

# Assessing the Dimensionality and Reliability of a Core Democratic Values Scale Among University Students: Evidence of a Five-Factor Model

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**Abstract**—This study aimed to develop and validate a Core Democratic Values (CDV) Scale for university students within a faith-based academic context. Grounded in established civic education resources, the initial 40-item instrument was administered to 200 tertiary students enrolled in social science courses. Exploratory Factor Analysis (EFA) revealed a five-factor structure—justice, patriotism, pursuit of happiness, equality, and diversity—explaining 51.7% of the variance. Eight items were removed due to low cross-loading or low factor loading. The final 32-item scale demonstrated strong internal consistency, with subscale alphas ranging from .700 to .870. The CDV Scale offers a culturally relevant, psychometrically sound tool for assessing democratic behaviors among university students. Administering this scale can support civic education efforts and foster democratic engagement in higher education. Confirmatory validation of this scale through Confirmatory Factor Analysis (CFA) can be conducted to assess measurement invariance in different populations and examine the predictive validity of the scale about civic behavior and engagement.

**Keywords:** democratic values, scale validation, university students

## I. INTRODUCTION

Democracy is often defined as the “power of the people.” It includes the autonomy of the individual and equality among people. More than just the active participation in elections, democracy endeavors to protect the interests of humanity, including minorities, by upholding human rights. However, declining interest in voting, exclusion of marginalized groups, rising nationalism, and limited civic engagement, especially among youth, remain a challenge (Annan, n.d).

According to the Center for Civic Education (1991), core democratic values are important principles that encourage people to participate in a democratic society. Patterned after Western civic education, these values include liberty, justice, equality, patriotism, and the common good.

Meanwhile, in the Asian and Philippine context, democratic values are influenced by cultural, moral, and communal backgrounds. The 1987 Philippine Constitution identifies human dignity, freedom, love, truth, justice, and peace as core elements of national identity and social transformation.

With the necessity of developing democratic core values among students, developing a reliable and valid scale is important to evaluate civic education and advance democratic engagement (Gafoor, 2015). A scale to measure the extent of core democratic values (CDV) among students will allow educators and researchers to determine how well their institutions are instilling democratic values and to identify gaps in their behaviors (Pavlović et al., 2020; Silaban et al., 2024).

As educators in faith-based institutions, the researchers believed that nurturing democratic values is not only a civic responsibility but also a reflection of our commitment to human dignity, justice, and community. While their institutions are grounded in moral and spiritual principles, they strive to prepare students to become active, compassionate, and responsible members of society. This shared belief inspires the researchers to develop a scale that can help them understand how university students internalize and live out core values. By doing so, the results of the study could contribute to shaping educational experiences that support both moral character and democratic engagement.

## II. LITERATURE REVIEW

Nagorniak (2016) claimed that the world has entered a democratic recession. In some countries, governments with histories of repression established additional restrictions on dissent, despite already implementing long-standing censorship, controlling the judiciary, and, in some cases, using violence. Consequently, governance institutions in these authoritarian states became increasingly ineffective, lost autonomy, and became more susceptible to corruption.

According to Grossman (2004), education systems emphasize civic duty, order, and cooperation as important values for a working democracy. Moreover, Mozaffari et al. (2022) emphasized that an individual's personal and social growth is shaped by formal education. Thus, the educational system of a country plays an important role in helping its citizens shape and foster an understanding of human rights.

Several instruments have been developed internationally to measure civic attitudes and democratic dispositions (e.g., the IEA Civic Education Study by Schulz et al., 2010), yet few have been adapted or validated for use in the Philippine higher education context. Gafoor (2015) emphasized the need for culturally sensitive tools that assess students' beliefs, behaviors, and attitudes toward democracy. Likewise, Samad and Macatangay (2020) called for localized metrics that consider students' socio-political and moral formation within diverse educational settings. Given these concerns, this study builds on both global and local perspectives to create a CDV scale that aligns with the Philippine educational context and the values upheld by faith-based institutions.

## III. MATERIALS AND METHODS

1. **Research Design:** This quantitative study employed an exploratory design using Exploratory Factor Analysis (EFA) to evaluate the underlying structure and to determine the psychometric properties of the Core Democratic Values (CDV) Scale. This methodology ensures transparency, replicability, and academic rigor in validating scale.

2. **Participants/Data Sources:** Two hundred tertiary students from a faith-based higher education institution voluntarily answered the scale. These students were enrolled in social sciences courses during the 2<sup>nd</sup> semester of the academic year 2023-2024. Ethical clearance was secured, and informed consent was obtained from all participants before data collection. The sample size met the minimum of Tinsley & Kass (1979), suggesting that there should be 5-10 respondents per item. The CDV scale had 40 items; thus, 200 respondents is the minimum sample size.
3. **Tools and Instruments:** The researchers constructed the CDV scale, which consists of 40 items that were based on established civic education resources and scholarly literature. These resources include Ascent Classical Academy (2024), Class Ace (2023), Kun and Gadanez (2019), Beetham et al. (2009), Kołczyńska (2020), and Sant (2019). Responses were recorded using a 5-point Likert scale from never (1) to always (5). The instruments were expertly reviewed.
4. **Procedures:** The CDV scale was administered in person in five social science courses at a faith-based higher education institution during the second semester of the 2023-2024 academic year. The questionnaire was distributed during scheduled class sessions with the cooperation of course instructors. Ethical clearance was obtained, and informed consent was secured from all participants before data collection.
5. **Analysis Techniques:** Data were analyzed using Exploratory Factor Analysis (EFA) with Principal Axis Factoring and Varimax rotation to identify the underlying structure of the CDV Scale. Sampling adequacy was confirmed through an acceptable KMO value and significance in the Bartlett's test of sphericity ( $p < .001$ ). Items with low or cross-loading were removed. Cronbach's alpha was used to assess reliability

#### IV. RESULTS AND DISCUSSION

##### Sample Adequacy and Factorability

The Kaiser-Meyer-Olkin (KMO) test result is shown in Table 1. The KMO value was 0.901, close to 1. Bartlett's test of sphericity yielded a chi-square value of 3,456. The degrees of freedom = 496, and  $p < 0.001$ . Thus, the scale was suitable for factor analysis.

Table 1. Kaiser-Meyer-Olkin Test Analysis

Dimension	KMO Value	Bartlett Test Value	Degree of Freedom	Significance
Core Democratic Value	0.901	3,456	496	< 0.001

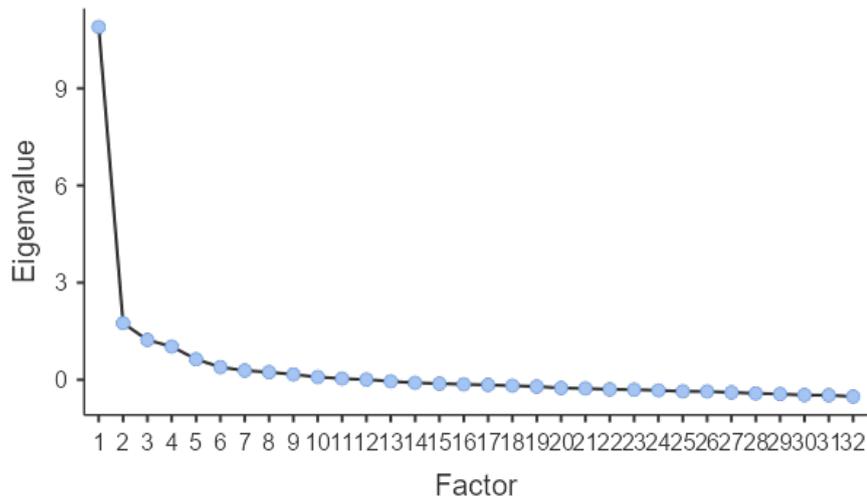
##### Factor Extraction and Dimensionality

The EFA results are shown in Table 2. Items with factor loadings below 0.50 and cross-loadings (8 in total) were removed. Thirty-two items were retained, and five factors were extracted. The cumulative variance explained was 51.7%. The scree plot in Figure 1 shows a clear break after the fifth factor, supporting the five-factor solution.

Table 2. Exploratory Factor Analysis and Variance Explained

Items	Justice	Patriotism	Pursuit of Happiness	Equality	Diversity
J6	0.794				
J7	0.869				
J8	0.690				
P3		0.703			
P4		0.633			
P5		0.734			
P6		0.693			
P7		0.759			
P8		0.730			
H1			0.687		
H2			0.721		
H3			0.726		
H4			0.746		
H5			0.760		
H6			0.690		
H7			0.725		
E1				0.749	
E2				0.719	
E3				0.769	
E4				0.718	
E5				0.761	
E6				0.736	
E7				0.695	
E8				0.633	
D1					0.730
D2					0.743
D3					0.635
D4					0.765
D5					0.700
D6					0.778
D7					0.713
D8					0.720
Eigenvalue					
Variance	15.94	13.74	9.05	6.59	6.40
Cumulative variance explained	15.9	29.7	38.7	45.3	51.7

Figure 1. Scree Plot for Exploratory Factor Analysis



### Reliability of the Scale

The internal consistency of the overall CDV Scale and its subscales was assessed using Cronbach’s alpha and is presented in Table 3. The overall scale achieved an excellent alpha of 0.939, while subscale alphas ranged from 0.700 to 0.870, all above the accepted threshold of 0.70.

Table 3. Cronbach’s Alpha for the CDV Scale and Subscales

Subscale	Cronbach’s Alpha
Justice	0.700
Patriotism	0.805
Pursuit of Happiness	0.847
Equality	0.870
Diversity	0.870
Overall CDV Scale	0.939

### The Final Set of Items

The final version of the CDV scale consisted of 32 items distributed across five factors: justice, patriotism, pursuit of happiness, equality, and diversity. Table 4 presents the finalized items grouped according to their respective factors, highlighting the thematic focus and conceptual clarity of each dimension.

Table 3. The Final Set of Items by Factor

Factor	Statements
Justice (3)	I keep myself informed about important events in my school.

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Patriotism (6)	<p>I understand important issues in my community.</p> <p>I obey school rules even without the presence of a school authority.</p> <p>I respect and honor the national symbols and traditions of my country.</p> <p>I participate in community services or civic activities that benefit my country.</p> <p>I actively seek to understand and appreciate my country's history and culture.</p> <p>I stay informed about national issues and participate in democratic processes.</p> <p>I respect the diverse views and backgrounds of my fellow citizens as a part of our national identity.</p>
Pursuit of Happiness (7)	<p>I need to contribute to the welfare of my country.</p> <p>I actively seek activities and goals that bring me personal satisfaction and joy.</p> <p>I respect others' rights to pursue their sources of happiness.</p> <p>I balance my pursuit of happiness with my responsibilities and duties.</p> <p>I support systems and policies that allow others to pursue their happiness.</p> <p>I am open to understanding and appreciating different interpretations of happiness by others.</p> <p>I take steps to improve my well-being and happiness healthily and sustainably.</p>
Equality (8)	<p>I believe that everyone has the right to pursue happiness, regardless of their background or circumstances.</p> <p>I treat individuals from all backgrounds with equal respect and consideration.</p> <p>I am open to hearing and valuing opinions different from my own.</p> <p>I believe in equal opportunities for all, regardless of their identity or background.</p> <p>I am aware of my privileges, and I do seek to understand the challenges faced by marginalized groups.</p> <p>I support policies and actions that promote equality in my community and beyond.</p> <p>I participate in discussions and activities that promote understanding and tolerance.</p>
Diversity (8)	<p>I recognize and appreciate the value of diverse perspectives in problem-solving and decision-making.</p> <p>I advocate for the inclusion of all voices in democratic processes and institutions.</p> <p>I understand the importance of diversity in fostering a democratic society.</p> <p>I actively listen to and consider perspectives from people of different backgrounds than my own.</p> <p>I am comfortable working and collaborating with individuals who have different viewpoints.</p>

I do recognize the value of diverse experiences in enriching my learning.  
I contribute to a culture of inclusivity in my school or community.  
I support initiatives and policies that promote diversity and equal opportunities.  
I challenge discriminatory behaviors and promote equality for all  
I seek out diverse sources of information to broaden my understanding of the world.

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The five extracted factors were interpreted and labeled based on the thematic content of their items, consistent with established frameworks on civic and democratic education, including UNESCO Education for Democratic Citizenship and the IEA Civic Education Study. The clarity of the factor loadings and theoretical alignment with the literature demonstrate that the items effectively measured distinct yet interconnected dimensions of core democratic values.

The first factor, justice (3 items), emphasizes awareness, fairness, and rule-following behavior, which aligns with principles highlighted in civic education programs that stress the importance of lawfulness and equitable treatment (Ascent Classical Academy, 2024; Class Ace, 2023). The second factor, patriotism (6 items), reflects national pride, civic responsibility, and democratic participation, echoing Beetham, Boyle, and Plantu's (2009) emphasis on civic engagement as a fundamental democratic value. The third factor, pursuit of happiness (7 items), represents personal well-being, fulfillment, and appreciation of individual freedoms—concepts rooted in democratic liberalism and elaborated by Murray (n.d.) and Kun and Gadanez (2019), who link happiness and autonomy to individual and societal well-being. The fourth factor, equality (8 items), captures beliefs in fairness, equity, and inclusion, supporting Kołczyńska's (2020) findings that democratic values are closely tied to educational access and equal opportunity. Lastly, the fifth factor, diversity (8 items), encompasses respect for varied backgrounds, collaboration, and pluralism, reflecting the inclusive nature of democratic societies as reviewed in the works of Sant (2019) and Kołczyńska (2020). Conclusion

The results support the construct validity and reliability of the Core Democratic Values (CDV) Scale as a multidimensional instrument assessing democratic values among university students. The five-factor structure aligns with key democratic principles—justice, patriotism, pursuit of happiness, equality, and diversity—reflecting both theoretical grounding and empirical coherence.

The high internal consistency of each subscale and the overall instrument affirms the reliability of the tool. The CDV Scale thus offers a practical and psychometrically sound means for educators and researchers to assess students' alignment with core democratic values, and it can inform curriculum design, civic education programs, and future scale refinement.

## V. LIMITATIONS

Although democratic theory includes a broad set of values, this study identified only five core factors as the most relevant in the academic context. These values reflect the priorities and experiences of university students, including fairness in policies, civic engagement, well-being, inclusivity, and respect for diverse perspectives. Their emergence suggests that these five dimensions are the most prominent and lived expressions of democracy in higher education. Future research should explore the confirmatory validation of this structure through Confirmatory Factor Analysis (CFA), assess measurement invariance across populations, and examine the predictive validity of the scale in relation to civic behavior and engagement.

## AUTHORS' CONTRIBUTIONS

Rowena Imelda A. Ramos was primarily responsible for the conceptualization of the study, development of the Core Democratic Values Scale, formulation of the rationale, design of the methodology, and writing of the manuscript. Ryan Ray Mata conducted the data cleaning, statistical analysis, and interpretation, which were validated by the lead author. Jeruel Ibanez assisted in the development of the scale and took the lead in data collection and tallying of responses.

## REFERENCES

- Akar, C., & Uluçınar, U. (2023). A scale development study on democratic attitude among third and fourth grade students. *Journal of Pedagogical Research*.  
<https://doi.org/10.33902/jpr.202320926>
- Kun, A., & Gadanez, P. (2019). Workplace happiness, well-being and their relationship with psychological capital: A study of Hungarian teachers. *Current Psychology*, 41(1), 185–199. <https://doi.org/10.1007/s12144-019-00550-0>
- Kołczyńska, M. (2020). Democratic values, education, and political trust. *International Journal of Comparative Sociology*, 61(1), 3–26.  
<https://doi.org/10.1177/0020715220909881>
- Mozaffari, S. M., Soleimanpour, J., & Khalkhali, A. (n.d.). Educational ethics: The role of the democratic school in primary education. *International Journal of Ethics & Society*, 4(2), 20–26. <https://doi.org/10.52547/ijethics.4.2.4>
- Nagorniak, K. (2016). Scales of democratic values: Measurement invariance in post-socialist societies. *Ukrainian Society*, 2016(1), 43–53.  
<https://doi.org/10.15407/socium2016.01.043>
- Sant, E. (2019). Democratic education: A theoretical review (2006–2017). *Review of Educational Research*, 89(5), 655–696. <https://doi.org/10.3102/0034654319862493>
- Silaban, A. L., Lubis, L. A., & Panjaitan, G. Y. (2024). The role of civic education in shaping democratic values: A systematic literature review. *Meta-analysis Journal*.

<https://doi.org/10.5281/zenodo.14500397>

Tinsley, H. E. A., & Kass, R. A. (1979). The latent structure of the need satisfying properties of leisure activities. *Journal of Leisure Research*, 11(4), 278–291.  
<https://doi.org/10.1080/00222216.1979.11969406>

Gafoor, K. A. (2015). Validation of scale of commitment to democratic values among secondary students. *Guru Journal of Behavioral and Social Sciences*, 3(1), 361–373.

Beetham, D., Boyle, K., & Plantu. (2009). *Introducing democracy: 80 questions and answers*. UNESCO Publishing. <https://unesdoc.unesco.org/ark:/48223/pf0000181392>  
Center for Civic Education. (1991). *Civitas: A framework for civic education*. Calabasas, CA: Author.

Murray, C. (n.d.). *In pursuit: Of happiness and good government*. Online Library of Liberty. <https://oll.libertyfund.org/titles/in-pursuit-of-happiness-and-good-government>

Grossman, D. L. (2004). Citizenship education: An Asian perspective. In W. O. Lee, D. L.

Grossman, K. J. Kennedy, & G. P. Fairbrother (Eds.), *Citizenship education in Asia and the Pacific: Concepts and issues* (pp. 13–35). Springer. [https://doi.org/10.1007/978-1-4020-7935-1\\_2](https://doi.org/10.1007/978-1-4020-7935-1_2)

Pavlović, Z., Baucal, A., & Dzamonja Ignjatović, T. (2020). Civic education and the acceptance of democratic values: The role of participatory class climate. *Empirical Studies in Psychology, 26th Conference*  
<http://dx.doi.org/10.13140/RG.2.2.36763.49440>

Annan, K. (n.d.). Democracy. In *Compass: Manual for Human Rights Education with Young People*. Council of Europe. <https://www.coe.int/en/web/compass/democracy>

Ascent Classical Academy | American Classical Education Institution. (2024, September 25). *Ascent Classical Academies*. <https://www.ascentclassical.org/>

Class Ace. (2023, May 10). Answers to: Write an essay about “As an SHS student how can you show that you value justice in your day-to-day life.” *Class Ace*.  
<https://www.classace.io/answers/write-an-essay-about-as-an-shs-student-how-can-you-show-that-you-value-justice-in-your-day-to-day-life>