The Development of Homosexual Tendencies's Inventory

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Abstract: Homosexuality is a controversial issue. In general, Indonesian society rejects the existence of homosexuals because they are not in accordance with the prevailing values and norms and are the cause of HIV / AIDS so that it not only endangers individuals and the perpetrators but can also destroy the fabric of society. This is the basis for the need for an instrument to identify a person's sexual orientation. More often than not, homosexual identification tools have been developed abroad so that they are not suitable for the context of Indonesian society. This study aims to develop an instrument capable of measuring the level of a person's homosexual tendency. The research method used follows the steps of developing Gall, Gall, and Borg's model. The research sample used was 265 students. Initially this instrument consisted of 28 items which were analyzed using the IRT approach. The results indicated that the inventory of homosexual tendencies was valid and reliable, totaling 26 items. Thus this instrument can be used to identify levels of homosexual tendencies.

Keywords: Inventory, Hosexual Tendencies, Development

Introduction

Homosexuality is an issue that is widely debated among Indonesians. Several groups exist that support the existence of homosexuals, but the majority of people reject it because it is against the norms and culture of Indonesian society. although after the revision of the DSM IV in 1973 homosexuals were no longer classified as mental disorders (Association, 2008). However, the Chairperson of the Section of Spiritual Religion and Psychiatry (RSP) at the Indonesian Psychiatric Association (PDSKJI) stated that this only applies to the United States because psychiatric science cannot be separated from religious issues (Anwar & Wahyuni, 2017).

The number of homosexuals in society is 1% to 10% of the world's population (Ping & Mohamad, 2020). A well-known sexologist, Kinsey, even mentions that at least 2% to 5% of women are lesbians. Based on research conducted by Kinsey on 20 year olds, 17% of women had lesbian experiences. Then in a study conducted on adolescents aged 16-19 years, there were 6% lesbian women. Furthermore, Kinsey also reported that 10.7% of high school students aged 12-18 years were unsure of their sexual orientation, about 5-6% of these students described as lesbian (Kinsey, Pomeroy, Martin, & Gebhard, 1953).

In Indonesia alone in 2014 it was estimated that people with LGBT (Lesbiam, Gay, bisexual, and Transgender) were as much as 1% of the total population of Indonesians and it is estimated that this

number will continue to increase every year (Azmi, 2015). Furthermore, according to Republika.co.id quoted from several researchers, the estimated number of LGBT perpetrators in West Sumatra is estimated to be 14,469 people who have sex with men or gay people, in West Sumatra. aged 15-25 years, the portion was even 75% of the 147 respondents studied (Candra, 2018). Then, most individuals are revealed to have a deviant sexual orientation after positively contracting AIDS (Kolstee et al., 2020; Wilson, Hoare, Regan, & Law, 2009). Based on these data, the need to measure a person's homosexual tendency is one of the options to prevent homosexuality.

Various instruments have been used to measure a person's sexual orientation. One of the existing gay and lesbian inventories developed by Ahmad Roslee, et al in Malaysia, namely the Roslee Gay Sex Orientation Tool (ISGR) and Roslee Lesbian Sex Orientation Assessment Tool (ISLR), (Ahmad, Amat, & Mahyuddin, 2017). Then in America several instruments have been developed to measure sexual orientation. Among them are the gay, lesbian and bisexual identity scale developed by Jonathan J. Mohr and Matthew S. Kendra (Mohr & Kendra, 2011), an instrument for measuring sexual orientation consisting of seven variables which are dimensions of sexual orientation, each of which is assessed. by subjects that apply to the present, the past, and ideally (Klein, Sepekoff, & Wolf, 2010).

In Indonesia there are still limited inventories that can be used as an instrument to measure homosexual tendencies, therefore a valid and reliable instrument is needed so that it can measure the level of sexual orientation. The homosexual tendency inventory is an instrument (Antunes, Morais, & Martins, 2017; Kowalski, Simpson, & Schermer, 2021; Pavalache-Ilie & Rioux, 2018) that can measure the level of sexual orientation well.

Method

This homosexual predisposition inventory was developed using a development procedure (Hendikawati, Zahid, & Arifudin, 2019; Rosendale & Albert, 2020; Syahril, Suparno, Syah, Hermansyah, & Hayadi, 2019) from Gall, Gall, and Borg's (Gall, Borg, & Gall, 1996). The development steps in this research are: (1) research analysis, need assessment, and proofof concept, (2) product planning and design, (3) preliminary product development, (4) preliminary field test, (5) product revision, (6) main field test, (7) final product revision and dissemination.

This study involved adolescents aged 15-18 years, consisting of 265 senior high school students (Fatgehipon, Azizah, & Bin-Tahir, 2019; Lorimy, Cosquer, Barron, & Jousselme, 2020). In general, the demographics of the study sample consisted of 73.6% women and 26.4% men, 27.9% from rural areas, 34.3% small cities, 36.2% cities, and 1.6% of participants did not write down their origin. domicile.

Results and Discussion

Research analysis, need assessment, and proofof concept

The main activities in this stage include literature review and empirical studies. In the literature review, what is done is analyzing the theoretical basis that will be used and the literature related to the development of instruments to measure sexual orientation. Based on the results of a basic theoretical study, the theoretical basis that will serve as the basis for developing the instrument is the multi-variable dynamic process theory by Fritz Klein, et al. (Klein et al., 2010; Weinrich & Klein, 2002) divides sexual orientation into seven dimensions, namely : (1) sexual attraction, (2) sexual behavior, (3) sexual fantasies, (4) emotional preference, (5) social preference, (6) self identification, (7) gay / hetero life style. The literature that develops instruments for measuring homosexual tendencies, namely the Roslee Gay Sex Orientation Measurement (ISGR) and the Roslee Lesbian Sex Orientation Measurement Tool (ISLR), the Klein Sexual Orientation Grid (KSOG), and the Lesbian and Gay Identity Scale (Ahmad et al., 2017; Klein et al., 2010; Mohr & Kendra, 2011).

Product planning and design

Based on the identification and definition of the characteristics of the phenomenon, a framework or blueprint for the instrument is developed. Blue print or grid of homosexual tendency measuring instrument reflects the specific details of the instrument including the aspect to be measured, the number of statements

in each aspect and the level of specificity desired. Based on the type of behavior being measured, the measuring instrument is classified as a typical performance test because it measures traits / personalities that do not contain right and wrong answers (Friedenberg, 2011).

The stages of the validity test carried out are in terms of content and construct. From the content point of view, the researcher asked guidance and counseling experts to assess the appropriateness of the instrument content to the theoretical basis. Then the construct validity stage was carried out by distributing the instrument to respondents (high school students), (Jarpe-Ratner, 2020; Olsen, Vivolo-Kantor, & Kann, 2020; Zeglin, Terrell, Barr, & Moore, 2020).

Preliminary product development

At this stage the researcher makes statement items from the grid that was made in the previous stage. Arrange steps to fill the measuring instrument. The grid for this research instrument is as follows.

Table 1. The Grid of Homosexual Tendencies's Inventory

No.	Variable	Indicator	Total Item	Item Question	Source
1.	Kecenderungan Homoseksual	*Sexual Attraction*	4	1, 2, 3, 4	Fritz
		Sexual Behavior	4	5,6, 7, 8	Klein,
		Sexual Fantasies	4	9, 10, 11, 12	Barry
		Emotional Preference	4	13,14, 15, 16	Sepekoff
		Social preference	4	17,18, 19, 20	&
		Sel-identification	4	21, 22, 23, 24	Timothy
		Gay / hetero Life Style	4	25, 26, 27, 28	J. Wolf, 1985
	TOTAL		28	28	

Based on the grid above, the arrangement of items is carried out by making statements from predetermined aspects. Then the choice of answers uses a rating scale (Spector, 1992; Wright & Masters, 1982) and consists of four answer choices.

Preliminary field test

The next stage in the development process is the content and construct validity test (Zumbo, 2006). In terms of content validity, the instruments were weighed and rated by three guidance and counseling experts. To find out the results of the assessment with respect to the research product being developed, a statistical test was carried out to find out whether there was a conformity of the assessment between each validator regarding the instrument content. The analysis that the researchers used was Kendall's Concordance Coefficient Test.

Tabel 2. The results of the calculation of Kendall's concordance coefficient test to experts regarding the instrument content

N	Kendall's W*	*Chi-Square*	*Asymp.Sig*	df
3	0,513	38,461	0,042	25

Based on these calculations, the chi-square value was obtained at 38.461 and the Asym.Sig value was 0.042. This means that the probability $\leq$ 0.05. Thus, there is no difference in the assessment given by the experts regarding the contents of the instrument, meaning that it can be interpreted that there is a harmonious assessment of the three experts regarding the research product.

Tabel 3. 28 Item of CFA Fit Index

	Fit Index	Explanation
Chi-Square	P=0,116	Model fit
RMSEA	0,108	Model closed fit

The test results on the CFA measurement model yielded p-value = 0.116 (p> 0.05) and RMSEA = 0.108 (closed fit model). Thus, these 28 items are a valid indicator for the measurement of the inverse construct of homosexual tendencies.

Then the next analysis procedure was carried out by testing the IRT prerequisites, namely, undimensionality and local independence. To find out whether this instrument is suitable for analysis using the IRT approach.

1. Reliability

The consistency of data on items and respondents regarding homosexual tendencies is presented in table 4.

Tabel 4. Reliability of the test results of the Homosexual Tendency Inventory Using the Rasch Analysis

	Mean	SD	Separation Index	Reliability	Chronbach α
Person	.07	.32	1.14	.57	.89
Item	.11	.56	2.63	.87	

The item reliability condition is indicated by the reliability item value of 0.87, it can be concluded that in general the homosexual tendency items are reliable (> 0.67). The separation index condition shows that the variability of the item group is very good (≥3.0), and shows the diversity of items. Then the value of the respondents' separation index is at the value of 1.14, it means that the conditions are based on a fairly homogeneous and specific data source. Meanwhile, the reliability of the respondents was low, namely 0.57. So that when viewed from the interaction between items and respondents, the value of Cronbach α (KR21) is 0.89, which means that the consistency of respondents' answers to good items.

2. Undimensionality

Undimensionality is important to know whether the inventory measures what it should be measured, which in this case is measuring homosexual tendencies.

Tabel 5. Undimensionality of the Homosexual Tendency Inventory used standardized residual variance

		Empirical		Modeled
Total raw variance in observations	36,47	100,0%		100,0%
Raw variance explained by measures	8,47	**23,2%**		23,6%
Raw variance explained by persons	0.73	2,0%		2,1%
Raw Variance explained by items	7,73	21,2%		21,5%
Raw unexplained variance (total)	28,00	76,8%	100,0%	76,4%
Unexplained variance in 1st contrast	3,53	**9,7%**	12,6%	
Unexplained variance in 2nd contrast	2,91	**8,0%**	10,4%	
Unexplained variance in 3rd contrast	2,77	**7,6%**	9,9%	
Unexplained variance in 4th contrast	2,24	**6,2%**	8,0%	
Unexplained variance in 5th contrast	2,14	**5,9%**	7,7%	

Based on the table, the results of the measurement of the raw variance of the data were 23.2%. This shows that the minimum requirements for undimensionality are met (Sumintono & Widhiarso, 2014). Then the unexplained variance ideally should not exceed 15%.
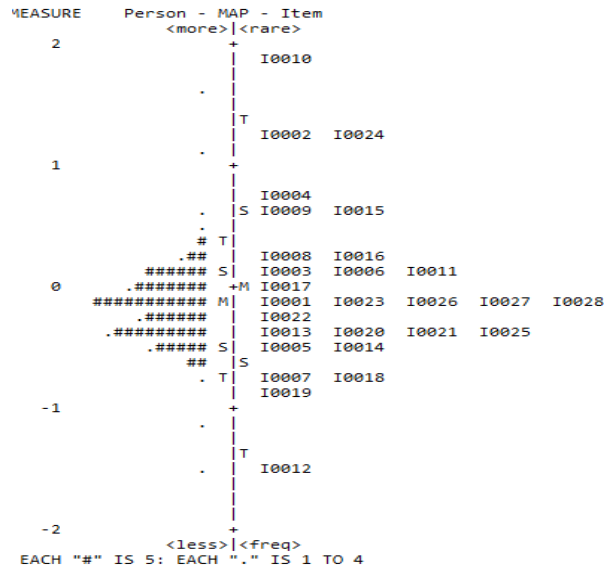
Product Revision

At this stage the researcher revises the product based on the results of field trial analysis and expert opinion. Product revisions based on expert opinion are in attachment 2. Meanwhile product revisions based on the results of field trial analysis were not carried out because no significant errors were found in the analysis carried out.

Main Field Test

At this phase a Rasch analysis is carried out to provide information on whether this inventory consists of good items (Swaminathan, Hambleton, & Rogers, 2006). The Item Response Theory (IRT) method in Rasch analysis also has the advantage of being able to provide linear measurements, expose missing data,

have accurate accuracy in measuring items, calculate outlier data, and provide an independent instrument of the parameters studied. The research data findings were analyzed using the Rasch model (Sumintono & Widhiarso, 2014), which uses the Winstep version 4.1 software (Linacre, 2012).

1. Item Fit

```
MEASURE     Person - MAP - Item
              <more>|<rare>
  2          +
             |   I0010
             |
           . |
             |T
             |   I0002  I0024
           . |
  1          +
             |
             |   I0004
           . |S I0009  I0015
           . |
          #  T|
        .## |   I0008  I0016
      ###### S|   I0003  I0006  I0011
  0  .####### +M I0017
    ########### M|   I0001  I0023  I0026  I0027  I0028
      .###### |   I0022
    .######### |   I0013  I0020  I0021  I0025
      .#### S|   I0005  I0014
        ##  |S
       . T|   I0007  I0018
             |   I0019
 -1          +
             |
           . |
             |T
           . |   I0012
             |
             |
             |
 -2          +
          <less>|<freq>
   EACH "#" IS 5: EACH "." IS 1 TO 4
```

Gambar 1. Wright Maps of Homosexual Tendencies's inventory

On the left the map shows the respondents while on the right shows the item numbers on this instrument (Penfield & Camilli, 2006). The left wright map shows one respondent with a higher level of ability (above +1 logit). While the lowest respondent's ability level is below 0 logit. This indicates that the respondent's ability to answer questions is high. Based on the picture, item 10 indicates that it is difficult to agree, meaning that respondents with high abilities on this map are likely to experience difficulties in answering the questions on this item. Meanwhile, item number 12 is an item for which almost all respondents tend to answer correctly, the lowest logit value (-1.49 logit) or it means that the statement is too easy compared to the respondent's ability. Accordingly, items 10 and 12 were excluded from the statement list of this instrument.

2. Analisis Differential Item Functioning (DIF)

An item is said to be detected by DIF if it has a level of agreement that is significantly different between the compared groups (Adams & Khoo, 1993). DIF testing of the homosexual trend inventory items in this study compared groups based on domicile origin (Brown-Saracino & Parker, 2017; Masullo, 2015; Scheitle & Wolf, 2017). In Rasch analysis, the response bias to items can be seen through the probability value <5% (0.05), where there is a response bias in items 1 (p = 0.03), 2 (p = 0.01), 10 (p = 0 , 01), 12 (p = 0.02), and 19 (p = 0.00). These five items must be corrected because they have a bias towards domicile origin.
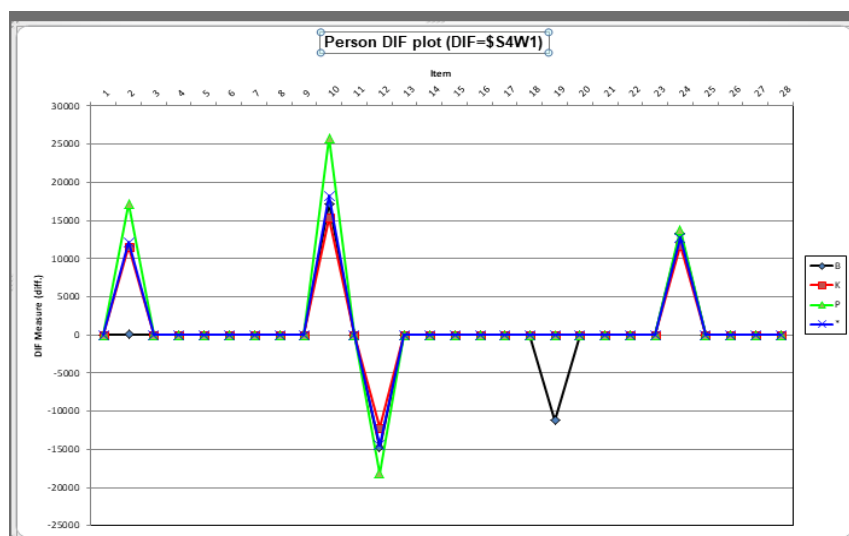
Gambar 2. *Analisis Differential Item Functioning* (DIF) based on domicile origin in the Homosexual Tendencies's Inventory

Final Product Revision and Dissemination

At this stage the products have passed the due diligence process to the experts and are tested for construct suitability, reliability, and item response theory. The stages of dissemination and implementation of research products are carried out by making product outputs in the form of implementation manuals, product reports at professional meetings or published journals, and distributing them to users.

Conclusion

Sexual orientation is the focus of an individual's sexual attraction towards the opposite sex. A homosexual individual has an unusual focus of attraction, namely same-sex. Based on these findings, this instrument is an inventory of homosexual tendencies that are reliable, valid, and have fit models and items. This finding can be one of the supports for guidance and counseling (BK) teachers in making decisions through appropriate services for students who have homosexual tendencies.

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