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Developing a Moral Values Scale for Urban Adolescents in India: Item Generation, Content Validity, and Exploratory Factor Structure

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ABSTRACT: Many scales of moral values in adolescents have been developed and validated in Western countries, leaving researchers and schools working in different cultural contexts like urban India with very little to no options. The present research article describes the first stage of a larger research project to construct and validate a moral values scale for secondary school students from urban Bangalore. An initial pool of 151 items, consisting of elements of moral development from various theorists and literature, was developed. This pool was reviewed by 29 experts and reduced to 71 items, and clustered into seven dimensions as Trust, Respect, Responsibility, Fairness, Caring, Citizenship, and Psycho-Social Values. Following a pilot study with 150 students (Cronbach's alpha = .91), the 71-item version was administered to 3,241 students aged 12-16 from 12 schools across Bangalore's four zones and three educational boards (CBSE, ICSE, and the Karnataka State Board). After removing incomplete and outlier responses, data from 2,878 students were retained for exploratory factor analysis. Sampling adequacy was acceptable (KMO = .67; Bartlett's test, $p < .001$), and five successive rounds of exploratory factor analysis reduced the instrument to 20 items loading on seven factors, together explaining 62.7% of the variance. Internal consistency for the seven provisional dimensions ranged from .76 to .82. The resulting short-form questionnaire provides a psychometrically promising and culturally grounded starting point for measuring adolescent moral values in urban Indian schools, and is carried forward for confirmatory validation in a companion paper.

1. INTRODUCTION

Schools everywhere are being asked to do more than teach subjects. Besides scholarly learning, there's a growing expectation that schools teach students how to treat each other and self. This expectation has always existed, but the nature of the pressure behind it has changed. Young people around the world are growing up in rapidly changing cities and experiencing the pressures of digitally connected social media, an often-breaking family unit, and an influx of various cultural influences. Many teachers and parents share the concern that children are losing some aspect of themselves as they're exposed to more and more of the world. While it's good to be concerned when children are growing up and changing, often there's very little evidence to support those claims.

It's in the area of measurement and evidence where psychology can best help. If moral development is going to be talked about in schools and in policy, there has to be a way to observe and measure this in a more structured and systematic way, rather than assuming and asserting it.

A number of moral values and character scales already exist, and they have shaped how the field thinks about the construct. However, the great majority were developed and normed on adolescents in North America, Europe, or East Asia. Constructs, item wording, and response norms built for those populations do not transfer cleanly to a country where joint family structures, religious plurality, multiple language communities, and a still-evolving national education policy shape how young people experience morality day to day. A scale built and tested directly on Indian adolescents, using items generated from their own schooling context, fills a real gap rather than a convenient one.

This paper is the first of two reporting the development of such a scale for secondary school students in urban Bangalore, one of India's largest and most demographically mixed cities. Here we describe how the item pool was generated, how content validity was established through expert review, and how exploratory factor analysis on a large sample was used to identify a preliminary factor structure. A second paper, using an independent sample, reports the confirmatory validation, final item set, and normative scoring bands.

2. THEORETICAL BACKGROUND

2.1 Foundational theories of moral development

Theories and concepts in this scale draw on theories that have structured moral development research over several decades. Kohlberg's (1984) theory of the stages of moral development is one of the early research contributions that structured our understanding of moral development. This scale is particularly interested in reasoning about right and wrong that has increased in sophistication and has grown with the individual. Erikson's psychosocial theory positions adolescence as a period structured around the formation of identity, and is closely related to an individual's value system and the choices they make for themselves. Bandura's social learning theory posits that moral development is learned, to some extent, through observation and reinforcement, e.g., through parenting and teaching, and by significant others in the individual's social environment. Vygotsky's sociocultural and Bronfenbrenner's ecological systems theories encourage us to move beyond the family and individual, to include the social environment, the school and the community. Of major relevance is Gilligan's critique of Kohlberg's theory that emphasises an ethic of care, and is used to offset an undue focus on rules in this research. Schwartz's theory of values is useful for describing a value structure in a moral framework, e.g., benevolence and universalism.

2.2 Other more recent perspectives

These classical theories capture the architecture of moral development well, but they don't necessarily describe the most valuable moral aspects that define cultures, and they were not developed with a focus on measurement at this scale. Two more contemporary frameworks helped to focus the item pool. First, Haidt's (2012) Moral Foundations Theory, which suggests that there are a limited number of more intuitive moral foundations (e.g., care, fairness, loyalty, authority, sanctity, etc.) and that different communities emphasize these foundations differently. During the item-writing process, this framework was helpful in accommodating the presence of other moral foundations beyond fairness and individual rights, like respect for elders, family loyalty, and moral foundations related to communal harmony and social order. This framework integrated well with Haidt's (2012) other work related to moral foundations.

The second framework added was the Jubilee Centre for Character and Virtues' (2022) framework, which consists of moral, civic, intellectual, and performance virtues, and encourages the intentional marriage of character and virtue within the school. This work, along with other efforts from the United Nations Educational, Scientific and Cultural Organization (UNESCO) with respect to values and competencies, allowed the item pool to focus on values and skills that schools are equipped to foster and integrate rather than more abstract philosophical concepts.

2.3 India's Policy Context

Ethics and values are among the expected outcomes enlisted by India's National Education Policy (NEP) 2020, for which schools are required to strive. This study took NEP 2020 as background to explain why this measurement concern exists in the context of India, rather than as a theoretical framework per se or to assert that the resulting scale would only apply to India. The moral constructs measured by this study, that is, self-worth, sense of responsibility, respect for family, regard for the community and appreciation of the value of education, are globally recognizable and reflected in the values education literature; NEP 2020, then, provides the immediate policy justification for why a validated Indian measure of such moral constructs was not available.3.

3. METHOD

3.1 Overview of the scale development process

The scale was developed using the standard steps outlined in psychological scale development (Boateng et al., 2018; DeVellis, 2016), including identifying the domain and generating items, expert review for content validity, pilot testing, large-scale administration, and exploratory factor analysis. This paper describes the process to and including the exploratory factor analysis; the rest of the process, including the confirmatory factor analysis, is conducted on a different, independent sample and reported separately.

3.2 Item generation

An initial pool of 151 items was written to represent seven provisional constructs (i.e. dimensions) based on the theoretical review: Trust, Respect, Responsibility, Fairness, Caring, Citizenship, and Psycho-social Values. These items were designed to represent the everyday experiences of the Indian adolescent student. Items were phrased as short statements in the first person. It was intended that participants would be able to respond to each of the items on a 5-point Likert scale.

3.3 Expert review and content validity

The item pool was assessed by 29 experts, including 9 secondary school teachers, 3 school counselors, 7 school principals, 2 school correspondents, and 7 professors of psychology and/or education with moral development research background. Experts evaluated the clarity and relevance of the items to the construct and judged the cultural adequacy of the items as well as the appropriateness of the items to the intended dimension. Experts could also recommend rewording, merging, or removal of items. The current review greatly improved the content of the item pool and reduced the number of items from 151 to 71, while keeping the seven provisional dimensions.

3.4 Pilot study

The 71-item version was piloted with 150 students to check comprehension and timing, and to obtain a first estimate of reliability. Internal consistency for the full pilot instrument was high (Cronbach's alpha = .91), and no further wording changes were made after the pilot.

3.5 Participants and procedure for the main study

The 71-item questionnaire was completed by 3,241 students, aged 12-16 years, enrolled in 8th to 10th grade in 12 schools in Bangalore. Schools were purposively selected to cover the four different zones of Bangalore (North, South, East and West) and the three different boards (CBSE, ICSE and Karnataka State Board) functioning in urban Karnataka. After eliminating incomplete and multivariate outlying responses, data from 2,878 students were subjected to analysis. This final sample was 54.4% males and 45.6% females, aged between 12 and 16 years (the majority being between 14 and 15 years) and was roughly in the proportion of CBSE (42.3%), ICSE (30.0%) and State Board (27.8%) schools.

Table 1. Demographic characteristics of the main sample (N = 2,878)

Characteristic	Category	n	%
Age	12	54	1.9
	13	822	28.6
	14	915	31.8
	15	919	31.9
	16	168	5.8
Gender	Female	1,312	45.6
	Male	1,566	54.4
Grade	8th	1,008	35.0

	9th	895	31.1
	10th	975	33.9
Educational board	CBSE	1,216	42.3
	ICSE	863	30.0
	Karnataka State Board	799	27.8

3.6 Analysis plan

Internal consistency of the seven provisional dimensions was assessed using Cronbach's alpha. Exploratory factor analysis, using principal component extraction with Varimax rotation, was then used to examine the underlying factor structure of the 71-item pool and to guide item reduction. Sampling adequacy was checked using the Kaiser-Meyer-Olkin measure and Bartlett's test of sphericity, and factors were retained using Kaiser's eigenvalue-greater-than-one criterion. Items with loadings below .40, or with meaningful cross-loadings across factors, were dropped in successive rounds.

4. RESULTS

4.1 Internal consistency of the initial dimensions

Cronbach's alpha for the seven provisional dimensions ranged from .76 to .82 (Table 2), each exceeding the conventional .70 threshold (Nunnally & Bernstein, 1994) and indicating that items within each provisional dimension were measuring a coherent underlying construct even before item reduction.

Table 2. Cronbach's alpha for the seven provisional dimensions

Dimension	Number of items	Cronbach's alpha
Trust	10	.79
Respect	12	.81
Responsibility	8	.77
Fairness	10	.78
Caring	12	.80
Citizenship	9	.76
Psycho-Social Values	10	.82

4.2 Exploratory factor analysis

Sampling adequacy for the 71-item pool was acceptable, Kaiser-Meyer-Olkin measure = .67, and Bartlett's test of sphericity was significant, chi-square(190) = 515.30, $p < .001$, confirming that the correlation matrix was suitable for factor analysis. Five successive rounds of exploratory factor analysis, removing items with low or cross-loadings at each step, produced a stable seven-factor solution retaining 20 items and explaining 62.7% of total variance (Table 3). The seven factors broadly tracked the provisional dimensions used at the item-generation stage, though item content shifted somewhat within dimensions as weaker items were dropped, which is expected at this stage of scale development and is the reason a confirmatory step on an independent sample is necessary before treating the structure as final.

Table 3. Total variance explained by the seven-factor exploratory solution

Component	Eigenvalue	% of variance	Cumulative %
1	4.01	20.03	20.03
2	1.99	9.92	29.95
3	1.69	8.46	38.42
4	1.40	7.00	45.41
5	1.33	6.64	52.05
6	1.12	5.62	57.67
7	1.01	5.05	62.72

5. DISCUSSION

This paper set out to build the first stage of a moral values measure grounded in the daily experience of urban Indian adolescents, rather than adapting an instrument built elsewhere. Two things are notable about the evaluation process. First, as noted, expert reviewers moved items mainly in the direction of respect toward elders and gratitude toward parents, as well as more social-in-kind behaviors, including a more general sense of community belonging. This could be a reflection of Haidt's (2012) assertion that in a wide range of communities, including their own, loyalty and authority, as well as sanctity, are equally, if not more, important than genuine moral foundations such as fairness and other kinds of Centered morality. This is something that would have been difficult to pick up using the typically individually oriented moral development theories that have historically informed the construction of these types of scales.

The seven-factor, 62.7% variance solution is psychometrically sound enough to consider this an early-stage instrument (Beavers et al., 2013), but 20 items in a seven-factor structure is cumbersome to use in the classroom and the stability of the factors is based on one large sample. These are expected conditions of the exploratory phase of scale development (Costello & Osborne, 2005), and so they are not particular to this instrument. They are, however, resolved during the confirmatory phase of the instrument, which is the subject of a companion paper, and reported that a shorter and more stable structure was confirmed using two additional, independent samples.

The limitations of this scale are evident. The data are based on self-report. This is common in research on values and attitudes but is subject to bias. The most common bias in this study is social desirability, especially in a construct like morality, which is culturally and socially loaded. The sample was recruited from only one city. While Bangalore has a diversified population, results from this sample cannot be extended to other rural Indian adolescents. The results are also a function of the cross-sectional design and cannot be generalized to other regions or states. The design also does not allow us to trace the evolution of these values over the course of adolescence.

Nevertheless, developing such an instrument is worthwhile as it offers a baseline, psychometrically sound value measurement tool on adolescent morality, which has been lacking in literature. Considering that most value-based instruments available in the public domain have either been cross-culturally adapted from English languages or from other West/North-centric measurement tools, this instrument will be useful to urban Indian researchers, school counsellors and other allied professionals.

6. CONCLUSION

This study collected a large, demographically representative sample of urban Bangalore secondary school students to develop and evaluate an item pool to assess adolescent moral values. The item pool was developed based on classical theories of moral development and recent theories such as the Moral Foundations Theory and character education. Exploratory factor analysis showed a 20-item structure, which was then further analyzed to identify seven factors. This structure will be further validated in an independent sample and reported along with scoring bands to assist school counselors and give practical recommendations in a companion paper.

REFERENCES

[1] Bandura, A. (1986). Social foundations of thought and action: A social cognitive theory. Prentice-Hall.
[2] Beavers, A. S., Lounsbury, J. W., Richards, J. K., Huck, S. W., Skolits, G. J., & Esquivel, S. L. (2013). Practical considerations for using exploratory factor analysis in educational research. Practical Assessment, Research, and Evaluation, 18(6).
[3] Boateng, G. O., Neilands, T. B., Frongillo, E. A., Melgar-Quinonez, H. R., & Young, S. L. (2018). Best practices for developing and validating scales for health, social, and behavioral research: A primer. Frontiers in Public Health, 6, 149.
[4] Bronfenbrenner, U. (1979). The ecology of human development. Harvard University Press.
[5] Costello, A. B., & Osborne, J. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. Practical Assessment, Research, and Evaluation, 10(7).
[6] DeVellis, R. F. (2016). Scale development: Theory and applications (4th ed.). Sage Publications.
[7] Erikson, E. H. (1968). Identity: Youth and crisis. Norton.
[8] Gilligan, C. (1982). In a different voice: Psychological theory and women's development. Harvard University Press.
[9] Haidt, J. (2012). The righteous mind: Why good people are divided by politics and religion. Pantheon Books.
[10] Jubilee Centre for Character and Virtues. (2022). A framework for character education in schools (3rd ed.). University of Birmingham.
[11] Kohlberg, L. (1984). Essays on moral development, Vol. 2: The psychology of moral development. Harper & Row.
[12] Ministry of Education, Government of India. (2020). National Education Policy 2020.
[13] Nunnally, J. C., & Bernstein, I. H. (1994). Psychometric theory (3rd ed.). McGraw-Hill.
[14] Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. Advances in Experimental Social Psychology, 25, 1-65.
[15] Vygotsky, L. S. (1978). Mind in society: The development of higher psychological processes. Harvard University Press.