Development and Psychometric Evaluation of the Multigroup Ethnic Identity Inventory

Desarrollo y Evaluación Psicométrica del Inventario Multigrupal de Identidad Étnica

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Abstract

Despite widespread use, there is limited research evaluating the psychometric properties and measurement invariance of the Multigroup Ethnic Identity Inventory (MEI2) across diverse populations. Current approaches to measuring Ethnic Identity often lack relevance to diverse cultural contexts, especially in the Indonesian context and among secondary students. This study investigates the psychometric properties of the MEI2 among Indonesian secondary school students representing diverse ethnic backgrounds. The participants consisted of 276 secondary school students (60.1% female; 39.9% male). Confirmatory factor analysis verified the validity of the MEI2, with the goodness-of-fit index indicating that the model was economical and reasonable. Furthermore, the correlation between the three domains revealed a significant positive relationship. The findings support the MEI2 as a valid instrument for assessing students' ethnic identity in this specific context. The contribution of this research is to be fostering diverse-friendly learning environments and supports educators in acknowledging and embracing the complexities of students' ethnic identities within Indonesian cultural landscapes.

Resumen

A pesar de su uso generalizado, hay una investigación limitada que evalúa las propiedades psicométricas y la invariancia de medida del Inventario Multigrupal de Identidad Étnica (MEI2) en diversas poblaciones. Los enfoques actuales para medir la Identidad Étnica a menudo carecen de relevancia en contextos culturales diversos, especialmente en el contexto indonesio y entre estudiantes de secundaria. Este estudio investiga las propiedades psicométricas del MEI2 entre estudiantes de secundaria indonesios que representan diversos orígenes étnicos. Los participantes consistieron en 276 estudiantes de secundaria (60.1% mujeres; 39.9% hombres). El análisis factorial confirmatorio verificó la validez del MEI2, con el índice de bondad de ajuste indicando que el modelo era económico y razonable. Además, la correlación entre los tres dominios reveló una relación positiva significativa. Los hallazgos apoyan al MEI2 como un instrumento válido para evaluar la identidad étnica de los estudiantes en este contexto específico. La contribución de esta investigación es fomentar entornos de aprendizaje amigables con la diversidad y apoyar a los educadores en el reconocimiento y la aceptación de las complejidades de las identidades étnicas de los estudiantes dentro de los paisajes culturales indonesios.

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1. Introduction

Ethnic identity serves as a crucial protective factor across different ethnic groups and development stages during adolescence in school education (D'hondt et al., 2021; Fisher et al., 2020; Lai et al., 2024). Moreover, it is a significant determinant of psychological well-being within ethnic minority communities (Balidemaj & Small, 2019; Rivas-Drake et al., 2014). Specifically, the strength of ethnic identification correlates with heightened self-esteem, positive personal growth, and individual competence (Kim et al., 2014). Drawing upon Burke & Stets (2022) conceptualization, identity is understood as a multifaceted construct shaped by diverse orientations, values, and beliefs, ultimately culminating in a commitment to one's ethnicity (Stryker & Burke, 2000). Conversely, social identity theory posits that ego identification, the core component, is intertwined with a sense of belonging to a social group, thus imbuing it with inherent value (Delia, 2015). Consequently, Phinney (1992) suggests that over time, ethnic identity evolves into a complex, multi-layered construct, with integral processes encompassing the evaluation of ethnic significance and an individual's allegiance to their ethnic or cultural group. Researchers define ethnic identity as an individual's self-perception formed by their awareness of belonging to an ethnic group and the emotional importance they associate with that membership (Tajfel, 1981).

Ethnicity encompasses complex classifications such as White, Black, Asian Pacific Islander, and Hispanic/Latino, which are deeply intertwined with biological, economic, and sociocultural factors (Gee et al., 2022; Johnson et al., 2019). These factors collectively influence psychological experiences in profound and multifaceted ways (Chemers et al., 2011; Phinney et al., 1997; Phinney & Ong, 2007; Wilson, 2017). Genetic predispositions specific to certain ethnic groups can significantly impact mental health vulnerabilities and stress responses. Additionally, economic disparities, manifested in varying levels of socioeconomic status and access to quality education and employment, play a crucial role in shaping psychological well-being. Furthermore, sociocultural elements, including cultural identity, experiences of discrimination, and culturally specific coping mechanisms, profoundly influence individual and collective psychological experiences (Phinney, 1996). Ethnic minorities frequently encounter systemic discrimination and microaggressions, contributing to heightened stress, anxiety, and depression. Conversely, cultural strengths such as community support and collective resilience offer protective psychological benefits, buffering against the negative impacts of discrimination and economic adversity.

Goffman explicitly identified "race" (Goffman, 1969), "religion" (Goffman, 2023), and "nationality" (Goffman, 2008) as three distinct components of ethnicity. Furthermore, Goffman (2009) contended that individuals classified by society as members of racial, religious, or national minority groups are likely to be stigmatized by those outside these groups. This stigmatization often leads to social marginalization, exclusion, and discrimination, impacting individuals' mental health, social standing, and overall quality of life (Gaines Jr et al., 2013). The strength of one's ethnic identity may be influenced by factors such as upbringing, cultural practices, community environment, and personal experiences. In some cases, individuals may strongly identify with their ethnic group, valuing and preserving its cultural traditions and language. On the other hand, the concept of a national identity is also significant and can be reinforced through education, patriotic symbols, and national events. Religious identity is another crucial aspect. Some individuals may prioritize their religious identity over ethnic identity or see them as interconnected. It's important to note that identity is a complex and multifaceted concept, and individuals may navigate and negotiate their various identities based on different contexts and life stages. Moreover, the interplay between ethnic, national, and religious identities can be dynamic and may evolve over time.

Phinney (1996) delineates three key dimensions pertaining to ethnic groups, which involve the differentiation of their defining characteristics. These characteristics may include a shared cultural heritage, collective group experiences, and a sense of social identity. Conversely, individuals within the same ethnic group may exhibit variations in how they express and perceive their ethnicity. While certain attributes of ethnicity may be unique to specific groups or individuals, there are also commonalities that cut across all ethnic groups. As Phinney (1996) elucidates, individuals from any ethnic background can possess a distinct cultural legacy that diverges from their contemporary cultural environment, face differential treatment based on their ethnicity, and maintain an identity that emphasizes their ethnic group affiliation. Essentially, comprehending the pathways conducive to fostering healthy personalities within this diverse population is imperative (Jackson et al., 2020). Individuals distinguish themselves from one another based on various factors, with ethnicity often serving as a useful classification in coping with daily life events. The defining feature of an ethnic group lies in the shared acknowledgment among its members of its unique identity and cohesive nature (Albert, 2014).

Consequently, inquiries about membership in an ethnic group typically assume a singular interpretation without considering individual perspectives (Hamer et al., 2020).

These objectives demonstrated the necessity for tools and measures to assess ethnic identity. Empirical research underscores the direct correlation between ethnic identity and significant outcome variables, such as coping strategies for prejudice ((Litam & Oh, 2022; Villegas-Gold & Yoo, 2014; Yoo & Lee, 2005), self-worth (Gummadam et al., 2016), and psychological well-being (Ajibade et al., 2016). However, findings vary based on how ethnic identity is conceptualized and measured (Dimitrova et al., 2018; Phinney et al., 1997; Sladek et al., 2020). Therefore, developing valid and reliable methods for assessing this construct is imperative. The study of ethnic identity has garnered significant attention in research circles due to its crucial role in identity formation and psychological well-being (Rivas-Drake et al., 2014). Phinney (1992) developed the "Multigroup Ethnic Identity Measure (MEIM)," a 14-item tool designed to assess various components of ethnic identity, such as positive ethnic attitudes, sense of belonging, ethnic identity achievement, and ethnic behaviors. The MEIM assesses the exploration and commitment to an ethnic identity, focusing on feelings of belonging and participation in cultural events, typically across various ethnic groups. It does not account for the specific historical, religious, cultural, or social experiences unique to any single ethnic group. The MEIM subscales evaluate ethnic identity exploration, affirmation, belonging, and commitment to a particular ethnic group. Initially, the scale comprised three subscales: (a) affirmation or belonging, (b) ethnic identity achievement, and (c) ethnic behaviors. The MEIM has been validated with middle school, high school, and college populations, including Mexican American, African American, Chinese, Australian, Armenian, and European American samples in the United States and internationally (Lee & Yoo, 2004; Worrell, 2000; Worrell et al., 2004). However, the validation primarily involved US populations. We are now aiming to extend this research by focusing on a sample from secondary education in Indonesia.

Initially, Phinney (1992) proposed that all items in the Multigroup Ethnic Identity Measure (MEIM) loaded onto a single ethnic identification factor. However, subsequent empirical investigations revealed a two-factor structure. Dandy et al. (2008) identified two distinct yet closely related factors: affirmation, belonging, and commitment (consisting of seven items), and exploration (comprising five items). Notably, even though the MEIM was measured on a two-scale basis in the US sample, Phinney & Ong (2007) viewed group membership as developing over time and occurring when individuals explore, understand, and commit to an ethnic group. Recent studies have corroborated the MEIM's two-dimensional structure (Yap et al., 2014); however, alternative three-factor models have also been described (Fisher et al., 2020; Gaines Jr et al., 2010, 2013). Therefore, it is worth investigating whether a three-scale model may be appropriate in the Indonesian context. The multiplicity of factors identified across diverse samples suggests that the underlying construct of ethnic identity may be composed of several facets, including affirmation or belonging, ethnic identity achievement, and ethnic belonging.

To overcome this disparity and enhance the content and face validity of the scale, Phinney & Ong (2007) established the "Multigroup Ethnic Identity Measure-Revised (MEIM-R)". It comprises two subscales (i.e., "Exploration (3 items) and Commitment (3 items)") and consists of a subset of the 12-item MEIM and one additional item. Additionally, Barry (2002) on the development of an ethnic identity scale for East Asian immigrants demonstrates the importance of considering the multidimensional nature of ethnic identity and its interaction with social and cultural factors. However, one limitation of Barry's study is that it focused specifically on East Asian immigrants, and the results may not be generalizable to other ethnic groups or to non-immigrant populations.

Despite the widespread use of the MEIM-R, "only a handful of research have evaluated its psychometric properties and measurement invariance to establish consistency in the concept of ethnic identity across diverse national and international populations". These findings provided support for an interrelated two-factor construct of investigation and duty (Blozis & Villarreal, 2014; Habibi et al., 2021; Maehler et al., 2019; Musso et al., 2018), unfortunately there were contradictory findings in terms of MI, which is essential for practical comparisons of groups. Musso et al. (2018) and Habibi et al. (2021) reported the presence of MI in a variety of adult European populations and Iranian context, respectively. Maehler et al. (2019) reported that exploration and commitment were moderately positively connected with life satisfaction levels for national (German) identification, but no such correlation was seen for ethnic identity, while Maehler et al. (2019) discovered that after correcting for behaviours, all but one of the impacts of attitudinal ethnic identity were no longer significant, indicating that attitudes were not predictive of responder behavior, even the attitude are important to daily live (Suherman & Vidákovich, 2022).

Overall, these results imply the necessity for continued psychometric testing of the Multigroup Ethnic Identity Inventory (MEI2), especially with secondary student populations. This is crucial in secondary education due to the complex nature of identity formation in adolescents. Adolescents undergo significant developmental changes, making it necessary to ensure the assessment tool accurately measures ethnic identity's nuances. According to Bandura (2013), this theory suggests that adolescents' beliefs about their ability to understand and navigate their ethnic identity can influence their engagement in the process. Robust testing allows for adjustments to account for developmental factors, ensuring the MEI2's validity across diverse student populations. This ongoing evaluation supports its relevance in informing educational policies and interventions aimed at promoting cultural inclusivity and positive identity development among secondary students.

Furthermore, existing research predominantly originates from heterogeneous cultures with extensive immigration histories, such as the United States, Canada, and Europe. However, there remains a dearth of data concerning the Indonesian context. This gap in the literature is compounded by the limited utilization of samples from Italy, the United States, and Canada in evaluating instruments like the MEI2. To comprehensively understand the nuances of ethnic identity within diverse cultural contexts, it is imperative to gather data from a broad spectrum of cultural backgrounds. Instruments developed and validated solely within European countries may not fully capture the complexities of ethnic identity when applied to Asian cultures, including Indonesia.

This study seeks to address these gaps in the literature by examining the psychometric properties of the MEI2 among Indonesian secondary students, representing a diverse array of ethnic backgrounds. By focusing on an Indonesian context that has been relatively understudied in the realm of ethnic identity research, we aim to provide insights that are more representative and inclusive. Additionally, by adapting and validating the MEI2 questionnaire for use in the Indonesian context, we contribute to the development of culturally sensitive instruments that can accurately capture the nuances of ethnic identity within this specific cultural milieu.

Building upon these foundational insights, the primary aim of this study was to assess the psychometric properties of the MEI2 among Indonesian secondary students representing diverse ethnic backgrounds. Our investigation hones in on three key dimensions of ethnic identity - 'affirmation belonging', 'ethnic identity achievement', and 'ethnic belonging' - with the objective of offering a nuanced comprehension of the intricate nature of ethnic identity. These dimensions have garnered considerable attention in prior scholarship as pivotal elements in the development of ethnic identity and its ramifications for individuals' psychological well-being, as well as its interplay with various social and cultural influences. While Phinney & Ong (2007) initially proposed a two-dimensional structure, recent scholarship underscores the importance of considering all three dimensions (Fisher et al., 2020; Gaines Jr et al., 2010, 2013). To achieve this, we evaluated the factor structure and internal consistency reliabilities of the MEI2 questionnaire, which we adapted for use in the Indonesian context. By tailoring the MEI2 questionnaire to suit the Indonesian cultural milieu, we aim to provide insights gleaned from secondary school students across Indonesia, thereby enriching our understanding of ethnic identity within this specific demographic context. Particularly, we formulated the following research questions in this study: (1) Is the MEI2 questionnaire's valid and reliable in a sample of secondary education?; (2) Does the MEI2 questionnaire's meet the model fit criteria?; (3) What is the relationship between a affirmation and belonging, ethnic identity achievement, and ethnic belonging to provide identity among student in secondary education?. Through this approach, our study to enrich the understanding of ethnic identity and its implications for psychological well-being in the Indonesian context, while also contributing to the broader cross-cultural literature on ethnic identity assessment.

2. Theoretical Backgorund

2.1. Affirmation and Belonging

Affirmation and belonging are crucial dimensions in ethnic identity development, significantly enhancing psychological well-being and social integration, particularly among diverse populations. Research by Phinney et al. (2001) highlights that individuals who feel a strong sense of belonging to their ethnic group experience higher self-esteem and greater life satisfaction. This sense of community provides a buffer against the negative effects of societal marginalization. Yip et al. (2008) found that ethnic affirmation can mitigate the stress associated with discrimination, demonstrating its protective role. Additionally, belonging offers a network of

social support essential for emotional and practical assistance, which enhances social skills and cultural competencies, as supported by Umaña-Taylor et al. (2014).

Furthermore, positive reinforcement from one's ethnic group fosters a coherent and positive self-identity. Jones & Galliher (2007) observed that adolescents who receive affirmation from their ethnic community are more likely to develop a strong ethnic identity, maintaining cultural continuity and pride in their heritage. Affirmation also plays a significant role in academic and professional development, with Cokley & Chapman (2008) finding that students who feel affirmed in their ethnic identity are more motivated and perform better academically. Moreover, individuals secure in their ethnic identity are more likely to appreciate and respect diversity, promoting cross-cultural understanding and tolerance, and contributing to a cohesive multicultural society (Verkuyten, 2006).

Affirmation and belonging is scale refers to group membership and attitudes toward the individual's group (Casey-Cannon et al., 2011). In the majority of prior studies, a sense of belonging to an ethnic group and attitudes toward the group have been identified as fundamental components of ethnic identity. Affirmation anf belonging encompasses an individual's emotional and cognitive acknowledgment and acceptance of their connection with a specific ethnic or cultural group (Spencer et al., 2000). It involves experiencing positive emotions and embracing one's association with their ethnic group, often characterized by feelings of pride and positive regard towards their cultural identity. This dimension explores the extent to which individuals affirm and feel positively connected to their ethnic identity. Thus, affirmation activities that specifically emphasize themes of belonging (i.e., affirmation and belonging) are likely to be more effective in mitigating threats than standard affirmation activities, as they more directly address the crucial element of close relationships (Layous & Nelson-Coffey, 2021).

These aspects can be influenced by an individual's attitude (Alpha, 2022). Common self-affirmation exercises involve individuals writing about their significant personal values, which, without explicitly focusing on belonging, help reduce the adverse impact of stressful events on various outcomes, such as academic performance and susceptibility to potentially harmful health information (Layous & Nelson-Coffey, 2021). Critcher & Dunning (2015) research emphasizes that a key aspect of standard self-affirmation exercises involves eliciting memories of close personal connections. Therefore, affirmation practices specifically centered on themes of belonging (referred to as affirmation and belonging) may offer more significant benefits in overcoming hazards than traditional affirmation activities due to their clearer emphasis on social connections. For instance, researchers explored whether affirmation and belonging could enhance outcomes for vulnerable individuals compared to standard affirmation instructions (Hales et al., 2016). This is due to its clear emphasis on social connections, which are vital for overcoming various hazards and enhancing overall well-being. These practices can be particularly beneficial in educational settings where fostering a sense of belonging can lead to improved academic outcomes and greater engagement.

2.2. Ethnic Identity Achievement

Ethnic identity refers to an individual's personal, self-categorizing concept in which they identify with an ethnic group and its cultural identity, beliefs, values, and traditions (Booth et al., 2022). Phinney (1996) characterizes ethnic identity as a lasting, foundational element of one's identity, encompassing a feeling of belongingness to an ethnic group along with the sentiments and perspectives connected to that affiliation. Ethnic identity stands as a crucial component of one's selfhood, encapsulating their affiliation with an ethnic group and its cultural facets. It holds immense importance in shaping an individual's feelings of belonging, self-esteem, and overall welfare.

Neblett Jr et al. (2012) highlight "the significance of cultural assets, such as ethnic identity, for the proper development of ethnically minority youth. Ethnic identity is a multifaceted psychological construct that describes one part of a person's total identity linked with ethnicity" (Rivas-Drake et al., 2014). Identity can be recognized as an understanding that comes on a social basis and is related to one's position in social interaction (Casarez et al., 2022). Ethnic identity is "a multifaceted construct that encompasses components of one's identity derived from categorization with an ethnic group, the amount to which one demonstrates, consolidates beliefs about, and participates with one's ethnic group, and feelings linked with group membership" (Syed & Juang, 2014).

According to developmental research, early to middle adolescence (roughly ages 10 to 16) is a significant time for the formation of ethnic identity (French et al., 2006). Several studies (Blozis & Villarreal, 2014; Brittian

et al., 2015) support the notion that, as a cultural asset, "ethnic identity plays both a protective (e.g., against discrimination and prejudice associated with minority status) and a promotional (e.g., related to higher self-esteem, better academic achievement, and mental health) role in youth's development. However, the majority of this research has been conducted in Western contexts. Very little study has been conducted on Indonesian sample ethnic identification".

Ethnic identity can be measured in various ways, and it is an important aspect of an individual's sense of belonging and self-worth (Gummadam et al., 2016). Identity achievement is the best result of the identity development process; identity diffusion is characterized by a change in meaning or worth towards oneself and a lack of clarity regarding one's place in society, and stems from a failure to resolve identity difficulties (Phinney, 1992). Additionally, ethnic identity achievement is component measures the extent to which individuals feel successful in their ethnic identity and their perception of their accomplishments in relation to their ethnic background (Thompson, 2016). Furthermore, Verkuyten & Brug (2002) stated that ethnic identity achievement pertains to how much individuals have established a confident perception of themselves as part of an ethnic or racial community and comprehend and embrace their ethnicity or race. This means that people who have achieved a strong ethnic identity have a clear understanding and positive acceptance of their ethnic or racial background. The emotional component of ethnic identity is the way an individual feels about their group membership, and it can have significant implications for personal well-being.

2.3. Ethnic Belonging

Belonging to an ethnic group reflects a favorable connection to one's own ethnic community, while achieving ethnic identity involves actively seeking knowledge about one's ethnic background. Engaging in ethnic activities demonstrates involvement in cultural practices, and attitudes towards individuals from different ethnic groups are encapsulated in other-group orientation (Kouli & Papaioannou, 2009; Phinney, 1992). Ting-Toomey et al. (2000) described ethnic belonging as the amalgamation of ethnic customs and principles with other forms of identification. Ethnic belonging refers to the feeling of belonging to a particular ethnic group. It encompasses a sense of attachment, pride, and positive association with one's ethnic or cultural identity (Epstein & Heizler, 2015). Additionally, ethnic belonging signifies "a favorable connection to one's own ethnic group, while ethnic identity achievement involves actively exploring knowledge about ethnic identity. Ethnic practices encompass involvement in ethnic-related activities, and other-group orientation pertains to attitudes and sentiments towards individuals from other ethnic groups" (Kouli & Papaioannou, 2009).

Moreover, Phinney (1992) explained that the aspect of ethnic belonging measures how closely affiliated and at ease individuals feel within their own ethnic community. This sense of belonging stands as a crucial aspect of ethnic identity and holds considerable influence over an individual's overall welfare and social interactions (Epstein & Heizler, 2015). Ethnic belonging differs from other facets of ethnic identity like ethnic identity achievement, which involves actively seeking knowledge about one's ethnic identity, and ethnic practices that encompass participation in ethnic-related activities (Satterthwaite-Freiman & Umaña-Taylor, 2023). It is also linked to other-group orientation, focusing on attitudes and emotions towards individuals from different ethnic backgrounds (Lee, 2005).

With this scale of ethnic belonging, students tend to exhibit several key behaviors and attitudes. Firstly, they are likely to show a higher degree of participation in cultural and ethnic activities, as their sense of belonging encourages active engagement in their community's traditions and practices. This involvement not only fosters a deeper connection to their cultural heritage but also enhances their social networks within their ethnic group. Furthermore, students with a strong sense of ethnic belonging are more likely to experience positive psychological outcomes, such as higher self-esteem and lower levels of anxiety and depression. This is because a strong ethnic identity provides a stable sense of self and a support system, which can buffer against the stressors of daily life and discrimination. Moreover, a robust sense of ethnic belonging can contribute to academic success. Students who feel a strong connection to their ethnic community often benefit from the collective support and encouragement of their peers and family members. This communal support can motivate them to achieve academic excellence and pursue higher education goals.

3. Method

3.1. Participants

Participants were selected from a group of secondary school students (N = 276) from various Indonesian public and private schools. The students were recruited from schools accredited by A in both urban and rural settings. Random class selection was conducted for each grade level. The specific sample included 166 girls (60.1%; Mage = 13.04; SD = 0.79) and 110 boys (39.9%; Mage = 12.85; SD = 0.87). Seventh- to ninth-grade students and 11-15 aged (Mage = 12.96; SD = 0.83) were selected at random from more than ten schools in cities and districts with secondary student in Lampung province, Indonesia. The study was approved by the Institutional Review Board of the XXX (Number: 6/2023) and signed an informed consent form electronically. This study's sample comprised all ethnocultural subgroups of participants (e.g., Javanese, Lampung, Batak, Sundanese), as determined by their responses to the demographic questionnaire. Additionally, private and public schools are part of the sample because in Indonesia, the secondary school system comprises both public and private schools. The inclusion of both private and public schools in the sample can provide a more comprehensive understanding of the educational landscape. Public schools tend to have larger student populations, often catering to a wider range of socioeconomic backgrounds, and follow a standardized curriculum. Conversely, private schools might have smaller class sizes, additional resources, and varied teaching methods due to their independence. Including both types of schools allows researchers to capture diverse perspectives, teaching methodologies, and resources available to students in different school environments. Including both types of schools in the sample allows researchers to capture diverse perspectives and educational approaches, offering insights into how different environments may influence students' ethnic identity and academic experiences. Table 1 shows the demographics of the participants.

Table 1
Demographic Characteristics of the Participants in this Research

Demographic		Frequency	Percentage (%)
Gender	Female	166	60.1
	Male	110	39.9
School Category	Private	187	67.8
	Public	89	32.2
Living Place	City	159	57.6
	District	117	42.4
Ethnic group	Batak	21	7.6
	Java	175	63.4
	Lampung	47	17.0
	Sunda	33	12.0
Religions	Budhist	8	2.9
	Catholic	9	3.3
	Hindu	6	2.2
	Moslem	231	83.7
	Protestant	22	8.0

3.2. Instrument

The MEI2 was developed by Phinney (1992) and Kouli & Papaioannou (2009) and some questions was developed by researchers. The development of questions or items by researchers is because that we need to assess and understand various aspects of ethnic identity and its impact on psychological adjustment, academic achievement, and the holistic formation of ethnic identity among individuals. The items consist of 21 items and comprise three subscales, i.e., affirmation and belonging (5 items), ethnic identity achievement (7 items), and ethnic belonging (9 items). All items constructed were measured independently. Each item was placed on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). The measure was translated from English into Indonesian language. The subscale was selected based on their recognized significance in understanding the complexities of ethnic identity in secondary education. Our literature review emphasizes their importance in students' academic and socio-cultural experiences. Focusing on these subscales allows

for a more nuanced exploration of ethnic identity intricacies in our research context, providing clarity in the revised introduction to enhance transparency in our research design.

Affirmation and belonging: In the affirmation and belonging, the five items scale are: (1) "I have a lot of pride in my ethnic group and its accomplishments", (2) "I feel a strong attachment towards my own ethnic group", (3) I feel good about my culture or ethnic background (Phinney, 1992). Ethnic Identity Achievement: This subscale comprises 5 items. The following are examples of ethnic identity achievement items: (1) "I have spent time trying to find out more about my own ethnic group, such as its history, traditions, and customs", (2) "I have a clear sense of my ethnic background and what it means for me", (3) "I think a lot about how my life will be affected by my ethnic group membership" (Phinney, 1992). Ethnic Belonging: This subscale consists of nine items, each of which is detailed below. Three of the following things were discovered to be accurate in the actual inventory: (1) "I like keeping the traditions of the heritage of my ethnic group", (2) "The values of my ethnic groups determine my life", (3) "In general, belonging to my ethnic group is an important part of my self-image" (Kouli & Papaioannou, 2009). Additionally, some questions which are developed by researchers: "I know about being traditional fabric cloth, such as Tapis Lampung" and "I know the values of Tapis Lampung, such as economy, culture, story".

3.3. Data Analysis

Statistical Package for the Social Sciences (SPSS) version 25 and partial least squares structural equation modeling (PLS-SEM) in SmartPLS v4 will be used to analyze the findings of this questionnaire's data collection. Confirmatory Factor Analysis (CFA) was done to evaluate the measurement model's fit (Jomnonkwao & Ratanavaraha, 2016). Following the CFA, "we utilized the chi-square test, comparative fit index (CFI), Tucker–Lewis index (TLI), root mean square error of approximation (RMSEA), standardized root mean square residual (SRMR), and Kaiser–Meyer–Olkin (KMO)" index to evaluate the model's fit (Kline, 2015). The degrees of freedom and p-value of the chi-square statistic are represented numerically. We examined Cronbach's alpha and composite reliability after finishing the CFA to establish the overall reliability of the research. "Internal consistency reliabilities (Crbα; Cronbach's alpha) and composite reliabilities (ω; McDonald's coefficient omega; Raykov (1997)) were calculated to evaluate dependability. As indicated by Habók & Magyar (2018), values larger than 0.70 imply positive results for empirical study".

The construction validity and discriminant validity tests were then used to evaluate a measurement model's construct validity. It is important, when examining the convergence of a theoretical model, to evaluate the level of connection between the model's components. When the sum of all elements within a single build is more than 0.70, the construct is considered confirmed. According to the requirements, "the construct reliability (CR) for each construct must above 0.70, and the average variance extracted (AVE) must exceed 0.50. Lower values are allowed only if the CR value is greater than 0.60 (Fornell & Larcker, 1981). In addition, we used HTMT as a discriminant validity criterion, which we derived by comparing to a fixed value. Acceptable as a criterion for discriminant validity eligibility is a cutoff value of 0.90" (Kline, 2015).

4. Results

4.1. CFA

CFA is "used to validate latent factors in the measurement model, indicating that all latent factors are operating successfully and achieving GoF indices. To assess model fit, a CFA diagram was produced in the measurement model using the pattern matrix builder plugin created by Gaskin & Lim (2016). In this structure model, single-headed arrows represent supposed one-way paths, and double-headed arrows represent the correlation between two variables. A circle symbolizes a latent variable (for example, a questionnaire factor), while a rectangle represents an observable variable (i.e., questionnaire item). The little circles on the graph represent the measurement errors for each of the measured metrics". Consequently, KMO was .885. Subsequently, in the loading factor was less than 0.40. It is usual practice, according to Tabachnick et al. (2007), to utilize a lower constraint on item factor loading to determine whether to keep or remove items from the database. Following a main component analysis, values below 0.40 were excluded from further research. A number of database entries with a value less than 0.40 were removed. This matched the 0.4 threshold value established by social scientists (Straub et al., 2004; Suherman & Vidákovich, 2022). We investigated the data using modification indices and covariance on items with values greater than 5 inside the same factor in order to get model fit and improve the CFA model's reliability. Modifications to the optimal measurement model include covarying error components that belong to the same factor (Hermida, 2015). The model fit was

improved (χ^2= 227.671; χ^2/df = 149; p = < .001; CFI = .978; TLI = .975; RMESA = .044, and SRMR = .075). Figure 1 will potentially lead in a fit CFA diagram, Table 2 is about loading factor of items, which is a diagram that has been modified.

Table 2
Loading scores items

| Item Code	Questions	Loading Factor
Affirmation and Belonging		
AB1	I am happy that I am a member of the group I belong to.	.681
AB2	I have a strong sense of belonging to my own ethnic group.	.734
AB3	I have a lot of pride in my ethnic group and its accomplishments.	.739
AB4	I feel a strong atachment towards my own ethnic group.	.753
AB5	I feel good about my culture or ethnic background.	.657
Ethnic Belonging		
EA1	I have spent time trying to find out more about my own ethnic group, such as its history, traditions, and customs.	.693
EA2	I have a clear sense of my ethnic background and what it means for me.	.707
EA3	I think a lot about how my life will be affected by my ethnic group membership.	.650
EA4	I undesrtand pretty well what my ethnic group membership means to me, in term of how to relate to my own group and other groups.	.686
EA5	In order to learn more about my ethnic background, I have often talked to other people about my ethnic group.	.619
Ethnic Identity Achievement		
EB1	I like keeping the traditions of the heritage of my ethnic group.	.642
EB2	The values of my ethnic groups determine my life.	.587
EB3	In general, belonging to my ethnic group is an important part of my self-image.	.710
EB4	The values of my ethnic groups are important for my judgment about what I have to do.	.677
EB5	The cultural traditions of my ethnic group absolutely express me.	.673
EB6	I know about being traditional fabric cloth, such as Tapis Lampung.	.542
EB7	I know about being Tapis Lampung motif, such as Jung Sarat motif, Mountain Motif, Flaura and Fauna motif, Pucuk Rebung motif.	.668
EB8	I know about the process of making Tapis Lampung	.596
EB9	I know the values of Tapis Lampung, such as economyc, cultur, story.	.677
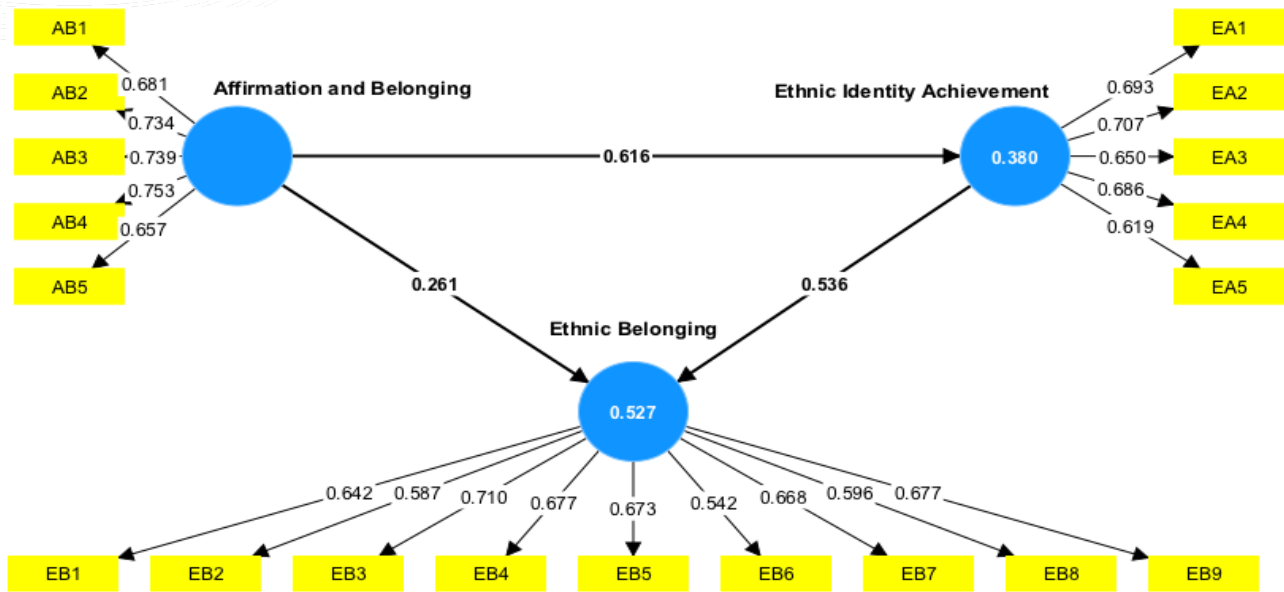
Figure 1. CFA graph for MEI2

4.2. Reliability

The calculation of each subscale's internal consistency as well as its dependability was a required skill (Table 3). The reliability has been calculated with values for the 3-subscales has ranged between 0.64 and 0.85, which indicates that their reliabilities on each were satisfactory. The consistency reliability was calculated using Crbα, and the composite reliability was calculated using ω. Both methods were used to calculate the reliability.

Table 3
Internal consistency reliability and composite reliability

Estimate	McDonald's ω	Cronbach's α
Affirmation and Belonging	0.76	0.76
Ethnic Identity Achievement	0.64	0.69
Ethnic Belonging	0.83	0.85

The reliability of the affirmation and belonging subscale was the greatest (Crbα = 0.76; ω = 0.76); similarly, the reliability of the ethnic belonging subscale was also high (Crbα = 0.85; ω = 0.83). Cronbach's alpha and omega coefficients were also acceptable for ethnic identity achievement (Crb α = 0.69; ω = 0.64). The overall dependability statistics of MEI2 indicate that the employed instrument is very dependable.

4.3. Convergent Validity

The use of convergent validity allowed for the examination of the relationship that existed between a number of variables that were all contained inside a single construct of an instrument. In other words, convergent validity was achieved when there was a significant degree of correlation between the variables that were contained within a factor. In order to ensure that this study maintains convergent validity, it is important to compute the CR and AVE (Table 4).

Table 4
Convergent validity measurement

Factors	CR	AVE
Affirmation and Belonging	0.76	0.39
Ethnic Identity Achievement	0.70	0.32
Ethnic Belonging	0.82	0.33

The convergent validity using the AVE results, three-factors had values between .32 and .39. Contrastky, the CR values for 3-factors were more than .60. Since the convergent validity of the construct was supported by CR values above .60 across all components, the lower limits of the validity range are likewise accepted (Fornell & Larcker, 1981; Malhotra & Dash, 2011). Convergent validity of the study was also established.

4.4. Discriminant validity

On the basis of the results of a discriminant validity test, it was determined whether latent factors differ empirically (Hair Jr et al., 2021). "Fornell-Larcker criterion was utilized to establish discriminant validity" (Henseler et al., 2015). Table 5 provides an overview of the outcomes. The range of results was from 0.591 to 0.696. This means that all values below 0.90 have been certified as having discriminant validity (Hair et al., 2010; Henseler et al., 2015). We also perform of the correlation between variables in term of path coefficients.

Table 5
Fornell-Larcker criterion for three-factors

|	AB	EB	EA
AB	.714		
EB	.591	.644	
EA	.616	.696	.672

Note: AB, Affirmation and Belonging; EA, Ethnic Identity Achievement; EB, Ethnic Belonging. "All correlations are significant at *p* < .01".
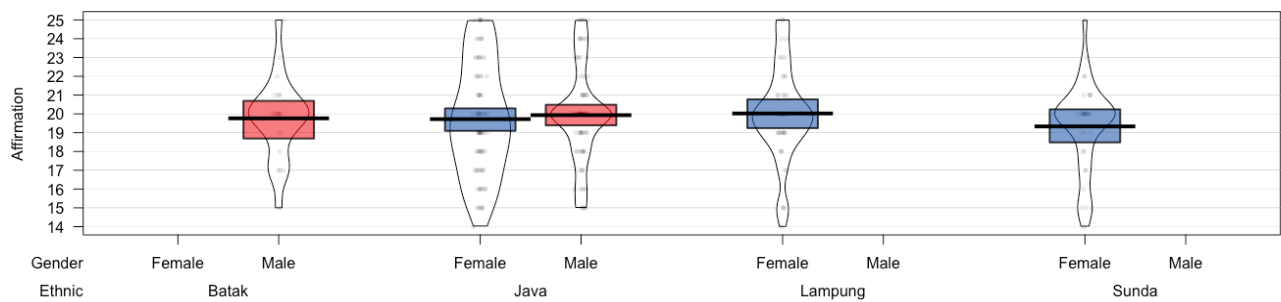
Table 6
Post-hoc minimum sample size

Correlation	Path coefficients	*p*
Affirmation and Belonging -> Ethnic Belonging	.261	< .001
Affirmation and Belonging -> Ethnic Identity Achievement	.616	< .001
Ethnic Identity Achievement -> Ethnic Belonging	.536	< .001
Affirmation and Belonging -> Ethnic Identity Achievement -> Ethnic Belonging	.330	< .001
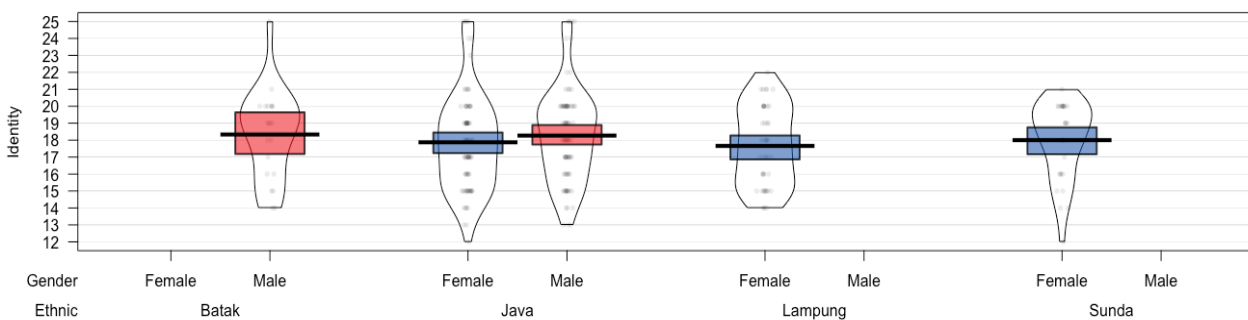
(a)
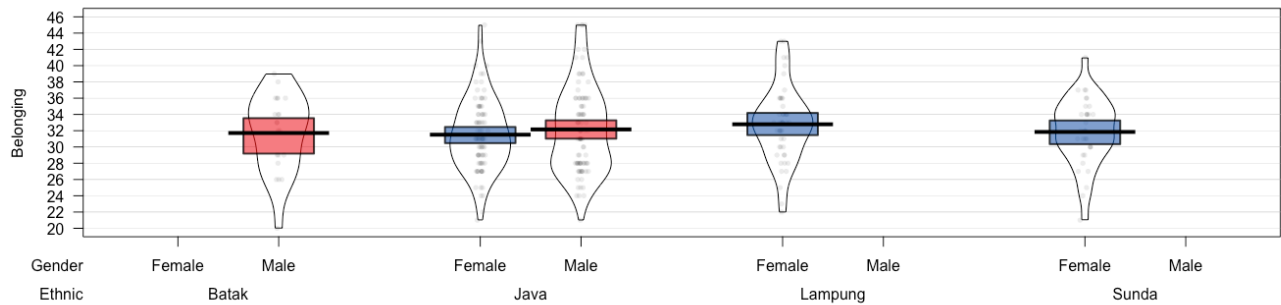
(b)

(c)

Figure 2. Students' performance on ethnic identity variables. (a) Students' performance on Ethnic Identity Achievement variable, (b) Students' performance on Ethnic Belonging variable, (c) Students' performance on Affirmation and Belonging variable.

In Table 6, a significant positive relationship was observed between affirmation and belonging and ethnic belonging (β = .261, p < .001). Furthermore, there were positive correlations noted between affirmation and belonging and ethnic identity achievement, as well as between ethnic identity achievement and ethnic belonging, with approximately (β = .611, p < .001) and (β = .536, p < .001), respectively. Moreover, the total direct effect for the three variables amounted to (β = .330, p < .001).

5. Discussion

This is a scientific breakthrough from our investigation into the psychometric characteristics of the MEI2 administered to a sample of ethnically diverse junior high school students in Indonesia, as far as we are concerned. In accordance with earlier research (e.g., Chakawa et al., 2015; Habibi et al., 2021; Miyoshi et al., 2017). In the Indonesian context, we have established three distinct factors: CFA, reliability based on Cronbach's α and McDonald's ω, validity based on CR and AVE, and discriminant validity. Moreover, the results of this investigation validated MEI2 for the three commitment subscales. In general, it was determined that the scale was reliable and valid for all genders and secondary pupils. "This study fulfills an essential function, as ethnic identity plays a crucial part in proper development and excellent youth activities" (Di Miceli, 2023; Rivas-Drake et al., 2014). By confirming the reliability and validity of MEI2 in the Indonesian context, we provide a robust tool for educators and researchers to better understand and support the ethnic identity development of students. This, in turn, can inform interventions and educational strategies that promote inclusivity and equity in diverse educational settings (Killen & Rutland, 2022). Furthermore, our findings underscore the importance of culturally sensitive psychometric tools in accurately capturing the nuances of ethnic identity across different cultural contexts, thereby contributing to the global discourse on youth development and educational psychology (Larson, 2000).

In this study, the MEI2 questionnaire was accepted and then verified in the context of an Indonesian secondary school student sample utilizing the CFA. The objective is to bridge the gap between the conceptual ideas and the development process. Following the CFA accomplished in this study, it was found that a three-factor model with two Ethnic Identity Achievement components deleted should be employed (i.e., "I am not very clear about the role of my ethnicity in my life" and "I really have not spent much time trying to learn more about the culture and history of my ethnic group"). Because the loading factors are less than 0.5, the eliminations have occurred. This low correlation can introduce noise and reduce the precision of the measurement, making the results less reliable. By removing these items, the overall internal consistency and construct validity of the questionnaire are enhanced. This practice is supported by previous research, such as Roberts et al. (1999) validation studies on the MEIM, where items with low loadings were recommended for removal to better capture the construct of ethnic identity. Similarly, general principles of psychometric evaluation, as discussed by scholars like Olatunji et al. (2007), emphasize that eliminating poorly performing items leads to a more accurate and interpretable measure. This ensures that the MEI2 questionnaire effectively assesses ethnic identity among Indonesian secondary school students, providing more reliable and valid results for research and practical applications. Furthermore, the MEI2's construct validity was confirmed by the moderate. But statistically substantial relationships exist between its total and subscale scores and subjective well-being measures (e.g., "positive affect, negative affect, and life satisfaction"). All associations were in the expected direction, thereby confirming the validity of previous research (D'hondt et al., 2016; Lal & Majumdar, 2023; Maehler et al., 2019; Phinney, 1992; Roslidah et al., 2017).

Our research established the reliability of an MEI2-representative scale in Indonesian, taking finance into account. However, it is essential to conduct a new examination into the instrument's measurement properties, as the scale may be applied to a wide range of groups. The sample in question might exhibit diverse structural traits and strategy categorizations, which will depend on the outcomes of these further investigations. Structural traits are determined to varying degrees across different samples, influenced by cultural, socio-economic, and contextual factors.

In psychological research, ensuring the cross-cultural validity of an instrument like the MEI2 is critical. Ethnic identity is a complex construct that can manifest differently in various cultural contexts. For instance, Phinney (1992) model of ethnic identity formation emphasizes the role of socio-cultural environments in shaping ethnic identity. This model supports the need for ongoing validation to ensure the instrument's accuracy in different settings. Measurement invariance, as highlighted by Meredith (1993), is crucial for confirming that the instrument functions equivalently across different groups. Without this, comparisons across groups may be invalid, leading to erroneous conclusions. Cheung & Rensvold (2000) further underscore the importance of assessing measurement invariance to ensure reliable cross-cultural research outcomes. Previous studies, such as Phinney & Ong (2007) review of ethnic identity, highlight the dynamic nature of ethnic identity and the necessity for adaptable instruments. They stress that instruments must be sensitive to cultural differences to capture the true essence of ethnic identity. This necessitates continuous validation efforts to refine and adapt the MEI2, ensuring it remains relevant and accurate.

6. Conclusions

In conclusion, our study demonstrates that the MEI2 is a viable instrument for assessing the correlates of ethnic identification among Indonesian secondary students from varied ethnocultural backgrounds. At this stage, only comparisons of MEI2 commitment ratings are valid, although exploration values should be compared between groups with consideration. Therefore, additional research on this popular measure is required. This research examined the MEI2's reliability, convergent validity, discriminant validity, and factor structure. Overall, we discovered that the MEI2 is a reliable instrument with high psychometric qualities, and thus it can be utilized more frequently in the Indonesian context. In addition, this study utilizes a restricted definition of ethnicity based on language, which contributes to multicultural research and expands the body of literature on ethnic identity. We believe that this study will lead the way for future research evaluating the MEI2 and other similar measures of ethnic identity among different and understudied ethnic groups.

7. Limitation and Future Research

The majority of participants were recruited using Internet social networking sites and other social media, restricting the scope of the study to persons with the means, interest, and education to use the Internet. Due to the absence of an accomplishment category, we were unable to identify the amount to which participants interacted with the learning achievement. In spite of this, because ethnic identity evolves gradually during

adolescence and young adulthood via the processes of exploration and commitment, it is not possible to predict ethnic identity (Habibi et al., 2021). Due to the limited sample size of our study, we encourage researchers to utilize the MEI2 item with caution when evaluating the biggest populations in Indonesia. This is especially important if the research subjects are connected to gender in any manner, as our study did not show that gender may play a substantial role as a mediator variable. Importantly, Phinney & Ong (2007) confirm that the 6-item MEIM-R version of this measure covers the basic characteristics of ethnic identity. In order to generate an administration-friendly version, future study might explore the psychometric properties of the 6-item MEIM-R in the Indonesian environment.

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Declaration of Competing Interest
No conflict of interest exists.

CRedIT
Suherman Suherman: Conceptualisation, Data collection and management (data curation), Formal analysis, Validation, Research, Methodology, Writing the original draft. **Tibor Vidákovich**: Acquisition of funding, Project management, Resources, Software, Supervision, Visualisation, Writing (revision and editing).

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