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Construct of anti-corruption character using exploratory factor analysis (EFA)

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ABSTRACT

Corruption is a highly complex problem in the current global era. One of the government's innovations in the battle against corruption is anti-corruption education. Along with the implementation of anti-corruption education, tools are needed to measure the success of implementing anti-corruption education programs through anti-corruption instruments. This study uses a quantitative research method with the Exploratory Factor Analysis (EFA) data analysis technique to show the validity of the construction of anti-corruption character assessment tools. The anti-corruption values consist of nine values: courage, justice, caring, simplicity and independence, hard work, responsibility, honesty, and discipline. This study uses the SPSS application to process EFA construct validity data. The questionnaire has been tested on 72 junior high school students. The study's findings show that the character evaluation tool satisfies a number of EFA requirements: 1) The criteria for adequacy of the sample with a KMO-MSA value of > 0.5 (0.681) and sig. 0.000 on Bartlett's Test. 2) All items can be carried out by factor analysis because they have an anti-image correlation value > 0.5. 3) There are eight factors formed from the eigenvalues of factor 1 (6.080), factor 2 (2.066), factor 3 (1.636), factor 4 (1.510), factor 6 (1.360), factor 7 (1.257), and factor 8 (1.085).

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INTRODUCTION

The problem of corruption in Indonesia is becoming increasingly complicated day by day. As demonstrated by Transparency International's poll results, the Corruption Perceptions Index in Indonesia in 2022 is 34/100, which puts Indonesia in 110th place out of 180 countries that took part in the survey (Transparency International, 2022). The data shows that the level of perception of corruption in Indonesia is still low compared to other countries. This fact must be addressed wisely through strategic steps. This requires that education must respond; education as a medium for character formation needs to play a role through preventive efforts that can be carried out by building anti-corruption habits and character. As conveyed by the Komisi Pemberantasan Korupsi (KPK), nine anti-corruption values are the forerunners of integrity values, including courage, justice, caring, simplicity and independence, hard work, responsibility, honesty, and discipline (KPK, 2016). In 2018, the government took steps towards anti-corruption education policies by signing a memorandum of understanding regarding the implementation of anti-corruption character and cultural education in the curriculum. Four ministries signed this pledge: the Minister of Home Affairs, the Minister of Education and Culture, the Minister of Religion, and the Minister of Research and Technology and Higher Education. This commitment will be implemented with various ministerial decisions regarding this matter.

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After the memorandum of understanding was signed by the four ministries, a number of regulations were released on the application of anti-corruption education, starting from the level of basic education to higher education. Such as Permenristekdikti Number 33 of 2019 on the introduction of anti-corruption education in higher education, Kepdirjen Pendis Number 5783 of 2019 concerning Guidelines for PAK Implementation at the Industrial Chemical Technology Polytechnic (PTKI), Decree of the Minister of Religion No. 184 of 2019 concerning Strengthening Character Education in the Madrasah Curriculum, Circular of the Minister of Religion No. B-1368.1/Dj.I/05/2019 concerning Anti-Corruption Education in Madrasah, Regulation Number 2 of 2020 by the Minister of Religion on the Application of Strengthening Character Education, Minister of Home Affairs Circular Letter Number 420/4047/SJ 2019 concerning Implementation of Anti-Corruption Education for governors (Pusat Edukasi Antikorupsi, 2022). More specifically, each region will issue regulations regarding its implementation in schools.

Anti-corruption education is education that seeks to make cultural corrections to current phenomena by introducing anti-corruption ways of thinking and values (Handoyo, 2013). The main point of this education is how anti-corruption values can be developed in the minds of students. Anti-corruption values try to equip students to become individuals with integrity. The formulation of the nine main values in anti-corruption education is the result of the formulation of the Komisi Pemberantasan Korupsi (KPK) and educational units in 2008. This value is developed under the presumption that personal discrepancies in the values of integrity, self-control, accountability, diminished work ethic, consumptive behaviour and hedonism, independence, and mental bypass are the root causes of corruption (Kemendikbud & KPK, 2012). When these ideals are inconsistent, someone will be motivated to do corrupt things. As a result, it's essential to implement a deliberate effort through education to inculcate and foster anti-corruption ideals.

Nine values represent the value of anti-corruption. First, honesty relates to speech and behaviour based on facts. Second, discipline is a form of self-character that shows seriousness in behaving consistently and obeying the rules that have been agreed upon. Third, responsibility is defined as a consistent attitude towards carrying out the task or work assigned to him completely (Kemendikbud & KPK, 2012). Fourth, hard work is described as a character who tries to always get the job done with maximum results. Fifth, simplicity is characterized by an appearance that is what it is and is not excessive. Sixth, independence is characterized by a consistent attitude towards completing work or assignments without depending on others (Kemendikbud & KPK, 2012). Seventh, justice is a character that respects differences by not taking sides with certain parties based on illogical reasons. Eighth, courage can be shown by being firm in saying and acting honestly and not hesitating to admit mistakes he has made. Ninth, caring is a character that always tries to fortify itself so that it adheres to the applicable rules and can set an example in the surrounding environment (Kemendikbud & KPK, 2012).

Along with the implementation of the anti-corruption education program, tools are also needed to measure the results of this program. Program implementation must go hand in hand with assessment. Assessment is part of the learning process. As we know so far, there are three stages of the learning process, including preparation, implementation, and assessment or assessment (Istiyono, 2020). Assessment is held to see the extent to which learning objectives or programs have been achieved. Whether learning or programs are running well or not depends on the results of the assessment.

Many studies have discussed the development of character assessment instruments. Unfortunately, no one has yet tried to develop an anti-corruption character instrument that contains these nine values. The research trend so far is that the development carried out is an instrument of one specific character, for example, honest character, disciplined character, and responsible character. The development of an honesty assessment instrument was carried out

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by Sarah et al. This study developed instruments in the form of questionnaires, interview guidelines, and observation sheets. There were two trials involving parents of high school students in Wonosobo, with a total of 2428 respondents. Then, the data were analyzed using content validity and explanatory factor analysis (EFA), and it is proven that the questionnaire has a Cronbach's alpha coefficient value of 0.840, the observation sheet is in the very good category, and the interview guidelines have fulfilled content validity after revision (Sarah et al., 2019). A character assessment instrument for the responsibility of junior high school students has also been developed. Tests by experts and product testing will be conducted on the produced device. It has been demonstrated that there are 47 valid items with a reliability of 0.945. Additionally, the factor analysis test yielded ten factors with a KMO-MSA reliability of 0.762 (Retnowati, 2019).

Additionally, Chatarina and Pardimin's research attempted to create a tool for gauging junior high school pupils' discipline. The concurrent validity and reliability of developed instruments are examined. The trial was conducted on 190 respondents, which resulted in 40 valid instruments, with a reliability coefficient of 0.905, a correlation coefficient of rxy 0.547, and a KMO-MSA of 0.776, so the instrument proved to be valid and reliable (Noviyanti & Pardimin, 2019). Based on research studies that are consistent with this research, existing research tends to develop character assessment instruments that are specific to one character. Meanwhile, no studies have tried to compile an anti-corruption character assessment instrument (consisting of nine values) that was developed using tested instrument development steps, including testing the construction of an anti-corruption character assessment instrument. This research will try to fill the research void left by previous studies. The focus of this study is to conduct an empirical test of the anti-corruption character assessment instrument. Then, the data from the trial results will be analyzed using construct validity.

The purpose of this study is to investigate how anti-corruption character assessment tools are created for students. Construct validity will be analyzed using the Exploratory Factor Analysis (EFA) method. A questionnaire served as the test instrument. The questionnaire contains statements based on the nine anti-corruption values. To properly assess the character of anti-corruption, quality and credible measurement tools are needed. A quality measuring instrument is proven by testing its reliability through construct validity. It is hoped that this research will be able to provide scientific empirical evidence for testing the construct validity of the anti-corruption character assessment instrument.

RESEARCH METHOD

This research design is a quantitative research using factor analysis in the form of Exploratory Factor Analysis (EFA). This study tested the construct validity of the non-cognitive instrument for assessing the anti-corruption character of students, especially junior high school students.

Population and Sample

Respondents who are junior high school students will test this instrument. The test subjects were 72 junior high school students. The trial sample was given an anti-corruption questionnaire via Google Form. The questionnaire consists of 24 questions. This questionnaire uses a Likert scale, which has five response options: strongly agree, agree, disagree slightly, disagree, and disagree strongly. Items or statements in the questionnaire consist of positive statements and negative statements.

The scoring technique for this questionnaire will use a Likert scale; alternative responses will be divided into five answers, and each will be given a score

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Table 1. Questionnaire Scoring Techniques

Favourable Statement	Score	Unfavorable Statement	Score
Strongly agree	5	Strongly agree	1
Agree	4	Agree	2
Disagree slightly	3	Disagree slightly	3
Disagree	2	Disagree	4
Disagree strongly	1	Disagree strongly	5

Research Procedure

After the questionnaire has been tested on the respondents, the collected data will be analyzed using construct validity with Exploratory Factor Analysis (EFA). SPSS version 25 was used to evaluate data from the study findings. To investigate the underlying data structure, determine a variable's pairwise relationship, and attempt to extract latent components from the variable being measured, we employ Exploratory Factor Analysis, or EFA (Banjanovic & Osborne, 2020).

Data Analysis

Using Bartlett's test and the Kaiser-Meyer-Olkin measure of sampling adequacy (KMO-MSA) test, the adequacy of the sample is examined as the initial step in the EFA analysis. The criterion for an adequate sample is if the KMO-MSA value is > 0.5 (JR et al., 2009). The sig value on Bartlett's test must be less than the degree of error, or α. These two tests are the criteria for testing sample adequacy. Then, for items to proceed to factor analysis, all items must have an anti-image correlation value of > 0.5 (Ozalp & Cetin, 2022). In addition, some criteria determine the ability of items to explain factors, namely looking at the extraction value in Communalities with the provision of an extraction value of > 0.4 (Garson, 2012). Then, the number of factors formed will be seen by looking at the Eigenvalue with the provision of the Eigenvalue > 1 (Bruce Thompson, 2004). Factor rotation is also an important part of factor analysis that plays a role in determining the position of items on the factor, provided that the factor loading value is> 0.4 (Siyoum et al., 2023).

FINDINGS AND DISCUSSION

Findings

The anti-corruption character instrument is based on anti-corruption values, which consist of nine values (Kemendikbud & KPK, 2012). These nine values seek reference in making instruments based on these value theories (Handoyo, 2013). The anti-corruption character is one that reflects a high spirit of integrity and is instilled through the values of courage, justice, caring, simplicity and independence, hard work, responsibility, honesty, and discipline. The anti-corruption character instrument will be tested for construct validity using the Exploratory Factor Analysis (EFA) method. Several aspects will be discussed based on the results of the EFA analysis using SPSS. Starting from the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO-MSA), Bartlett's Test, Anti-image Correlation, Communalities, Total Variance Explained (eigenvalues), Scree Plot, dan Rotated Component Matrix.

Factor analysis in this study used trial data involving 72 respondents among junior high school students. The assessment of sample adequacy will be the initial stage of the study. Table 2 shows the results of the KMO-MSA and Bartlett's tests. The KMO value is 0.681, so it meets the sample adequacy criteria because it is greater than 0.5. Then, for Bartlett's Test of Sphericity test, the results show a value of sig. 0.000, so this data strengthens the results of the KMO-MSA test, and the trial data of this questionnaire is sufficient for the sample size determination (Retnawati, 2016).

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Table 2. Kaiser-Meyer-Olkin (KMO)and Bartlett's Test

Kaiser-Meyer-Olkin (KMO) and Bartlett's Test		
Kaiser-Meyer-Olkin Measures of Sampling Adequacy.		0.681
Bartlett's Test of Sphericity	approx. Chi-Square	643.294
	df	300
	Sig.	0.000

Table 3. Anti-image Correlation

Item	Anti-image Correlation
AK1	0.716
AK2	0.633
AK3	0.710
AK4	0.667
AK5	0.787
AK6	0869
AK7	0.716
AK8	0.738
AK9	0.566
AK10	0.713
AK11	0.745
AK12	0.572
AK13	0.677
AK14	0.665
AK15	0.711
AK16	0.617
AK17	0.655
AK18	0.552
AK19	0.742
AK20	0.729
AK21	0.783
AK22	0.784
AK23	0.653
AK24	0.583

Before carrying out the Exploratory Factor Analysis (EFA) test, it is also necessary to ensure that the items can be used for factor analysis. To be sure, we need to look at the value of the anti-image correlation. Items that have a correlation value above 0.5 can be included in the next factor analysis (Ozalp & Cetin, 2022). Information on anti-image correlation can be seen in Table 3. All items can be included in further factor analysis because they all have an anti-image correlation > 0.5. Item 6 has the highest anti-image correlation value of 0.869, and Item 18 has the lowest anti-image correlation value of 0.552.

The communalities table will give us information on the ability of the items to explain factors; items that have an extraction value > 0.4 can explain factors (Garson, 2012). Based on the extraction values in Table 4, we can conclude that the 24 items tested were able to explain the factors because they had extraction values > 0.4. Item number 24 has an extraction value between 0.454 and 0.828.

The eigenvalues will be a benchmark for determining the factors that can be formed based on the results of the EFA analysis. The test is carried out with 24 components, and a factor is formed if it has an eigenvalue > 1 (Bruce Thompson, 2004). Eight components have an eigenvalue > 1, so eight factors have been formed in the anti-corruption instrument test.

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Table 4. Communalities

Items	Extraction
AK1	0.595
AK2	0.767
AK3	0.636
AK4	0.703
AK5	0.550
AK6	0.534
AK7	0.658
AK8	0.811
AK9	0.737
AK10	0.573
AK11	0.682
AK12	0.780
AK13	0.642
AK14	0.742
AK15	0.711
AK16	0.776
AK17	0.454
AK18	0697
AK19	0.660
AK20	0.828
AK21	0.672
AK22	0.748
AK23	0.701
AK24	0.748

Table 5. Total Variance Explained (Initial Eigenvalues)

Components	Eigenvalues	Variances	Cumulative
1	6.080	25.335	25.335
2	2.066	8.607	33.942
3	1.636	6.817	40.759
4	1.510	6.291	47.049
5	1.412	5.882	52.932
6	1.360	5.666	58.598
7	1.257	5.237	63.835
8	1.085	4.521	68.356
9	0.887	3.694	72.050
10	0.859	3.580	75.631
11	0.788	3.285	78.916
12	0.685	2.852	81.768
13	0.655	2.728	84.496
14	0.555	2.311	86.807
15	0.513	2.139	88.946
16	0.480	2.002	90.948
17	0.438	1.823	92.771
18	0.378	1.575	94.346
19	0.324	1.351	95.697
20	0.296	1.234	96.931
21	0.232	0.966	97.897
22	0.202	0.841	98.738
23	0.174	0.726	99.464
24	0.129	0.536	100.000

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Factor 1 can explain 25.335% of the overall variance. While factor 2 was able to contribute 8.697%, factor 3 was 6.817%, factor 4 had an impact of 6.291% of the total variance, factor 5 contributed 5.882%, factor 6 had a role of 5.666%, factor 7 was able to explain 5.237%, and finally, factor 8 contributed 4.521% of the total variance. If total, then the eight existing factors can explain 68.356% of the total variance. Meanwhile, the remaining 31.644% is explained by other factors. The formation of eight factors can also be seen in the Figure 1 scree plot; eight points are above eigenvalue 1. We can see that factor 1 has the largest eigenvalue of 6,080, followed by factor 2 (2.066), factor 3 (1.636), factor 4 (1.510), factor 5 (1.412), factor 6 (1.360), factor 7 (1.257), and factor 8 (1.085).

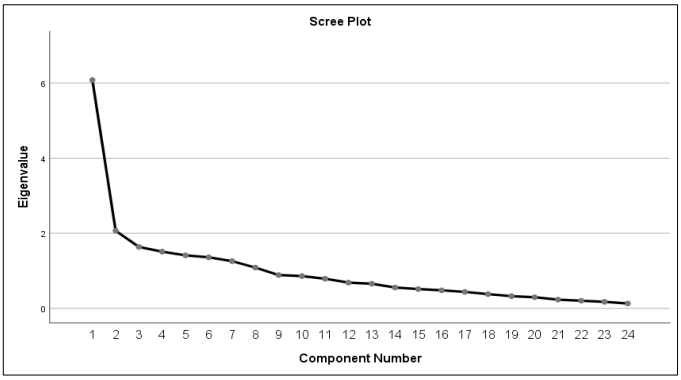

Figure 1. Scree Plots

The scree plot in Figure 1 shows that the point starts to slope at factor 8. Then the line on the graph shows that there is one dominant factor with a steep line on factor 1. So, factor 1 is considered the most dominant in this anti-corruption questionnaire, with a total contribution 25.335% of the total variance of 68.356%.

Table 6. Rotated Component Matrix

Components	1	2	3	4	5	6	7	8
AK1	0.615	0.189	-0.093	0.373	0.057	0.087	0.149	-0.002
AK2	0.191	0.240	0.145	-0.144	0.761	0.148	-0.018	0.173
AK3	0.029	0.195	0.743	-0.074	0.172	0.096	0.030	-0.015
AK4	0.154	0.795	0.127	-0.102	-0.028	-0.090	0.105	0.026
AK5	0.062	0.229	0.424	0.488	0.161	0.194	-0.069	0.086
AK6	0.147	0.624	0.026	0.213	0.095	0.222	0.092	0.106
AK7	0.018	0.264	-0.024	0.220	0.087	0.215	0.007	0697
AK8	0.044	0.810	0.179	0.109	0.290	0.140	-0.015	0.069
AK9	0.272	0.240	-0.152	0.034	0.463	0.434	-0.022	-0.422
AK10	0.293	0.020	0.634	0.169	0.112	0.153	0.135	0.050
AK11	0.012	-0.029	0.186	0.294	0.709	-0.037	0.162	0.171
AK12	0.114	0.040	0.006	0814	0.033	-0.059	0.308	0.063
AK13	0.095	-0.030	-0.152	0.209	0.281	0.527	0.392	0.235
AK14	0.167	-0.023	0.211	0.483	0.056	0.565	-0.226	0.250
AK15	0.058	0.141	0.301	-0.108	0.000	0.754	0.115	-0.063
AK16	0.081	0.042	0.195	0.093	0.203	-0.054	0.810	0.141
AK17	0.537	-0.119	0.292	0.050	0.091	-0.006	0.236	0.015
AK18	0.113	0.105	-0.048	0.080	-0.087	0.181	0.789	-0.036
AK19	0.374	0.276	0.280	0.396	0.386	-0.221	0.024	-0.096
AK20	0.854	0.119	0.057	-0.054	0.235	0.135	0.020	0.070
AK21	0.636	0.315	0.192	0.249	-0.036	0.045	-0.135	0.220
AK22	0.558	0.298	0.178	-0.122	-0.157	0.476	0.202	0.098
AK23	0.335	-0.033	-0.001	-0.098	0.305	-0.107	0.173	0.666
AK24	0.105	0.483	0.547	0.381	-0.197	0.022	-0.096	-0.103

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The rotated component matrix in Table 6 then allows us to determine each item's placement within the factor. We can determine which factor category the item belongs to by looking at the factor loading value > 0.4 (Siyoum et al., 2023). If several factors have a factor loading value > 0.4, then we can have the factor with the largest correlation value. Based on these provisions, factor 1 consists of items 1, 17, 20, 21, and 22. Then factor 2 is filled in by items 4, 6, and 8. Factor 3 consists of items 3, 10, and 24. Then factor 4 is arranged by items 5 and 12. Factor 5 consists of items 2, 9, and 11. Factor 6 is filled by items 13, 14, and 15. Then factor 7 consists of items 16 and 18. Finally, factor 8 is composed of items 7 and 23. However, there is one item that has a factor loading < 0.4, namely item 19 with a factor loading value of 0.396.

Discussion

The purpose of this study is to demonstrate the construct validity of the anti-corruption character evaluation tool created for junior high school pupils. The anti-corruption education program aims to accomplish its objectives through the development of the anti-corruption value. The anti-corruption value contains nine values that are trying to be developed, among them are simplicity, boldness, independence, discipline, responsibility, independence, honesty, and fairness (KPK, 2016). These values are the ones that educational institutions work to cultivate through a variety of initiatives, such incorporating them into the curriculum (Kurniawan & Lutfiana, 2021). In addition, anti-corruption values are also trying to be integrated through non-academic activities such as extracurricular activities and habituation (Sari et al., 2021). The development of anti-corruption values in schools through various means, both academic and non-academic, requires a valid instrument to measure the results of the implemented anti-corruption education.

This study aims to evaluate the anti-corruption character evaluation instrument's construct. Construct validity is done to prove that the instrument can accommodate the theoretical construct to be measured (Caturiyati, 2013). After testing the instrument and analyzing the data using Exploratory Factor Analysis (EFA), we can see whether this instrument is of good quality or not. The EFA method will produce constructs from latent dimensions among the observed variables (Chan & Idris, 2017). So that we will obtain information on how many factors make up the construct of the instrument, In the research that has existed so far, no one has tried to develop an anti-corruption character instrument or even tested the construct. Therefore, this study tries to test the construction of the instruments that have been developed.

There has been previous research that has developed and tested an instrument based on construct validity, not specifically an anti-corruption character assessment instrument, but an instrument containing one of the nine anti-corruption values. An accountability tool has been created for junior high school pupils. The tool comprised a questionnaire with twenty-four valence items and twenty-three factual items, which were tested using the construct validity of the EFA, with the result that 10 factors were formed and the KMO-MSA value was 0.762 (Retnowati, 2019). Additionally, Krisna Adjii has created a tool for vocational high school students to use for disciplinary assessments. A questionnaire with 38 items was used to create the instrument, and all items passed the validity test, with the results of the EFA construct validity forming five factors (Adjii, 2019). In addition, one part of the anti-corruption value is honesty. Honesty instruments are developed and tested for quality through content validity, construct validity with the EFA method, and reliability to produce the conclusion that there is only one factor in this honesty instrument (Sarah et al., 2019). Therefore, we can see that parts of the anti-corruption value have been developed by other researchers up to the instrument construct test, but until now, no one has developed an anti-corruption character assessment instrument. So, the research fills this void by testing the construct of the anti-corruption instrument using the EFA method.

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Before conducting factor analysis, In order to determine whether the number of samples used in the trials was adequate, researchers performed a preliminary test called the Kaiser-Meyer-Olkin Measures of Sampling Adequacy (KMO-MSA) and Bartlett's Test. These criteria have been met with a KMO value of 0.681 and Bartlett's Test of Sphericity showing a sig. of 0.000. So that the data used has reached the specified limits (García-Santillán et al., 2017). Then, to see whether the items can be used for factor analysis, it is necessary to look at the value of the anti-image correlation. The data matrix can proceed to factor analysis if it correlates > 0.5; The anti-image correlation value displays the correlation value (Verdian, 2019). There were 24 items processed in the EFA analysis, and all items showed an anti-image correlation > 0.5, which was in the range 0.552–0.869. So that each item tested has sufficient correlation and is following the minimum limit requirements. Therefore, the items can be continued to the next factor analysis step.

Next, we need to pay attention to whether the items being tested can explain the factors by looking at the extraction values for commonalities. Communities offer details about how many components need to be taken out for factor analysis (UCLA: Statistical Consulting Group, 2021). In Table 4, we can see that the 24 items tested are in the range of 0.454–0.828, so all extraction values for each item are above 0.4, which means that they meet the criteria that make all items have the ability to explain factors (Garson, 2012). Factor formation is one of the main pieces of information generated from EFA. The formation of factors is indicated by the presence of components with an eigenvalue > 1 (Avşar, 2022). In addition to the criteria for forming factors from eigenvalues, factors may also determine how many factors there are that have been determined in the research objectives or can also come from previous research; some factors can explain the variance of more than 60% on the scree plot, factors that have a large common variance are also included in the formed factors; and when factors of heterogeneity exist among sample subgroups (JR et al., 2009). We can see the data in Table 5, and Figure 1 shows that the eigenvalues are above 1. There are eight factors. So, the eigenvalue, which is one of the criteria for factor formation, has met the minimum limit. The scree plot also demonstrates this, where there are 8 points above eigen 1. Then, the criteria for variance above 60% were fulfilled because eight factors explain 68,356% of the total variance.

Finally, factor rotation becomes an important part of factor analysis. Factor rotation is carried out to assist researchers in clarifying the results of factor analysis. It is said to be a rotation because there is a main axis that is rotated, which then puts the item in the closest position to the factor (Banjanovic & Osborne, 2020). More easily, this rotation will determine which item is in which factor position. There are two types of rotation techniques: oblique and orthogonal (Avşar, 2022). But in this study, we used orthogonal rotation with the varimax method. Based on Table 6 data, factor 1 consists of items 1, 20, 21, and 22, factor 2: items 4, 6, and 8, factor 3: items 3, 20, and 24, factor 4: items 5 and 12, factor 5: items 2, 9, and 11, factor 6: items 13, 14, and 15, factor 7: items 16 and 18, and factor 8: items 7 and 23. Item 19 is not included in the factor because it has a factor loading of < 0.4.

CONCLUSION

This study proves the construct validity of the anti-corruption character assessment instrument using Exploratory Factor Analysis (EFA). Items of the anti-corruption character assessment instrument, which were tested on 72 students at the junior high school level, met the sample adequacy requirements with a KMO-MSA score. Then, all items can be used for factor analysis because they have an anti-image correlation value > 0.5. There are eight factors formed from this analysis. Proving construct validity is used to assess the quality of an instrument being developed. So that the instrument that will be used to measure a result can be

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scientifically accounted for because it has gone through various testing procedures. Overall, the objectives of this study have been achieved by fulfilling various requirements of Exploratory Factor Analysis (EFA) and forming eight factors from this instrument. Due to the limited number of studies developing anti-corruption assessment instruments, it is hoped that in the future, more researchers will develop valid and reliable anti-corruption instruments.

Conflict of interests

There are no known conflicts of interest associated with this publication.

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