



# The Indonesian Version of Triangular Hate Scale: A Validation and Current Mapping on Young Adults via Rasch Analysis

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**Abstract.** The problem of hatred in society is still urgently needed, especially in light of the detrimental effects associated with social conflict, discrimination and inequality, psychological harm, and social polarization. Instruments are required to measure the extent to which hatred occurs to map the conditions under which it occurs and find various treatments to counteract hatred and its worst effects. Although there have been numerous studies on hatred, there are still no widely accepted tools for measuring it, particularly ones translated into Indonesian. This study aims to investigate the psychometric properties of the triangular hate scale (THS) (Sternberg, R. J., and Sternberg, K., 2008) in its Indonesian version (ID-THS), which is a tool used to assess the intensity of personal hatred based on three main indicators: the negation of intimacy, passion, and commitment. There are 816 participants in this study, ages 13 to 18, 278 of whom are male and 631 are female. The findings of our study show that the ID-THS has a person reliability of 0.91 and an item reliability of 0.99. The final ID-THS version includes 29 tested items. Meanwhile, other findings show that even though the average score of respondents indicates low hatred (-.39 Logit). The difference in hatred between males and females is significant ( $\text{prob} < 0.05$ ), hatred in males (-.57 Logit) is less than that in females (-.31). In summary, the ID-THS is the first to measure hatred in the Indonesian context with adequate psychometric properties.

**Keywords:** Hate scale, Indonesian version, validation, Rasch model

## 1 Introduction

Hate is a complex social phenomenon and has become a public concern recently among adolescents [1]. Since 2018, the Ministry of Communication and Information Technology has

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addressed 3,640 instances of hate speech-related content. During the first three months of 2023, as many as 425 hate-inciting hoaxes circulated on websites and digital platforms. Dissimilarities, such as ethnicity, nationality, religion, and gender, can spark hatred (Subyantoro and Apriyanto, 2020). The majority of the causes of hatred in Indonesia are related to the mental health of the individual and the factors of infrastructure and technology (Febriyani, 2018). The social dominance orientation directly affected the offline and online spread of hate speech [4]. Extreme psychological injury can result from such hateful speech, particularly for adolescents attempting to achieve developmental tasks (Obermaier and Schmuck, 2022). Such as grief [6], Post Traumatic Stress Disorder (PTSD) and depressive symptoms (Wypych and Bilewicz, 2022), suicide, and acts of violence [8]. This phenomenon in Indonesia is often seen in hate speech that uses threatening narratives to survive (Alexandra and Satria, 2023a), cyberbullying, using abusive comments (Sari et al., 2022; Byoung-Chul et al., 2023) primarily through online spaces, especially Twitter (Muzakir et al., 2023; Prasetyo and Samudra, 2022). To understand and measure hate effectively, measurement tools are needed that can be used in specific cultural contexts. One tool commonly used to measure hatred is the triangular hate scale, developed by Robert J. Stenberg (Stenberg and Stenberg, 2008). To measure feelings of hatred, THS has been developed to offer a way to scientifically evaluate the theory and draw judgments about its viability [15].

Hate instrument that other researchers have developed in-between the self hate scale [16] which refers to self-hatred. In the legal and criminal fields, Hate Crime Beliefs Scale (HCBS) to measure attitudes toward hatred in the legal and criminal fields [17]. In other areas, the Love-Hate Scale for Sports Fans (LHSSF) is used to evaluate feelings of fanaticism (love and hate) among football fans [18]. Additionally, the Brand Hate Short Scale (BHS) measures consumer hatred for brands related to desires for revenge and avoidance [19]. Finally, the Hateful Emotional Responses Scale (HatERS) offers a preliminary analysis of a new scale for assessing hateful emotional reactions to being harmed by an offender [20]. No instruments have been developed that precisely measure adolescent hatred, which is more about interpersonal relations. So this study aims to adapt, validate, and map the Indonesian version of the Triangular Hate Scale in the adolescent population. THS has not been widely adapted, and one finding is that the Celebrity-THS is a promising measure with the potential for use in media psychology and communication science [21]. Furthermore, we adapted the Indonesian version of THS for adolescents.

This research is important because hatred is a growing problem in Indonesia, especially among adolescents. The rise of hate speech online and its impact on mental health necessitates effective measurement tools. While existing scales like the Triangular Hate Scale (THS) offer a framework, they haven't been adapted for adolescents in an Indonesian context. This study aims to fill that gap by adapting, validating, and mapping the Indonesian version of THS specifically for this population. This will allow researchers and professionals to better understand and measure hatred among adolescents, leading to more effective interventions and solutions to this critical social issue.

The research questions include, how accurate is the Indonesian version of the THS in terms of validity and reliability for measuring the perceptions of hatred among young adults? How does the perception of hatred vary based on demographic and social factors? This research has the potential to significantly contribute to understanding adolescent hate in the Indonesian context. With the latest validation and mapping of the Triangular Hate Scale in Indonesia, it is

hoped that it can provide a strong foundation for researchers and practitioners to study and overcome hatred in adolescents and young adults in Indonesia.

## 2 Method

### 2.1 Participant

This cross-sectional study collected data at a particular time [22] from March to April 2023. The participants in this study were adolescents aged between 13-18 years who represent the population in Indonesia. The sample will be selected using a random sampling method according to the probability distribution [23], considering sociodemographic diversity such as gender, residence, and parenting style. We also distributed the instrument through the Google form to respondents, who were willing to complete the questionnaire anonymously by first giving written consent.

**Table 1.** Psychometric properties (I = 29, N = 816)

Psychometric properties	Person	Item
N	816	29
Mean measure	-0,39	0,00
<i>Gender</i>		
Male	30,6%	
Female	69,4%	
<i>Parenting style</i>		
Authoritative	70%	
Neglectful	14%	
Authoritarian	11%	
Permissive	5%	
<i>Location</i>		
Rural	70%	
Sub urban	28%	
Urban	3%	

### 2.2 Instrument

THS is an instrument developed by Stenberg and Stenberg (2008) (Sternberg and Sternberg, 2008). The ID-THS includes three components: negation of intimacy, passion, and commitment. Negation of intimacy involves denying emotional closeness, seeking emotional distance, or detachment. Often, emotional distance is sought from the target individual because the individual experiences disgust for the person experiencing hatred. Passion involves expressions of intense anger and fear in response to threats. Commitment is marked by an awareness of devaluation and reduction through the humiliation of the target group.

THS consists of 29 items, and the answer criteria use a summated rating scale or a Likert scale with a rating range from "1-very inappropriate" to "5-very appropriate". Higher scores on each item indicate a more positive attitude toward the responses to the instrument items. According to Tsang (2012) [24], a Likert scale with or without a midpoint is acceptable if the midpoint does not significantly affect reliability.

### 2.3 Procedure analysis

The measurement tool is a translated version of the THS (Sternberg and Sternberg, 2008) from English into Indonesian. This scale consists of several statements that measure the level of hatred in an interpersonal context. Data will be collected through online surveys using Google Forms. Participants will be asked to rate the extent to which they strongly agree or disagree with the statements on the THS.

The validity and reliability of the measurement instrument is a crucial aspect in this study (Jumadi et al., 2023), because it will ensure that the scale can accurately and consistently measure the level of hatred in respondents. The method used in this research is Rasch analysis using Winstep 5.1.5.1., which is a probabilistic model researchers across social sciences use to measure unobservable variables (Lamprianou, 2019). This method would allow a more in-depth assessment of individual attributes measured by the hate scale. In Rasch's study, measurement data were analyzed based on item response theory (Shoahosseini and Baghaei, 2020), which allows a more in-depth assessment of individual attributes as measured by the aversion scale.

Participants in this study were adolescents in Indonesia, who represent the relevant population for hate measurement. Data will be collected through a survey consisting of a translated version of the Triangle Hatred Scale in Indonesian. The results of the Rasch analysis will provide a better understanding of the characteristics and validity of the scale in the Indonesian cultural context.

## 3 Result and Discussion

### 3.1 Overall fit to the Rasch measurement model

The results of the Rasch analysis for ID-THS are shown in Table 1. The person reliability index (0.91) means that the consistency of adolescent thinking and the quality of the item items is in the "very good" category, and the item reliability index (0.99) indicates that the level consistency item difficulty is included in the "very good" category. Cronbach's alpha coefficient (0.93) also shows that ID-THS has "very good" internal consistency (Šerbetarand Sedlar, 2016). Thus, this instrument is reliable.

**Table 2.** Summary statistics of person and item (I = 29, N = 816)

	Reliability	Separation index	Mean measure*)	Cronbach's alpha
Person	0,91	3,20	-0,39	0,93
Item	0,99	8,99	0,00	

The Person Separation Index ( $3.20 > 2$ ) indicates this is "good," meaning that the respondents are pretty varied or the person can distinguish between high and low performers. Then the Item Separation index ( $8.99 > 3$ ), which means "excellent," It indicates that the person sample is large enough to validate the item difficulty hierarchy. So, the ID-THS capacity to discriminate between people's abilities as latent attributes and the broad distribution of items in a scale developed to determine easy and difficult items (Clark and Watson, 2019). The higher the separation index value, the better the measurement instrument distinguishes items or individuals with different characteristics (Park and Park, 2019). However, it should be noted that these values must be seen in context and comparison with the relevant norms for the measurement being carried out.

The mean measure for the person is  $-0.39$  logit and for the item is  $0.00$ , indicating that our respondents have low levels of hatred on average. Surprisingly, there is a disparity between the low average score of adolescent hatred in Indonesia and the phenomenon of hatred on social media, which is frequently perpetrated by digital citizens or netizens. These results suggest that social media hatred may not be representative of the entire Indonesian adolescent population. Nonetheless, these findings do not diminish the importance of preventing hostility, particularly in cyberspace (Alexandra and Satria, 2023b; Iqbal and Keshtkar, 2023; Wachs and Wright, 2022), education, coping strategies [31], social campaigns and the development of policies that support responsible internet use and the growth of digital literacy must be implemented continuously to prevent the widespread dissemination of hatred.

### 3.2 Unidimensionality

A set of items is considered unidimensional when, after controlling for the variance due to the latent construct, there are no correlated residuals between the items [32]. Likewise, if all items measure the same process equally, then can be considered unidimensional [33]. The unidimensionality analysis identified several aspects that were measured by the instrument, taking into account the raw variance explained by measures and unexplained variance in the 1st to 5th contrast. Dimensionality can be shown if the raw variance explained by measures is  $\geq 40\%$  with a record of the general interpretation category. Then for unexplained variance in 1st to 5th, the contrast of residuals is less than  $10\%$  each. The results of the deployment of the hatred instrument among adolescents in Indonesia are shown in Table 3.

**Table 3.** Unidimensionality (I = 29, N = 816)

Category	Eigenvalue	Observed	Expected
Raw variance explained by measures	16.9	36.8%	37.2%
Raw variance explained by person	4.3	9.4%	9.5%
Raw Variance explained by items	12.5	27.3%	27.6%

Unexplned variance in 1 <sup>st</sup> contrast	3.6	7.9%	12,5%
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In these data, the variance explained by the items, 27,3%, is only three times the variance explained by the first contrast, 7.9%, indicating that the items contain a detectable secondary dimension. The raw variance explained by measures is 36.8% (< 40%) and it close to the expected 37,2%. Another consideration shows that if at least 20% of the total variance can be explained by Rasch modeling, the measurement is determined as unidimensional (Reeve andMâsse, 2004)[35] and it is supported by an unexplained variance value 7,9% more than 4% (<10%) with 3,4 eigenvalue It indicates the lack of a second dimension, so the test is likely unidimensional [36]and the adaptation of the items in this study was successful.

### 3.3 Item measure, fit indices, and precision measurement

The results of the item difficulty level and fit of the item to the model can be seen in the following table 4 where two items are classified as difficult, namely items 17 and 14; two are classified as easy, namely items 6 and 28. Overall, the measure numbers show a range of -1 to 1, so this instrument has a good level of difficulty.

**Table 4.**The summary of item measure (I = 29, N = 816)

Iter	Total score	Measure	S.E. Model	Infit		Outfit		Pt. Measure Corr.
				MNSQ	ZSTD	MNSQ	ZSTD	
17	1741	0.59	0.03	1.33	5.90	1.23	3.29	0.44
14	1751	0.57	0.03	1.18	3.48	1.09	1.39	0.44
28	2844	-0.45	0.03	1.07	1.68	1.06	1.29	0.57
6	2863	-0.47	0.03	1.00	0.01	1.01	0.24	0.58

The suitability of the items can be seen from the MNSQ Outfit numbers. from the table, the Outfit MNSQ score ranges between  $0.5 < \text{MNSQ} < 2.0$  indicating that the data fits the model [37]. The "Model S.E" column represents the "Standard Error of Measure" for each item. The standard error in the proposed instrument is within the range of 0.5, indicating a decisive result produced by ID-THS.

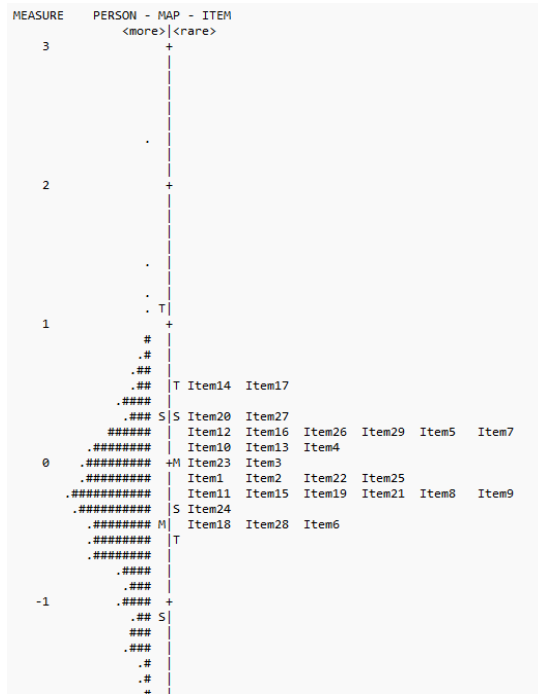


Fig. 1.item wright map

The wright plotting above demonstrates that the difficulty of the items varies. In general, participants can answer the queries from easiest to most challenging. The participants' abilities also varied, ranging from those with low to those with high abilities.

### 3.4 Person measure, fit indices, and precision measurement

In addition to item measures, we present a person measure to show the person's ability to answer items. Before discussing person measure, we will first discuss person misfit. Based on the Rasch calculations obtained, Table 5 presents the highest and lowest five responses from the 816 respondents who participated in this study.

Table 5. The summary of person measure (I = 29, N = 816)

Person entry number	Total score	Measure	S.E. Model	Infit		Outfit		Pt. Measure Corr.
				MNSQ	ZSTD	MNSQ	ZSTD	
1005	140	2.32	0.43	0.71	-0.37	0.77	-0.22	0.22
289	132	1.46	0.26	0.86	-0.23	0.83	-0.31	0.19
356	132	1.46	0.26	1.03	0.21	1.01	0.15	0.15
424	131	1.39	0.25	2.16	2.41	1.58	1.37	0.49

563	131	1.39	0.25	1.54	1.33	1.69	1.56	0.14
498	30	-3.81	0.99	0.93	0.30	0.80	0.19	0.13
597	30	-3.81	0.99	0.95	0.32	1.03	0.41	-0.03
614	30	-3.81	0.99	0.94	0.31	0.86	0.24	0.09
1029	30	-3.81	0.99	0.93	0.30	0.80	0.19	0.13
1145	30	-3.81	0.99	0.94	0.31	0.93	0.31	0.04

The data above is the five highest and lowest data from the total score, this is a representation of all existing data. The magnitude of the individual (2.32 logits; S.E. = 0.43) exhibiting the highest level of hatred was identified as respondent number 1005, a female aged approximately 13-15 years with both parents present, characterized by a neglectful parenting style, residing in a rural area. In contrast, a male respondent, number 1145, aged around 16-19 years, having intact parents with an authoritative parenting style and living in a village, had the lowest hatred (-3.81 logit; S.E = 0.99) compared to all respondents involved in this research. Thus it can be concluded that women experience higher hatred than men. This can be caused because women have a higher level of pathological worry and minimize cognitive distortions than men. Parenting also influences adolescent hatred, and incredibly neglectful parenting. Much adolescent hatred arises from online media (Abdallah Tani and Alrasheed, 2023)(Tripathi and Natraj, 2021). Study results show that good parenting in this era can fulfill the domain between 'screen time,' framing children's 'intimate surveillance' and parental responsibility in managing their children's online experiences [40].The suitability of the person against the Rasch model is shown in the outfit MNSQ and ZSTD of Table 5. This shows that the person is fit to the Rasch model.

### 3.5 Rating scale diagnostics

Another unidimensional Rasch model to examine ratings in two or more ordered categories is the Rating Scale (RS) model. The RS model was developed to analyze data from rating scales with a fixed or common number of answer categories across a collection of items intended to assess a latent variable or unidimensional construct [41]. A diagnostic rating scale was carried out to determine respondents' understanding of differences in answer choices on the hate variable, starting from a small logit value for answer options with a minimum score to a considerable logit value for answer options with a maximum score. Respondents understand the difference in answers if the observed average and Andrich threshold values increase according to their level [42]; in detail, the Andrich threshold values can be seen in Table 6.

**Table 6.**Item threshold and fit indices of response format (I = 10, N = 1632)

Category	Andrich Threshold	Observed Average	Observed Count (%)	Infit	Outfit
Strongly Disagree	NONE	-0.97	30	1.02	1.03
Disagree	-0.37	-0.49	22	0.98	0.96
Neutral	-0.28	-0.20	20	1.01	1.01
Agree	0.24	0.06	15	0.99	0.98
Strongly Agree	0.41	0.36	12	1.00	1.00



The findings in Table 6 signify the respondent's capacity to verify differences between the various ID-THS response options. The observation rate related to the Andrich Threshold also changes monotonically from NONE then the negative logit moves towards the positive logit (0.41 logit) for each answer option. This result also confirms that the answer choices are valid and accurate for respondents.

### 3.6 The DIF analysis

DIF analysis is intended to find out whether the items benefit one individual compared to another and are further explained in Table 6. In the DIF analysis, we obtain interesting results, especially on the sub-group of respondents.

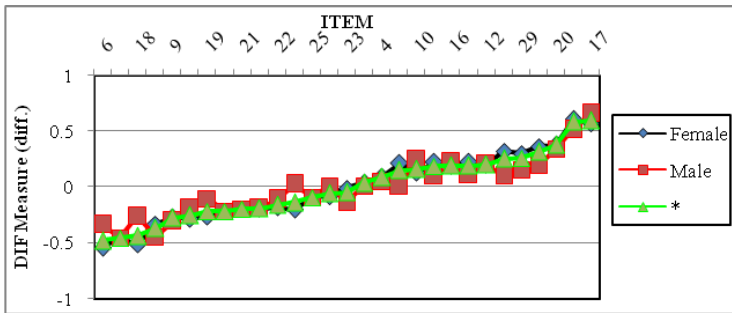


Fig. 2.Item DIF-based on gender

Based on the DIF items on gender, several gender-related DIF items were found to have probabilities  $< 0.05$ , including item1 (0.00), item2 (0.02), item5 (0.03), item6 (0.00), item13 (0.00), item18 (0.00), item19 (0.02), item23 (0.03), item26 (0.00), and item29 (0.02). All of them, however, have a DIF contrast  $< 0.64$ , allowing them to be maintained.

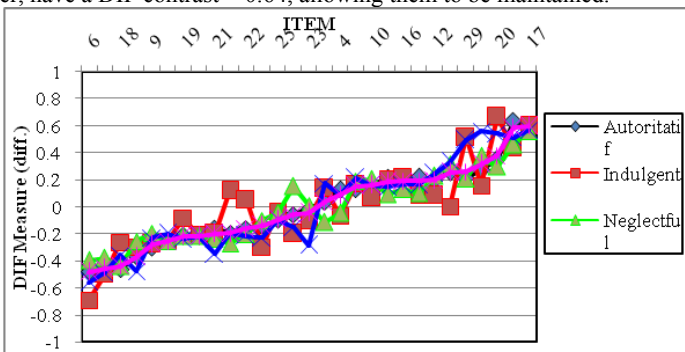


Fig. 3.Item DIF-based on parenting style

Item DIF based on parenting style shows several items indicated DIF (prob.<0.05) including, item 2 for neglectful (0.04), item3 for neglectful (0.02), item4 for neglectful (0.02), item6 for per-missive (0.04), item20 for permissive ( 0.03), item22 for permissive (0.04), item23 for authoritarian (0.01), item27 for authoritarian (0.01), item29 for authoritarian (0.02).

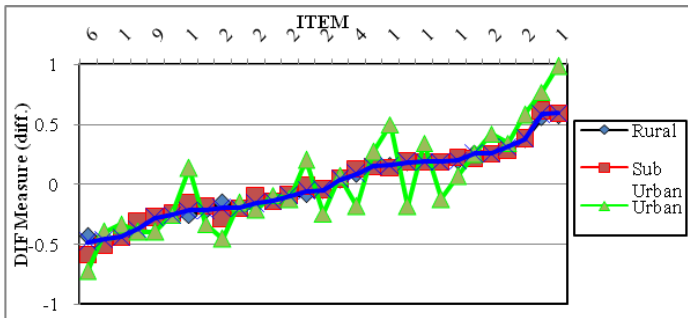


Fig. 4.Item DIF-based on communities

Item DIF based on communities shows no data indicating DIF (prob.<0.05), all data indicate a probability value of >0.05, even though several points on the graph deviate significantly from the normal line. Amongst these objects are: item19 (0.05), item8 (0.53), item2 (0.16), item23, item4 (0.09), item10 (0.07), item5 (0.05), item7 (0.10), dan item17 (0.13). All data for the urban category.

Based on these findings, several subcategories indicate the detection of DIF. However, all items can be maintained because they are insignificant (DIF contrast < 0.64), including in slight to moderate [36]. These findings draw our attention, especially to differences in hate between male and female respondents, where women experience hate more than men. The results of the study show differences in conceptual understanding abilities based on gender, where men tend to be better at observing phenomena than women, which has an impact on their understanding of concepts [43], so understanding related to male hatred can be more logical and realistic. Differences in where you live and parenting styles are also important in understanding hatred. The results further prove that differences within some of these subcategories in response patterns should not be ignored.

**3.7 Variations of hatred based on demographic and social factors**

This study was conducted on adolescents considering several demographic and social factors, such as gender, parental style, and residence location. Table 7below describes each form of hatred as seen from these perspectives.

Table 7.Hatred based on gender

Person count	Mean measur	S.E. Mean	Code
816	-0,39	0.02	-

631	-0.31	0.03	Female
278	-0.57	0.05	Male

According to the table, females experience more hatred than males. This contradicts the findings of investigations, which indicate that women scored higher than men on pathological worry [44] and that women scored substantially higher than men on the sub-dimensions of emotional expressiveness and social control [45]. Concerning parenting practices, as described in the Table 8 below:

**Table 8.** Hatred based on parenting style

Person count	Mean measure	S.E. Mean	Code
816	-0.39	0,02	-
637	-0.46	0,03	Authoritative
47	-0.33	0,10	Permissive
127	-0.27	0,05	Neglectful
98	-0.12	0,06	Authoritarian

According to the data, the level of hatred is most prevalent among adolescents with authoritarian, then neglectful, permissive, and authoritative parental styles. Hatred is connected to parenthood, whether it makes it better or worse. The study's findings demonstrate, the perceived prosocial educational goals of parents strengthened the negative association between openness to diversity and hate speech perpetration in schools, but did not moderate the relationship with social perspective-taking [46]. Furthermore, Parental control devices may promote restrictive mediation styles that impede children's online voice and exploratory agency [47] so that the role of parents can help reduce online hateful conduct. The last aspect, communities, is described in Table 9 below.

**Table 9.** Hatred based on communities

Person count	Mean measure	S.E Mean	Code
816	-0.39	0,02	-
634	-0.39	0,03	Rural
250	-0.38	0,05	Sub-urban
25	-0.51	0,14	Urban

The majority of respondents reside in suburban areas, followed by rural and urban areas. Adolescent hatred is also related to where they reside. Adolescents in urban areas experience the highest levels of hatred, followed by those in suburban and rural areas. Based on the study, both urban and rural hate crimes may be predicted by structural and demographic factors [48]. This is a common occurrence for immigrants [49], including rural residents [50]. The impact of hatred, particularly in demographically motivated hate crimes, causes significant problems for adolescents and young adults, such as fatal injuries and deaths among racial and ethnic minority populations [51]. Consequently, it is necessary to conduct research on animosity, with a focus on prevention and control measures.

## 4 Limitation

Although the psychometric properties of the ID-THS are adequate, several limitations of this study must be considered. Firstly, this research focuses on the adolescent population aged 13-18 years. Therefore, the results and findings of this study may not be directly applicable to a wider population or different age groups. Additional studies are needed to validate the instrument and evaluate its applicability in other population groups. Secondly, this research involves validating the "Indonesian Version of the Triangular Hate Scale." Despite the validation conducted, it may be necessary to identify or include other factors in this research that could influence the instrument's validity. The validity of this instrument must also be retested through further research to ensure the reliability of the results. Thirdly, this research was conducted in Indonesia, and certain cultural factors and the local context may influence the research results. The findings and results may not be fully applicable to other cultural contexts. Replicating these studies in other countries or with different cultural populations would help broaden understanding of the instruments and constructs measured. Considering these limitations when interpreting research results and planning future research is essential. Further research that refines or complements these aspects could provide a better understanding of the instruments and constructs tested in this study.

## 5 Conclusion

This study has produced an Indonesian version of the THS (ID-THS) with a youth sample, which means that this instrument is adapted to the culture and characteristics of Indonesian society. The structure of the hate indicator was verified into three, and all items in each factor matched their well-embedded constructs. Following the results of our analysis, ten items indicated DIF but were retained because the DIF contrast was not significant. Judging from the hate profile, it can be concluded that women tend to experience greater levels of hate than men. This may be due to women having higher levels of pathological worry and being more likely to minimize cognitive distortions than men. It is surprising to find a discrepancy between the low average score of adolescent hatred in Indonesia and the prevalence of hatred on social media, a behavior frequently exhibited by digital citizens or netizens. In summary, ID-THS has good psychometric properties to measure hatred in the context of adolescents in Indonesia. Furthermore, Hatred is experienced by females more than men, in suburban communities and with an authoritarian parenting style.

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