

## **Emotional Intelligence in Filipino College Students: Development and Validation of a New Scale**

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### **ABSTRACT**

Psychological test is one of the tools used in psychological assessment that allows for the objective and standardized assessment of an individual's psychological variables, such as behaviors, feelings, and cognitions. Emotional intelligence is characterized as the capacity to comprehend and regulate one's own feelings, as well as the ability to discern and react appropriately to the emotions of others. Emotional quotient (EQ) tests assess and gauge an individual's proficiency in identifying others' emotions, predicting potential emotional responses of others to specific situations and certain behaviors. However, there are limited resources for locally made psychological tests— especially, emotional quotient tests— tests developed in the Philippines for the Filipinos. The existing locally-made EQ tests in the Philippines were for physical and mental health, and health behaviors of Filipinos (Abascal & Diaz, 2015; Carandang et. al (2019), and contextualized on high school students (Israel & Tayaban, 2013). This led the researchers to develop and validate an emotional intelligence test for Filipino college students aiming to determine if the standardized EQ test for Filipino college students is reliable and valid. Data from Filipino college students in Nueva Vizcaya State University – Bayombong Campus and Saint Mary's University was used for the reliability and validity testing garnering. The developed test garnered an overall 0.914 Cronbach's alpha which implies high reliability. Meanwhile, factor analysis was used to explore its validity, however, some items did not load on their original dimension.

*Keywords:* emotional quotient test, psychological testing, reliability, standardized test, validity

### **INTRODUCTION**

Emotion is a complex and subjective experience characterized by physiological changes that prepare an individual for action. It plays a critical role in human cognition, behavior, and decision-making. Emotions are strong, pervasive, and foreseeable, and can influence judgments across various domains, including politics, law, and economics (Kappas et al., 2018; Lerner et al., 2014). The growing understanding of how emotions shape behavior has brought increasing attention to the concept of emotional intelligence (EI).

Emotional intelligence refers to the ability to recognize, understand, manage, and utilize emotions effectively in oneself and others. It encompasses both intrapersonal and interpersonal competencies, including self-awareness, self-regulation, empathy, motivation, and social skills (Goleman, 1995). According to Chen et al. (2016), emotional intelligence begins developing in early childhood and continues throughout adolescence and young adulthood as individuals encounter diverse emotional situations. This development leads to more refined emotional regulation and deeper empathy over time.

Adolescence and young adulthood are key stages in this progression. Garg (2023) describes adolescence (ages 10-19) as a time of heightened emotional sensitivity due to rapid biological and social changes, and young adulthood (ages 19-35) as the stage where emotional intelligence is applied in real-life situations. In these years, individuals learn to manage academic demands, maintain interpersonal relationships, and make critical life decisions. A well-developed emotional intelligence enables them to cope with stress, build deeper social bonds, and maintain overall mental well-being.

Research has demonstrated the importance of emotional intelligence in the context of higher education. College students with high EI levels tend to regulate negative emotions more effectively, seek help when needed, and adopt proactive coping strategies (Llena & Peña, 2018). These traits contribute to academic success, greater life satisfaction, and lower stress and depression (Reyes, 2019; Perez, 2018). Emotional intelligence also fosters better communication, stronger relationships, and adaptability in both academic and professional settings (Brackett et al., 2020; Akhtar et al., 2017).

Despite its universal relevance, the expression and development of emotional intelligence are influenced by cultural context. While studies suggest that individual differences often outweigh cross-cultural ones (Pekrun, 2014; Tsai et al., 2006), culture still plays a vital role in shaping emotional norms and behaviors. In the Philippines, emotional expression is deeply intertwined with cultural values such as *pakikipagkapwa* (shared identity), *malasakit* (compassionate concern), and *bayanihan* (collective unity). These values inform how Filipinos perceive, express, and manage emotions in family, school, and community settings.

However, emotional intelligence assessments used in Philippine contexts are often adapted from Western-developed tools, such as the Trait Emotional Intelligence Questionnaire (TEIQue) and the BarOn EQ-i®. These instruments, while widely recognized, may not accurately capture the nuances of Filipino emotional life, particularly regarding collectivism, humility, and indirect communication (Pe-Pua & Protacio-Marcelino, 2000; Datu, 2013; Bernardo, 2011). Language barriers and cultural misalignment can lead to biased interpretations or inaccurate results (Bernardo, 2011). While notable progress has been made in developing culturally grounded psychological assessments in the Philippines, such as the *Panukat ng Ugali at Pagkatao* (PUP) by Enriquez (1975) and the *Masaklaw na Panukat ng Loob* (MAPA ng Loob) by Del Pilar (2017), these tools focus primarily on personality traits and character, not emotional intelligence. Among the limited efforts in EQ-specific assessment, the Israel-Tayaban EQ Scale remains the only known instrument developed for Filipino students.

Moreover, these tools were designed specifically for high school populations (Israel & Tayaban, 2013), leaving a significant gap in standardized, culturally appropriate emotional quotient assessments tailored for Filipino college students. Given the increasing importance of emotional intelligence in higher education and professional development, there is a clear need for a culturally grounded, psychometrically valid tool to assess emotional intelligence among Filipino college students. This study addresses that gap by developing and validating the 2A2H 5D EQ Scale, a bilingual emotional quotient test anchored in Daniel Goleman's five-domain model and integrated with Filipino cultural values and linguistic contexts. This scale aims to support a more accurate and meaningful evaluation of emotional intelligence, reflective of both the developmental needs and cultural identity of Filipino youth. Specifically, this study aims to determine if the developed standardized test EQ for Filipino College Students of Nueva Vizcaya is reliable and valid.

## METHODOLOGY

This study employed a mixed-method research design integrating both qualitative and quantitative approaches. The qualitative component involved a sentence completion survey designed to solicit college students' views and personal experiences related to the five core dimensions of emotional intelligence: self-awareness, self-regulation, motivation, empathy, and social skills. This step supported the development of culturally grounded and contextually relevant test items.

The quantitative component involved a two-phase test development process aimed at examining the psychometric properties of the Emotional Quotient (EQ) scale. The first tryout focused on evaluating the reliability of 100 preliminary items through item-total correlation and

internal consistency analysis. The second tryout employed advanced statistical procedures, including exploratory factor analysis using Principal Axis Factoring (PAF), to assess the construct validity and refine the underlying structure of the scale. Correlation analysis was also conducted to evaluate the relationships between items and dimensions.

The study was conducted across three higher education institutions in Nueva Vizcaya, Philippines: Saint Mary's University (SMU), Nueva Vizcaya State University - Bayombong Campus (NVSU), and King's College of the Philippines (KCP). Saint Mary's University (SMU), a premier Catholic institution, is accredited by PAASCU and offers diverse academic programs through its four academic schools. Nueva Vizcaya State University, a public SUC Level IV institution, is recognized for its excellence in education, research, and community engagement. King's College of the Philippines, a private Christian institution, balances traditional pedagogy with modern educational technologies and emphasizes holistic development grounded in faith-based values.

A total of 1,143 college students aged 18 to 25 participated in the study. The researchers employed both simple random sampling and purposive sampling techniques to ensure a representative and culturally relevant sample. All participants were currently enrolled in higher education institutions within Nueva Vizcaya and had been raised in the Philippines, ensuring linguistic and cultural consistency necessary for a standardized psychological measure.

For the initial qualitative phase, 100 students from Saint Mary's University, 25 from each academic year level participated in the Sentence Completion Survey. The first quantitative tryout included 276 students from King's College of the Philippines, while the second and final tryout involved 767 participants from SMU, consisting of 507 students from Saint Mary's University and 260 students from Nueva Vizcaya State University.

#### *Sentence Completion Form*

To generate culturally grounded test items, a 50-item sentence completion form was developed, with 10 stems for each of Goleman's five EI dimensions. This qualitative tool captured students' perceptions and experiences related to emotional intelligence. Responses were analyzed for recurring patterns, which were transformed into structured test items. Additionally, relevant items were adapted from existing instruments such as the Global Emotional Intelligence Test, the Israel-Tayaban EQ Test, and the Emotional Intelligence Questionnaire from the Leadership Toolkit. This process resulted in an initial test bank of 200 items.

#### *2A2H 5D Emotional Quotient Scale*

From the item pool, a refined 75-item EQ scale was finalized, consisting of 15 items for each of the five dimensions. The instrument was bilingual (English and Filipino) and utilized a 4-point Likert scale to measure the extent of agreement with each statement. This structure ensured ease of response, cultural accessibility, and balance across emotional intelligence dimensions.

The development process followed nine key steps: conceptualization, literature review, item generation, expert validation, pilot testing, item analysis, test revision, second tryout, and final psychometric evaluation. The theoretical framework was based on Daniel Goleman's five-domain model, supplemented with Filipino cultural values such as *pakikipagkapwa*, *bayanihan*, *malasakit*, *pakikiramdam*, and *sipag at tiyaga* (Enriquez, 1992).

Expert reviewers from Saint Mary's University evaluated the clarity and relevance of 150 items using a validation matrix. Only items with 80% to 100% agreement were retained. The items were also translated into Filipino to enhance cultural alignment and accessibility.

The pilot test was conducted at a private higher education institution at Bambang, Nueva Vizcaya with standardized procedures. After obtaining informed consent, data were collected from 276 participants. Item analysis was conducted using item-total correlation and Cronbach's alpha. Low-performing items were removed, resulting in the 75-item final scale.

The second tryout, conducted with students from a public and private higher education in Bayombong, Nueva Vizcaya, followed the same administration protocol. Data from this phase were used to assess internal consistency and to perform exploratory factor analysis to determine the scale's construct validity.

Descriptive statistics were used to present the demographic profile of participants and to establish normative data. For reliability testing, Cronbach's alpha coefficients were computed for both the overall scale and each subscale. Item-total correlations and "Cronbach's alpha if item deleted" analyses supported the refinement of the instrument. Construct validity was evaluated through exploratory factor analysis using Principal Axis Factoring to confirm the five-domain structure based on Goleman's theoretical framework.

## RESULTS AND DISCUSSION

A total of 767 Filipino college students aged 18 to 25 participated in the second tryout of the 2A2H 5D Emotional Quotient (EQ) Scale. The sample was composed of 514 females (67%) and 253 males (33%). Participants came from various academic levels, including 284 first-year, 227 second-year, 147 third-year, and 109 fourth-year students. The most represented age groups were 18 years old (30%) and 19 years old (22%), consistent with the typical demographic of undergraduate students in the Philippines.

Following data collection, the initial 100-item version of the EQ scale underwent item analysis using item-total correlation and an evaluation of "Cronbach's alpha if item deleted." Based on these analyses, 25 items that showed weak statistical performance were removed. The refined version consisted of 75 items, with an equal number of 15 items allocated to each of the five emotional intelligence dimensions: self-awareness, self-regulation, empathy, social skills, and motivation. This revision maintained both theoretical balance and fidelity to Goleman's framework of emotional intelligence.

**Table 1**

*Summary of the Reliability Analysis using Cronbach's Alpha of 2nd Test Tryout per Dimension*

Dimensions	Reliability Coefficient	Number of Items
Self-Awareness	0.85	15
Self-Regulation	0.79	15
Empathy	0.87	15
Social Skills	0.74	15
Motivation	0.70	15
Overall	0.91	75

To assess the internal consistency of the revised scale, Cronbach's alpha coefficients were computed for each subscale. The empathy subscale achieved the highest reliability ( $\alpha = 0.87$ ), followed by self-awareness ( $\alpha = 0.85$ ), self-regulation ( $\alpha = 0.79$ ), social skills ( $\alpha = 0.74$ ), and motivation ( $\alpha = 0.70$ ). The overall Cronbach's alpha for the entire 75-item instrument was 0.91, indicating excellent internal consistency. These findings suggest that the scale reliably measures emotional intelligence traits across its five dimensions among Filipino college students.

**Table 2**

*Total Variance Explained of Items in Second Test Tryout*

Items	Initial Eigenvalues	% of Variance	Cumulative %
1	15.057	20.08	20.08

2	3.835	5.11	25.19
3	2.772	3.70	28.89
4	2.353	3.14	32.02
5	2.011	2.68	34.71
...	...	...	...
75	.227	.302	100.000

Note. Only factors with eigenvalues greater than 1 were retained for the analysis. The percentage of variance indicates the proportion of the total variance explained by each factor, while the cumulative percentage shows the cumulative variance explained up to that factor.

Construct validity was examined through Exploratory Factor Analysis (EFA) using Principal Axis Factoring. The analysis revealed five factors with eigenvalues greater than one, collectively accounting for 34.71% of the total variance. The first factor alone explained 20.08% of the variance, suggesting the presence of a dominant latent construct, likely linked to self-awareness based on the nature of the items that loaded onto it. Out of the 75 items, 50 (67%) met the minimum factor loading threshold of 0.40. However, only 7 items (9.3%) loaded exclusively on their hypothesized dimensions, indicating considerable construct overlap and pointing to a need for further refinement in scale structure.

**Table 3**

*Rotated Factor Matrix After Removing Low Factor Loadings, Cross-Loadings, or Weak Associations with Factors*

Self-Awareness	Self-regulation	Empathy	Social Skills	Motivation
<b>Q01</b> (0.500)	<b>Q06</b> (0.546)	<b>Q12</b> (0.484)	<b>Q16</b> (0.544)	<b>Q36</b> (0.670)
<b>Q02</b> (0.391)	<b>Q08</b> (0.629)	<b>Q13</b> (0.651)	<b>Q19</b> (0.513)	<b>Q37</b> (0.678)
<b>Q04</b> (0.391)	<b>Q07</b> (0.536)	<b>Q14</b> (0.725)	<b>Q24</b> (0.560)	<b>Q40</b> (0.691)
<b>Q03</b> (0.672)	<b>Q11</b> (0.593)	<b>Q15</b> (0.758)	<b>Q25</b> (0.368)	<b>Q41</b> (0.712)
<b>Q05</b> (0.515)	<b>Q43</b> (0.564)	<b>Q29</b> (0.626)	<b>Q30</b> (0.453)	<b>Q42</b> (0.589)
<b>Q09</b> (0.627)	<b>Q10</b> (0.585)	<b>Q32</b> (0.565)		<b>Q43</b> (0.662)
<b>Q12</b> (0.585)	<b>Q16</b> (0.476)	<b>Q33</b> (0.479)		<b>Q45</b> (0.516)
<b>Q13</b> (0.651)	<b>Q21</b> (0.535)	<b>Q35</b> (0.462)		<b>Q48</b> (0.459)
<b>Q14</b> (0.725)	<b>Q25</b> (0.466)	<b>Q39</b> (0.427)		<b>Q49</b> (0.460)
<b>Q15</b> (0.758)	<b>Q27</b> (0.482)			
<b>Q18</b> (0.497)	<b>Q28</b> (0.477)			
<b>Q20</b> (0.747)	<b>Q29</b> (0.464)			
<b>Q22</b> (0.755)	<b>Q30</b> (0.582)			
<b>Q23</b> (0.731)				

Overall, the findings support the goal of developing a culturally relevant EQ assessment tool for Filipino college students. The 2A2H 5D EQ Scale demonstrated strong internal reliability and provided initial evidence of construct validity. Notably, the Empathy and Self-Awareness subscales emerged as the most psychometrically sound dimensions. This may reflect the influence of Filipino cultural values such as *pakikiramdam* (sensitivity to others), *pakikipagkapwa* (shared identity), and *malasakit* (deep concern for others), which emphasize emotional attunement and interpersonal harmony. These values may enhance how Filipino students understand and regulate their emotional experiences, particularly in relation to others.

On the other hand, the relatively lower reliability scores for the motivation and social skills subscales may reflect culturally shaped expressions of leadership, initiative, and assertiveness. In collectivist societies such as the Philippines, social norms often encourage humility and group cohesion, which may influence how these traits are expressed and interpreted. Additionally, the low alignment of items with their intended dimensions in the factor analysis suggests that the conceptual boundaries between emotional intelligence components may be more fluid in this cultural context.

These insights underscore the importance of situating psychological constructs within the sociocultural realities of the population being assessed. While the results of this study are promising, further refinement of the scale is necessary to enhance its dimensional alignment and reduce construct overlap. In doing so, the 2A2H 5D EQ Scale may evolve into a more

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culturally appropriate and sensitive instrument for assessing emotional competence among Filipino college students.

## CONCLUSION AND RECOMMENDATIONS

### Conclusion

This study developed the 2A2H 5D EQ Scale as a culturally contextualized instrument for assessing emotional intelligence among Filipino college students. The scale demonstrated high internal consistency across all dimensions, indicating strong reliability. However, factor analysis results suggest the need for further refinement to fully validate its five-domain structure. These findings support the scale's potential as a reliable and relevant tool, while also highlighting the importance of continued psychometric validation and cultural sensitivity in emotional intelligence assessment.

### Recommendations

Although this study yielded promising results, some limitations can be addressed in future research to enhance the development, implementation, and application of the 2A2H 5D EQ Scale. First, the researchers would like to recommend rigorous evaluation on the results of Rotated Factor Matrix. Second, future researchers are encouraged to investigate the potential differences and correlation in emotional intelligence across various age groups within the college student population, particularly between freshmen, sophomores, and seniors. Third, it is highly recommended to conduct further validation studies, such as Confirmatory Factor Analysis, to improve the scale's construct validity. Fourth, future researchers should revise the items that did not load on their original dimension to better align them with the theoretical constructs. Fifth, it is recommended to try to explore the correlation of emotional intelligence with career readiness, academic performance, mental health, and well-being, using a mixed-method approach for a more comprehensive understanding. Lastly, future research should try to include a more diverse sample from different universities and regions across the Philippines to assess the scale's applicability to a wider population of Filipino college students.

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