Construct Validity and Reliability Test of Social Anxiety Using SEM

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ABSTRACT*: The purpose of this study was to examine the construct validity and reliability of social anxiety using SEM. The subjects in this study were 150 Papuan college students who are studying in Yogyakarta. The scale in the study uses a social anxiety scale created by the researcher by referring to aspects of social anxiety from Greca and Lopez (1998). The scale arranged in the form of a semantic differential scale based on its aspects of 30 statements containing two adjectives that contradict each other with the response level used ranges from 1 to 4. The scale of this study was analyzed using Structural Equation Model (SEM) software AMOS version 24. The results showed that there were 6 valid and reliable statements.*

KEYWORDS - *College Students, Structural Equation Model, Social Anxiety, Validity, Reliability.*

I. INTRODUCTION

Freshman student is a status held by someone in the first year of college. Entering the world of lectures brings major changes to someone's life (Santrock, 2017). Students face many changes in their social environment, making them more vulnerable to experiencing emotional problems such as rejection (Danneel, Bijttebier, Bastin, Colpin, Noortgate, Leeuwen, Verschueren, & Goossens, 2019). Emotional problems that exist make emotional experience. Emotional experience is the main determinant of a person's behavior and how someone behaves has a huge impact on feelings (Chow, Fua, Huang, Yu, Bonelli, Wesley, Xiong, Haoyi, Barnes, Laura, Teachman, & Bethany, 2017). So that makes a person must enter a conflict situation without fear of criticism, rejection or evaluation of others, and consider themselves to be valuable person (Moghtader & Shamloo, 2019). Factors that inhibit the social relations developments are social anxiety (Coyle, Malecki, & Dowdy, 2017). Rejections on social relations consistently cause social anxiety (Fung & Alden, 2016).

In general, anxiety in social situation such as fear of rejection or shame can have a negative impact on individuals (Jacobson, Summers, & Wilhelm, 2020). Social anxiety increases a person's risk of depression (Klemanski, Curtiss, & Hoeksema, 2017). Besides social anxiety causes someone to experience loneliness (Lim, Rodebaugh, & Zyphur, 2016). Social anxiety also affects alcohol and substance dependence (Dryman & Heimberg, 2018). Someone who experiences social anxiety tends to consider themselves not competent enough and not to signal any competency that might be felt (Dijk, Emmerik, & Grasman, 2018).

Social anxiety is a feeling of fear, worry, and fear experienced by an individual in the context of social relations (Eratg, Flanagan, & Bierman, 2007). Social anxiety is often experienced in social situations such as interacting with others, eating in public places, or giving speeches. This fear is driven by negative self-perception and fear of being mocked by others, causing an increase in social withdrawal and social avoidance (Pickard, Rijsdijk, Happe, & Mandy, 2017). Wakefield, Horwitz and Schmitz (2012) said that social anxiety is a mental health condition caused by irrational anxiety or fear of activity. Social anxiety is a state of discomfort and stress with the expectation that it will act inappropriately, make a fool of himself, leave a negative impression and be evaluated by others in a negative way (stupid, losers, incompetents, et cetera) in sharing events and social situations (Baltaci & Hamarta, 2013). In terms of cognitive, behavioral, and physiological, fears that are intense and continue evaluated negatively in social situations by avoiding situations that cause social anxiety (Crisan, Vulturar, Miclea, & Miu, 2016). An individual is afraid that if you act in such a way or show symptoms of anxiety, which will cause shame or humiliation (Powell, Williams, Atherton, Bennerr, Yang, & Davoudianfar, 2020). So it can be concluded that each individual has the potential to experience social anxiety but returns to the individual whether he can overcome or not to avoid social anxiety.

II.   THEORETICAL BACKGROUND AND RESEARCH FRAMEWORK

Greca and Lopez (1998) state that social anxiety is a persistent fear of social situations, which is related to self-performance and faces evaluations from others, being observed, afraid of being humiliated and humiliated. Wakefield, Horwitz and Schmitz (2012) said that social anxiety is a condition of mental health caused by irrational anxiety or fear of activity. Social anxiety is a state of discomfort and stress that an individual experiences with expectations that he will act inappropriately, makes a fool of himself, leaves a negative impression and is evaluated by others in a negative way in sharing events and social situations (Baltaci & Hamarta 2013). Wilding and Milne (2013) say that social anxiety is a term used to describe the discomfort of extreme anxiety felt in social situations. Parr and Cartwright (2009) say social anxiety is anxiety that is often chronic and unrelenting, and can have significant negative consequences on quality of life. Dayakisni and Hudaniah (2009) social anxiety is a form of feeling uncomfortable with the presence of others, accompanied by feelings of shame that are characterized by clumsiness or fear, obstacles and tendencies to avoid social interaction. Russell and Shaw (2009) social anxiety is a mental disorder characterized by extreme and consistent fear when acting in an embarrassing way, meeting new people, having oversight in various performance and / or interactional situations.

Greca and Lopez (1998) state that there are 3 aspects of social anxiety: Fear of negative evaluations such as worrying about doing or saying something embarrassing or making him feel insulting. Social avoidance and stress in new situations are when individuals feel nervous when talking and do not understand why this can happen. Social avoidance and a general sense of pressure experienced by people who are known as seeing how the ability of individuals in building relationships.

III.   METHODOLOGY

3.1 Population and Sample

The population in this study were Papuan college students who are studying in Yogyakarta. The sample in this study amounted to 150 people. Data collection techniques in this study used a purposive random sampling technique.

3.2 Research Instrument

Social anxiety in this study was measured using a social anxiety scale with a semantic differential scaling model. The scale of the study was arranged by the researcher by referring to aspects of social anxiety from Greca and Lopez [1] that consists of fear of negative evaluations, social avoidance with strangers and social avoidance with known people. Example of items in social anxiety scale shown on table 1.

Table 1 Sample Table of Items of Social Anxiety

I am a person who…..					
Friendly	1	2	3	4	No friendly
Adaptable	1	2	3	4	Difficult to adapt
I am a person who …. When doing something new					
Quiet	1	2	3	4	Restless
Relax	1	2	3	4	Anxious
I am a person who …..ask people i know					
Easy	1	2	3	4	Difficult
Brave	1	2	3	4	Afraid

The blueprint that can be used as a reference in preparation of social anxiety scale can be seen in table 2:

Table 2 Table Blueprint Constructions Social Anxiety

Aspect	Indicator	Item	Sum
Fear of negative evaluations	Worried about doing or saying something embarrassing Feeling that other people are paying attention Correcting own social abilities when interacting with others	1, 2 ,3, 4, 5, 6, 7, 8, 9, 10	10
Social avoidance with strangers	Feeling nervous when talking and not understands why it can happen, Feeling ashamed nervous when meeting with new people avoiding eye contact and social situations	11, 12, 13, 14, 15, 16, 17, 18, 19, 20	10

Social avoidance with known people	Feeling depressed experienced with people who are known in building relationships, feeling uncomfortable, and fear of rejection difficult to ask questions and shame when with a group.	21, 22, 23, 24, 25, 26, 27, 28, 29, 30	10
Total		30	30

In table 2 above, it can be seen that the construct of social anxiety uses 3 aspects in this study, each of aspects has three indicators with a total of 30 items.

3.3 Procedure

Researchers conducted a study by spreading the scale to Papuan college students who are studying in Yogyakarta for 12 days, from January 15 to January 26, 2020. The social anxiety scale uses a differential semantic scale with 4 levels of response. The scale is filled in by students based on statements that are close to college students themselves. Rating scale based on the type of statement that shown in table 3 below:

Table 3 Response Format Table

Stimulus (Sentence)					
Adjective	1	2	3	4	Adjective

The analysis of this research is to test the validity by calculating the Confirmatory Factor Analysis (CFA) value using Structural Equation Modeling (SEM) AMOS version 24 software. Validity test is to measure the correlation between items scale of research with a construct research to see the factor loading value or standardized loading estimate. Validity test that meets the factor loading value > 0.5 declared valid [19]. Reliability test in this study calculate the value of Average Variance Extracted (AVE) with the value of Construct Reliability (CR). The assessment recommended in this test has a AVE value > 0.5 then it is declared valid and said to be reliable if the CR value > 0.7 (Ghozali, 2017). Here's how to determine the AVE value in formula 1 and the CR value in formula 2.

$$AVE = \frac{\sum standard\ loading2}{\sum standard\ loading2 + \Sigma\varepsilon j} \qquad (1)$$

$$AVE = \frac{(\sum standard\ loading)2}{(\sum standard\ loading)2 + \Sigma\varepsilon j} \qquad (2)$$

IV.   RESULT

4.1. Discriminant Validity

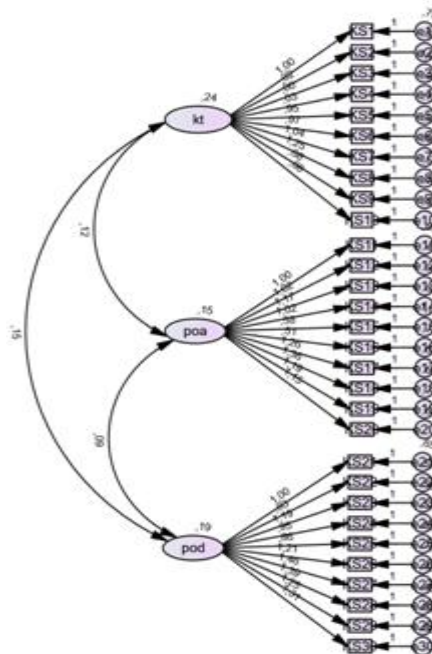The following is an overview of the processing results using SEM Amos version 24.

Figure 2: Value of Social Anxiety Constructions

The results of the validity test calculation using the CFA value, items that have a factor loading > 0.5 can be seen in the following table 4:

Table 4 CFA Value Table

Aspect	Item Code	*Loading Factor*	Information
Fear of negative evaluations	KS1	0,480	Invalid
	KS2	0,484	Invalid
	KS3	-0,001	Invalid
	KS4	0,015	Invalid
	KS5	0,478	Invalid
	KS6	0,459	Invalid
	KS7	0,549	Valid
	KS8	0,637	Valid
	KS9	0,353	Invalid
	KS10	0,463	Invalid
Social avoidance with strangers	KS11	0,427	Invalid
	KS12	0,497	Invalid
	KS13	0,431	Invalid
	KS14	0,396	Invalid
	KS15	0,214	Invalid
	KS16	0,221	Invalid
	KS17	0,512	Valid
	KS18	0,551	Valid
	KS19	0,485	Invalid
	KS20	0,402	Invalid
Social avoidance with known people	KS21	0,474	Invalid
	KS22	0,431	Invalid
	KS23	0,570	Valid
	KS24	0,481	Invalid
	KS25	0,381	Invalid
	KS26	0,508	Valid
	KS27	0,688	Valid
	KS28	0,666	Valid
	KS29	0,570	Valid
	KS30	0,592	Valid

Based on table 4 above it can be seen that there are 10 items that have a factor loading > 0.5 but after processing again there are only 6 valid items and there are 24 items that have a factor loading value < 0.5, then declared invalid. The following outputs of the validity test of social anxiety scale after re-estimation can be seen in table 5 below:

Table 5 CFA Value after Re-estimation

Aspect	Item Code	*Loading Factor*	Information
Fear of negative evaluations	KS7	0,521	Valid
	KS8	0,873	Valid
Social avoidance with strangers	KS17	0,654	Valid
	KS18	0,621	Valid
Social avoidance with known people	KS27	0,792	Valid
	KS28	0,634	Valid

4.2 Reliability Test

The results of AVE calculation with values > 0.5 and CR with values > 0.7 can be seen in the following table 6:

Table 6 AVE and CR Values

Construct	AVE	CR	Information
Social Anxiety	0,579	0,843	Reliable

4.3 Blueprint of Social Anxiety After Renumeration

The social anxiety scale was re-enumerated so the scale was ready to be used for research, it can be seen in the following table 7.

Table 7. Social Anxiety Blueprint after Renumeration

Aspect	Indicator	Item	Sum
Fear of negative evaluations	Worried about doing or saying something embarrassing Feeling that other people are paying attention Correcting own social abilities when interacting with others	1, 2	2
Social avoidance with strangers	Feeling nervous when talking and not understands why it can happen, Feeling ashamed nervous when meeting with new people avoiding eye contact and social situations	3,4	2
Social avoidance with known people	Feeling depressed experienced with people who are known in building relationships, feeling uncomfortable, and fear of rejection difficult to ask questions and shame when with a group.	5,6	2
Amount		6	6

In table 7 above, it can be seen that the blueprint for the construct of social anxiety after renumeration consists of 6 statements.

V. DISCUSSION

Based on the results of the analysis of construct validity and construct reliability, aspects and indicators that formed social anxiety variables are declared valid and reliable. This shows that all aspects and indicators are able to reflect and formed the social anxiety variable. The aspects of social anxiety consist of fear of negative evaluations, social avoidance with strangers, and social avoidance with known people.

The results of previous studies on social anxiety variables that are relevant to this study which also in his study explained the validity and reliability of which are Alkis, Kadirhan, and Sat (2017) which prove that the social anxiety scale meets the reliability requirements with a Cronbach alpha value of 0.80. This research measures anxiety in various social anxiety measurement settings on various social media platforms by using four dimensions of anxiety. Other research that also explain the validity and reliability is the research of Schry, Roberson-Na, and White (2012) proving that the scale of social anxiety meets the reliability requirements with a Cronbach alpha value of 0.720. Findings from relevant research indicate that social anxiety variables meet reliability requirements with a Cronbach alpha value of 0.820 (March, Parker, Sullivan, Stallings, & Conners. 1997). Further research from Fresco, Coles, Heimberg, Liebowitz, Hami, Stein, and Goetz (2001) showed a Cronbach Alpha value of 0.740 and other results by Heeren, Jones, and McNally (2018) with a Cronbach alpha value of 0.810. Another study by Mortberg, Hoffart, and Clark (2015) that improved cognitive therapy for social anxiety disorder fulfilling reliability requirements with a Cronbach alpha value of 0.81.

The results of this study when compared with this research show that the results of this study can be used as instruments to measure social anxiety, because reliability analysis results show that the scale in this study has a higher reliability value with a Cronbach alpha value of 0.843. The results of this study are expected to provide an overview of the validity and reliability of the social anxiety scale especially in expressing social anxiety in Papuan college students who are studying in Yogyakarta so that it can be used in research data collection and become a reference in subsequent research related to social anxiety.

VI. CONCLUSION

The results of the validity and reliability test using SEM AMOS version 24 can be concluded that the construct of social anxiety is valid and reliable with a scale made by the researcher, so it can be used to measure social anxiety in college students. Social anxiety has 3 aspects including fear of negative evaluation, social avoidance with strangers and social avoidance with people who are known. The test results show that there are 6 items that can be used in further research.

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