, & Adnan, 2019). Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy, is an index that measures how large the observed correlation coefficient is with the magnitude of the partial coefficient (Mohamad et al., 2017). The KMO Measure of Sampling Adequacy number must be greater than 0.50 so that factor analysis can be carried out further testing. Bartlett's Test of Sphericity is a test used to test the interdependence between the variables that constitute a factor. This analysis is intended to state that the research variables are not correlated with each other in the population. The significance in Bartlett's test must also show a number smaller than 0.05 so that factor analysis can be carried out (Shrestha, 2021).

**Table 1 Kaiser-Meyer-Olkin (KMO) Test Results  
Measure of Sampling Adequacy****KMO and Bartlett's Test**

|                                                  |                    |          |
|--------------------------------------------------|--------------------|----------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. |                    | .904     |
| Bartlett's Test of Sphericity                    | Approx. Chi-Square | 7348.491 |
|                                                  | df                 | 1176     |
|                                                  | Sig.               | .000     |

Source: SPSS 27 Processing Results (2024)

Based on Table 1 above, it can be seen that the KMO MSA value is 0.904. These results show that the research variables have a correlation coefficient value observed for the partial coefficient of 0.904 or 90.4%. Furthermore, the Bartlett's Test of Sphericity value was obtained at 7348.491 with a significance  $\alpha$  of 0.000. By referring to these results, it can be concluded that the research variables have passed the KMO MSA test and Bartlett's Test of Sphericity and factor analysis testing can be continued.

In Factor Analysis, the data matrix must have correlation so that factor analysis can be carried out. The correlation value is shown in the anti-image correlation matrix. The MSA value on the diagonal anti-image correlation must be above 0.5 (Santoso, 2012).

**Table 2 Anti-Image Correlation Test Results**

|                           |           |       |           |       |
|---------------------------|-----------|-------|-----------|-------|
| Anti-image<br>Correlation | PR-1      | 0.780 | BIA-4     | 0.826 |
|                           | PR-2      | 0.767 | PROS-1    | 0.955 |
|                           | PR-3      | 0.798 | PROS-2    | 0.915 |
|                           | PK-1      | 0.952 | PROS-3    | 0.917 |
|                           | PK-2      | 0.928 | PROS-4    | 0.924 |
|                           | PK-3      | 0.924 | PROS-5    | 0.918 |
|                           | PK-4      | 0.924 | HR-1      | 0.902 |
|                           | CIT-1     | 0.900 | SDM-2     | 0.918 |
|                           | CIT-2     | 0.904 | HR-3      | 0.907 |
|                           | CIT-3     | 0.935 | HR-4      | 0.895 |
|                           | CIT-4     | 0.953 | PROD-1    | 0.894 |
|                           | JUR-1     | 0.927 | PROD-2    | 0.935 |
|                           | JUR-3     | 0.928 | PROD-3    | 0.940 |
|                           | JUR-4     | 0.816 | PROD-4    | 0.942 |
|                           | LOK-1     | 0.861 | EKS-2     | 0.839 |
|                           | LOK-2     | 0.914 | EKS-4     | 0.880 |
|                           | LOK-3     | 0.929 | QUALITY-1 | 0.896 |
|                           | LOK-4     | 0.916 | QUAL-2    | 0.899 |
|                           | SARPRAS-1 | 0.906 | QUALITY-3 | 0.884 |
|                           | SARPRAS-2 | 0.946 | QUAL-4    | 0.915 |
|                           | SARPRAS-3 | 0.911 | KES-1     | 0.793 |
|                           | SARPRAS-4 | 0.910 | KES-2     | 0.830 |
|                           | BIA-1     | 0.892 | KES-3     | 0.821 |
|                           | BIA-2     | 0.904 | KES-4     | 0.866 |
|                           | BIA-3     | 0.804 |           |       |

Source: SPSS Data Processing Results (adjusted format) (2024)

Based on Table 2 above, it can be seen that the MSA value for each variable is greater than 0.5, so it can be concluded that each variable has a correlation value as expected.

**Communalities Test Results**

Communalities show how much diversity of independent variables, namely the factors that influence parents' interest in choosing SMK 45 Lembang, can be explained by the factors formed (Setiawati & Atarita, 2018).

Table 3 shows that the communality value of the 49 factors is greater than 0.5, this shows that the factors formed can explain at least 50% of the diversity of the original variable data, namely the factors that influence parents' interest in choosing SMK 45 Lembang. The following is the communality value resulting from factor analysis with 49 factors.

**Table 3 Communalities Test Results**  
**Communalities**

|           | Initial | Extraction |
|-----------|---------|------------|
| PR-1      | 1,000   | ,906       |
| PR-2      | 1,000   | ,827       |
| PR-3      | 1,000   | ,860       |
| PK-1      | 1,000   | ,654       |
| PK-2      | 1,000   | ,647       |
| PK-3      | 1,000   | ,736       |
| PK-4      | 1,000   | ,742       |
| CIT-1     | 1,000   | ,648       |
| CIT-2     | 1,000   | ,664       |
| CIT-3     | 1,000   | ,716       |
| CIT-4     | 1,000   | ,739       |
| JUR-1     | 1,000   | ,651       |
| JUR-3     | 1,000   | ,667       |
| JUR-4     | 1,000   | ,591       |
| LOK-1     | 1,000   | ,630       |
| LOK-2     | 1,000   | ,685       |
| LOK-3     | 1,000   | ,822       |
| LOK-4     | 1,000   | ,766       |
| SARPRAS-1 | 1,000   | ,686       |
| SARPRAS-2 | 1,000   | ,593       |
| SARPRAS-3 | 1,000   | ,607       |
| SARPRAS-4 | 1,000   | ,689       |
| BIA-1     | 1,000   | ,644       |
| BIA-2     | 1,000   | ,664       |
| BIA-3     | 1,000   | ,717       |
| BIA-4     | 1,000   | ,669       |
| PROS-1    | 1,000   | ,697       |
| PROS-2    | 1,000   | ,669       |
| PROS-3    | 1,000   | ,706       |
| PROS-4    | 1,000   | ,732       |
| PROS-5    | 1,000   | ,831       |
| HR-1      | 1,000   | ,858       |
| SDM-2     | 1,000   | ,696       |
| HR-3      | 1,000   | ,840       |
| HR-4      | 1,000   | ,831       |
| PROD-1    | 1,000   | ,726       |
| PROD-2    | 1,000   | ,705       |
| PROD-3    | 1,000   | ,773       |
| PROD-4    | 1,000   | ,712       |
| EKS-2     | 1,000   | ,779       |
| EKS-4     | 1,000   | ,750       |
| QUALITY-1 | 1,000   | ,783       |
| QUAL-2    | 1,000   | ,830       |
| QUALITY-3 | 1,000   | ,684       |
| QUAL-4    | 1,000   | ,734       |
| KES-1     | 1,000   | ,794       |
| KES-2     | 1,000   | ,756       |
| KES-3     | 1,000   | ,812       |
| KES-4     | 1,000   | ,737       |

Extraction Method: Principal Component Analysis.

Source: SPSS Data Processing Results (2024)

Table 3 above shows that the communality value of 49 factors is greater than 0.5. This shows that the factors formed can explain at least 50% of the diversity of the original variable data, namely the factors that influence parents' interest in choosing SMK 45 Lembang. The largest value is the Promotion Factor for the PR-1 indicator with an extraction value of 0.907, which means the Promotion Factor for the indicator "Teachers promote about this school to me through social gatherings/recitation groups/certain groups" has a variance of 90.7% in explaining the ability to influence parents' interests and the smallest value is the Department Factor for the JUR-4 indicator with an extraction value of 0.593, which means the Department Factor for the indicator "The majors in SMK 45 Lembang are not available in other vocational schools around it" has a variance of 59.3% in explaining the ability to influence parents' interests.

### 3. Factor Extraction

Total Variance Explained explains the percentage of data diversity from independent variables, namely factors that influence parents' interest in choosing SMK 45 Lembang which can be explained by the factors formed.

**Table 4 Total Variance Explained Test Results**

| Component | Initial Eigenvalues |               |              | Total Variance Explained |               |              | Rotation Sums of Squared Loadings |               |              |
|-----------|---------------------|---------------|--------------|--------------------------|---------------|--------------|-----------------------------------|---------------|--------------|
|           | Total               | % of Variance | Cumulative % | Total                    | % of Variance | Cumulative % | Total                             | % of Variance | Cumulative % |
| 1         | 20.388              | 41.608        | 41.608       | 20.388                   | 41.608        | 41.608       | 7.276                             | 14.849        | 14.849       |
| 2         | 3.283               | 6.699         | 48.307       | 3.283                    | 6.699         | 48.307       | 5.380                             | 10.980        | 25.830       |
| 3         | 2.721               | 5.553         | 53.860       | 2.721                    | 5.553         | 53.860       | 4.273                             | 8.720         | 34.550       |
| 4         | 2.375               | 4.846         | 58.706       | 2.375                    | 4.846         | 58.706       | 4.116                             | 8.400         | 42.950       |
| 5         | 1.866               | 3.808         | 62.514       | 1.866                    | 3.808         | 62.514       | 3.820                             | 7.797         | 50.746       |
| 6         | 1.449               | 2.957         | 65.471       | 1.449                    | 2.957         | 65.471       | 3.320                             | 6.776         | 57.522       |
| 7         | 1.356               | 2.768         | 68.239       | 1.356                    | 2.768         | 68.239       | 2.918                             | 5.956         | 63.478       |
| 8         | 1.158               | 2.363         | 70.602       | 1.158                    | 2.363         | 70.602       | 2.472                             | 5.045         | 68.522       |
| 9         | 1.064               | 2.171         | 72.773       | 1.064                    | 2.171         | 72.773       | 2.083                             | 4.250         | 72.773       |
| 10        | .973                | 1.986         | 74.759       |                          |               |              |                                   |               |              |
| 11        | .918                | 1.874         | 76.633       |                          |               |              |                                   |               |              |
| 12        | .852                | 1.738         | 78.371       |                          |               |              |                                   |               |              |
| 13        | .795                | 1.623         | 79.994       |                          |               |              |                                   |               |              |
| 14        | .765                | 1.562         | 81.556       |                          |               |              |                                   |               |              |
| 15        | .698                | 1.405         | 82.960       |                          |               |              |                                   |               |              |
| 16        | .643                | 1.312         | 84.272       |                          |               |              |                                   |               |              |
| 17        | .595                | 1.214         | 85.486       |                          |               |              |                                   |               |              |
| 18        | .562                | 1.148         | 86.633       |                          |               |              |                                   |               |              |
| 19        | .526                | 1.073         | 87.706       |                          |               |              |                                   |               |              |
| 20        | .473                | .966          | 88.672       |                          |               |              |                                   |               |              |
| 21        | .430                | .878          | 89.550       |                          |               |              |                                   |               |              |
| 22        | .402                | .821          | 90.371       |                          |               |              |                                   |               |              |
| 23        | .383                | .782          | 91.153       |                          |               |              |                                   |               |              |
| 24        | .362                | .739          | 91.892       |                          |               |              |                                   |               |              |
| 25        | .340                | .693          | 92.586       |                          |               |              |                                   |               |              |
| 26        | .330                | .674          | 93.260       |                          |               |              |                                   |               |              |
| 27        | .291                | .593          | 93.853       |                          |               |              |                                   |               |              |
| 28        | .282                | .576          | 94.429       |                          |               |              |                                   |               |              |
| 29        | .263                | .537          | 94.966       |                          |               |              |                                   |               |              |
| 30        | .243                | .495          | 95.461       |                          |               |              |                                   |               |              |
| 31        | .231                | .472          | 95.933       |                          |               |              |                                   |               |              |
| 32        | .202                | .413          | 96.346       |                          |               |              |                                   |               |              |
| 33        | .189                | .385          | 96.731       |                          |               |              |                                   |               |              |
| 34        | .183                | .374          | 97.105       |                          |               |              |                                   |               |              |
| 35        | .159                | .324          | 97.429       |                          |               |              |                                   |               |              |
| 36        | .149                | .305          | 97.733       |                          |               |              |                                   |               |              |
| 37        | .145                | .296          | 98.030       |                          |               |              |                                   |               |              |
| 38        | .125                | .254          | 98.284       |                          |               |              |                                   |               |              |
| 39        | .117                | .239          | 98.522       |                          |               |              |                                   |               |              |
| 40        | .107                | .218          | 98.740       |                          |               |              |                                   |               |              |
| 41        | .100                | .204          | 98.944       |                          |               |              |                                   |               |              |
| 42        | .094                | .192          | 99.136       |                          |               |              |                                   |               |              |
| 43        | .088                | .180          | 99.316       |                          |               |              |                                   |               |              |
| 44        | .075                | .152          | 99.468       |                          |               |              |                                   |               |              |
| 45        | .072                | .147          | 99.615       |                          |               |              |                                   |               |              |
| 46        | .061                | .125          | 99.740       |                          |               |              |                                   |               |              |
| 47        | .059                | .120          | 99.859       |                          |               |              |                                   |               |              |
| 48        | .048                | .098          | 99.957       |                          |               |              |                                   |               |              |
| 49        | .021                | .043          | 100.000      |                          |               |              |                                   |               |              |

Extraction Method: Principal Component Analysis.

Source: SPSS Data Processing Results (2024)

Table 4 above shows that there are nine factors that have eigenvalues greater than 1. Each of these nine factors has an eigenvalue of 20.388 (factor 1), 3.283 (factor 2), 2.721 (factor 3), 2.375 (factor 4), 1.866 (factor 5), 1.449 (factor 6), 1.356 (factor 7), 1.158 (factor 8) and 1.064 (factor 9). The eigenvalue describes the relative importance of each factor in calculating the variance of the 49 factors analyzed. If all the variables are added up the value is 49 ( **the same as the number of variables included in the calculation** ).

$$Faktor\ 1 = \frac{20,388}{49} \times 100\% = 41,608\% \quad Faktor\ 2 = \frac{3,283}{49} \times 100\% = 6,699\%$$

$$Faktor\ 3 = \frac{2,721}{49} \times 100\% = 5,553\% \quad Faktor\ 4 = \frac{2,375}{49} \times 100\% = 4,846\%$$

$$Faktor\ 5 = \frac{1,866}{49} \times 100\% = 3,808\% \quad Faktor\ 6 = \frac{1,449}{49} \times 100\% = 2,957\%$$

$$Faktor\ 7 = \frac{1,356}{49} \times 100\% = 2,768\% \quad Faktor\ 8 = \frac{1,158}{49} \times 100\% = 2,363\%$$

$$Faktor\ 9 = \frac{1,064}{49} \times 100\% = 2,171\%$$

So the total cumulative diversity of original factors that can be explained by the six factors mentioned above is 72.773%. The amount of variance that can be explained by the new factors formed is 72.773% while the remaining 27.227% is explained by other factors that were not studied.

#### 4. Factor Rotation

Rotated Component Matrix testing is carried out to determine the contents of each factor, which can be determined by looking at the factor loading values in the Component Matrix Table (Kline, 2014). Factor loadings show the magnitude of the correlation between variables and the factors formed. The greater the factor loading value, the closer the relationship between the variables and the factors formed.

**Table 5 Rotated Component Matrix Test Results**

**Rotated Component Matrix <sup>a</sup>**

|           | Components |      |      |      |      |      |   |   |      |
|-----------|------------|------|------|------|------|------|---|---|------|
|           | 1          | 2    | 3    | 4    | 5    | 6    | 7 | 8 | 9    |
| HR-1      | ,806       |      |      |      |      |      |   |   |      |
| PROS-5    | ,791       |      |      |      |      |      |   |   |      |
| HR-4      | ,722       |      |      |      |      |      |   |   |      |
| HR-3      | ,713       |      |      |      |      |      |   |   |      |
| SDM-2     | ,678       |      |      |      |      |      |   |   |      |
| PROS-4    | ,657       |      |      |      |      |      |   |   |      |
| PROS-3    | ,577       |      |      |      |      |      |   |   |      |
| PROS-1    | ,575       |      |      |      |      |      |   |   |      |
| SARPRAS-4 | ,518       |      |      |      | ,482 |      |   |   |      |
| PROS-2    | ,489       |      |      |      |      |      |   |   |      |
| SARPRAS-2 | ,446       |      |      |      |      |      |   |   |      |
| SARPRAS-1 | ,439       |      |      |      |      |      |   |   |      |
| PK-4      |            | ,772 |      |      |      |      |   |   |      |
| PK-3      |            | ,708 |      |      |      |      |   |   |      |
| PK-1      |            | ,699 |      |      |      |      |   |   |      |
| PK-2      |            | ,674 |      |      |      |      |   |   |      |
| CIT-1     |            | ,592 |      |      |      |      |   |   |      |
| JUR-1     |            | ,574 | ,435 |      |      |      |   |   |      |
| JUR-3     |            | ,505 |      |      |      |      |   |   |      |
| CIT-4     |            | ,504 |      |      |      |      |   |   |      |
| LOK-1     |            |      | ,756 |      |      |      |   |   |      |
| LOK-2     |            |      | ,748 |      |      |      |   |   |      |
| LOK-4     |            |      | ,681 |      |      |      |   |   |      |
| LOK-3     |            |      | ,678 |      |      |      |   |   |      |
| JUR-4     |            |      | ,467 |      |      |      |   |   |      |
| CIT-3     | ,432       | ,423 | ,442 |      |      |      |   |   |      |
| QUAL-2    |            |      |      | ,772 |      |      |   |   |      |
| QUALITY-1 |            |      |      | ,747 |      |      |   |   |      |
| QUAL-4    |            |      |      | ,661 |      |      |   |   |      |
| QUALITY-3 |            |      |      | ,542 |      |      |   |   |      |
| PROD-4    |            |      |      | ,523 |      |      |   |   |      |
| BIA-1     |            |      |      |      | ,732 |      |   |   |      |
| BIA-4     |            |      |      |      | ,726 |      |   |   |      |
| BIA-3     |            |      |      |      | ,637 |      |   |   | ,467 |
| BIA-2     |            |      |      |      | ,544 |      |   |   |      |
| SARPRAS-3 | ,449       |      |      |      | ,462 |      |   |   |      |
| CIT-2     |            |      |      |      | ,424 |      |   |   |      |
| KES-1     |            |      |      |      |      | ,862 |   |   |      |
| KES-3     |            |      |      |      |      | ,835 |   |   |      |
| KES-2     |            |      |      |      |      | ,769 |   |   |      |



| Rotated Component Matrix <sup>a</sup> |            |   |   |      |   |      |      |      |      |
|---------------------------------------|------------|---|---|------|---|------|------|------|------|
|                                       | Components |   |   |      |   |      |      |      |      |
|                                       | 1          | 2 | 3 | 4    | 5 | 6    | 7    | 8    | 9    |
| KES-4                                 |            |   |   | ,527 |   | ,542 |      |      |      |
| PR-1                                  |            |   |   |      |   |      | ,925 |      |      |
| PR-3                                  |            |   |   |      |   |      | ,895 |      |      |
| PR-2                                  |            |   |   |      |   |      | ,860 |      |      |
| PROD-3                                |            |   |   |      |   |      |      | ,631 |      |
| PROD-1                                |            |   |   |      |   |      |      | ,610 |      |
| PROD-2                                |            |   |   |      |   |      |      | ,565 |      |
| EKS-2                                 |            |   |   |      |   |      |      |      | ,707 |
| EKS-4                                 |            |   |   |      |   |      |      | ,406 | ,617 |

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 16 iterations.

Source: SPSS Data Processing Results (2024)

Based on Table 5 above, it can be seen that each indicator falls into a certain factor group according to its largest loading factor value . The number of factors formed is nine factors.

Loading Factors value for each variable.

the loading factor value shows how big the correlation or relationship is between the variable and its factor group. Following are the test results.

**Table 6 Rotation Value Table**

| Factor | Indicator | Information                                                                                                                                   | Loading Factor | % of Variance | Cumulative % |
|--------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------------|--------------|
| I      | HR-1      | Teachers who teach at SMK 45 have abilities that match their education and the subjects taught/taught                                         | 0.806          | 41,608        | 41,608       |
|        | PROS-5    | Teachers provide assessments objectively without discriminating                                                                               | 0.791          |               |              |
|        | HR-4      | Teachers and staff at SMK 45 Lembang have good relationships with students and guardians so that the learning process can be carried out well | 0.722          |               |              |
|        | HR-3      | Teachers and staff at SMK 45 Lembang provide good service to children and parents and prioritize good ethics and morals                       | 0.713          |               |              |
|        | SDM-2     | Teachers and staff at SMK 45 Lembang are actively involved in achieving student competencies                                                  | 0.678          |               |              |
|        | PROS-4    | Teachers provide motivation and provide advice to students for learning                                                                       | 0.657          |               |              |
|        | PROS-3    | Teachers are able to provide instruction to children according to the child's characteristics                                                 | 0.577          |               |              |
|        | PROS-1    | The teacher's ability to guide children is very good                                                                                          | 0.575          |               |              |
|        | SARPRAS-4 | I noticed that this school has sufficient sports facilities and facilities for students                                                       | 0.518          |               |              |
|        | PROS-2    | Teachers communicate with parents about school programs                                                                                       | 0.489          |               |              |
|        | SARPRAS-2 | I noticed that this school has sufficient laboratory space with adequate facilities for its students                                          | 0.446          |               |              |



| Factor | Indicator | Information                                                                                                                                         | Loading Factor | % of Variance | Cumulative % |
|--------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------------|--------------|
| II     | SARPRAS-1 | I noticed that this school has adequate classrooms according to the number of students                                                              | 0.439          | 6,699         | 48,307       |
|        | PK-4      | I chose SMK 45 Lembang because of the collaboration between the school and the industrial world which opens up job vacancies for its graduates      | 0.772          |               |              |
|        | PK-3      | I chose vocational school education because my child can work immediately after completing his education                                            | 0.708          |               |              |
|        | PK-1      | In my view, vocational school graduates have the opportunity to work immediately after completing their education compared to high school graduates | 0.699          |               |              |
|        | PK-2      | More graduates from this school are accepted to work after graduation                                                                               | 0.674          |               |              |
|        | CIT-1     | SMK 45 Lembang is an educational institution that is able to meet the needs of intellectual and spiritual education                                 | 0.592          |               |              |
|        | JUR-1     | I know there is a major that my child is interested in at SMK 45 Lembang                                                                            | 0.574          |               |              |
|        | JUR-3     | The major chosen at SMK 45 Lembang for my child was the right major                                                                                 | 0.505          |               |              |
|        | CIT-4     | The accreditation of SMK 45 Lembang was the reason I chose this school for my child                                                                 | 0.504          |               |              |
|        | LOK-1     | As a parent, to send my child to school I choose a school that is close to where I live                                                             | 0.756          | 5,553         | 53,860       |
| III    | LOK-2     | I chose this school for my child because the location is close to the main road so it is easy to reach                                              | 0.748          |               |              |
|        | LOK-4     | The strategic location of this school is one of my considerations in sending my child to this school                                                | 0.681          |               |              |
|        | LOK-3     | I think the location of this school is very good and the atmosphere is comfortable so it attracts my interest in sending my child to school         | 0.678          |               |              |
|        | JUR-4     | The majors at SMK 45 Lembang are not available at other vocational schools around it                                                                | 0.467          |               |              |
|        | CIT-3     | The teachers and staff at SMK 45 Lembang have good relations with the community/parents, which influenced me in choosing this school                | 0.442          |               |              |
|        | QUAL-2    | According to my observations, graduates of SMK 45 Lembang have the skills/abilities needed in the world of work                                     | 0.772          | 4,846         | 58,706       |
| IV     | QUAL-1    | Graduates from SMK 45 Lembang have good attitudes/ethics in society                                                                                 | 0.747          |               |              |
|        | QUAL-4    | In my opinion, graduates of SMK 45 Lembang have better skills at work and in society                                                                | 0.661          |               |              |

| Factor | Indicator | Information                                                                                                                       | Loading Factor | % of Variance | Cumulative % |
|--------|-----------|-----------------------------------------------------------------------------------------------------------------------------------|----------------|---------------|--------------|
| V      | QUALITY-3 | According to my observations, graduates from SMK 45 Lembang can compete with graduates of other schools in the world of work      | 0.542          | 3,808         | 62,514       |
|        | PROD-4    | SMK 45 Lembang can teach and prepare my child to enter the world of work                                                          | 0.523          |               |              |
|        | BIA-1     | I chose SMK 45 Lembang because the education costs were affordable                                                                | 0.732          |               |              |
|        | BIA-4     | I chose SMK 45 Lembang because it has a scholarship program for students                                                          | 0.726          |               |              |
|        | BIA-3     | I chose SMK 45 Lembang because it has many tuition fee discount programs                                                          | 0.637          |               |              |
|        | BIA-2     | I chose SMK 45 Lembang because the costs were in accordance with the educational facilities obtained                              | 0.544          |               |              |
|        | SARPRAS-3 | I noticed that this school provides a whiteboard, projector screen and LCD projector in each class as a learning tool             | 0.462          |               |              |
|        | CIT-2     | SMK 45 Lembang has a good school culture and school staff who are responsive to requests and complaints                           | 0.424          |               |              |
| VI     | KES-1     | After graduating from vocational school, I want my child to continue his education at university                                  | 0.862          | 2,957         | 65,471       |
|        | KES-3     | In my opinion, sending my child to SMK 45 Lembang is preparation and provision for my child to continue his education to college. | 0.835          |               |              |
|        | KES-2     | Graduates from SMK 45 Lembang have a better chance of entering college                                                            | 0.769          |               |              |
|        | KES-4     | Based on my observations, many graduates of SMK 45 Lembang are accepted into state and private universities                       | 0.542          |               |              |
| VII    | PR-1      | The teacher promoted this school to me through social gatherings/religious studies/certain groups                                 | 0.925          | 2,768         | 68,239       |
|        | PR-3      | I found out about this school from the brochures distributed                                                                      | 0.895          |               |              |
|        | PR-2      | I found out about this school from the banners/billboards on the public road                                                      | 0.860          |               |              |
| VIII   | PROD-3    | I am interested in sending my child to SMK 45 Lembang because of the achievements achieved by the school                          | 0.631          | 2,363         | 70,602       |
|        | PROD-1    | SMK 45 Lembang has a good reputation, so I chose to send my child to it                                                           | 0.610          |               |              |
|        | PROD-2    | SMK 45 Lembang has a program that is recognized by many people as well as organizations and the government                        | 0.565          |               |              |
| IX     | EKS-2     | Extracurricular activities are interesting activities for my child                                                                | 0.707          | 2,171         | 72,773       |
|        | EKS-4     | Extracurricular activities can make my child more disciplined and responsible                                                     | 0.617          |               |              |

Source: SPSS Data Processing Results (2024)

The amount of correlation for each variable can be seen according to the factor column where the variable is located. Factor I consists of 12 indicators which have a % of Variance value of 41.608%. Factor II consists of 8 indicators which have a % of Variance value of 6.699%. Factor III consists of 6 indicators which have a % of Variance value of 5.553%, Factor IV consists of 5 indicators which have a % of Variance value of 4.846%, Factor V consists of 6 indicators which have a % of Variance value of 3.808%, Factor VI consists of the 4 indicators which have a % of Variance value of 2.957%, Factor VII consists of 3 indicators which have a % of Variance value of 2.768%, Factor VIII consists of 3 indicators which have a % of Variance value of 2.363%, and Factor IX consists of 2 indicators that have a % of Variance value of 2.171%,

#### Component Transformation Matrix Test Results

The component transformation matrix indicates the magnitude of the correlation between the components or factors formed. The higher the correlation value on the diagonal line, the closer the correlation between the resulting factors and the factors that influence parents' interest in choosing SMK 45 Lembang.

**Table 7 Component Transformation Matrix Test Results**  
**Component Transformation Matrix**

| Components | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1          | ,547  | ,439  | ,343  | ,334  | ,333  | ,218  | ,170  | ,255  | ,160  |
| 2          | ,147  | -.516 | -.469 | ,473  | -.080 | ,500  | -.242 | ,155  | ,155  |
| 3          | -.346 | -.244 | ,624  | -.319 | ,201  | ,573  | ,294  | -.050 | ,395  |
| 4          | ,021  | ,029  | -.361 | ,688  | -.266 | -.018 | ,876  | ,132  | -.087 |
| 5          | -.165 | -.283 | -.184 | ,180  | ,658  | -.509 | ,121  | ,153  | ,311  |
| 6          | -.590 | ,130  | ,298  | ,692  | -.058 | ,532  | ,062  | -.134 | -.202 |
| 7          | -.191 | ,249  | -.345 | -.181 | ,532  | ,331  | -.504 | ,096  | -.589 |
| 8          | ,375  | -.385 | ,126  | ,112  | ,224  | ,024  | ,192  | -.709 | -.303 |
| 9          | -.082 | ,516  | -.412 | ,036  | ,047  | ,059  | -.039 | -.581 | ,590  |

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Source: SPSS Data Processing Results (2024)

Table 7 above shows that in Factor I the correlation value is  $0.547 > 0.5$ , Factor II:  $0.516 < 0.5$ , Factor III:  $0.624 < 0.5$ , Factor IV:  $0.688 > 0.5$ , Factor V:  $0.658 > 0.5$ , Factor VI:  $0.532 > 0.5$ , Factor VII:  $0.504 > 0.5$ , Factor VIII:  $0.709 > 0.5$  and Factor IX:  $0.590 > 0.5$ . Factors that have a correlation value  $> 0.5$  then the factors formed can be said to be appropriate in summarizing the nine existing factors. Because all factors have a correlation value greater than 0.5, it can be concluded that there is no orthogonal relationship to the nine factors formed.

#### 5. Factor Interpretation

Factor interpretation aims to determine the names of factors, because factors are a construct that must be interpreted (Widhiawati, Astana, & Indrayani, 2019). Interpretation of factors can be done by knowing the variables that form them. The nine factors obtained from the reduction results will be given names, where the naming of these factors depends on the names of the variables that form one group in the interpretation of each analysis, and is subjective and there are no definite provisions regarding the naming. Giving a name to each factor can be described as follows:

- Factor 1, namely human resources which influence parents' interest in choosing SMK 45 Lembang is 41.608% with an eigenvalue of 20.388. The variables included in this factor are SDM-1, Pros-5, SDM-4, SDM-3, SDM-2, Pros-4, Pros-3, Pros-1, Sarpras-4, Pros-2, Sarpras-2, Sarpras-1.

- b. Factor 2, namely job opportunities which influence parents' interest in choosing SMK 45 Lembang is 6.699% with an eigenvalue of 3.283. The variables included in this factor are PK-4, PK-3, PK-1, PK-2, CIT-1, JUR-1, JUR-3, CIT-4.
- c. Factor 3, namely location, which influences parents' interest in choosing SMK 45 Lembang is 5.553% with an eigenvalue of 2.271. The variables included in this factor are LOK-1, LOK-2, LOK-4, LOK-3, JUR-4, CIT-3.
- d. Factor 4, namely the quality of graduates which influences parents' interest in choosing SMK 45 Lembang, is 4.846% with an eigenvalue of 2.375. The variables included in this factor are KUAL-2, KUAL-1, KUAL-4, KUAL-3, PROD-4.
- e. Factor 5, namely costs which influence parents' interest in choosing SMK 45 Lembang, is 3.808% with an eigenvalue of 1.866. The variables included in this factor are BIA-1, BIA-4, BIA-3, BIA-2, SARPRAS-3, CIT-2.
- f. Factor 6, namely the opportunity to continue education which influences parents' interest in choosing SMK 45 Lembang by 2.957% with an eigenvalue of 1.449. The variables included in this factor are KES-1, KES-3, KES-2, KES-4.
- g. Factor 7, namely promotion which influences parents' interest in choosing SMK 45 Lembang by 2.768% with an eigenvalue of 1.356. The variables included in this factor are PR-1, PR-3, PR-2.
- h. Factor 8, namely products that influence parents' interest in choosing SMK 45 Lembang, is 2.363% with an eigenvalue of 1.158. The variables included in this factor are PROD-3, PROD-1, PROD-2.
- i. Factor 9, namely extracurricular activities which influence parents' interest in choosing SMK 45 Lembang is 2.171% with an eigenvalue of 1.064. The variables included in this factor are EKS-2, EKS-4.

## Discussion

### Correlation Test

a. Using the KMO test and Bartlett's Test of Sphericity at this stage is to assess the correlation between the variables forming the factors. The hypotheses for significance are:

Ho: The sample (variable) is not sufficient to carry out further analysis

H1: The sample (variable) is adequate for further analysis

The criteria for seeing significance are:

Sig > 0.05 then Ho is accepted

Sig < 0.05 then Ho is rejected

It can be seen from table 4.20 KMO and Bartlett's Test of Sphericity, that the KMO value obtained is 0.904 so that the assumption H1 is accepted and Ho is rejected. Thus, the research variables can be subjected to further analysis because they have a correlation between variables, and have a sig value < 0.05 so that Ho is rejected and H1 is accepted, so that the sample or variable can be analyzed further.

### b. Test Measure of Sampling Adequacy (MSA)

The MSA test is carried out to analyze each variable, to find out which variables can be processed further and which ones must be excluded. In this test, the value that can be used to continue the factor analysis process is  $MSA > 0.5$ . In table 4.21 it can be seen that all variables have an MSA value > 0.5 so the FA process can continue.

## II. Factoring or Extraction

This process is to extract variables to form a factor.

### a. Determining Cumulative

Before carrying out the factoring or extraction process, first pay attention to the variable contribution table from the extraction results in table 4.22. Communality is a value that shows the contribution of variables to a factor that is formed.

In table 4.22, the contribution of the extracted variables shows the large variance of the filtered variables with other variables. In the PR-1 variable, it can be seen that the extraction value is 0.906, which means that around 90.6% of the variance in the PR-1 variable can be explained by factors that will later be formed. The greater the

Communality of a variable, the closer it is related to the factors formed. Variable contributions are as follows:

- 1) In the PR-1 variable, the extraction value is 0.906, which means that around 90.6% of the variance in the PR-1 variable can be explained by factors that will later be formed.
- 2) In the PR-2 variable, the extraction value is 0.827, which means that around 82.7% of the variance in the PR-2 variable can be explained by factors that will later be formed.
- 3) In the PR-3 variable, the extraction value is 0.860, which means that around 86.0% of the variance in the PR-3 variable can be explained by factors that will later be formed.
- 4) In the PK-1 variable, the extraction value is 0.654, which means that around 65.4% of the variance in the PK-1 variable can be explained by factors that will later be formed.
- 5) In the PK-2 variable, the extraction value is 0.647, which means that around 64.7% of the variance in the PK-2 variable can be explained by factors that will later be formed.
- 6) In the PK-3 variable, the extraction value is 0.736, which means that around 73.6% of the variance in the PK-3 variable can be explained by factors that will later be formed.
- 7) In the PK-4 variable, the extraction value is 0.742, which means that around 74.2% of the variance in the PK-4 variable can be explained by factors that will later be formed.
- 8) In the CIT-1 variable, the extraction value is 0.648, which means that around 64.8% of the variance in the CIT-1 variable can be explained by factors that will later be formed.
- 9) In the CIT-2 variable, the extraction value is 0.664, which means that around 66.4% of the variance in the CIT-2 variable can be explained by factors that will later be formed.
- 10) In the CIT-3 variable, the extraction value is 0.716, which means that around 71.6% of the variance in the CIT-3 variable can be explained by factors that will later be formed.
- 11) In the CIT-4 variable, the extraction value is 0.739, which means that around 73.9% of the variance in the CIT-4 variable can be explained by factors that will later be formed.
- 12) For the JUR-1 variable, the extraction value is 0.651, which means that around 65.1% of the variance in the JUR-1 variable can be explained by factors that will later be formed.
- 13) In the JUR-3 variable, the extraction value is 0.667, which means that around 66.7% of the variance in the JUR-3 variable can be explained by factors that will later be formed.
- 14) In the JUR-4 variable, the extraction value is 0.591, which means that around 59.1% of the variance in the JUR-1 variable can be explained by factors that will later be formed.
- 15) In the LOK-1 variable, the extraction value is 0.630, which means that around 63.0% of the variance in the LOK-1 variable can be explained by factors that will later be formed.
- 16) In the LOK-2 variable, the extraction value is 0.685, which means that around 68.5% of the variance in the LOK-2 variable can be explained by factors that will later be formed.
- 17) In the LOK-3 variable, the extraction value is 0.822, which means that around 82.2% of the variance in the LOK-3 variable can be explained by factors that will later be formed.
- 18) In the LOK-4 variable, the extraction value is 0.766, which means that around 76.6% of the variance in the LOK-4 variable can be explained by factors that will later be

formed.

- 19) In the SARPRAS-1 variable, the extraction value is 0.686, which means that around 68.6% of the variance in the SARPRAS-1 variable can be explained by factors that will later be formed.
- 20) In the SARPRAS-2 variable, the extraction value is 0.593, which means that around 59.3% of the variance in the SARPRAS-2 variable can be explained by factors that will later be formed.
- 21) In the SARPRAS-3 variable, the extraction value is 0.607, which means that around 60.7% of the variance in the SARPRAS-3 variable can be explained by factors that will later be formed.
- 22) In the SARPRAS-4 variable, the extraction value is 0.689, which means that around 68.9% of the variance in the SARPRAS-4 variable can be explained by factors that will later be formed.
- 23) In the BIA-1 variable, the extraction value is 0.644, which means that around 64.4% of the variance in the BIA-1 variable can be explained by factors that will later be formed.
- 24) In the BIA-2 variable, the extraction value is 0.664, which means that around 66.4% of the variance in the BIA-2 variable can be explained by factors that will later be formed.
- 25) In the BIA-3 variable, the extraction value is 0.717, which means that around 71.7% of the variance in the BIA-3 variable can be explained by factors that will later be formed.
- 26) In the BIA-4 variable, the extraction value is 0.669, which means that around 66.9% of the variance in the BIA-4 variable can be explained by factors that will later be formed.
- 27) In the PROS-1 variable, the extraction value is 0.697, which means that around 69.7% of the variance in the PROS-1 variable can be explained by factors that will later be formed.
- 28) In the PROS-2 variable, the extraction value is 0.669, which means that around 66.9% of the variance in the PROS-2 variable can be explained by factors that will later be formed.
- 29) In the PROS-3 variable, the extraction value is 0.706, which means that around 70.6% of the variance in the PROS-3 variable can be explained by factors that will later be formed.
- 30) In the PROS-4 variable, the extraction value is 0.732, which means that around 73.2% of the variance in the PROS-4 variable can be explained by factors that will later be formed.
- 31) In the PROS-5 variable, the extraction value is 0.831, which means that around 83.1% of the variance in the PROS-5 variable can be explained by factors that will later be formed.
- 32) In the SDM-1 variable, the extraction value is 0.858, which means that around 85.8% of the variance in the SDM-1 variable can be explained by factors that will later be formed.
- 33) In the SDM-2 variable, the extraction value is 0.696, which means that around 69.6% of the variance in the SDM-2 variable can be explained by factors that will later be formed.
- 34) For the SDM-3 variable, the extraction value is 0.840, which means that around 84.0% of the variance in the SDM-3 variable can be explained by factors that will later be formed.
- 35) In the SDM-4 variable, the extraction value is 0.831, which means that around 83.1% of the variance in the SDM-4 variable can be explained by factors that will later be formed.
- 36) In the PROD-1 variable, the extraction value is 0.726, which means that around 72.6% of the variance in the PROD-1 variable can be explained by factors that will later be formed.

- 37) In the PROD-2 variable, the extraction value is 0.705, which means that around 75.0% of the variance in the PROD-2 variable can be explained by factors that will later be formed.
- 38) In the PROD-3 variable, the extraction value is 0.773, which means that around 77.3% of the variance in the PROD-3 variable can be explained by factors that will later be formed.
- 39) In the PROD-4 variable, the extraction value is 0.712, which means that around 71.2% of the variance in the PROD-4 variable can be explained by factors that will later be formed.
- 40) In the EKS-2 variable, the extraction value is 0.779, which means that around 77.9% of the variance in the EKS-2 variable can be explained by factors that will later be formed.
- 41) In the EKS-4 variable, the extraction value is 0.750, which means that around 75.0% of the variance in the EKS-4 variable can be explained by factors that will later be formed.
- 42) For the KUAL-1 variable, the extraction value is 0.783, which means that around 78.3% of the variance in the KUAL-1 variable can be explained by factors that will later be formed.
- 43) In the KUAL-2 variable, the extraction value is 0.830, which means that around 83.0% of the variance in the KUAL-2 variable can be explained by factors that will later be formed.
- 44) For the KUAL-3 variable, the extraction value is 0.684, which means that around 68.4% of the variance in the KUAL-3 variable can be explained by factors that will later be formed.
- 45) For the KUAL-4 variable, the extraction value is 0.734, which means that around 73.4% of the variance in the KUAL-4 variable can be explained by factors that will later be formed.
- 46) In the KES-1 variable, the extraction value is 0.794, which means that around 79.4% of the variance in the KES-1 variable can be explained by factors that will later be formed.
- 47) In the KES-2 variable, the extraction value is 0.756, which means that around 75.6% of the variance in the KES-2 variable can be explained by factors that will later be formed.
- 48) In the KES-3 variable, the extraction value is 0.812, which means that around 81.2% of the variance in the KES-3 variable can be explained by factors that will later be formed.
- 49) In the KES-4 variable, the extraction value is 0.737, which means that around 73.7% of the variance in the KES-4 variable can be explained by factors that will later be formed.

b. Extraction process to determine factors

From the results of table 4.23, the results of extraction using PCA show that the number of variables extracted was 49 variables and the factors formed were nine factors which can be seen from the eigenvalue  $> 1$ . Extraction results that have an eigenvalue  $< 1$  cannot be used as factors in the variables. In table 4.23, it can be seen that the extraction results with an eigenvalue  $> 1$  are as many as nine factors formed, with the eigenvalues sorted from the largest to the smallest value in determining the factors. So the factors formed can be seen as follows:

In accordance with the eigenvalue criteria, only components 1 to 9 are formed as factors because they have eigenvalues greater than 1, and other components are considered to have no correlation with the factors formed, because their eigenvalues are smaller than 1. In table 4.23 the number of results Extraction clearly shows the factors formed by looking at the eigenvalues, variance and cumulative.

From table 4.23, according to the number of factors formed, namely nine factors, the amount of variance for each factor and for all the factors formed is:



- i. Factor 1 = 41.068 of 100% of the total variance, namely by (total variables of factor 1 or eigenvalue of factor 1: number of variables x 100%).  
 $= 20,388 : 49 \times 100\% = 41,068$ . This means that out of 100% of the total variance there is 41.068% of the variance that can be explained by factor 1 based on the variability that forms factor 1.
- ii. Factor 2 = 6.699 of 100% of the total variance, namely by (total variables of factor 2 or eigenvalue of factor 2: number of variables x 100%).  
 $= 3,283 : 49 \times 100\% = 6,699$ . This means that out of 100% of the total variance there is 6.699% of the variance that can be explained by factor 2 based on the variability that forms factor 2.
- iii. Factor 3 = 5.553 of 100% of the total variance, namely by (total variables of factor 3 or eigenvalue of factor 3: number of variables x 100%).  
 $= 2,721 : 49 \times 100\% = 5,553$ . This means that out of 100% of the total variance there is 5.553% of the variance that can be explained by factor 3 based on the variability that forms factor 3.
- iv. Factor 4 = 4.846 of 100% of the total variance, namely by (total variables of factor 4 or eigenvalue of factor 4: number of variables x 100%).  
 $= 2,375 : 49 \times 100\% = 4,846$ . This means that out of 100% of the total variance there is 4.846% of the variance that can be explained by factor 4 based on the variability that forms factor 4.
- v. Factor 5 = 3.808 of 100% of the total variance, namely by (total variable factor 5 or eigenvalue of factor 5: number of variables x 100%).  
 $= 1,866 : 49 \times 100\% = 3,808$ . This means that out of 100% of the total variance there is 3.808% of the variance that can be explained by factor 5 based on the variability that forms factor 5.
- vi. Factor 6 = 2.957 of 100% of the total variance, namely by (total variable factor 6 or eigenvalue of factor 6: number of variables x 100%).  
 $= 1,449 : 49 \times 100\% = 2,957$ . This means that out of 100% of the total variance there is 2.957% of the variance that can be explained by factor 6 based on the variability that forms factor 6.
- vii. Factor 7 = 2.768 of 100% of the total variance, namely by (total variable factor 7 or eigenvalue of factor 7: number of variables x 100%).  
 $= 1,356 : 49 \times 100\% = 2,768$ . This means that out of 100% of the total variance there is 2.768% of the variance that can be explained by factor 7 based on the variability that forms factor 7.
- viii. Factor 8 = 2.363 of 100% of the total variance, namely by (total variable factor 8 or eigenvalue of factor 8: number of variables x 100%).  
 $= 1,158 : 49 \times 100\% = 2,363$ . This means that out of 100% of the total variance there is 2.363% of the variance that can be explained by factor 8 based on the variability that forms factor 8.
- ix. Factor 9 = 2.171 of 100% of the total variance, namely by (total variable factor 9 or eigenvalue of factor 9: number of variables x 100%).  
 $= 1,064 : 49 \times 100\% = 2,171$ . This means that out of 100% of the total variance there is 2.171% of the variance that can be explained by factor 9 based on the variability that forms factor 9.

So the cumulative factors formed are:

- i. Factor 1 = 41.608 of 100% cumulative total, meaning that the cumulative factor 1 is 41.608.
- ii. Factor 2 = sum (cumulative of factor 1) 40.608 + 6.699 (variance of factor 2) = 48.307, meaning that 48.307 cumulative can be formed by factor 2
- iii. Factor 3 = total (cumulative of factor 2) 48.307 + 5.553 (variance of factor 3) = 53.860, meaning that 53.860 cumulative can be formed by factor 3.
- iv. Factor 4 = total (cumulative factor 3) 53.860 + 4.846 (variance of factor 4) = 58.706, meaning that 58.706 cumulative can be formed by factor 4.

- v. Factor 5 = total (cumulative factor 4) 58.706 + 3.808 (variance of factor 5) = 62.514, meaning that 62.514 cumulative can be formed by factor 5.
- vi. Factor 6 = total (cumulative factor 5) 62.514 + 2.957 (variance of factor 6) = 65.471, meaning that 65.471 cumulative can be formed by factor 6.
- vii. Factor 7 = total (cumulative factor 6) 65.471 + 2.768 (variance of factor 7) = 68.239, meaning that 68.239 cumulative can be formed by factor 7.
- viii. Factor 8 = total (cumulative factor 7) 68.239 + 2.363 (variance of factor 8) = 70.602, meaning that 70.602 cumulative can be formed by factor 8.
- ix. Factor 9 = sum (cumulative factor 8) 70.602 + 2.171 (variance of factor 9) = 72.773, meaning that 72.773 cumulative can be formed by factor 9.

### III. Rotation Process

Factor rotation has the aim of further clarifying the position of a variable, to be included in one or two factors or in other factors. In table 4.23 Component Matrix after Varimax rotation you can see the variables that have been interpreted according to the largest correlation value, the placement of variables on factors can be seen from the highest correlation value without having to look at the correlation values (+) and (-).

loading value identifies the correlation between variables and the factors formed. The higher the loading value means the closer the variable is to the factor. From table 4.23 after the rotation is carried out, it can be seen that all variables form a factor based on their largest loading value, so that it can be concluded in table 4.25 from the results of variable interpretation, it can be seen that the factors formed are a total of nine factors with eigenvalues > 1.

The variables that have been grouped are given names, where the names given depend on the variables that form them. So naming this factor is subjective and there are no definite provisions regarding the naming. The naming of factors from the results of data interpretation is as follows:

- i. Factor 1 is Human Resources and Infrastructure (HR and Infrastructure)  
Factor 1 is named HR because the representative variable consists of HR 1-4 regarding the competence of teaching staff, PROS 1-5 which is still related to the ability of teaching staff in providing teaching to students, and SARPRAS 1,2,4 regarding infrastructure owned by SMK 45 Lembang. Human resource and infrastructure factors were able to explain 41.608% of the variance. If seen from the loading value, the variable that has the most influence on the HR and Infrastructure factors is the HR-1 variable = teachers who teach at SMK 45 Lembang have appropriate abilities between education and the subjects taught/taught, with a correlation value = 0.806 because they have a value loading then variables PROS-5 = 0.791, SDM-4 = 0.722, SDM-3 = 0.713, SDM-2 = 0.678, PROS-4 = 0.675, PROS-3 = 0.577, PROS-1 = 0.575, SARPRAS-4 = 0.518, PROS-2 = 0.489, SARPRAS-2 = 0.446, SARPRAS-1 = 0.439
- ii. Factor 2 is job opportunities  
Factor 2 is named job opportunities because the representative variables consist of PK 1-4, which describes the job opportunities obtained by graduates of SMK 45 Lembang, CIT variables 1 and 4 regarding school image, and JUR-1 and 3 variables, regarding majors or programs. skills available at SMK 45 Lembang. The job opportunity factor is able to explain the variance of 6.699%. The job opportunity factor consists of the variable PK-4 with a loading value of 0.772, PK-3 with a loading value of 0.708, PK-1 with a loading value of 0.699, PK-2 with a loading value of 0.674, CIT-1 with a loading value of 0.592, JUR-1 with loading value 0.574, JUR-3 with a loading value of 0.505, CIT-4 with a loading value of 0.504. The variable that has the highest correlation with the job opportunity factor is the PK-4 variable with a loading value of 0.772, namely parents/guardians of students choose SMK 45 Lembang because of the collaboration between the school and the industrial world which opens up job vacancies for graduates.
- iii. Factor 3 is location

Factor 3 is a location factor with an eigenvalue of 2.721 and a variance of 5.553%. This factor consists of the variable LOK-1 with a loading value of 0.756, LOK-2 with a loading value of 0.748, LOK-4 with a loading value of 0.681, LOK-3 with a loading value of 0.678, JUR-4 with a loading value of 0.467, CIT-3 with a loading value of 0.442. The variable that has the most influence on the promotion factor is the LOK-1 variable with the highest loading compared to the other variables that make up factor 3. With the LOK-1 variable, namely as a parent/guardian, to send my children to school, I choose a school that is close to where I live.

iv. Factor 4 is the Quality of Graduates

The fourth factor is the graduate quality factor with an eigenvalue of 2.375 and a variance of 4.846%. The graduate quality factor consists of the constituent variables KUAL-2 with a loading value of 0.772, KUAL-1 with a loading value of 0.747, KUAL-4 with a loading value of 0.661, KUAL-3 with a loading value of 0.542, PROD-4 with a loading value of 0.523. The variable that has the highest correlation value is KUAL-2, that is, according to the observations of parents/guardians, graduates from SMK 45 Lembang have the skills/abilities needed in the world of work.

v. Factor 5 is Cost

The cost factor is the fifth constituent factor with an eigenvalue of 1.866. The cost factors consist of the constituent variables BIA-1 with a loading value of 0.732, BIA-4 with a loading value of 0.726, BIA-3 with a loading value of 0.637, BIA-2 with a loading value of 0.544, SARPRAS-3 with a loading value of 0.462, CIT-2 with loading value 0.424. The variable that has the highest correlation is BIA-1 of 0.732, namely parents/guardians choose SMK 45 Lembang because of the affordable education costs.

vi. Factor 6 is the opportunity to continue education

The opportunity to continue education factor is the sixth constituent factor with an eigenvalue of 1.449. The opportunity factor for continuing education consists of the constituent variables KES-1 with a loading value of 0.862, KES-3 with a loading value of 0.835, KES-2 with a loading value of 0.769, KES-4 with a loading value of 0.542. The variable that has the highest correlation is KES-1 of 0.862, namely parents/guardians want their children to continue their education to college.

vii. Factor 7 is Promotion

The promotion factor is the seventh constituent factor with an eigenvalue of 1.356. The cost factor consists of the constituent variables PR-1 with a loading value of 0.925, PR-3 with a loading value of 0.895, PR-2 with a loading value of 0.860. The variable that has the highest correlation is PR-1 with a loading value of 0.925. Teachers promote schools through social gathering/recitation groups.

viii. Factor 8 is Product

The product factor is the eighth constituent factor with an eigenvalue of 1.158. The product factors consist of the constituent variables PROD-3 with a loading value of 0.631, PROD-1 with a loading value of 0.610, PROD-2 with a loading value of 0.565. The variable that has the highest correlation is PROD-3 of 0.631, namely parents/guardians are interested in sending their children to SMK 45 Lembang because of the achievements achieved by the school.

ix. Factor 9 is Extracurricular Activities .

The extracurricular activity factor is the ninth constituent factor with an eigenvalue of 1.064. The extracurricular activity factor consists of the constituent variables EKS-2 with a loading value of 0.707, EKS-4 with a loading value of 0.617. The variable that has the highest correlation is EKS-2 of 0.707, namely extracurricular activities are activities that are interesting for students.

## CONCLUSION

Based on the results of the analysis and discussion carried out in the previous chapter , several things can be concluded. Respondents in this study consisted of 25% men and 75% women, of which 67.9% of respondents had a relationship as mothers of students at SMK 45 Lembang. The majority of respondents' education was high school/equivalent level at 42.6%, and the largest occupation of respondents was as a housewife (housewife) at 61.7%.

Based on factor analysis, it can be concluded that the factors that influence parents' interest in choosing SMK 45 Lembang as a place to send their children to school consist of nine factors, namely human resources (HR), job opportunities, location, quality of graduates, costs, opportunities for continuing education, promotions, products and extracurricular activities. The most dominant factor is the HR factor, which includes variables such as HR-1, Process-5, SDM-4, SDM-3, SDM-2, Process-4, Process-3, Process-1, Infrastructure-4, Process-2, Infrastructure-2, and Infrastructure-1.

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