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Validation of Genderism and Transphobia Scale Indonesian Version: Short Version, Factor Structure, and Reliability

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Abstract. This study aimed to develop a short version of the Genderism and Transphobia Scale (GTS) that is culturally appropriate for the Indonesian context. The GTS is a measuring tool developed by Hill and Willoughby in 2005 to measure transphobia, which is operationalized by the thoughts, feelings, and behavior that someone has toward transgender and gender-diverse people. While the GTS has been validated across various cultural contexts, results have varied. No validation study has been conducted in Indonesia to date. This research consisted of two quantitative studies using a non-random survey design: Study I involved 265 secondary data sources, and Study II involved 109 primary data sources. In Study I, the Indonesian short version of the GTS (GTS-SV) was developed using Exploratory Factor Analysis (EFA), Cronbach's alpha reliability testing, and inter-item correlation analysis. Study II evaluated the internal structure of the GTS-SV using the same analytical methods. Findings from both studies supported the validity and reliability of the Indonesian version of the GTS-SV. This scale provides a psychometrically sound instrument for assessing transphobia in Indonesia and may support future research and interventions aimed at fostering greater social acceptance of gender-diverse populations.

Keywords: internal structure; EFA transphobia; genderism; validity; reliability

The rapid development of social media platforms has enabled individuals from diverse communities to express themselves more openly. This includes transgender individuals, who openly share their pronouns, fashion choices, and physical transformations on social media (Sanika, 2023). The widespread expression of identity changes has triggered significant societal rejection, commonly referred to as transphobia (Chakravarthi, 2024). For example, a case reported by Hutasoit (2023) involved a transgender individual in Indonesia who received death threats via social media for publicly expressing their gender identity. In the same national report, involving 401 transgender individuals from 24 provinces, it was found that 43.4% had experienced physical violence, highlighting them as one of the most vulnerable groups to abuse in public spaces (Hutasoit, 2023). Additionally, James et al. (2024) found that 48% of transgender individuals reported experiencing discrimination in healthcare, including being mis gendered, denied care, or verbally abused by medical professionals.

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These cases highlight the severity of transphobia, emphasizing the urgent need to measure and address it systematically. Unchecked transphobia threatens not only the safety and psychological well-being of transgender individuals but also contributes to broader social inequality and violence. Without reliable data and validated tools to assess transphobia, efforts to design effective interventions or shape inclusive policies will remain limited and less impactful.

To clarify its conceptual foundation, this study defines transphobia as a multidimensional construct that encompasses thoughts, emotions, and behaviors toward transgender and gender-diverse individuals. Drawing on Allport (1954) theory of prejudice, transphobia begins with cognitive categorization, where individuals reduce complex social identities into rigid in-groups and out-groups. In this process, transgender individuals are often placed in the out-group, leading to negative beliefs or stereotypes shaped by societal influences such as cultural and religious norms (Beato, 2020; Walch et al., 2012). These beliefs form the cognitive aspect, termed genderism, which refers to an ideological system that enforces binary gender norms and invalidates gender diversity (Hill & Willoughby, 2005; Morrison et al., 2017).

The emotional aspect, referred to as transphobia, includes feelings of fear, disgust, or discomfort toward those who do not conform to traditional gender roles. Beato (2020) explains that such emotional responses often emerge from internalized prejudice and reinforce rejection or avoidance of transgender individuals. Over time, these thoughts and emotions can escalate into the behavioral aspect, labeled gender-bashing, which involves verbal harassment, discrimination, or physical aggression toward those perceived as violating gender norms (Hill & Willoughby, 2005; Morrison et al., 2017).

These three aspects, genderism (thoughts), transphobia (feelings), and gender-bashing (behaviors), are operationalized in the Genderism and Transphobia Scale (GTS). The scale distinguishes between internal attitudes and external actions, offering a comprehensive framework to assess prejudice against transgender individuals. Understanding these components is essential for validating the GTS in the Indonesian context, where the expression of such prejudice may differ from those observed in Western societies.

The intensity of transphobic behavior in society has undergone a significant rise in the current widespread social media usage within society. This is proven in a survey conducted by the Home Office on police criminal records in 2023, where there had been an increase in hate crimes toward the transgender community as much as 11% (4.732 cases) from the previous year (Home Office, 2023). The rise of transphobia itself also occurs in Indonesia, where many transgender individuals still experience much discrimination. For example, obtaining a national identity card is more difficult for transgender individuals, hindering their ability to exercise their rights. (Shanti & Tandias, 2024). Transphobia negatively impacts the transgender individual and society as a whole. Previous research has found that transgender individuals who have been exposed to a high intensity of transphobic behavior will experience a decline in their mental health, namely depressive symptoms, high anxiety, and the emergence of suicidal thoughts (Kohnepoushi et al., 2023). Furthermore, high levels of transphobia in an area could lead to a rise in crime, endangering those who live there (Gyamerah et al., 2021).

Given these widespread issues, there is an urgent need for tools to assess the levels of

transphobia within Indonesian society. However, there is a significant gap in the availability of validated measurement tools for transphobia in Indonesia. While 83 measurement tools for transphobia have been developed across various countries (Morrison et al., 2017), no such tool has been created or validated in Indonesia. This absence may be attributed to Indonesia's strong religious and cultural norms, which tend to frame transgender identity as a moral or spiritual deviation rather than a topic of scientific inquiry. As a result, discussions around transgender issues are often approached from theological or human rights perspectives, rather than from a psychological or psychometric standpoint (Amrianto et al., 2023; Hapsari & Suryandari, 2023; Putri, 2022). Consequently, previous research has primarily relied on qualitative or case study methods, and there has been limited initiative to develop standardized tools for measuring transphobia as a psychological construct. This cultural framing may also contribute to academic hesitancy in treating transphobia as a measurable form of social prejudice, thereby slowing the development of psychometrically valid instruments in the Indonesian context.

One of the measurement tools created by researchers to understand the prevalence of transphobia is the Genderism Transphobia Scale (GTS), which was developed by Darryl B. Hill and Brian L. B. Willoughby in 2005 in Canada. GTS consists of 32 items with two dimensions, which are gender-transphobia and gender-bashing, and was developed to measure transphobia through the thoughts, feelings, and behaviors that a person has toward transgender individuals (Hill & Willoughby, 2005). The dimension of genderism transphobia measures the cognitive and feelings of individuals who despise the transgender community. The gender-bashing dimension measures the behavioral tendency of someone to commit violence against a transgender person. The original GTS and a short version of the GTS were compared with 83 tools for measuring transphobia. The short version of the GTS had the strongest psychometric traits, demonstrating solid reliability and validity as a robust measure for assessing transphobia across different populations and contexts (Morrison et al., 2017). Due to its high psychometric traits, many researchers have tried to validate these measurement tools.

Validation of the original GTS by Hill and Willoughby (2005) has been conducted in various countries, including Hong Kong (Winter et al., 2008); the Philippines (Macapagal, 2013); China (Chen & Anderson, 2017); and Poland (Konopka et al., 2020). The result from these validation studies showed different grouping patterns of items across countries, meaning the items were organized into new factors by the country's cultural context. Validation in Hong Kong resulted in five new dimensions, consisting of sissy prejudice, anti-trans violence, trans unnaturalness, trans immorality, and background genderism. Researchers found three new dimensions in the Philippines: morality and shame, teasing, and violence. Meanwhile, validation in Poland resulted in two dimensions identical to the original GTS. A similar result was also found in two short versions of the GTS, namely the GTS-Short Form created by Tebbe et al. (2014) in Florida, consisting of 12 items, and the GTS-Short Version created by Carrera-Fernández et al. (2014) in Spanish, which consists of 13 items. The results from both studies showed a similar grouping pattern to the original GTS design by Hill and Willoughby (2005), consisting of two dimensions: gender-transphobia and gender-bashing.

The item grouping patterns across these countries differ significantly, suggesting that cultural

contexts play a crucial role in shaping the way transphobia is expressed and understood. In countries like Canada, Florida, Spain, and Poland, where religious influence is waning, the focus tends to be on acceptance and equality (Berry, 2013; Rayside, 2019). In contrast, Asian cultures often hold more traditional and religious views that contribute to the marginalization of transgender people (Chen & Anderson, 2017; Macapagal, 2013). These cultural differences necessitate a unique approach to validating the GTS within the Indonesian context. According to van Widenfelt et al. (2005), cross-cultural validation often reveals discrepancies in grouping patterns, which is why tools must be adapted to suit the cultural context in which they are used. One effective approach to ensuring cultural relevance is to develop a short version of the tool, maintaining the validity and reliability of the original scale while adapting it for the local context. Creating a short version could help researchers in simplifying the factor structure by refining and focusing the scale on the most relevant items (Smith et al., 2000).

This research aimed to obtain the GTS version that can serve as a valid and accurate measurement of transphobia in Indonesia. To achieve this, the research will be divided into a two-part study. Study I will aim to create a short version of the Genderism Transphobia Scale (GTS-SV) in Indonesian. First, researchers evaluated the validity of the GTS in the Indonesian context by analyzing validity evidence based on internal structure using Exploratory Factor Analysis (EFA) and performing a Cronbach Alpha reliability test. Subsequently, they developed a short version of the GTS (GTS-SV) by conducting an inter-item correlation analysis and a content validity evaluation of the selected items. In the second study, the researchers validated the GTS-SV developed in the first study by re-evaluating validity evidence based on internal structure using EFA and performing the Cronbach Alpha reliability test. The hypotheses of this study are:
H1: The GTS-SV will demonstrate reliable internal consistency.
H2: The factor structure of the GTS-SV will align with the cultural context of Indonesia, reflecting the specific dimensions of transphobia present in Indonesian society.

This study aims to contribute to the advancement of transphobia research in Indonesia by introducing a quantitative measurement approach using a validated instrument. In doing so, this study seeks not only to address the methodological gap in transphobia measurement but also to respond to real-world issues, such as physical violence, verbal abuse, and institutional discrimination, that transgender individuals continue to face in Indonesia. By developing a culturally relevant and psychometrically sound tool, this research hopes to support evidence-based interventions and policies that can reduce stigma and promote social inclusion.

Method

Research Design

This study consisted of two stages, employing a quantitative approach with a survey design. Study I aimed to develop a valid and reliable short version of the Genderism and Transphobia Scale (GTS-SV) adapted for Indonesian culture. According to Kogar (2020), the first step in creating a short version

of measurement tools is to ensure the validity and reliability of that instrument in its original form. Consequently, in Study I, the 32 GTS items developed by Hill and Willoughby (2005) will be translated into Indonesian before testing their validity and reliability. The findings from this study served as the foundation for the development of the Indonesian GTS-SV in Study II. Secondary data were obtained from a course titled *Penyusunan Skala Psikologis* (abbreviated as PSP; English: Psychological Measurement). The course is designed to teach third-semester students at the Faculty of Psychology, University of Surabaya, how to develop and adapt psychological scales. The data were used to examine validity based on internal structure using Exploratory Factor Analysis (EFA). This method was chosen because it can identify the grouping pattern of measurement items that is statistically correct and accurate following the latent factors underlying the data variability (Rios & Wells, 2014). This section also includes reliability testing using Cronbach's alpha to assess the consistency of items measuring the same construct (Taherdoost, 2016).

Meanwhile, Study II aims to conduct a cross-check on the design of Genderism Transphobia – Short Version in Indonesia. Based on the design from Study I, the Indonesian GTS-SV comprises two dimensions and nine items. The cross-check in this segment will be completed to determine if the grouping results from Study I are already accurate and precise in measuring transphobia in Indonesian society. The cross-check will be completed with an Exploratory Factor Analysis and Cronbach Alpha Reliability test using data from new participants.

Participants

In Study I, researchers used secondary data from the PSP course that had previously been collected using the accidental sampling technique, which facilitated convenient access to respondents relevant to the research objective, specifically university students. Although this method is often criticized for the risk of selection bias (Etikan, 2016), several steps were taken to ensure that the data collected remains representative for generalization to the population. First, the data was collected by a group of surveyors from different areas. Data collection was conducted online, with each surveyor distributing the survey link across various platforms such as their personal Twitter and Instagram accounts. This approach ensured a heterogeneous sample, enhancing the generalizability of the results to other student populations in Indonesia.

This secondary dataset consists of responses from 265 participants, with 23% male, 74% female, and 3% who chose not to disclose their gender. All participants were active university students aged 18 to 22 years (M = 19, SD = 1.01). They were selected based on ease of access, with no specific inclusion criteria applied.

The adequacy of sample size in this study is supported by several established guidelines. de Winter* et al. (2009) found that stable factor solutions can be achieved with as few as 100 participants when factor loadings are high and the number of factors is fewer than four. Similarly, Anthoine et al. (2014), in a review of 114 scale validation studies, reported that while only 9.6% of studies justified their sample size in advance, around 90% included at least 100 participants, and 25% used a subject-to-item ratio of 20 or more. Most studies used sample sizes between 100 and 300. With 265

participants, this study exceeds those typical thresholds and is considered sufficient for exploratory factor analysis. Furthermore, based on the Cochran formula (as provided by the Raosoft Sample Size Calculator, available at http://www.raosoft.com/samplesize.html), 271 participants would be needed to achieve a 90% confidence level with a 5% margin of error. Since the dataset already consisted of 265 participants, the margin of error was estimated to be approximately 5.07%, which is within an acceptable range.

In Study II, researchers used primary data collected through accidental sampling. This technique was chosen for its efficiency in accessing respondents relevant to the study's objective: university students. Although this method is often criticized for the risk of selection bias (Etikan, 2016), several steps were taken by the researchers to ensure that the data collected remains representative for generalization to the population. First, the data collection was conducted both online and offline. The researcher toured several areas in Surabaya that are densely populated with students and distributed the survey link on various online platforms such as Twitter and Instagram. Secondly, the data collection was assisted by several surveyors who are university students from outside of Surabaya. This step was taken to ensure that the sample was not limited to a single geographic area.

In determining the sample size for Study II, Kline (2011) stated that the number of parameters being analyzed determines the sample size in a study. In this second study, which aims to ensure the categorization of two dimensions with nine items, nine parameters must be analyzed. In line with this, based on the rule of thumb theory proposed by Everitt (1975), the recommended sample size is ten times the number of items in the instrument. Therefore, referring to these two recommendations, it is concluded that an adequate sample size for this study is 90 participants, obtained by multiplying the nine parameters by the rule of thumb. Furthermore, de Winter* et al. (2009) also stated that the minimum sample size of statistical analysis should consider several factors, including the number of variables, factors, and factor loadings. de Winter* et al. (2009) found that when factor loadings are high and the number of factors is 4, the required sample size ranges from 80 to 140 participants. Therefore, the sample size of 90 participants in this study meets the requirements outlined in the literature.

In addition, the results from Study I provide further justification for this sample size. The EFA in Study I revealed that all factor loadings were above 0.6, which indicates a strong relationship between items and their respective factors. MacCallum et al. (1999) argue that when factor loadings are consistently high, smaller sample sizes (ranging from 80 to 100 participants) can still produce reliable and stable factor structures in EFA. Because Study I demonstrated strong factor loadings, a sample size of 90 participants in Study II is expected to be sufficient to confirm the robustness of the factor structure.

Moreover, MacCallum et al. (1999) highlight that sample size requirements depend not only on the number of items but also on the magnitude of factor loadings and communalities. Since the GTS-SV has already shown strong loadings and a well-defined structure in Study I, a larger sample would not necessarily improve the quality of the factor solution. Instead, Study II focuses on verifying the consistency of the factor structure across a new sample while maintaining statistical efficiency. Therefore, based on both theoretical recommendations and empirical findings from Study I, the chosen

sample size of 90 participants is deemed appropriate for further validation.

The data was collected by sharing the questionnaire through social media platforms such as Twitter posts and Line group chat. This process was carried out in one week, and 109 participants were obtained within the age range of 20 - 28 years old, and the participants were 36% male and 64% female. The majority of the participants were 20 years old (54%). As with Study I, no special criteria were applied when searching for a subject in Study II.

Instrument

The instrument used in Study I is the Genderism Transphobia Scale (GTS) developed by Hill and Willoughby (2005), consisting of 32 items. The GTS was developed to measure transphobia, defined as the thoughts, feelings, and behaviors an individual has toward transgender people. The GTS was developed to measure transphobia, which is operationalized by the thoughts, feelings, and behavior of a person towards transgender people. In line with this measurement objective, Hill and Willoughby initially designed the GTS as a scale comprising three dimensions: genderism, transphobia, and gender-bashing. However, during the course of developing the GTS, they discovered a strong correlation between the Genderism and Transphobia dimensions. Consequently, Hill and Willoughby decided to combine these two dimensions into a single, unified construct, which they named genderism-transphobia. The GTS uses a six-point Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree).

Therefore, the GTS consists of two dimensions, which are genderism-transphobia and gender-bashing. Genderism-transphobia refers to individuals' thoughts and feelings toward those who do not conform to conventional gender norms, such as masculine women, feminine men, cross-dressers, and transgender individuals. The second dimension, gender-bashing, measures behavior, such as a person's tendency to harass or commit violence towards individuals who do behave according to the conventional concept of gender. Each GTS item was rated on a six-point Likert scale (1 = "strongly disagree" to 6 = "strongly agree").

To ensure that the initial psychometric quality of the measuring instrument is not contaminated (Fenn et al., 2020), a forward translation of the GTS items from English to Indonesian was carried out, ensuring that participants fully understood the meaning of each item. The translation process consisted of four steps. First, a psychometrician with English language skills at C1 level in CEFR (Common European Framework of Reference for Language) completed the initial translation of the scale. Next, a psychometrician with English language skills at C2 reviewed the initial translation and provided feedback. The first psychometrician then reviewed the feedback provided, making revisions before finalizing the translated version. Finally, the translated items were given to a senior psychometrician, who has been active in the psychometric industry for more than 12 years, to conduct a final review. Additionally, the senior psychometrician performs a cross-check to verify that all items from the original scale have been preserved and suitably adapted to align with the cultural context of Indonesia. In this process, the senior psychometrician ensures that the translated items accurately represent the constructs measured by the original scale, confirming that all items continue to capture

the intended dimensions of the GTS. Participants then provided their responses to the final translated GTS via Google Form. The specifications of the Genderism and Transphobia Scale (GTS) are presented in Table 1.

Table 1

Specifications of Genderism Transphobia Scale in Indonesian

Dimension	Sub-dimension	Type of items		Total	Examples of item
		Favorable	Unfavorable		
Genderism Transphobia	GTF	3, 7, 16, 18, 22, 25, 29	5, 26	9	Saya jijik dengan pria yang menggunakan pakaian wanita demi kepuasan seksualnya.
	GTG	4, 10, 11, 12, 14, 15, 17, 19, 21, 24, 27, 28, 30, 31	8, 23	16	Menurut saya, tidak normal jika wanita melihat diri mereka sebagai pria.
Gender Bashing	–	1, 2, 6, 9, 13, 20, 32	–	7	Saya pernah memukuli pria yang berlagak banci.
		Total		32	

Meanwhile, the research instrument used in Study II is the Genderism Transphobia Scale – Short Version (GTS-SV) in Indonesian, which consists of nine items. The factor analysis conducted in Study I revealed a two-factor grouping pattern consisting of genderism, transphobia, and gender-bashing. This grouping pattern aligns with the original GTS design developed by Hill and Willoughby (2005). In Study II, researchers conduct a cross-check to determine if the grouping of two dimensions can accurately measure transphobia within Indonesian society.

Data Analysis

The data collected in Study I underwent a comprehensive analysis process. According to Standards for Educational and Psychological Testing, there are five sources of validity evidence. In Study I, the validation process focused on internal structure, enabling researchers to analyze item correlations and identify latent factors underlying data variability (Rios & Wells, 2014). This allows researchers to determine the accurate factor structure for GTS.

The internal structure analysis that was carried out consisted of Exploratory Factor Analysis (EFA) and an internal reliability test. EFA was used to explore the representation of items in several latent constructs (Shadiqi, 2023). In line with this, Beaton et al. (2000) also recommend using EFA when conducting cross-cultural validation of measurement tools, as this analysis method allows researchers to explore the factor structure in a new cultural context in greater depth. EFA allows researchers to explore the underlying structure of a construct in the absence of strong theoretical assumptions or prior empirical data (Cooper, 2023). This contrasts with CFA, which is typically used when a strong theoretical framework exists to define the structure or dimensions of a variable (Tavakol & Wetzel, 2020).

According to Sappaile et al. (2023), two requirements must be met before conducting EFA, which are having the Kaiser-Meyer-Olkin (KMO) value of < 0.5 and significance Bartlett < 0.05 from the data. This ensures that the data is appropriate for factor analysis by identifying the underlying factors between the variables and sufficient common variance within the overall data (Watkins, 2018). To determine the optimal factor solution, five criteria were considered: a priori criterion, latent root criterion, percentage of variance, and scree test criterion (Norman & Streiner, 2014). The selection of the best factor structure was guided by the goal of achieving a clear grouping pattern, with minimal cross-loading and no zero-loading items. Based on these principles, the researchers identified the most theoretically and statistically appropriate grouping pattern for the Indonesian cultural context. This process ensured that the resulting structure was both empirically valid and culturally relevant, thus strengthening the internal structure validity of the GTS in this setting.

Apart from EFA, this research also conducts a reliability test, which is mandatory in ensuring the validity levels of a measurement tool (Taherdoost, 2016; Watkins, 2018). The reliability test that was carried out in this research is the Cronbach Alpha Reliability Test, which was used to identify the levels of reliability between items in measuring the same construct. A measurement tool is considered reliable if it demonstrates a Cronbach's alpha of at least 0.70 and a Corrected Item-Total Correlation (CITC) above 0.30 for each item across all dimensions (Hinton et al., 2014).

Next, to develop the design of GTS-SV Indonesian, researchers conducted an inter-item correlation analysis on the 32 items of GTS developed by Hill and Willoughby (2005). This inter-item correlation was done to evaluate the degree of relation between the scores on items within one dimension (Piedmont, 2014). It is important to identify the similarity of content being measured between items in one dimension (Cohen-Swerdlik, 2009). According to Smith et al. (2000), developing a short-form measurement tool based on inter-item correlation requires a content validity review to ensure accurate construct representation. In line with this, the items with correlation values between 0.5 and 0.7 in this study were further evaluated by two experienced psychometric experts to assess their appropriateness for inclusion in the Indonesian version of the GTS-SV. The 0.50.7 range was selected as it indicates a moderate correlation, suggesting that items measure similar but non-redundant content (Cohen-Swerdlik, 2009).

Study II aimed to cross-check the factor structure identified in Study I by reapplying Exploratory Factor Analysis (EFA) and Cronbach's Alpha reliability testing on a new dataset. Similar to the first study, EFA was used to explore the internal structure without prior assumptions, due to the absence of a predefined theoretical model for the Indonesian context.

Results

The first statistical analysis conducted in Study I was Exploratory Factor Analysis (EFA). The analysis result showed a KMO value of 0.924 and a significance of Bartlett < 0.001. This indicates that the data were suitable for further analysis. Several suggestions exist for the number of factors to group the 32 items of the Indonesian version of the GTS. A priori suggests two factors, percentage of variance

suggests four factors, and then the latent root criterion and scatter plot suggest six factors. The two-factor solution had two items with zero loading and significant cross-loading issues, while the four-factor solution had several cross-loading items and factors with two items. Notably, the third factor in the four-factor solution consisted of only two items, both of which exhibited cross-loading with other factors. In contrast, the six-factor solution demonstrated better item grouping, with only five cross-loading items and no zero-loading items, all meeting the factor loading criteria of 0.4, making it the most suitable structure for the GTS.

Table 2 presents the rotated component matrix for the six-factor solution. As shown in the table, Factor 2 consists of items from the Gender-Bashing (GB) dimension, which reflects behavioral tendencies to reject or act negatively toward diverse gender expressions. Meanwhile, the items from gender-transphobia (GT) dimensions were spread across a couple of factors. Items from GT_F were grouped in factor one, which measures the feeling of someone uncomfortable with various gender expressions. Items from GT_G were grouped in factor three, which measures the conservative thoughts of individuals who consider transgender as wrong because it violates the norm and morals in society; in factor five, which measures someone's perception that is demeaning transgender people, and also in factor six, which measure someone's inclusive/open thoughts that tend to accept transgender people. Meanwhile, factor four consists of items from GT_F and GT_G, which measure a conservative understanding within society that does not acknowledge nor accept various gender expressions.

Table 2

Rotated Component of The Matrix Genderism Transphobia Scale (GTS) in Indonesian

Item Number	1	2	3	4	5	6
GTS_GB_20	.746					
GTS_GT_G_17	.723					
GTS_GT_F_22	.712					
GTS_GT_F_18	.665					
GTS_GT_F_16	.652					
GTS_GT_G_10	.621		.451			
GTS_GT_F_25	.610					
GTS_GT_G_12	.516		.440			
GTS_GT_G_21	.503					
GTS_GT_F_29	.407					
GTS_GB_1		.744				
GTS_GB_13		.737				
GTS_GB_2		.734				
GTS_GB_6		.608				
GTS_GT_F_5		.519				
GTS_GT_G_11		.469				
GTS_GT_F_26	.409	.469				
GTS_GB_32		.450				
GTS_GB_9		.421				

Table 2 (Continued)

Rotated Component of The Matrix Genderism Transphobia Scale (GTS) in Indonesian

Item Number	1	2	3	4	5	6
GTS_GT_G_30			.754			
GTS_GT_G_24			.686			
GTS_GT_G_15			.680			
GTS_GT_G_19			.535			
GTS_GT_G_14			.512			
GTS_GT_G_27				.636		
GTS_GT_G_4				.620		
GTS_GT_F_3				.543		
GTS_GT_F_7	.479			.483		
GTS_GT_G_31		.411			.807	
GTS_GT_G_28					.573	
GTS_GT_G_8						.838
GTS_GT_G_23						.510

Note: *GTS: Genderism Transphobia Scale; GB: Gender Bashing; GT_G: Genderism; GT_F: Transphobia*

Based on the six-factor grouping, Factor 1 measures thoughts, Factor 2 measures behaviors, Factors 3, 5, and 6 measure thoughts, and Factor 4 measures both thoughts and feelings. This grouping result led the researchers to propose three grouping factors for GTS, which consist of Thoughts (I), Feelings (A), and Behaviors (U). After that, an inter-item correlation analysis for the 32 GTS items was conducted. This process contributed to the development of the Indonesian version of the GTS-SV. During the analysis, many items were removed due to high correlation, which indicated redundancy. The final result revealed nine items with correlation values between 0.5 and 0.7, indicating that these items were contextually similar but not redundant.

Next, the nine selected items underwent content analysis by psychometric experts with more than a decade of experience. This analysis was conducted to address the limitations of creating a short version, which tends to narrow the scope of the measured construct. Therefore, the psychometric experts focused on assessing the appropriateness of the nine items in accurately representing each dimension and the overall construct of transphobia. The analysis results demonstrate that the nine items effectively represent the measurement of each dimension and the overall construct of transphobia. The details are presented in Table 3.

Table 3

Summary of Dimension and Indicator Representation in GTS-SV Indonesia

Dimension	Sub- dimension	Indicator	Items with the Indicator	Items in the GTS-SV	Conclusion
GT	GT_F	Disgust	7, 18, 22	3, 7, 25	All indicators are represented
		Discomfort	3, 5, 16, 25, 29		
	GT_G	Negative Views	4, 10, 12, 28, 31	10, 15, 19	All indicators are represented
		Negative Stereotypes	14, 15, 17, 19, 21, 24, 27, 30		
GB	-	Verbal Violence	1, 2, 20, 32	1, 2, 13	All indicators are represented
		Physical Violence	6, 9, 13		

The evaluation showed that the nine GTS-SV items adequately represented all indicators across both dimensions. Subsequently, the nine items then underwent an Exploratory Factor Analysis (EFA). The results of this analysis, including the Rotated Component Matrix, are presented in Table 4.

Table 4

Rotated Component of Matrix Genderism Transphobia Scale-SV in Indonesian

Item Number	1	2
GT_G_10	0.792	
GT_F_7	0,731	
GT_G_19	0.726	
GT_F_25	0.708	
GT_F_3	0.692	
GT_G_15	0.684	
GB_2		0.852
GB_1		0.838
GB_13		0.781

Note: *GTS: Genderism Transphobia Scale; GB: Gender Bashing; GT_G: Genderism; GT_F: Transphobia*

The EFA analysis generated a KMO value of 0.816 and a significance of Bartlett's < 0.001, indicating the data's appropriateness for further analysis. This analysis obtained two types of factor suggestions: a three-factor suggestion proposed by a priori and a two-factor suggestion proposed by latent root criteria, variance percentages, and the scree plot. Results indicated that the two-factor model was the most effective in grouping the nine items of the GTS-SV in Indonesian, evidenced by the clear and systematic grouping pattern wherein no items demonstrated cross-loading or zero loading.

Following this secondary EFA, the best structure for the GTS-SV in Indonesian consists of nine items grouped in two dimensions. The first dimension, Genderism-Transphobia, contains three items measuring the "Thoughts" construct and three measuring the "Feelings" construct. The second dimension, named Gender-Bashing, includes three items that measure the "Behavior" construct of transphobia. After that, a reliability test was conducted to ensure that the two-factor grouping was accurate. The results of this reliability analysis are presented in Table 5.

Table 5

Reliability Test Result of Genderism Transphobia Scale-SV in Indonesian

Dimension	Sub-dimension	Code	Item	Cronbach Alpha	Range of CITC
GT	GT_G	GT_G_10	Pria yang berlaku seperti wanita seharusnya malu terhadap dirinya sendiri.	0.741	0.536 0,613
		GT_G_15	Menurut saya, tidak normal jika wanita melihat diri mereka sebagai pria.		
		GT_G_19	Pria yang feminim seharusnya disembuhkan dari permasalahannya.		
	GT_F	GT_F_3	Saya akan sangat kaget jika menemukan sahabat saya mengganti jenis kelaminya.	0.734	0.522 0.610
		GT_F_7	Saya jijik dengan pria yang menggunakan pakaian wanita demi kepuasan seksualnya.		
		GT_F_25	Pria yang feminim sering kali membuat saya merasa tidak nyaman.		
GB	-	GB_1	Saya pernah memukuli pria yang berlagak banci.	0.780	0.583 0.667
		GB_2	Saya pernah berperilaku kasar terhadap wanita yang terlalu maskulin.		
		GB_13	Saya pernah mengejek wanita karena penampilan atau perilakunya yang maskulin.		

Note: *GTS: Genderism Transphobia Scale; GB: Gender Bashing; GT_G: Genderism; GT_F: Transphobia*

The reliability result in Table 4 showed that the items of GTS-SV in Indonesian are highly reliable. All dimensions have a Cronbach Alpha value of more than 0.7 and CITC within the range of > 0.3. Based on the range of factor loadings and CITC for each dimension, the assumption of Tau Equivalent Reliability can be considered fulfilled. This is evidenced by the GT factor, which has a factor loading range of

0.6840.792 and a CITC range of 0.5220.613. For the GB factor, the factor loading range is 0.7810.852, with a CITC range of 0.5830.667. The strong correlations between items within each dimension indicate that the Indonesian version of the GTS-SV is reliable and fulfills the Tau Equivalent assumption. This suggests that each item contributes equally to its respective dimension, meaning there are no items with excessively high factor loadings or correlations or those with excessively low factor loadings or correlations compared to the others.

Meanwhile, in Study II, the result from the EFA analysis that was conducted on 109 participants showed a value of KMO = 0.768 and significant Bartlett < 0.000, which indicates the data in Study II has met the requirement to be analyzed further. The analysis also showed several factor suggestions, consisting of three factors from the priori criterion, two factors from the latent root criterion, the percentage of variance, and a scree plot. The grouping of two factors was later chosen because it showed a neat and precise grouping, without any cross-loading and zero loading item within the criteria of factor loading value within the 0.4 range.

The detailed results of the factor analysis in Study II are presented in Table 6. As shown in the table, the Indonesian version of the GTS-SV demonstrates a clear and well-structured factor grouping pattern. Factor one consists of items from the genderism-transphobia (GT) dimension, which consists of GT_G (I) items that measure the thoughts aspect and GT_F (A), which measures the feelings aspect. Meanwhile, the second factor consists of items from the gender-bashing (U) dimension, which measures the behavioral aspects of transphobia. The result of grouping in Study II can be considered both neat and precise grouping because it's identical to the grouping design of GTS developed by Hill and Willoughby (2005).

Table 6

Rotated Component of Matrix Genderism Transphobia Scale SV in Indonesian

Item Number	1	2
GT_F_25	0.785	
GT_F_10	0.765	
GT_G_19	0.739	
GT_F_3	0.729	
GT_G_15	0.705	
GT_F_7	0.699	
GB_2		0.858
GB_1		0.852
GB_13		0.518

Note: *GTS: Genderism Transphobia Scale; GB: Gender Bashing; GT_G: Genderism; GT_F: Transphobia*

A good reliability test result further supports this finding, as presented in Table 7. The analysis showed acceptable Cronbach's alpha values for both dimensions, indicating satisfactory internal consistency. Based on the range of factor loadings and CITC for each dimension, the assumption of Tau Equivalent Reliability can be considered fulfilled. The GT factor has a factor loading range of 0.6990.785 and a CITC range of 0.5510.636, while the GB factor has a factor loading range of 0.5180.858 and a CITC

range of 0.2640.587. The strong correlations between items indicate that the Indonesian version of the GTS-SV is reliable and meets the Tau Equivalent assumption, with each item contributing equally without any items being overly dominant or less relevant.

The reliability of the analysis results between Study I and Study II further supports the finding that the Indonesian version of the GTS-SV is a reliable measurement tool suitable for evaluating the construct of transphobia. However, the reliability results for Gender Bashing (GB) show that this dimension only has a moderate level of consistency, with a Cronbach Alpha score of 0.602. The low Cronbach Alpha score for the GB dimension is influenced by one of its items, GB_13, which has a CITC score of only 0.264. This score indicates that this item does not correlate strongly with the other items in the dimension. This happens due to the difference in constructs between the items, where GB_13 focuses on measuring verbal violence, while the other items measure physical violence.

However, despite GB_13 contributing to the low Cronbach Alpha score, this item must be retained to ensure the representation of the essential GB construct measured in the GTS-SV. Verbal violence is a key part of gender-based discrimination and should be included to give a complete picture of the issue. While GB_13 has a lower CITC, it helps the scale cover both types of violence, making it more accurate and reliable in measuring gender-bashing behaviors.

Table 7

Reliability Test Result Genderism Transphobia Scale SV in Indonesian (Study II)

Factor			Cronbach Alpha		Range of CITC	
Dimension	Sub-dimension	Item	Dimension	Sub-dimension	Dimension	Sub-dimension
GT	GT_G	GT_G_10	0.838	0.740	0.573 – 0.683	0.551 – 0.585
		GT_G_15				
		GT_G_19				
	GT_F	GT_F_3		0.771		0.595 – 0.636
		GT_F_7				
		GT_F_25				
GB	-	GB_1	0.602	-	0.264 – 0.587	-
		GB_2				
		GB_13				

Note: *GTS: Genderism Transphobia Scale; GB: Gender Bashing; GT_G: Genderism; GT_F: Transphobia*

Discussion

This research aimed to develop and validate a culturally appropriate short version of the Genderism and Transphobia Scale (GTS-SV) for the Indonesian context through a two-step process involving scale development and structural confirmation. Based on the result from Study I, it has been found that six factors are the best grouping for the 32 items of GTS in Indonesian. However, this six-factor grouping shows overlapping key behaviors between dimensions. This factor structure does not align with the original GTS model proposed by Hill and Willoughby (2005), which comprises two dimensions. The differences in factor grouping can be caused by various factors, such as differences in

cultural background, socioeconomic status, levels of education, age, and also the gender of the research participant (Arafat et al., 2016).

This supports the findings of Winter et al. (2008), who noted that societal perceptions of transgender individuals differ across cultures, making it difficult to generalize factor structures across countries. This statement is also proven by the result of other GTS validation research from Asian countries that have different cultural backgrounds from Canada, such as Hong Kong (Winter et al., 2008), the Philippines (Macapagal, 2013); and China (Chen & Anderson, 2017). The result from the research showed that the culture applied in a country can cause a different grouping pattern from the original GTS design developed by Hill and Willoughby (2005). The influence of traditional values in Hong Kong and China, such as Taoism, Confucianism, and Neo-Confucianism, taught the society to live naturally without fighting against nature, while the influence of Catholic teaching in the Philippines taught them that transgender is an abnormal and sinful behavior (Kwok & Wu, 2015; Macapagal, 2013; Reyes et al., 2024; Winter et al., 2008). This influences the society within those countries to have a negative perspective towards transgender individuals and firmly oppose their existence.

Cultural perspectives in many Asian societies differ significantly from those in Canada, where the original GTS was developed by Hill and Willoughby (2005). The same thing can also be found in this research, where there is a different grouping pattern in GTS due to the difference in cultural background between Canadian and Indonesian people. Canadian people tend to be more open and accepting toward the transgender communities due to the decrease in influence from religious teaching in their daily lives (Berry, 2013; Rayside, 2019). Meanwhile, Indonesian people tend to be highly dedicated and obedient to religious teachings in their daily lives. The majority of Indonesian society condemns the existence of transgender individuals, viewing it as a sinful act that brings great wrongdoing due to its incompatibility with religious values (Karim et al., 2023; Sakinah & Kurniawan, 2023; Winardy & Septiana, 2023). This religious teaching is also influenced by the conventional gender concept in Indonesian society, which teaches that gender consists only of males and females (Jasruddin & Daud, 2017; Rosyidah & Nurwati, 2019).

The influence of religious teachings can make individuals transphobic through the process of social learning within society. Social learning can occur when someone adopts a view or behavior through observation and imitation from the surrounding environment (Bandura et al., 1961). Individuals who were born and raised in communities with high regard for religious values, which oppose the transgender community, can adopt those values from their surrounding environment and, in turn, become opposed to the existence of transgender communities (Sakinah & Kurniawan, 2023). This is the main factor that causes the majority of Indonesian people to consider transgender individuals as sinful because they oppose norms, culture, and religious values (Valentina et al., 2021; Winardy & Septiana, 2023). This is certainly different from the culture followed in Canada. The vast contrast between Indonesian and Canadian cultures is what makes the grouping of the GTS so different from its original version.

However, the significant influence of culture on the GTS grouping results in Indonesia does not

dismiss the fact that the theory states that the measurement of transphobia should consist of three constructs: thoughts, feelings, and behavior of transphobic individuals, which Hill and Willoughby (2005) structured into two GTS dimensions–gender-transphobia (measuring the constructs of thoughts and feelings) and gender-bashing (measuring the construct of behavior). Due to these differences in factor structure, the researchers aimed to develop a short Indonesian version of the GTS that aligns more closely with the original model. According to Smith et al. (2000), creating a short version could help researchers simplify the factor structure by refining and focusing the scale on the most relevant items.

In this research, the development of the GTS-SV in Indonesian was conducted through inter-item correlation analysis. The majority of the items were removed due to high correlation, which suggests that there's redundancy within the items. Ultimately, nine items were selected with correlation scores ranging from 0.5 to 0.7, indicating that these items address similar contexts but are not redundant with one another. Following this, two psychometric experts conducted a content validity analysis on the nine items to evaluate their appropriateness in accurately reflecting the measurement of the transphobia construct. To mitigate the weaknesses of creating a short version with inter-item correlations that could narrow the accuracy of construct representation (Smith et al., 2000), psychometric experts conducted a content validity analysis on the nine items to assess their appropriateness in accurately reflecting the measurement of the transphobia construct. The results of this evaluation indicated that the nine items of the GTS-SV adequately cover all indicators measured in both dimensions of the GTS-SV.

An Exploratory Factor Analysis (EFA) was then performed to identify the appropriate grouping for these nine items. This EFA resulted in a two-dimensional grouping pattern, with clear grouping and no zero or cross-loadings. This grouping aligns with the original GTS design developed by Hill and Willoughby (2005). Subsequently, the reliability test on this grouping also showed high-reliability values, with Cronbach's Alpha > 0.7 across all dimensions and CITC values in the range of > 0.3. These results are consistent with studies by Tebbe et al. (2014) in Florida and Carrera-Fernández et al. (2014) in Spain, who also developed the GTS-SV. The findings from these two studies and from Study I of this research suggest that the GTS can be reconstructed into a shorter version while maintaining both high validity and reliability.

These findings are further supported by the results of Study II. Based on the exploratory factor analysis using data from new participants, the result showed that GTS-SV in Indonesian has a clear grouping with two dimensions, without cross-loading and zero loading items. The first dimension within the grouping consists of items that measure thoughts (genderism) and feelings (transphobia), grouped into one. Grouping those items can happen due to the strong connection of thoughts and feelings. According to Dryden (1994), there is an interrelated connection between cognitive, emotive, and behavioral aspects. A person's feelings towards something depend on their perception of it. If a person has an unpleasant perception of something, they will feel the corresponding feelings of that perception, which could happen in the form of feeling uncomfortable or disgusted (Bandura et al., 1961; Beck, 1964).

This is also in line with the Cognitive-Affective-Behavioral (CAB) model, which could provide a comprehensive framework for understanding how thoughts, feelings, and behaviors interact to form and sustain prejudice, including transphobia. The cognitive component involves the stereotypes and beliefs individuals hold about certain groups. These stereotypes can reinforce discriminatory attitudes by guiding how information about transgender people is processed (Callender, 2015). The affective component refers to the emotions experienced toward outgroup members, such as discomfort, fear, or anger, which can influence individuals to avoid or engage with certain groups of individuals in biased ways. Kawakami et al. (2019) highlight that these emotions, whether predicted or experienced in response to prejudice, can drive people to either confront or avoid biased behavior. The behavioral component consists of actions individuals take based on their cognitive and emotional responses, which can include discriminatory behaviors (Fazio & Olson, 2003). In the case of transphobia, negative stereotypes lead to discomfort and discriminatory behaviors, reinforcing a cycle that perpetuates prejudice.

In the context of transphobia itself, cultural and societal influences create prejudiced thoughts towards transgender individuals. When someone is faced with a transgender person, these prejudiced thoughts are activated, which then causes feelings of discomfort to arise and maintain these prejudiced thoughts (Pascal et al., 2023). Meanwhile, the second dimension consists of gender-bashing items, which measure the behavior of someone who rejects the transgender community.

The result of this grouping is in line with the original design of GTS developed by Hill and Willoughby (2005). A similar grouping structure was found in the GTS-Short Form by Tebbe et al. (2014) and the GTS-Short Version by Carrera-Fernández et al. (2014). The similarity of this grouping pattern, which was obtained in the validation between three countries with different cultural backgrounds, demonstrates that transphobia can be universally understood as a combination of thoughts, feelings, and behaviors toward the transgender community. This was also visible when researchers conducted an in-depth analysis of the GTS validation results that were conducted in other Asian countries such as Hong Kong (Winter et al., 2008), the Philippines (Macapagal, 2013), and China (Chen & Anderson, 2017).

As an example, the grouping in GTS - Hong Kong found five new dimensions that measure the same three main concepts of transgender, which are thoughts, feelings, and behavior. The dimension of anti-sissy prejudice measures the negative emotion consisting of antipathy toward the transgender community, and then the dimension of trans unnaturalness, trans immorality, and background genderism measures the perception that transgender is an unnatural and immoral behavior. The last dimension, which is anti-trans violence, measures the violent acts against transgender people (Winter et al., 2008). This is due to cultural differences in how each society expresses prejudice towards transgender individuals and how these prejudices are labeled. However, the underlying constructs of thoughts, feelings, and behavior remain the same. Indonesia may not present with the same cultural nuances of transphobia that were found in other Asian countries, therefore causing the GTS-SV in Indonesia to align more closely with the original GTS, retaining the simplicity of Hill and Willoughby's framework of transphobia.

Moreover, this similarity in structure does not compromise the validity and reliability of the GTS-SV in Indonesian. Instead, Cronbach's Alpha score ranging from 0.602 – 0.838 further reinforces that the scale accurately measures transphobia within Indonesian society, aligning both conceptually and statistically with the original GTS. The existence of the GTS-SV with a solid internal structure allows Indonesian researchers to assess the level of transphobia within Indonesian society easily. This can help broaden the focus of transphobia research in Indonesia, shifting towards a more quantitative approach. Additionally, the availability of this measurement tool can also positively contribute to the development of interventions aimed at reducing discriminatory behaviors toward transgender individuals.

Conclusion

The two stages of studies that were described in this research were conducted to develop and ensure the quality of the Genderism Transphobia Scale - Short Version (GTS-SV) in Indonesian. The GTS-SV in Indonesia has proven to have a good internal structure consisting of good grouping items and fulfills the standard of Cronbach Alpha and Tau-equivalent assumption. The analysis of both stages of the study has proven the internal structure quality of the measurement tools, which indicates that the nine items of GTS-SV in Indonesian can be used to measure the levels of transphobia in Indonesian society accurately. This research has contributed to the area of transphobia research within Indonesia by presenting a transphobia measurement instrument, which is currently rare in Indonesia. This validation research is expected to broaden the scope of transphobia studies in Indonesia through a quantitative approach and support the development of intervention modules addressing the rise of transphobia.

However, this study has some limitations. While the GTS-SV has shown a strong internal structure, future research should seek to validate the scale further using more diverse sample populations from various regions in Indonesia to improve its generalizability. Additional studies are also needed to assess the validity of the scale through other methods. Future studies may apply Confirmatory Factor Analysis (CFA) to determine whether the GTS-SV accurately captures the intended dimensions of transphobia. CFA would provide more insights into the scale's construct validity, helping to understand how well it measures the cognitive, emotional, and behavioral components of transphobia.

Additionally, it would be useful to consider the impact of the measurement by observing the consequences of using the scale. This could involve examining how the scale influences test-takers awareness of transphobia or how researchers might apply the findings in developing interventions. Such assessments could offer valuable information about the practical use and effectiveness of the GTS-SV as a tool for understanding and addressing transphobia, though more research is needed to confirm these impacts.

Recommendation

Researchers recommend that future studies test the validity of the Indonesian GTS-SV using impact-based validity evidence and Confirmatory Factor Analysis. The source of validity based on the impact of measurement can be conducted by evaluating the consequences arising from the administration of the measuring instrument, including its effect on the test creator, test-taker, test users, test publishers, test-sellers, test instructors, and researchers. For example, researchers can evaluate how test-takers' awareness of transphobia changes after completing the scale or how organizations use the results to design interventions. Such steps will ensure the scale's applicability in real-world settings. Additionally, CFA can be used to confirm whether the scale accurately captures the cognitive, emotional, and behavioral aspects of transphobia. By applying CFA, researchers can also refine the scale, ensuring its validity and reliability across different populations. Combining these methods would enhance understanding of the GTS-SV's effectiveness and its practical value in assessing and addressing transphobia.

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Conflict of Interest

All researchers declare that there is no conflict of interest for this publication.

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