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The salience of demographic factors in the operation of altruism amongst school children: A factorial experiment

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ABSTRACT

A 3×2×2 factorial design was employed to test the effects of age levels, gender, urban context, and their interaction on level of altruism. The factors included three age levels (high, middle and low), gender (male, female), and urban context (metropolitan, non-metropolitan). The subjects with age ranging 10-15 years were all school going children and were tested on the altruism scale. Analysis revealed that selected demographic factors didn't have their main effect on altruism level except the interaction of age and gender. The findings have been discussed in the light of psycho-social theories and a social policy projection has been presented for the use of policy makers and stakeholders.

Keywords: Altruism, School Children, Age, Gender, Urban Context

Urban ethnotheories have expounded change in human behavior due to their built environment and related culture (Kärtner, 2013; Penderi, & Petrogiannis, 2011) but owing to their operant learning (Burkey et al, 2016; Lancy, Bock, & Gaskins, 2010). Altruism is one such behaviours which is claimed to have changed (Kurzban, 2015; Fletcher, & Doebeli, 2009). Altruism refers to any behavior or action that benefits others without any expectation of personal gain or reward (Batson & Shaw, 1991). The concept of altruism has been studied in various fields, including psychology, sociology, biology, and philosophy. Researchers have explored the factors that motivate altruistic behaviors (Steele et al, 2008), the social and situational factors that can inhibit or promote altruism (Vollhardt, 2009; Berkowitz, 1972) and the potential impact of altruism on individuals and society as a whole (Wilson & Csikszentmihalyi, 2007; Fehr, & Fischbacher, 2003).

Several key theories have been proposed to explain altruistic behaviors. Kin selection theory suggests that individuals are more likely to help others who are genetically related to them, as this increases the likelihood of their own genes being passed on (Hamilton, 1964). Reciprocal altruism theory suggests that individuals may engage in altruistic behaviors if they believe that others will reciprocate in the future (Trivers, 1971). Social identity theory proposes that individuals are more likely to help others who are perceived as part of their own social group (Tajfel, 1979). Empathy, or the ability to understand and share the feelings of others, has also been found to play a significant role in motivating prosocial behaviors.

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Research has shown that individuals who experience high levels of empathy are more likely to engage in altruistic behaviors, such as donating to charity or volunteering (Batson & Shaw, 1991).

Another important aspect of altruism is the bystander effect, which refers to the phenomenon where individuals are less likely to intervene in an emergency situation when others are present (Darley & Latané, 1968). Research has shown that the presence of others can diffuse responsibility and reduce the likelihood of individuals taking action to help others (Darley & Latané, 1968). More recent research has focused on the effective altruism movement, which emphasizes evidence-based approaches to promoting altruistic behaviors and achieving the greatest possible positive impact (MacAskill, 2015; Beyer, 2017; Overall, 2017). This approach involves evaluating the effectiveness of different interventions and causes, and prioritizing those that are likely to have the greatest impact.

Various demographic factors influence the complexity of altruism (Krebs, 1970). Research has shown that age, gender, social class, and culture are some of the key demographic factors that can affect altruistic behavior (Chen et al, 2013; Piff et al, 2010; Theurer & Wister, 2010).. For example, women are generally more likely than men to engage in altruistic behaviors, such as volunteering and donating to charity (Eagly & Crowley, 1986; Barreto et al., 2015). Age has also been found to play a role, with older individuals being more likely to engage in altruistic behaviors than younger individuals (Luo & Han, 2014). Social class and culture can also influence altruistic behavior (Laidley, 2013). Research has shown that individuals from higher social classes may be more likely to engage in altruistic behaviors, but may also be more likely to do so for self-interested reasons (Piff et al., 2010). Cultural values and norms can also shape altruistic behavior, with some cultures placing a higher value on collectivism and helping others than others (Smith et al., 2017; Perlow & Weeks, 2002).

Altruism tends to function slightly distinctively in urban life (Sampson, 2012). Metropolitan cities present unique challenges and opportunities for altruistic behavior due to their dense populations, diversity, and complex social structures (Bar-Yam, 2016; Sampson, 2013). Research has examined various aspects of altruism in metropolitan cities, including the influence of social norms, the role of urban design, and the impact of social media (Ramaswami et al 2012, Sampson, 2012).

Nier (2018) found that social norms play a significant role in promoting altruistic behavior in metropolitan cities. People tend to help others when they believe it is expected of them and when they perceive that others will also help (Rosener, 2011). This suggests that creating a culture of helping and kindness in urban areas can encourage more altruistic behavior (Schnall et al, 2010; Robinson III & Curry, 2005).

The arrangement of urban spaces can also influence altruistic behavior (Manolache, 2013). Research indicates that the establishment of green areas like parks and gardens can foster a sense of unity and promote behaviors that benefit the environment (Kuo & Sullivan, 2001). Other design components, such as public art and effective lighting, can similarly boost perceptions of safety and interconnectedness, potentially encouraging altruistic behaviour (Van der Meer, 2010). Additionally, in metropolitan areas, social media has emerged as a potent tool for encouraging altruism (Kwon & Wen, 2010; Selfhout et al., 2010). Platforms like Facebook and Twitter can serve to rally communities for charitable endeavors and link volunteers with chances to assist (Murthy & Gross, 2013). Social media also aids in the exchange of resources and support, enabling individuals to aid one another during crises (Sutton et al., 2014).

Altruism has been widely studied in the context of school education too (Shin, Ahn & Kim, 2018). In India, where social values and norms play a strong role in shaping children's

behavior, understanding altruism among school children is particularly important (Faruque, 2015). Research has examined various factors that may influence altruistic behavior among Indian school children, including cultural values, parental attitudes, and peer relationships (Patil & Adsul, 2017). Indian children tend to exhibit more altruistic behavior when they are raised in families that prioritize values such as compassion and service to others (Srivastava & Chakrabarti, 2018). Additionally, children who have positive relationships with their peers tend to show more helping behavior (Kaur & Sidhu, 2016). These findings suggest that family and peer relationships play an important role in shaping altruistic behavior among Indian school children.

The school environment itself may also influence altruistic behavior (Robinson III & Curry, 2005). Creating a positive school climate that promotes social-emotional learning can increase children's altruistic behavior (Jindal-Snape et al., 2018). Moreover, incorporating service-learning opportunities into the curriculum has been found to increase children's pro-social behavior (Rahman et al., 2018).

There are, however, cultural factors that may limit altruistic behavior among Indian school children. Rao & Shultz (1993) in this connection suggested that the hierarchical social structure in India may discourage children from helping those who are seen as socially inferior. Also, certain cultural practices, such as the caste system, may contribute to social divisions and inhibit altruistic behavior (Bhattacharya & Satyanarayana, 2013). Overall, altruism among Indian school children is shaped by a complex interplay of cultural, familial, and social factors (Srivastava & Joshi, 2013).

The purpose of the present study was to extend the analysis of the association between some demographic factors and altruism by sampling altruistic behavior in children with different age levels, gender and type of cities in a social experimental setting.

Hypothesis and research questions

To help understand the relationship of our targeted demographic factors with the level of altruism of school going children more decisively, we ask the following research questions:

RQ1: How does the level of altruism among school children vary across different age levels, genders, and types of cities?

RQ2: To what extent do age, gender, and urban context independently contribute to the variation in the level of altruism displayed by school children?

RQ3: Are there any significant interaction effects among age, gender, and urban context that collectively influence the level of altruistic behavior in school children?

Necessarily, to guide the direction of our experimental research, we propose a null hypothesis based on the aforementioned literature and reasoning:

H₀1: There is no significant interaction effect of demographic factors on the operation of altruism among school children.

This null hypothesis proposes that the demographic factors considered in this study do not have a statistically significant impact on the way altruism operates among school children. This implies that the differences in altruistic behavior that might be observed are not due to the variations in demographic factors but could be attributed to other factors or chance.

Method:

Design of the study: This study used a 3 (Age levels: 10-11, 12-13, 14-15) × 2 (gender: male and female) × 2 (levels of civility: metropolitan and non-metropolitan cities) between-subjects fully factorial experimental design. According to these categories, 12 sub-groups were

formed and 10 subjects were taken for each subgroup making a sample of 120 for this experiment.

Sampling method: Three hundred school children aged 10 to 15 years from a non-metropolitan city (Aligarh) and a metropolitan city (New Delhi) were randomly contacted and were requested to complete the test of Altruism. A total number of 264 children provided analyzable data. Out of this pool, 120 children were selected for the experiment with the help of MS Excel software. The data of 120 consisted of all sub-group categories which was transported to SPSS software for analysis.

Outcome measure: A three point Altruism test developed by Penny Jain was used. The test consists of 25 items suitable to the socio-cultural settings of Indian society and follows Likert rating style. The split half reliability of the test is 0.91 whereas the questionnaire satisfies the content and face validity.

Analysis: Preliminary analysis covered descriptive statistics, t-test and one-way ANOVA to see the status of subgroups and any differences across the subgroups. Main analysis was Univariate GLM having Level of Altruism as dependent or outcome variable whereas age levels, gender and urban context (all in categorical forms) were independent variables. Analysis of variance was computed in the main analysis too.

Results:

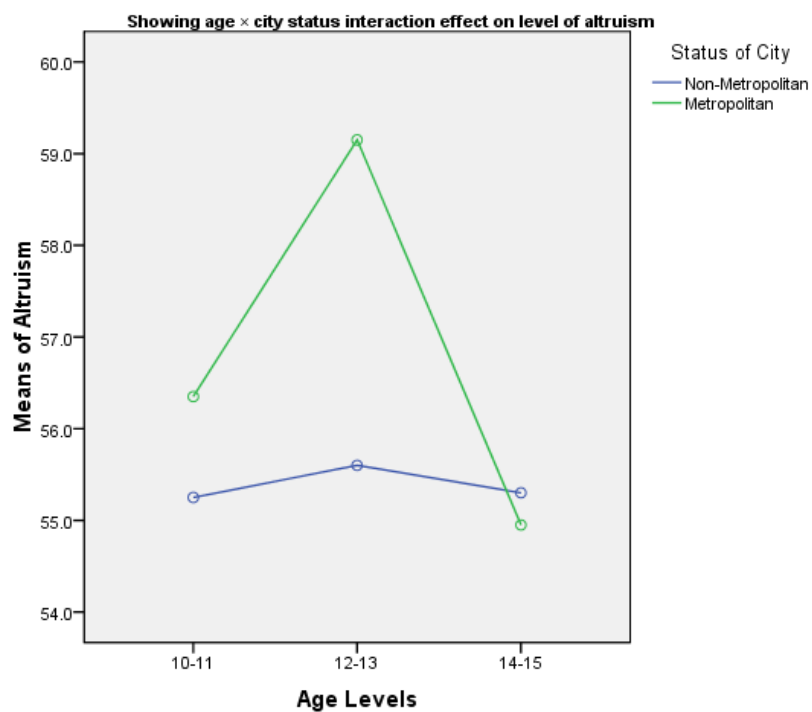
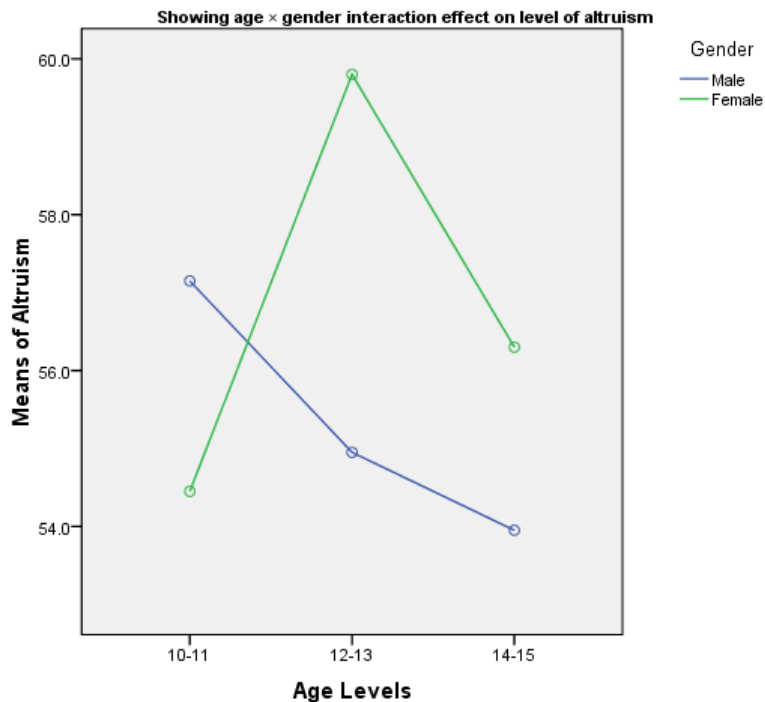
Preliminary analysis provided measures of central tendency for the whole sample of 120 as well as of the subgroups ($\bar{x}$ = 56.10, σ = 5.85, Male: $\bar{x}$ = 55.35, σ = 5.98; Female: $\bar{x}$ = 56.85, σ = 5.66; Metropolitan: $\bar{x}$ = 56.82, σ = 5.86; Non-metropolitan: $\bar{x}$ = 55.38, σ = 5.80; Age 10-11: $\bar{x}$ = 55.80, σ = 6.35; Age 12-13: $\bar{x}$ = 57.38, σ = 5.60; Age 14-15: $\bar{x}$ = 56.10, σ = 5.85). After computation with t-test and one way ANOVA, intergroup differences on means did not show any statistically significant differences across various groups.

Table 1 presents the effects of age levels, gender and urban context on altruism of our subjects. The results indicate that the main effects of all three independent variables are statistically non-significant. Most of the interaction effects are also statistically non-significant. However, the interaction effect of age levels and gender is statistically significant.

Table 1: Tests of Between-Subjects Effects
Summary of the Analysis of Variance of the Effects of Age Levels, Gender and Urban Context on Altruism scores

Source of Variance	Sum of Squares	df	Mean Square	F
Gender (A)	67.500	1	67.500	2.196
urban context (B)	61.633	1	61.633	2.005
Age Levels (C)	106.650	2	53.325	1.735
A × B	13.333	1	13.333	.434
A × C	295.850	2	147.925	4.812*
B × C	77.717	2	38.858	1.264
A × B × C	128.317	2	64.158	2.087
Within	3319.800	108	30.739	
Total	381736.000	120		
Corrected Total	4070.800	119		

The following two figures indicate interactions of age levels with gender and age levels with urban context. Figure 1 clearly indicates a significant interaction effect during the lowest age level where male altruism is going downwards whereas female altruism is going upwards.



It is also visibly clear that altruism grows differently among metropolitan school children as compared to their non-metropolitan counterparts. On the one hand, male subjects began with high altruism but they go consistently downwards with the progression of age whereas girl subjects begin with low altruism which steeply rises at age level 12-13 and then shows a downfall at 14-15 years. On the other hand, similar subjects representing different urban context collectively show a different pattern of altruism. While metropolitan subjects main a consistent but low level, their non-metropolitan counterparts who begin slightly higher, go further high but then go steeply downwards even lower than metropolitan children.

Discussion:

Altruism seems to have a significant impact on the well-being of individuals and communities (Moir & Jessel, 2010; Batson, 2014) and especially among children, it can lead to positive outcomes such as increased empathy, social connectedness, and positive self-esteem (Eisenberg, Fabes & Spinrad, 2006; Carlo et. al. 2010). The factors that influence altruism among school children are complex and multifaceted (Smetana & Villalobos, 2009; Narvaez et. al, 2013). Demographic factors such as age, gender, social class, and culture can all play a role in shaping altruistic behavior (Davis, 1991; Liu & Liao, 2014). Review of research in this study has suggested that girls tend to engage in more altruistic behaviors than boys (Eisenberg & Fabes, 1998; Malti, et. al., 2009), and that cultural values around collectivism and individualism can influence the degree to which individuals prioritize the needs of others (Markus & Kitayama, 1991; Triandis, 1995; Chen & Bond, 2010). Our study has indicated that altruism manifest differently in female and male children which might be due to a combination of biological, social, and environmental factors (Zahn-Waxler, 1984; Eberhard, 1975). Major factors which operate as mediators and moderators of gendered altruism could be socialization and gender norms (Badgett, 1999; Salgado, 2018), empathy and emotional expression (Eisenberg, 2002; Zahn-Waxler, 1984), communication and collaboration (Zahavi, 1977), cultural and family influences (Jellal & Wolff, 2002), biological factors (Eberhard, 1975) and context and situational factors (Carlo et al, 1991; Fagin-Jones & Midlarsky, 2007). Importantly, while investigating the relationship between altruism among female school children and considering their urban context and age is a valuable endeavor, it's crucial to approach the topic with nuance and an understanding of the multifaceted factors that influence altruistic behavior.

Understanding the interplay of our selected demographic factors and how they shape altruistic behavior among school children is important for several reasons (Bayer & Reyna, 2012). First, it can help us to identify strategies for promoting and fostering altruistic behavior in schools and communities (Piliavin & Charng, 1990; Staub, 2005; Liu & Chiu, 2009; Van Lange, 2012). Second, it can shed light on the broader societal factors that influence social behavior and highlight potential areas for intervention and policy change (Schwartz, 1992; Aquino & Reed, 2002; Yamagishi, 2011). Moreover, in India, collectivist cultural values can contribute to greater levels of altruistic behavior among school children (Singh, 2017) and factors such as parental modeling and peer influence can play a significant role in shaping altruistic behavior among children (Khandelwal & Chakrabarti, 2014). Therefore, by gaining a deeper understanding of the interplay of these factors, policymakers and educators can develop targeted interventions to promote altruistic behavior and cultivate a more compassionate and socially responsible society.

Policy Projection:

The study investigated the relationship between age, gender, urban context (metropolitan vs. nonmetropolitan), and the level of altruism exhibited by school children. Altruism, a vital social behavior, contributes to positive community development and

individual well-being. The findings suggest the need for targeted policies aimed at fostering altruistic behavior among school children, recognizing the nuances influenced by age, gender, and urban environment. Following three major areas of this policy projection might help the policy makers and stakeholders to refine their decisions and practices:

I- Policy Objectives:

Promote Altruism Education: Develop and implement educational programs within school curricula that emphasize the importance of empathy, kindness, and helping others. Tailor the content to various age groups and address gender-specific socialization patterns.

Encourage Gender-Neutral Altruism: Design interventions that challenge traditional gender norms and stereotypes related to altruism. Encourage boys and girls alike to engage in various forms of altruistic behavior, fostering a more inclusive and equitable society.

Urban-Specific Initiatives: Tailor altruism-promoting initiatives based on the unique characteristics of metropolitan and nonmetropolitan areas. For example, in metropolitan areas, initiatives could focus on creating volunteer opportunities that reflect urban challenges, while nonmetropolitan areas could emphasize community cooperation and support.

Age-Appropriate Interventions: Implement age-specific strategies to nurture altruism. Younger children might benefit from activities that develop empathy and cooperation skills, while older children could engage in service-learning projects that address community needs.

Community Engagement: Collaborate with local communities, schools, parents, and civic organizations to create a holistic approach to nurturing altruism. Engage families in promoting altruistic values at home and within their neighborhoods.

II- Implementation Strategies:

Curriculum Integration: Collaborate with educational authorities to integrate altruism education into school curricula, aligning with developmental stages and gender considerations.

Workshops and Seminars: Organize workshops for educators, parents, and community leaders to provide them with tools to effectively promote altruism and challenge gender biases.

Digital Platforms: Develop age-appropriate digital resources such as games, videos, and interactive modules that highlight the significance of altruism, showcase diverse role models, and emphasize gender equality.

Altruism Awards: Establish awards or recognition programs to celebrate students who actively engage in altruistic actions. Recognize both small acts of kindness and larger community-oriented projects.

Collaborative Partnerships: Collaborate with NGOs, youth organizations, and local authorities to extend the reach of altruism-promoting initiatives and ensure a coordinated effort.

III- Monitoring and Evaluation:

Data Collection: Continuously collect data on altruistic behaviors among school children, considering age, gender, and urban context. Monitor changes over time to assess the effectiveness of interventions.

Feedback Mechanism: Establish channels for students, parents, and educators to provide feedback on the impact of initiatives. Use this feedback to refine and adapt strategies.

Research-Based Approach: Support ongoing research to deepen the understanding of the relationship between age, gender, urban context, and altruism. Use research findings to inform policy adjustments.

Through this study and policy analysis, the author aims to help create an environment that fosters altruism among school children, addressing age and gender differences while recognizing the influence of metropolitan and nonmetropolitan contexts. By implementing targeted strategies and promoting inclusive values, we seek to cultivate a generation of empathetic and compassionate individuals who contribute positively to their communities and society as a whole.

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