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# Validation of the General Decision Making in the Substance Use Instrument among Secondary School Students in Malaysia

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## Abstract

The current research aimed to assess the validity of the decision-making process in the substance use instrument among secondary school students in Malaysia. This research used a survey research design. The current research participants were 211 secondary school students in Johor, Selangor, and Kedah, Malaysia. Two procedures were used to analyse the data: exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). EFA with comprehensive techniques that compromise parallel analysis and minimum average partial (MAP) yielded a 5-factor solution: avoidant decision making, rational decision making, spontaneous decision making, dependent decision making, and intuitive decision making. Furthermore, the factors attain a minimum standard of Communalities (.30 to 1.0) and factor loading (>.50). The structure of the instrument was then confirmed through Confirmatory factor analysis (CFA) with adequate fit indices such as RMSEA (<06 to .08), CFI, TLI (.80), and CMIN (<5). The instrument validation and reliability were tested through AVE, CR, and Cronbach's alpha.

**Keywords:** Confirmatory Factor Analysis, Exploratory Factor Analysis, Decision Making, Substance Abuse, Drug Education

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## INTRODUCTION

Grant et al. (2000) stated that deteriorating decision-making capabilities could cause drug abuse. The condition that drives students into a quandary drug situation could be associated with a lack of confidence, a lack of motivation and the behaviour of denying the consequences of the drug. It is also related to rational thinking, emotion and memory (Kerwin et al., 2015; Chen et al., 2020). It becomes dangerous when students make a risky decision, known as compulsive or uncontrolled substance use behaviour because it causes repeated drug use (Chen et al., 2020). Furthermore, studies revealed the correlation between poor decision making drug addictions (Chen et al., 2020). That emphasises the importance of research related to drug abuser decision-making impairment. Grant et al. (2000) stated that the cognitive study regarding dysfunction under the controlled

condition of someone could give essential advanced knowledge of addiction. Other than that, considering why individuals begin consuming drugs initially is the major factor in drug abuse research (Zachry et al., 2019). Hence this study intended to contribute to understanding students' decision-making in substance use by proposing a measurement scale.

Regarding the research on decision-making and substance use, several research studies have been attempted. Zachry et al. (2019) conducted qualitative research comparing the decision-making underlying substance user between males and females. They found that males have relatively more risky behaviour than women, where men take drugs as the experimental while women take drugs initially to reduce stress. Fisher et al. (2021) conducted a literature review on using shared decision-making among drug users as the treatment. They found that shared decision-making is well accepted and preferred as treatment decision-making. Qualitative research by Mata et al. (2022) revealed that the intervention action for drug abuse prevention should approach youth as capable of making the decision. It emphasised that current research on decision-making in substance abuse focuses on qualitative approaches and treatment procedures. No research discusses instruments or scales used to measure the decision-making in drugs.

Regarding scale development in decision-making, Yoo and Chon (2008) developed a decision-making instrument regarding convention participation. The instrument was developed through a literature review to define the construct, collect data, test the scale through factorial analysis of both EFA and CFA, and finalise the scale. In the end, the instrument has five constructs with 17 items. Furthermore, Jain et al. (2021) developed a decision-making instrument regarding investor behavioural biases. The instrument was constructed through a literature review and validated through both factorial analyses, namely EFA and CFA. The final structure of the instrument consists of 10 constructs and 39 items. Both types of research showed that factorial analysis is acceptable for validating instruments.

Regarding the decision-making instrument, very little research validates decision-making instruments in education, especially for students. One of the examples is research conducted by Anderson and Minke (2007), who validated a parents' decision-making instrument to be involved in student education. The instrument was analysed using multivariate analysis of variance combined with path analysis in Amos software. The final structure of the instrument consists of 4 constructs: role construction, sense of efficacy, resource and perception of teacher invitation. The literature review proved that there needs to be more research regarding the decision-making in substance use instruments among secondary school students.

Validating instruments in decision-making in the use of the substance is important. An instrument is a tool for collecting data in a certain scope, so the decision-making instrument in substance use will collect data about the student's decision when the trigger of substance consumption happens. According to Schildkamp (2019), data based on decision-making can be utilised by several school stakeholders, such as teachers, school leaders, and students, to attain the school's goals. Substance or drug agencies and parents can also use the data to reduce and prevent the student from substance abuse. According to the data, the agencies and parents can plan a strategy to prevent children from substance use. It is emphasised by the data on substance users in Malaysia, where in 2021, the number of substance users recorded was 129,604, and it declined to 108,220 in 2022 (Department of Statistics Malaysia, 2022). Even though there is a reduction in substance use, the number is still high. Regarding the importance of decision-making in substance-use instruments, this research aims to validate decision-making in substance-use instruments among secondary school students in Malaysia.

## METHODS

### Participants

The current research was survey research. A cross-sectional survey attempted to test the validity and reliability of the instrument among secondary students in Johor, Selangor and Kedah, Malaysia. The population of the current research were secondary school students in Johor, Selangor and Kedah, Malaysia. The questionnaire was separated offline, where the researcher

came to the school and gave the student a paper survey sheet. As the nature of the current research, convenience sampling techniques were adopted to asses that had filled out the survey. Participants of the current study were 211 students in Johor, Selangor and Kedah, which is acceptable for the factorial analysis (Taherdoost et al., 2014). Furthermore, the ratio of the participants with the variables was 9:1. Complete description of the characteristic of the sample can be seen in table 1.

**Table 1.** Characteristic of the Sample.

| Sample | | N | Percentages |
|---|---|---|---|
| **Region** | | | |
| | Johor | 110 | 52.1% |
| | Selangor | 70 | 33.2% |
| | Kedah | 31 | 14.7% |
| **Gender** | | | |
| | Male | 85 | 40.3% |
| | Female | 124 | 58.8% |
| **Races** | | | |
| | Malay | 111 | 52.6% |
| | China | 66 | 31.3% |
| | India | 29 | 13.7% |
| | Other | 5 | 2.4% |

## Instrument

The survey included demographic and 25 Likert scale items of decision-making in substance use among secondary school students adopted with 5 point scale (1= strongly disagree, 5= strongly agree) adopted from (Scott & Bruce, 1995). The instrument consists of 5 constructs, namely avoidant decision-making, rationale decision-making, spontaneous decision-making, dependent decision making and intuitive decision-making. Each construct has five items, so the total items were 25 items. The instrument was translated through back translation; 3 researchers translated the questionnaires from English to Malay. Then, the questionnaires were translated back into English by three experts. The complete item is listed in table 2.

**Table 2.** Instrument.

| Dimension | Items | Sentence |
|---|---|---|
| Avoidant | 16 | When I avoid making important decisions, there is constant pressure on me. |
| | 17 | I am suspended from making a decision as long as I can. |
| | 18 | I often delay when deciding to take drugs. |
| | 19 | I generally make important decisions in the final moments. |
| | 20 | I delayed making the decision to take drugs because thinking about it made me feel uncomfortable. |
| Rational | 1 | I planned my important decisions carefully. |
| | 2 | I reviewed the source of information about the drug to make sure I had the correct facts before making a decision. |
| | 3 | I make decisions logically and systematically. |
| | 4 | I made a cautious decision to accept the call to use drugs. |
| | 5 | When deciding to take drugs, I consider a variety of risks based on specific goals. |
| Spontaneous | 21 | I usually make quick decisions when it comes to drugs. |
| | 22 | I often make decisions suddenly. |
| | 23 | I usually make a quick decision. |
| | 24 | I often make decisions without long thinking about drugs. |
| | 25 | When I made a decision, I did it naturally at that time. |
| Dependent | 11 | I often need help from others when deciding to take drugs. |

| | | |
|---|---|---|
| | 12 | I rarely make important decisions without negotiating with others about taking drugs. |
| | 13 | If I get the support of others, it's easier for me to make a decision about drugs. |
| | 14 | I use other people's advice in making decisions about using drugs. |
| | 15 | I like to have someone who can guide me in the right direction when I face important decisions. |
| Intuitive | 6 | When making decisions about drugs, I rely on my instinct. |
| | 7 | When I make decisions about drugs, I tend to rely on my intuition. |
| | 8 | I made a decision that I felt was right. |
| | 9 | I rarely make important decisions without negotiating with others about taking drugs. |
| | 10 | When I make a decision about drugs, I trust my inner feelings and reactions. |

**Data Analysis**

Before factorial analysis was conducted, the sample size was tested for adequacy and appropriateness for factorial analysis. Several methods can be utilised to check the sampling adequacy for factorial analysis; Taherdoost et al. (2014) suggested using Kaiser-Meyer-Olkin (KMO) and Barlett's test of Sphericity. According to Goretzko et al. (2021), the KMO test measures the suitability of the data to be performed in factorial analysis. The value ranged from 0 to 1, and a value of 0.5 and above is considered adequate for factorial analysis (Taherdoost et al., 2014). The noteworthy value for Barlett's test of Sphericity of $< 0.05$ recommended that factor analysis is suitable for the data set (Shrestha, 2021).

The main analyses used in the current research were exploratory factor analysis (EFA) and confirmatory factor analysis. EFA tests the dimensionality and gathers information about the intercorrelation among the set variables (Shrestha, 2021). The main function of EFA was to determine which factor to retain in the analysis (Finch, 2020). Several methods are used to retain the factor in the current research: eigenvalues greater than 1, scree plots, Velicer's Minimum Average Partial (MAP), and parallel analysis. The reason is that the Kaiser-Guttman rule of Eigenvalue more significant than one is unreliable and needs to be strengthened by another method, such as the scree plot (Schreiber, 2021). In the current research, MAP was also conducted to strengthen the analysis. According to Finch (2020), both Eigenvalues are more significant than 1, and Scree plots are relatively inaccurate; hence, he suggested using MAP to confirm the number of factors retained in the analysis. Caron (2019) stated that MAP is an excellent solution to determine the current number of factors because it assesses the impact of removing the successive eigenvalues. Parallel analysis is also considered in the current research since, according to Taherdoost et al. (2014), this analysis is correct 92% of the time and exhibits minor variability and sensitivity to different factors.

After several methods of factor retention, the rotation is performed to enhance the interpretability of the result (Finch, 2020). In the current research, varimax rotation makes the factor interpretable (Rohe & Zeng, 2020). This extraction method escalates the distinction between the squared pattern structure coefficients on a factor (Shrestha, 2021). Furthermore, principles component analysis with a fixed number of factors was performed. The number of commonalities and factor loading are considered to frame the items' structure. Communality is essential since it typifies the original variable's total amount shared with all variables (Ogunsanya et al., 2019). Communality ranged from 0 to 1. If the values are closer to one, the variance of the items is explained by extracted factor. Communality between .20 to .80 is considered low, .20 to .80 is exhaustive, and .60 to .80 is considered high (Lorenzo-Seva & Ferrando, 2020). Factor loading must be considered since it is the correlation between the item and the factor (Tavakol & Wetzel, 2020).

CFA was performed to test the hypothesised number of factors and the correlation between the construct and the item (Knekta et al., 2019). In CFA, a model of fit indices was developed to

help the researcher. These indices' values did not intend to be the standard of binary judgement; hence, utilising at least two different indices is recommended (Knekta et al., 2019). Some goodness of fit indices considered are comparative fit indices (CFI) (>.90). Tucker-Lewis Index (TLI) (>.90), and the root mean square error of approximation (RMSEA) (<.0.08) (Hox, 2021). Other than that, the researcher limits the standard for the absolute fit indices as follows CMIN (<5) and SRMR (<.05) (Dash & Paul, 2021). The quality of the instrument measurement is tested through average variance extracted (AVE) and Composite reliability (CR). AVE is explained as the amount of variance taken by the construct related to the measurement error, and CR measures the degree of correlation of the several indicators of the same construct which are in agreement (Shrestha, 2021). In a good model, AVE is expected to exceed 0.5, while the composite reliability value is expected to exceed 0.7 (Dash & Paul, 2021; Nasution et al., 2020).

## FINDING AND DISCUSSIONS

### Findings

*Exploratory factor analysis*

The appropriateness of the data used in the factorial analysis was tested through the Kaiser-Meyer-Olkin and Barlett's test of Sphericity. For the current dataset, the value of KMO was .796, while the value of Barlett's test of Sphericity was significant. It means that the dataset is appropriate to be used for factor analysis.

**Table 3.** The result of KMO and Barlett's Test

| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | Bartlett's Test of Sphericity | | |
|---|---|---|---|
| | Approx. Chi-Square | Df | Sig. |
| .796 | 1797.138 | 300 | .000 |

In order to determine how many factors to retain in the analysis, several methods were performed, namely eigenvalues greater than 1, scree plots, MAP and parallel analysis. The result can be seen in table 4 and figure 1.

**Table 4.** Initial Eigenvalue, parallel Analysis-generated Eigenvalue at the 95th percentile, and Velicer's average squared partial correlation

| Components | Initial Eigenvalue | | Simulated Eigenvalue at 95th percentile | | Velicer's Minimum Average Partial |
|---|---|---|---|---|---|
| | Total | % of the variance | Means | percentile | |
| 1 | 4.205 | 16.820 | 1.702168 | 1.809547 | 4.2051 |
| 2 | 4.101 | 16.404 | 1.585934 | 1.663653 | 4.1010 |
| 3 | 2.431 | 9.723 | 1.499175 | 1.566310 | 2.4307 |
| 4 | 1.594 | 6.378 | 1.418649 | 1.483912 | 1.5944 |
| 5 | 1.439 | 5.756 | 1.353621 | 1.409302 | 1.4389 |
| 6 | 1.071 | 4.282 | 1.300672 | 1.347291 | 1.0705 |
| 7 | .971 | 3.884 | 1.243686 | 1.284920 | .9709 |
| 8 | .909 | 3.636 | 1.185989 | 1.231358 | .9091 |
| 9 | .819 | 3.276 | 1.140929 | 1.181412 | .8191 |
| 10 | .762 | 3.048 | 1.092616 | 1.130341 | .7619 |

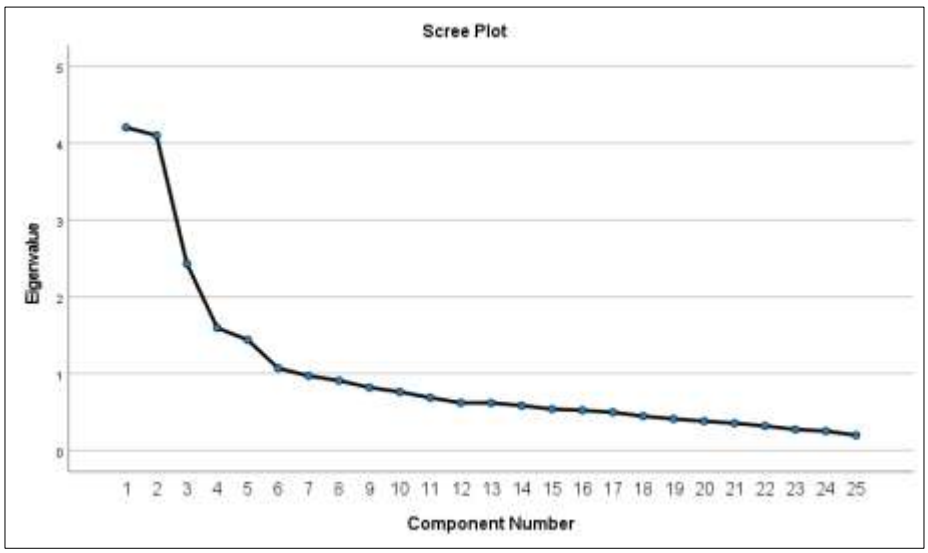


**Figure 1.** Scree plot

The initial factor analysis constructed six factors explaining 59.363% of the variance (see table 4). The scatter plot also displays the six factors' structure (see Figure 1). However, the parallel analysis suggests five factors to retain (see table 4). When we compare the means in parallel analysis, the six components in the means column are more significant than the initial Eigenvalue (parallel Eigenvalue mean: 1.300672, initial Eigenvalue: 1.071). Other than that, the sixth column of the percentile in the parallel analysis is more significant than the sixth component of the initial Eigenvalue (Parallel eigenvalue percentile: 1.347291, initial Eigenvalue: 1.071).

**Table 5.** Velicer's Minimum Average result.

| Velicer Minimum Average | Results |
|---|---|
| The smallest average squared partial correlation | ,0170 |
| The smallest average 4rth power partial correlation | ,0007 |
| The Number of Components According to the Original (1976) MAP Test | 5 |
| The Number of Components According to the Revised (2000) MAP Test | |

The finding of the parallel analysis is strengthened by Velicer's Minimum Average Partial, where the number of components suggested by the original MAP is 5 (see table 5). Based on the findings, there are five factors retained in the analysis.

**Table 6.** Exploratory Factor Analysis Result

| Factor | Dimension | Items | Communalities | Components | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | 1 | 2 | 3 | 4 | 5 |
| Decision Making | Avoidant | X16 | .547 | .660 | | | | |
| | | X17 | .644 | .817 | | | | |
| | | X18 | .729 | .812 | | | | |
| | | X19 | .641 | .759 | | | | |
| | | X20 | .614 | .783 | | | | |
| | Rationale | X1 | .568 | | .712 | | | |
| | | X2 | .650 | | .733 | | | |
| | | X3 | .634 | | .778 | | | |
| | | X4 | .663 | | .793 | | | |
| | | X5 | .582 | | .723 | | | |
| | Spontaneous | X21 | .736 | | | .787 | | |
| | | X22 | .618 | | | .720 | | |

| | | | | |
|---|---|---|---|---|
| | X23 | .760 | .839 | |
| | X24 | .540 | .511 | |
| | X25 | .272 | .420 | |
| | X11 | .569 | .666 | |
| | X12 | .410 | .472 | .365 |
| Dependent | X13 | .625 | .739 | |
| | X14 | .537 | .732 | |
| | X15 | .500 | .585 | |
| | X6 | .492 | | .642 |
| | X7 | .356 | | .509 |
| Intuitive | X8 | .436 | | .565 |
| | X9 | .217 | | .450 |
| | X10 | .428 | | .620 |

After finding the instrument's number of factors, the researcher examines the commonalities and factor loading. The eigenvalue analysis proposed five factors of decision-making in the substance use instrument. Several items were deleted regarding the item elimination standard based on commonalities and factor loading. No item was deleted in the first factor (avoidant). No items were deleted in the second factor (rationale). An item was deleted in the third factor (spontaneous), namely, X25, because the item has a commonality below .30 (.272) and also has a factor loading below .50 (.420). An item was deleted in the fourth factor (dependent), namely X12 because the items were loaded in two different factors (.472 in factor 4 and .365 in factor 5). Moreover, one item was deleted from the fifth factor (Intuitive), namely X9, because the item has a commonality below .30 (.217). As a result, there are five factors with 22 items remaining in the analysis.

*Confirmatory Factor Analysis.*

The primary analysis in EFA proposes a model of the instrument. The decision-making process in substance abuse instruments consists of five factors. The first factor has five items; the second has five items; the third has four items; the fourth has three items; and the fifth has four items. The structure of the instrument is then confirmed through CFA. Two order models were conducted in CFA; the first order model consists of five factors of decision-making in substance use: avoidance, rationale, spontaneity, dependence, and intuition. Several model fit indices were considered. The estimation result was CMIN: 1.892, SRMR: .0941, CFI:883, TLI:.863 and RMSEA:.065.

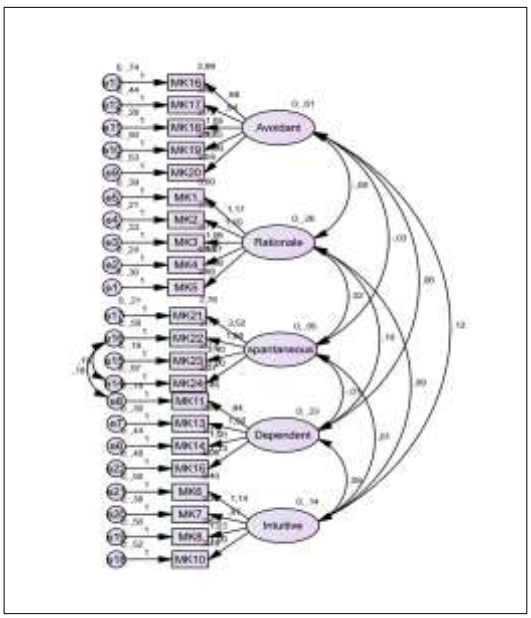


**Figure 2.** EFA first-order model

The second-order model was conducted. The decision-making model has five factors: avoidant, rational, spontaneous, dependent, and intuitive. The estimation result was CMIN: 2.093, SRMR: .1146, CFI:853, TLI:.833 and RMSEA:.072.

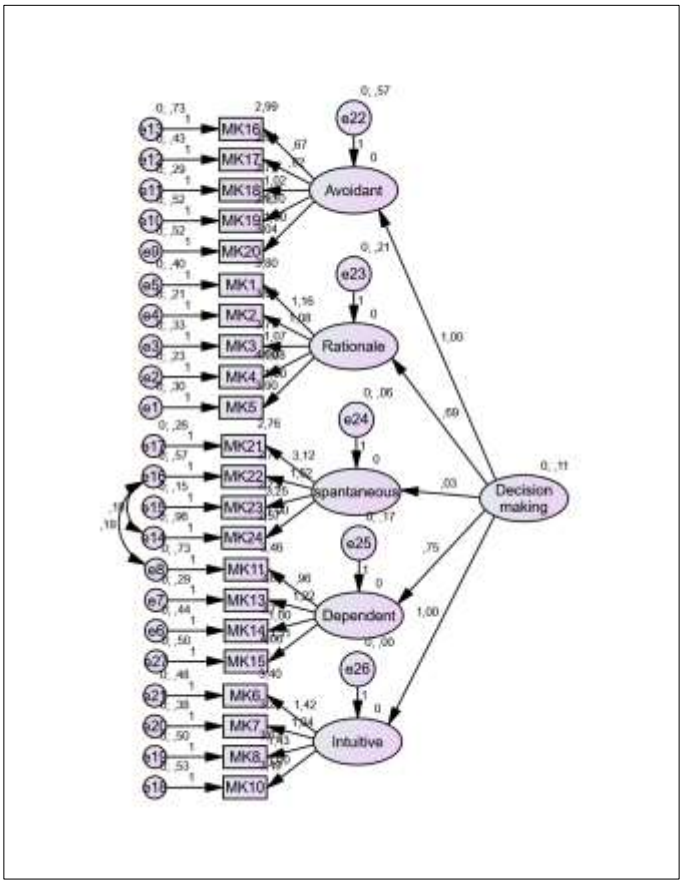


**Figure 3.** EFA Second order model

**Table 7.** The First and the Second Order Model Comparison

| Goodness of fit | Criterion | Model | |
|---|---|---|---|
| | | First order | Second order |
| CMIN | <5 | 1.892 | 2.093 |
| TLI | ≥.90 | .863 | .833 |
| CFI | ≥.90 | .883 | .853 |
| RMSEA | <.06 to .08 | .065 | .072 |
| SRMR | <.05 | .0941 | .1146 |

Table 7 compares the first- and second-order models with the standard given. Based on the finding, two comparative fit indices, namely CFI and TLI, did not meet the threshold of ≥.90, where the value ranged from .833 to .883, but Anwar (2018) considers a value above.80 still to be accepted. Furthermore, the value of SRMR is not appropriate, but another value of the absolute fit indices, such as CMIN and RMSEA, has gained the threshold. Overall, the models show acceptable and tolerable good fit indexes.

*Validity and Reliability test.*

The validity and reliability of the instrument were tested through multiple tests. Convergent validity is done through AVE. The AVE value for each item is as follows: The first factor was 0.550, the second was 0.516, the third was 0.440, the fourth was 0.365, and the fifth was 0.242. Composite reliability was tested, which showed that the first factor was 0.857, the second factor was 0.842, the third factor was 0.725, the third factor was 0.692, the fourth factor was 0.692, and the fifth factor was 0.558. Other than that, the Cronbach alpha showed that the first factor was

0.846, the second factor was 0.838, the third factor was 0.699, the fourth factor was 0.687, and the fifth factor was 0.570.

**Table 8.** The result of Convergent Validity and Composite Reliability

| Components | Convergent Validity | Composite Reliability | Reliability Analysis |
|---|---|---|---|
| | AVE | CR | Cronbach Alpha |
| Avoidant | 0.550 | 0.857 | 0.846 |
| Rationale | 0.516 | 0.842 | 0.838 |
| Spontaneous | 0.440 | 0.725 | 0.699 |
| Dependent | 0.365 | 0.692 | 0.687 |
| Intuitive | 0.242 | 0.558 | 0.570 |

The result of the validity and reliability test showed that the first factor, namely avoidance, the second factor, namely rationale, and the third factor, namely spontaneity, have acceptable values of AVE (0.5), CR (0.7), and Cronbach's alpha (0.7). While the fourth factor, namely dependence, and the fifth factor, namely intuition, did not meet the acceptable standards of AVE (0.5), CR (0.7), and Cronbach's alpha (0.7).

## Discussion

The suitability and adequacy of the current data set are to be tested in factor analysis through Kaiser-Meyer-Olkin (KMO) and Barlett's test. The current dataset gained a KMO of .796, and Barlett's test was 0.00. According to Taherdoost et al. (2014), a KMO with a value exceeding 0.5 indicates that the dataset is suitable for factorial analysis, and Barlett's test <.05 is considered significant. Testing the sampling adequacy is important in factorial analysis because it groups the items into a set of interpretable factors that can better explain the factor in the exploration stages (Taherdoost et al., 2014).

Several methods determine how many factors to retain in the analysis. Kaiser's Eigenvalue is greater than one, and the scree plot showed six factors to retain, but parallel analysis and MAP suggest five factors to retain. For the current research, the researcher chose to retain five factors. Parallel analysis is more accurate in determining the factor compared to Kaiser's Eigenvalue greater than one and scree plot. The theoretical consideration in Kaiser's Eigenvalue greater than 1 was that a factor should explain at least as much variance as a single item. This method is lacking because it still produces an eigenvalue greater than one, even in the absence of any factor or in the sampling error (Auerswald & Moshagen, 2019; Ramadhani et al., 2022). Furthermore, Lim and Jahng (2019) explain the bias in the Kaiser's Eigenvalue being greater than 1; the correlation matrix of the sample correlation matrix in this procedure is still supposed to be greater than one even if the variable completely did not correlate in the population. Lim and Jahng (2019) then suggest using parallel analysis since it uses the average of each sampling distribution as the categorisation threshold and becomes the representation of the sample eigenvalue.

The result in the parallel analysis is supported by MAP, which suggests five factors to retain in the current analysis. Caron (2019) explains that MAP can be used to validate the result of parallel analysis because it examines the effect of abolishing the successive Eigenvalue, whereas parallel analysis only executes a null model. The five factors retained in the analysis are in accordance with the original structure of the instrument. In order to reflect the common variance and examine the relationship between each item to the underlying factor, commonalities and factor loading are executed (Shrestha, 2021). Based on the result of commonalities, two items were deleted, namely X9 and X25, because both have low commonalities. Furthermore, one item was deleted based on factor loading, namely X12, which loaded in two different factors. In the end, five factors with 22 items remained as the structure of the decision-making process in the substance use instrument.

The five factors found in this study explain the type of decision-making. The first factor related to avoidant decision-making has five items. The second factor relates to rational decision-

making for five items. The third factor relates to spontaneous decision-making and includes four items. The fourth factor relates to dependent decision-making with four items.

Furthermore, the fifth factor relates to intuitive decision-making with the other four items. The structure has already been validated through confirmatory factor analysis. CFA mainly assesses the hypothesised model framed in EFA by evaluating the model fit indices of the hypothesised model. The model of fit reflects how well the model fits with the observed data (Alavi et al., 2020; Banseng et al., 2021). Specifically, how was the relationship between the item and the factor (Credé & Harms, 2019)? The result of model fit indices such as RMSEA, CMIN, SRMR, TLI, and CFI is considered acceptable.

The instrument's internal consistency was tested through Cronbach's alpha, and 0.7 is considered acceptable (Shrestha, 2021). Furthermore, the instrument was tested through composite reliability, indicating each item's consistency with its common factor (Duarte et al., 2020). Moreover, average variance is extracted (AVE) to measure the convergent validity or the measurement of the level of the correlation of multiple items in the same factor in agreement (Shrestha, 2021). In the current research, all three measurements have the same conception where among five factors, two factors which are the fourth factor, namely dependent decision making (AVE: 0.365, CR: 0.692, Cronbach Alpha: 0.687), and the fifth factor, namely intuitive decision making (AVE: 0.242, CR: 0.558, Cronbach Alpha: 0.570) did not accept the threshold. Other than that, the third factor, namely spontaneous, did not gain the standard of AVE (0.440) and nearly accepted the threshold Cronbach Alpha (0. 699) but got an acceptable value in CR (0.725).

The two strong validity and reliability results were rational and avoidant decision-making. Theoretically, rational decision-making is related to substance consumption habits. Sung and Richter (2007) explain that rationality is the underlining factor in the conception of personal choice. Poor or irrational decision-making was found to have a relationship with substance abuse (Shiv et al., 2005). The question was whether adolescents, including students, could make ideal decisions. Self-control, or the choice of an ideal decision, is reduced by high rewards and individual temptation (Reyna & Farley, 2006; Handrianto et al., 2024). That is why adolescents were labile when it came to substance decisions.

People use substances for many reasons, including anti-depression medication (Currie & MacLeod, 2020; Hafnidar et al., 2021). In this context, adolescents have choices to consume or not consume the substance. However, the irrational use of antibiotics such as substances in the community is rising (Intahphuak et al., 2022; Matt et al., 2022). Intahphuak et al. (2022) proposed a new rational drug use policy model through their research. Through this model, people can be more rational and consider the use of medicine, which might be categorised as a substance. O'Malley (2019) reported that substance misuse had given way to the discourse of substance users, so people suggested being more careful and cautious in substance use (X1 and X4). People need to review the sources of information about substances to ensure they have the correct facts before making decisions (X2).

An individual with substance use disorder is also displayed as an impaired risk avoidant (Yamamoto et al., 2015; Adam et al., 2022). Consuming drugs is risky, and having a disability to avoid drugs is a big disaster. That is why avoidant decision-making in terms of drug consumption is important. Research conducted by Fooladvand et al. (2017) found that avoidance decision-making positively relates to potential addiction. It means that adolescent with poor avoidance decision-making did not use their problem-solving technique but only relied on substance use. The emotional condition had a role in the avoidance of decision-making. C. Anderson (2003) stated that emotion proposes regret and fear, which result in someone avoiding to decide by delaying or choosing an option perceived as no decision. Furthermore, Amemori and Graybiel (2012) opined that the emotional condition in the state of anxiety greatly reduces avoidance of decision-making.

## CONCLUSION

The aim of this research was to evaluate the decision-making process in substance use among secondary school students in Malaysia. The current research results validate decision-making in

the substance use instrument among secondary school students in Malaysia utilising EFA, CFA, AVE and CR. Overall, the sub-construct attains a minimum standard for the Eigenvalue (above 1), commonalities (.30 to 1.0) and factor loading (>.50) for EFA. RMSEA (<06 to .08), CCFI, TLI (.80), CMIN (<5) for CFA. The first factor, namely avoidance, the second factor, namely rationale, and the third factor, namely spontaneity, have acceptable values of AVE (0.5), CR (0.7), and Cronbach's alpha (0.7). While the fourth factor, namely dependence, and the fifth factor, namely intuition, did not meet the acceptable standards of AVE (0.5), CR (0.7), and Cronbach's alpha (0.7). To sum up, five factors and 22 items were retained in the instrument.

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