

DEVELOPING SOCIAL-EMOTIONAL COMPETENCE INSTRUMENTS FOR INDONESIA'S GEN Z: A CROSS-SECTIONAL VALIDATION STUDY

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Abstract:

Social and emotional competence is essential for the well-being Gen Z. Existing measurement instruments for social and emotional competence are still limited to certain areas and cannot be generalized in measuring Gen Z in Indonesia. This study aims to validate and examine the psychometric properties of a contextually and culturally relevant instrument for measuring social and emotional competence among Indonesian Gen Z. The instrument construct was developed based on five competencies of the Collaborative for Academic, Social, and Emotional Learning (CASEL) consisting of self-awareness, self-management, social awareness, relationship skills, and responsible decision-making. The sample involved 353 students in Malang, Indonesia. Construct validity was analyzed using exploratory and confirmatory factor analysis (CFA) via AMOS 25.0. The results showed that the social-emotional competency measurement had met the goodness-of-fit criteria with the results 1) $\chi^2/df = 1.52$; 2) RMSEA = 0.038; and CFI = 0.95. The validated SECI is a reliable tool for assessing the social and emotional competence of Gen Z.

Keywords: social-emotional competency, instruments, indonesia's Gen Z, cross-sectional validation

Introduction

Social and emotional competence is crucial for youth growth. Improving social and emotional competencies is a priority for educators and school policy (Bishop, 2023). Social emotional competence (SEC) means knowing how to understand and handle your own feelings and being able to fit in with others so you can grow in both personal and social ways (Elias, 1997). This competence involves several dimensions with a variety of skills and ways of thinking to achieve intrapersonal and interpersonal well-being (Lee & Junus, 2023). Social and emotional competence has a significant role in developing individuals' abilities to manage themselves and adapt to their peers and the social situations, as well as students' parent-child relationships, teacher-student relationships, and peer relationships (Lin et al., 2024). CASEL (The Collaborative for Academic, Social, and Emotional Learning) identifies five dimensions of social-emotional competence, which comprise assertiveness, tolerance, social regulation, emotion regulation, and emotional awareness (Collie et al., 2024). Kim investigates the levels of social-emotional competence of critical thinking disposition, self-directed learning, creativity, emotional intelligence, problem-solving, and collaboration (Kim & Shin, 2021). Kula identifies social and emotional competence as having the ability to identify feelings, regulate behavior, build positive relationships, make responsible decisions, communicate effectively, resolve conflicts, set and achieve goals, and handle challenging situations appropriately (Kula & Coffee, 2012). Social and emotional competence also includes self-awareness, social awareness, self-management, relationship skills, and responsible decision-making (Roth, J. C., & Erbacher, 2021); ((Hoffman, 2009); ((D'URSO et al., 2023); (Domitrovich et al., 2017). Enhancing social and emotional development is substantial for motivating Gen Z to learn, improving

academic achievement, adopting active learning, and advancing their social and emotional development (Esen-Aygun et al., 2017). Social-emotional competence is an important component of resilience to trauma exposure and predicts increased problem behaviors, such as delinquency and substance use (Hutchison et al., 2020). Teachers and parents play a critical role in teaching and improving youths' abilities in managing emotions and social skills.

Over a period of 20 years, 25 assessments were identified to measure social and emotional competencies developed in the USA, Brazil, Canada, Spain, and Singapore (Martinez-Yarza et al., 2023). Zhou developed a social-emotional competency questionnaire (SECQ) with 27 items that have been tested for validity and reliability. Social and emotional competencies have also been developed in Asia by modifying the Defining Issues Test (DIT) for secondary school students in Singapore (Ee, 2014).

Some developments of social and emotional competence instruments were only tested in certain areas and races. Thomas' (2023) research using the Social Competence Scale-Teacher edition (SCS-T), which assessed children's social-emotional competence in diverse contexts, revealed differences between the samples of children from Pakistan and Sweden. Vikhman's research, which validated the 48-item Questionnaire of Social-Emotional Competence of the Personality (QSECP) as a reliable tool for assessing socio-emotional competence, still considered some scales inadequate for measuring social-emotional competence. Thus, a new questionnaire was needed (Vikhman et al., 2022). Lozano-Pena, who developed four models of social-emotional competence and one model with available scales, argued that clear guidelines are needed to conceptualize social-emotional competence (Lozano-Peña et al., 2021a). The Social Emotional Competence Questionnaire (SECQ), which covers five dimensions of social emotional competence, such as self-awareness, social awareness, self-management, relationship management, and responsible decision-making, with 25 statement items, has good internal consistency and predictive validity with student standardization in America (Zhou & Ee, 2012).

The members of Generation Z (Gen Z), who were born after the year 2000 and are ages 15 to 18, are capable of using technology, yet they are also very emotional (Collantes G. & Jerkovic, 2024). Gen Z faces significant challenges, which can reduce face-to-face interactions and hinder the development of important social and emotional skills. Reliance on social media can lead to increased anxiety and depression, which negatively impacts their ability to build deep relationships (Twenge, Jean, 2017). Damayanti's research shows the results of an analysis identifying risk factors for mental health among students in Indonesia, including academic pressure, poor time management, heavy workloads, and lack of social support (Damayanti & Satria, 2025). As a result, some Gen Z members may have difficulties in communicating effectively and managing their emotions in social situations (Fadillah, 2025). Research by Primack et al. suggests that excessive social media use may be associated with feelings of loneliness and isolation, further exacerbating challenges in understanding nonverbal cues that are important in human interactions (Primack et al., 2017). Therefore, it is important to provide appropriate support and training to help Gen Z develop their social and emotional competence in an increasingly digitally connected world.

The ability of Gen Z to manage emotions and social has not received attention from teachers and parents. Schools need to establish safety and mental health programs that promote prevention and early intervention, support learning and academic achievement, and improve students' social-emotional competence (Roth, J. C., & Erbacher, 2021). Schools in Indonesia still prioritize academic performance (Indrahadi & Wardana, 2020) and grade achievement, rather than teaching the ability to manage emotions and build social relationships with the environment. Teachers and the environment have not realized the importance of Gen Z having proper social and emotional competence, even though the positive and negative impacts of academic emotions affect attention, engagement, motivation, and academic achievement, even positive academic emotions can predict students' cognitive skills (Hachem et al., 2022). Increased social-emotional development becomes important in motivating Gen Z to learn, improving academic achievement, and adopting active learning that advances (Pham, 2024). Gen Z requires assistance in developing social-emotional skills and handling new demands in school and social life and emotional intensity through help from adults (Jones et al., 2017). Social-emotional competence is an important component of resilience to trauma exposure and predicts increases in problematic behaviors such as delinquency and drug use (Lozano-Peña et al., 2021b).

The development of social and emotional competence has not yet become a major concern in schools, even though a lot of literature has shown that social-emotional learning has a positive impact on the social-emotional competence of Gen Z and schools (Youngblood, 2015). Schools play an important part in implementing mental health and safety programs that can promote prevention and early intervention for Gen Z development. That can support the learning process and improve academic achievement as well as support the improvement of students' social-emotional competence (Roth, J. C., & Erbacher, 2021). James and Kahn explain that learning centers need to collaborate socially, emotionally, cognitively, linguistically

and academically so that academic teaching could be integrated with social-emotional competence and will encourage youth success (Roth, J. C., & Erbacher, 2021).

The positive and negative impacts of academic emotions have an effect on attention, engagement, motivation, and academic achievement. Positive academic emotions could even predict students' cognitive skills (Hachem et al., 2022). School counselors, teachers, principals, and policy makers in schools need to take part in understanding the level of Gen Z' social and emotional competence so as to provide appropriate social and emotional learning so that they can teach and develop Gen Z's social and emotional competence appropriately. In order to improve social and emotional competence, a social and emotional competence measurement assessment is needed. Thus, the competences that need to be improved in learning activities can be identified. Measurements are conducted to be able to map the need for social and emotional competence improvement in schools.

Based on practical considerations, this research attempts to develop a social and emotional competence measurement that examines the quality of the measurement in terms of validity and reliability. Measurement development needs to be adapted to the Indonesian educational context, which is influenced by culture, ethnicity, identity, and habitual learning and teaching processes (Ikasari, Wipsar, Siwi, 2019). The development of the measurement will refer to the competencies dimensions of SEL developed by CASEL (Roth, J. C., & Erbacher, 2021): self-awareness, self-management, social awareness, relationship skills, and responsible-decision making. This study aims to develop and validate a contextually and culturally relevant instrument for measuring social and emotional competence among Indonesian Generation Z.

METHOD

Study Design

Instrument development was conducted by considering instrument construction procedures. The stages of instrument development included identifying the dimensionality of the construct, determining the questionnaire distribution format, determining the item format, develop the item development, expert testing, and preliminary pilot testing (Tsang et al., 2017). The study was approved by the research ethics committee at Yogyakarta State University (No. T/55/UN34.9/PT.01.04/2025).

The instrument development process aligns with the theory and procedures in psychometric measurement tool development. The use of the Tsang model ensures that the resulting instrument is truly relevant, valid, and suitable for use in the Indonesian educational context. The systematic flow of instrument development: identify the dimensionality of the construct, determine the questionnaire distribution format, determine the item format, item development, and determine the length of the questionnaire. After the instrument development process, item review and revision (2 experts), preliminary testing (N= 353 students), validity and reliability were carried out to produce a valid and reliable instrument.

Identification of the dimensionality of the construct was conducted by reviewing theories regarding the concept of social emotional competence and various social emotional competence measurement instruments. The instrument's draft was developed based on the basic theory of social emotional competence consisting of 5 dimensions of social emotional competence discussed by Roth: self-awareness, self-management, social awareness, relationship skills and responsible decision making (Roth, J. C., & Erbacher, 2021). The theoretical construct was then described in more operational terms, which were developed into indicators. Indicators became a reference in instrument development.

In the second stage, the determination of the questionnaire distribution format was implemented, using an online cross-sectional. The sample consisted of a total sample of five schools in the city center with students aged 15 to 18 years. The questionnaire distribution was carried out by counselors at school and given to students via a Google Form link. The counselors accompanied the students in completing the social and emotional competence instrument form. The social and emotional competence instrument used statements with closed answers utilizing a Likert scale with 4 responses, namely a score of 1 for "not appropriate" to 4 for "very appropriate".

At the item development stage, statements were determined or questions were written containing the dimensions of social-emotional competence being developed. The statement items were structured simply, concisely, and in easy-to-understand language for senior high school students. The statement items prepared must be easy for students to understand and could measure students' social-emotional competence. The results of the instrument development generated 50 positive statement items to measure competence achievement, consisting of self-awareness described in 14 items, social awareness described in 8 items, self-management described in 11 items, relationship skills described in 8 items and responsible

decision-making described in 9 items. Based on social-emotional competence, the preparation of the instrument grid was carried out, which was then described in the instrument items, also called a blueprint. Initial item review and revision involved qualified experts in reviewing the items. Items were reviewed by experts to ensure they are accurate, free of instrument bias, and grammatically correct. The instrument's draft went through a content validity testing process by involving professional/expert judgment. The analysis was conducted using two methods, i.e. the qualitative method by revising the language structure so that it is easy for students to understand, and the quantitative method by using the inter-rater agreement calculation developed by Gregory.

At the preliminary pilot testing, it was suggested to run a pilot test of the questionnaire on a small sample of about 30 students to determine the ease of the items for respondents and get respondents' suggestions for item improvements. Questionnaire items that have received feedback would be revised to obtain items ready to be tested on a larger scale. At the initial validation stage, a pilot test was conducted by distributing the instrument to the targeted respondents for initial validation. In a pilot test with a representative sample and a large number of respondents, reliability is considered as a form of consistency in measuring the same construct.

Data Analysis

At the review and revision stage involving 2 experts, they provided suggestions for revising the statement items so as not to cause bias and double interpretation, rearranging the sentence structure to make it easier for students to understand and revisions to increase the clarity of statements for students. The results of the assessment scores given by each expert assessed the representativeness of the content on a scale of five with a content validity score of 0.68. Based on Gregory's classification criteria, content validity criteria: 0.8–1: Very high validity; 0.6–0.79: High validity; 0.40–0.59: Moderate validity; 0.20–0.39: Low validity and 0.00–0.19: Very low validity (Gregory, 2016). Thus, the social and emotional competence instrument was included in the high validity category.

The measurement of validity and reliability of the instrument was obtained from the instrument distribution in 353 students. The respondents consisted of 54.1% female students and 45.9% male students. Confirmatory factor analysis was conducted on the data to obtain evidence of construct validity in order to get an assessment of suitability with a sample of Gen Z. An instrument reliability test was also performed on the data.

Before conducting Confirmatory Factor Analysis (CFA), the researchers wanted to revalidate the instrument using Exploratory Factor Analysis (EFA). Osborne (2014) suggested that EFA be carried out on adaptation measuring tools to provide more convincing empirical evidence regarding the number of construct factors in different samples.

RESULTS

Exploratory Factor Analysis (EFA)

Selecting Variables

This stage is the initial stage in factor analysis. At this stage, two things need to be done before performing factor analysis. The first is to determine the value of Bartlett's Test of Sphericity which is used to determine whether there is a significant correlation between variables. The second is the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy which is used to measure sample adequacy by comparing the magnitudes of the observed correlation coefficients to the magnitudes of the partial correlation coefficients.

TABLE 1 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.935
Bartlett's Test of Sphericity	Approx. Chi-Square	14781.328
	df	1176
	Sig.	0.000

The calculation result in Table 1 showed that the value of Bartlett's Test of Sphericity is 14781.328 with a significance of 0.000. It meant that there is a significant correlation between the observer variables. The KMO calculation result of 0.94 showed that the sample adequacy is in the good category so that factor analysis can be continued. As a requirement for CFA testing, Kaiser-Meyer-Olkin (KMO) and Bartlett's for the correlation between the desired variables are above 0.5 and the research significance level is below 0.05 (Osborne et al., 2011).

Factor Extraction

In the next stage, factor extraction analysis was performed. Factor extraction involves determining the smallest number that can be used to represent the interrelationships between variables (Swanson, Richard A; Holton III, 2015). As stated by Swanson, factor extraction is a method used to reduce data from several indicators to obtain factors in a smaller number so that it can explain the relationship between the observed indicators. The method used for factor extraction in this research was principal axis factoring. In the total variance explained table, several values were obtained that could show the contribution of the variation of a factor able to explain the variation of the total factor as a whole (Williams et al., 2010). Initial Eigenvalues higher than one were shown in factors 1-5. These five factors were able to explain 59.959% of the variation in the total factors. The first factor was able to explain 36.274% of the total variance. The second factor was able to explain 9.753% of the total variance. The third factor was able to explain 5.570% of the total variance. The fourth factor was able to explain 4.398% of the total variance. The fifth factor was able to explain 3.963% of the total variance. The results of the total variance explained had not yet become a benchmark value for the results of factor analysis because further analysis must be carried out. Table 4 shows the results of this analysis.

TABLE 2 Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% Variance	of Cumulative %	Total	% Variance	of Cumulative %	Total	% Variance	of Cumulative %
1	17.774	36.274	36.274	17.774	36.274	36.274	6.935	14.153	14.153
2	4.779	9.753	46.027	4.779	9.753	46.027	6.619	13.509	27.662
3	2.730	5.570	51.598	2.730	5.570	51.598	5.990	12.224	39.886
4	2.155	4.398	55.996	2.155	4.398	55.996	5.828	11.893	51.779
5	1.942	3.963	59.959	1.942	3.963	59.959	4.008	8.180	59.959

Based on Table 2, there are five main factors from Exploratory Factor Analysis (EFA) with a total variance explained by the five factors of 59.96%, which is quite good in instrument development in psychology (generally >50% is sufficient). The scores for each competency indicate that the five factor structures align with the data and support the CASEL theory (which indeed has five core competencies).

Factor Rotation

In the next stage, the researchers conducted factor rotation. The rotation technique employed was varimax rotation. Costello and Osborne (2005) explained that a factor structure is considered fit when it has a factor loading higher than 0.3 so that there are no cross-loadings and one factor has a minimum of three items (Osborne et al., 2011). Based on the analysis results, five factors were formed that had a factor loading of >0.3.

The validity test of five competencies in SECI for Gen Z employed confirmatory factor analysis. The analysis was performed using a covariance matrix, and the resulting solution was based on maximum likelihood estimation. The developed SEC instrument obtained responses on five SEC's competencies labeled SA for self-awareness, SM for self-management, SAW for social awareness, RS for relationship skills and RDMB for responsible decision-making. Each item developed would show a relationship.

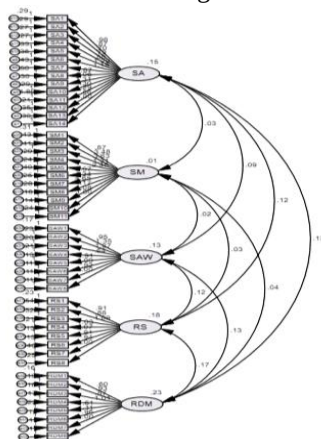


FIGURE 1 Confirmatory factor analysis (CFA) results for the five-factor SECI Original Instrument (N = 353)

The analysis is performed using a covariance matrix and the resulting solution is based on the estimated maximum probability. Multiple criteria were used in determining the goodness of fit to the data for this hypothesized structure, including the chi-square degree of freedom ratio (χ^2/df), the comparative fit index (CFI), the incremental fit index (IFI), and the root mean square error of approximation (RMSEA). χ^2/df less than 3.0 indicates a good model fit; CFI and IFI values near 1.0 are optimal, with values greater than .90 indicating acceptable model fit (Ridwan et al., 2023). Meanwhile, the RMSEA values less than .05 indicate a good fit, with values as high as .08 representing reasonable errors of approximation in the population (Cudeck & Browne, 1992).

Basic CFAs in Figure 1 and internal consistencies as shown in Table 3, initial testing of the hypothesized model for this group yielded a marginally good fit as indicated by the following criteria: $\chi^2 = 3344.50$ ($df = 1117$, $p < .001$), $\chi^2/df = 2.99$, RMSEA = 0.075, CFI = 0.73, IFI = 0.73. For self-awareness (SA), social awareness (SAW), self-management (SM), relationship skill (RS) and responsible decision-making (RDM), the Cronbach's alphas were 0.73, 0.80, 0.87, 0.84 and 0.88, respectively.

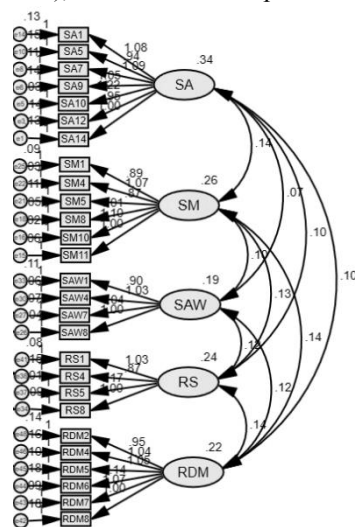


FIGURE 2 Confirmatory Factor Analysis (CFA) Results for the Five-Factor SEC Fit Instrument

Based on Figure 1, the initial 50-item model only provided a moderate model fit, but after modification to 27 items in Figure 2, the CFA model showed an excellent fit across all indicators ($\chi^2/df < 2$, RMSEA < 0.05, CFI and IFI > 0.95). The five-dimensional model is consistent with theory and statistically valid and is suitable for measuring the social-emotional competencies of Indonesian Gen Z. Comparison with an alternative instrument was necessary due to the low factor loadings and as an attempt to improve model fit. Thus, additional CFA would attempt to investigate the fit of the hypothesized instrument and a suitable alternative instrument. An alternative instrument was tested by deleting all items with loadings below 0.50. To compare the relative fit of the two instruments, it is recommended to use the χ^2/df ratio to indicate better instrument fit (Hooper et al., 2008). The overall fit index of the research instruments was not considered in the final decision on instrument selection, especially when the χ^2/df values on both instruments indicated acceptable instrument fit. None of the CFI and IFI results exceed 0.90, but only the instrument fit showed values close to both indices, indicating a reasonable instrument fit (Figure 2). ECVI was used to estimate a single sample in cross-validation which measures the generalizability of an instrument to other samples. "The instrument with the smallest ECVI result shows the best fit." For these reasons, the instrument fit was considered the most appropriate instrument (Table 3).

TABLE 3 Goodness-of-Fit Indexes for Different Instruments of SECI in Study 1 (N = 353)

Instrument	Overall fit indices				
	χ^2/df	RMSEA	CFI	IFI	ECVI
Model Instrument	2.99	0.075	0.73	0.73	10.12
27-item Instrument(fit	1.62	0.042	0.98	0.98	1.82

instrument)

Note. CFI = comparative fit index; IFI= incremental fit index; RMSEA = root-mean-square error of approximation; ECVI = expected cross-validation index

Table 3 shows the results of a comparison between the initial model consisting of 50 items and the modified model consisting of 27 items, which shows $X^2/df = 2.99$, which is at the maximum limit of the accepted fit category. After modifying the items, it decreased to 1.62, indicating a very good model fit. The RMSEA in the initial model was 0.075, which was not optimal, but in the 27-item instrument, it decreased to 0.042, indicating a very good model. CFI and IFI were at the minimum threshold of 0.73, but in the 27-item model, they jumped to 0.98, indicating a very high statistical value. ECVI, which was at a low generalisation level of 10.12, became more stable and generalizable in the 27-item model.

The results of the instrument validity test showed a C.R. value > 1.96 , with a p value < 0.05 . Therefore, the instrument was considered valid and reliable for use as an instrument to measure the social emotional competence of senior high school students. The following are the results of table 4

TABLE 4 Construct Reliability Results

			Loadings	Error	(SUM/loading))^2	Construct Re- liability (CR)	
SA14	<---	SA	0,852	0,13	37,149025	0,980598682	Valid
SA12	<---	SA	0,833	0,136			
SA10	<---	SA	0,975	0,026			
SA9	<---	SA	0,852	0,11			
SA7	<---	SA	0,888	0,146			
SA5	<---	SA	0,823	0,126			
SA1	<---	SA	0,872	0,061			
SM11	<---	SM	0,901	0,017	28,955161	0,843284752	Valid
SM10	<---	SM	0,975	0,053			
SM8	<---	SM	0,914	0,105			
SM5	<---	SM	0,807	0,029			
SM4	<---	SM	0,955	0,094			
SM1	<---	SM	0,829	0,142			
SAW8	<---	SAW	0,901	0,045	11,655396	0,976294973	Valid
SAW7	<---	SAW	0,869	0,067			
SAW4	<---	SAW	0,882	0,058			
SAW1	<---	SAW	0,762	0,113			
RS8	<---	RS	0,851	0,092	11,9025	0,972863623	Valid
RS5	<---	RS	0,986	0,01			
RS4	<---	RS	0,742	0,148			
RS1	<---	RS	0,871	0,082			
RDM8	<---	RDM	0,736	0,185	22,515025	0,963126189	Valid
RDM7	<---	RDM	0,856	0,091			
RDM6	<---	RDM	0,784	0,178			
RDM5	<---	RDM	0,838	0,101			
RDM4	<---	RDM	0,768	0,164			
RDM2	<---	RDM	0,763	0,143			

Composite reliability is used to test the reliability value of indicators on a variable. A variable can be said to meet composite reliability if it has a composite reliability value > 0.60 .

The results of the instrument validity test showed a C.R value > 1.96 , with a p-value < 0.05 . Therefore, the instrument was considered valid and reliable for use as an instrument to measure the social-emotional

competence of Gen Z. Composite reliability is used to test the reliability value of indicators on a variable. A variable can be said to meet composite reliability if it has a composite reliability value > 0.60 (Lozano-Peña et al., 2021b) (Ahmed et al., 2025). Reliability tests with composite reliability can be strengthened by using the Cronbach's alpha value. A variable can be declared reliable or meet Cronbach's alpha if it has a Cronbach's alpha value > 0.70 .

The CFA results show that the instrument fit with 27 items is acceptable and meets the valid and reliable criteria for use on students in Indonesia. The difference between instrument development and other instruments developed by CASEL (2008) and previous experts is to assess students' ability to have social and emotional competencies that are in accordance with the knowledge and habits of Indonesian students. CFA results generally show that the instrument is acceptable and suitable for samples in Indonesia. Some of the items developed in the instrument that measure students' social-emotional competence will also be influenced by the student's background, such as family circumstances and how students acquire social-emotional competence in the family, school and community environment (Kolb & Pietzonka, 2024). The measure of psychological constructs produced in one culture can be applied meaningfully by validating according to the culture in the society (Davis, 2003). Based on testing the validity and reliability of the instrument through tests on 353 students, producing instrument items that are easily understood by students and obtaining the right answers from students.

DISCUSSION

In general, this research attempts to develop a social and emotional competence instrument by validating and testing the reliability of the instrument in order to obtain a valid and reliable instrument. The instrument development process at the review and revision stage involved 2 experts with the competency areas of guidance and counseling in the personal and social fields who provided feedback related to the instrument so as not to cause bias and double interpretation, rearranging the sentence structure to make it easier to understand and providing clarity of statements for Gen Z. After the instrument was revised, validation was carried out by distributing the instrument to 353 high school students with the assistance of school counselors. The validation results of 50 instruments produced 27 instruments showing χ^2/df value of 1.62, RMSEA 0.042, CFI value of 0.98, IFI value of 0.98 and ECVI 1.82 and reliability met Cronbach's alpha > 0.70 . Exploratory Factor Analysis (EFA) with a total variance explained by the five factors of 59.96%, which is quite good in instrument development in psychology.

Based on validity and reliability tests, the instrument had produced instrument items that were easily understood by students and able to obtain correct answers from students. The results of the confirmatory factor analysis measured against five dimensions of social and emotional competence showed that the instrument fit with 27 items was acceptable and met the valid and reliable criteria for use on students in Indonesia. The dimensions of social and emotional competence include self-awareness, self-management, social awareness, relationship skills and responsible decision-making.

The difference between the development of this instrument and other existing instruments is that the statement items of this social and emotional competence instrument were developed in accordance with students' knowledge and habits in Indonesia. Thus, this instrument is able to describe Gen Z's social and emotional competence as a guide in developing social and emotional learning that suits students' needs. The challenges faced by Gen Z, who experience anxiety and fatigue due to social media, require measurement of social and emotional conditions that can support prevention programs for Gen Z (Sharma et al., 2023). Some experts argued that the measurement of psychological constructs produced in one culture can be applied meaningfully by conducting validation tests according to the culture in society (Davis, 2003). With these considerations, the instrument development attempts to adapt to the emotional and psychological conditions of students so that the instrument is easily understood by the students and able to measure accurately and identify at-risk Gen Z (Davidson et al., 2018). Kim argued that people's knowledge, skills and beliefs are heavily influenced by family, social, cultural and environmental contexts, so it is necessary to have an indigenous psychology that cannot be generalized using instruments applicable in other areas (Uichol Kim & Hwang, 2024).

Furthermore, the findings in this study reinforce the importance of context-based assessment in measuring social and emotional competence. The measurement tools developed not only meet high standards of validity and reliability but also are designed to capture the unique characteristics of Generation Z in Indonesia based on cultural considerations (Wen et al., 2025). This is in line with research by Rodrigues that shows that instruments adapted to local social and cultural conditions tend to provide more accurate and applicable results in the context of education. Thus, this instrument can be a reference for educators

and policymakers in designing more effective social and emotional learning programs (Rodrigues et al., 2017).

In addition, the results of confirmatory factor analysis (CFA) in this study show that the five dimensions of social and emotional competence have a significant relationship with students' psychological well-being and academic achievement. The dimensions of self-awareness and self-management have a greater contribution in increasing student resilience and self-control, while social awareness and relationship skills play an important role in building positive social interactions. These findings support previous findings that state that strengthening social and emotional competencies can help students better cope with academic and social challenges (Diering et al., 2018).

This study also provides implications for the development of school-based intervention programs. With validated instruments, educators and school counselors can use them as a tool to identify students who need support in social and emotional aspects. Intervention programs designed based on valid assessment results will be more effective in improving students' social and emotional skills and supporting more inclusive learning (Aghatabay et al., 2023). These findings can also serve as a basis for the development of more well-being-oriented education policies, as recommended in various studies on the importance of social and emotional learning in education systems.

Finally, this research also opens up opportunities for further exploration related to the effectiveness of instruments in various groups of students with different backgrounds. Although this instrument has been tested on secondary school students in Malang, Indonesia, further research is needed to test its validity and reliability in a wider population, including students in different regions and at different levels of education. In addition, future research may explore the relationship between social and emotional competencies with other factors, such as emotional intelligence, learning motivation, and mental well-being, in order to gain a more comprehensive understanding of the role of social and emotional competencies in students' academic and psychosocial development.

CONCLUSION

The instrument development and validation process was conducted to adapt the instrument to the culture and habits of Gen Z in Indonesia. The development of a new instrument would adjust the statement items to suit the Gen Z conditions, who have unique characteristics and cannot be compared to the characteristics of students in other countries. Indonesia as a developing country has unique student characteristics whose social-emotional competence has not been measured and developed through comprehensive school programs. Social and emotional development is still limited to additional achievements in learning activities. The limitations of the study are that the subjects are limited to students in the Malang area, so it needs to be followed up for validation of a wider area, long-term research, and variations in the characteristics of Gen Z.

The development of a social and emotional competence instrument that generated 50 positive items has undergone preliminary pilot testing and a review and revision stage based on expert feedback. Limitations in the research may include subjective item assessment by experts, so items that are ambiguous and confusing to students and considered not understood by students have been revised. The revised instrument was tested for initial validation to measure the achievement of social and emotional competence in 353 students. The results after the confirmatory test and modifications were 27 valid and reliable items consisting of 7 self-awareness items, 6 self-management items, 4 social awareness items, 4 relationship skill items, and 6 responsible decision-making items. The social-emotional competency measurement has the advantage of being based on CASEL theory, which is adapted to the cultural context and customs of students in Indonesia. The measurement has undergone testing to avoid language bias and excessive technicality. The measurement has been strongly validated through EFA and CFA and is simpler and more applicable to Indonesian secondary schools. The validated instrument is expected to be used by schools to identify social and emotional learning intervention needs, monitor Gen Z well-being, and support training and programs to improve social and emotional competencies.

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