EMPATHY, PERSONAL AND SOCIAL RESPONSIBILITY

Empathy and Personal and Social Responsibility among Generation Z Students: Relationship, Prediction, and Gender Differences

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Abstract

Empathy is often seen as a motivational basis for prosocial conduct, yet its link with personal and social responsibility among Generation Z students has received little attention. This cross-sectional study looked at levels of empathy and personal and social responsibility (PSR), the association and statistical prediction between the two, and sex differences, using a sample of 216 Generation Z students from the Hassan District of Karnataka, India. Convenience sampling was used to recruit participants in March and April 2026. Empathy was assessed with the 16-item Toronto Empathy Questionnaire. Responsibility was assessed with a 35-item scale made up of 15 personal and 20 social responsibility items, and exploratory factor analysis showed these items loading onto one dominant factor. The analyses included Pearson's correlation, simple linear regression, and independent-samples t-tests. Empathy correlated strongly with PSR ($r = .81$), personal responsibility ($r = .80$), and social responsibility ($r = .78$) (all $p < .01$), and it explained 65.0%, 64.2%, and 60.4% of their variance, respectively. PSR also predicted empathy ($R^2 = .65$), but this symmetry is built into single-predictor models and does not establish direction. No significant sex differences emerged (all $p \geq .134$; Cohen's $d = 0.01–0.22$). Empathy and responsibility were closely linked in this sample, though the cross-sectional, self-reported design rules out causal inference. The findings support empathy-focused and service-learning initiatives in educational and social work practice.

Keywords: Empathy; gender differences; Generation Z; personal responsibility; social responsibility

1 Introduction

Empathy, the capacity to understand and share another person's emotional state, is widely regarded as the foundation of moral and prosocial functioning. It is usually described as having cognitive and affective components [1, 2], and theory links it to caring behavior and a concern for justice [3, 2]. Reviews have related empathy to prosocial behavior, although the strength of the association depends on how empathy is measured [4]. Responsibility is the corresponding commitment to action. Personal responsibility denotes accountability for one's own actions and their effects on others [5], and social responsibility extends this accountability to the welfare of other people and the wider community. Together, they are referred to as personal and social responsibility (PSR).

Generation Z [6] (born between 1997 and 2012) is just entering higher education and the workforce, and it has a reputation for being ethically aware. Feelings of social responsibility, and expectations about it, influence how these young people consume sustainably [7], and those with a strong moral identity lean toward employers whose environmental, social, and governance practices are credible

[8]. But caring about something is not the same as acting on it. Stated ethical intentions do not always turn into action [9]. So what helps people bridge the gap between values and conduct?

A few things could limit empathy and responsibility in these students. Social isolation and anxiety, for one, have been linked to Generation Z's readiness to share personal details online, perhaps in place of closer engagement with other people [10]. Burnout among parents, driven by conflict between work and family, can damage parent–child relationships [11]. And a meta-analysis of American college students found that self-reported dispositional empathy dropped between 1979 and 2009 [12].

Even so, little is known about how empathy relates to personal and social responsibility in Gen Z. Studies of this group have mostly looked at consumption, what they want from employers, and workplace expectations [7, 8, 13]. Empathy research, on the other hand, has relied largely on health profession samples [14, 15, 16, 17]. Work that links the two constructs seldom separates personal from social responsibility, tests prediction in both directions, or looks at gender differences. Students in smaller Indian districts are barely represented at all.

This study set out to examine (a) the levels of empathy, personal responsibility, social responsibility, and overall PSR among Generation Z students in the Hassan District, Karnataka, India; (b) how empathy relates to each form of responsibility; (c) how far empathy and PSR predict each other; and (d) gender differences on these variables. The findings are meant to inform empathy-building and responsibility-oriented programs in educational and social work practice.

2 Literature review and hypotheses

2.1 Empathy and responsibility

Theoretical accounts place empathy at the heart of moral motivation. Hoffman [2] proposed that empathic arousal prompts concern for others and supports care- and justice-based moral development in children, and Batson [3] argued that empathic concern motivates people to help. Applied studies point the same way. Empathy mediates the link between emotional support and caring behavior among nursing interns [15], and Generation Z job seekers with a strong moral identity respond favorably to socially responsible employers [8]. Social responsibility feelings, engagement, and expectations shape Generation Z consumers' sustainability actions [7], and perceived corporate social responsibility raises Generation Z hotel customers' green image perceptions and willingness to pay in India [18]. The last three studies did not measure empathy, so the empathy–responsibility link was inferred rather than tested. Personal responsibility involves recognizing how one's actions affect others [5], and that presupposes perspective taking, which empathy supports.

Empathy is not fixed. Reflective community service was associated with gains in cognitive empathy among prospective medical students, although the durability of such gains is uncertain [19], and empathy mapping with simulation [20] and feedback-based learning [21] have been proposed or tested as ways to strengthen empathic skills. Empathy can also carry costs: affective empathy was associated with poorer mental health in some medical students [16], and among nurses, the link between empathy and compassion fatigue was mediated by social support [22]. Taken together, the literature supports the expectation that more empathic students feel more accountable for their conduct and are more committed to others' welfare. Accordingly:

H1. Empathy is positively correlated with overall PSR.

H1a. Empathy is positively related to personal responsibility.

H1b. Empathy is positively related to social responsibility.

2.2 Direction of the relationship

The theory treats empathy as an antecedent of responsibility [3, 2]; however, the reverse is also plausible. Programs that combine social engagement with reflection, such as mandatory service learning for prospective medical students and a social–emotional learning curriculum in elementary schools, have increased empathy [23, 19], suggesting that acting responsibly toward others may strengthen empathy. Cross-sectional data cannot establish precedence; therefore, the prediction was tested statistically in both directions.

H2. Empathy significantly predicts (a) overall PSR, (b) personal responsibility, and (c) social responsibility.

H3. Overall, PSR significantly predicts empathy.

2.3 Gender differences

The evidence on gender and empathy is mixed. Women scored higher than men on self-report measures, yet that gap mostly vanished on physiological and unobtrusive ones [24]. Newer work found higher empathy and compassion in women [25], and a review of behavioral and neural evidence reported sex differences in implicit measures of empathy [26]. Among Indian college students, girls scored above boys [27]. Some studies, though, found no significant differences in university students [28]. For responsibility the evidence is thinner. Thomas [18] brought gender into a model of Generation Z customers' reactions to corporate social responsibility, and Generation Z management students described gendered obstacles to success, with women reporting lower confidence [29]. Still, studies that compare personal and social responsibility directly are rare. Hence:

H4. Male and female students differ significantly in terms of (a) empathy, (b) personal responsibility, (c) social responsibility, and (d) overall PSR.

3 Methodology

3.1 Design and setting

The study followed a descriptive, cross-sectional, correlational design. Every respondent provided data once, at a single point in time. The setting was the Hassan District of Karnataka, India, across eight taluks: Hassan, Holenarasipura, Arkalgud, Arsikere, Belur, Channarayapatna, Sakleshpur, and Alur. Generation Z was taken as individuals born between 1997 and 2012 [6].

3.2 Participants and sampling

There is no finite, enumerable, or official list of Generation Z youth in the district, so non-probability convenience sampling was used. Students from pre-university/ITI, undergraduate, and postgraduate programs took part as their availability, access, and willingness allowed, giving a total of 216. They filled in Google Forms online during March and April 2026. Table 1 shows the sample profile.

3.3 Measures

Socio-demographic schedule. A self-developed schedule recorded gender, course of study, residence (hostel/PG, day scholar, or rented room), parental status, disability status, monthly family income,

and place of residence (urban, rural, semi-urban, or tribal/agency area). Its content was reviewed for clarity and comprehensiveness before data collection.

Empathy. Empathy was measured using the 16-item Toronto Empathy Questionnaire [30] (TEQ), which was derived from a factor-analytic integration of several empathy measures and treated empathy as a largely emotional process. Negatively worded items were reverse-scored. Items were rated on a five-point frequency scale (never, rarely, sometimes, often, always), coded 1–5, and summed (possible range 16–80), with higher scores indicating higher empathy.

Personal and social responsibility. PSR was measured using a researcher-developed 35-item self-report scale presented bilingually in English and Kannada. The 15-item personal responsibility subscale covered accountability, self-discipline, time management, and learning from mistakes (for example, "I take responsibility for my actions"), and the 20-item social responsibility subscale covered respect, cooperation, helping others, and community participation (for example, "I help others when needed"). All items were positively worded statements. Items were rated on a five-point Likert scale (strongly disagree to strongly agree), coded 1 to 5, and summed (possible ranges 15–75, 20–100, and 35–175 for personal, social, and total scores), with higher scores indicating greater responsibility.

For descriptive purposes, scores were classified as low, moderate, or high using the sample mean ± 1 standard deviation (SD) as cut-offs.

3.4 Ethical considerations

This study was approved by the college-level ethics committee. The respondents were informed of the purpose and scope of the study, and data were collected only after informed consent was obtained. Participation was voluntary, with the freedom to withdraw at any stage. Responses were kept confidential and anonymous and were used solely for research purposes. The instruments posed no foreseeable physical, psychological, or social harm, and respondents were treated with dignity and respect; permission was obtained to use the Toronto Empathy Questionnaire in accordance with its developers' terms of use.

3.5 Data analysis

Data were analyzed using IBM SPSS Statistics, Version 20 [31]. Internal consistency was assessed using Cronbach's alpha [32], and frequencies, percentages, means, standard deviations, skewness, and kurtosis were used to describe the sample and variables. The structure of the responsibility items was examined using exploratory factor analysis (EFA) with principal axis factoring, run separately for the 15 personal and 20 social items, and then for all 35 items together (with oblimin rotation when more than one factor was extracted). Sampling adequacy was assessed using the Kaiser–Meyer–Olkin (KMO) measure [33] and Bartlett's test of sphericity, and the number of factors was determined using the Kaiser criterion [34] (eigenvalue > 1) checked against a parallel analysis [35] (95th-percentile eigenvalues from 2,000 random datasets of the same size). Pearson's correlation was used to test H1, and simple linear regressions were used to test H2 (empathy predicting PSR, personal responsibility, and social responsibility) and H3 (PSR predicting empathy). The Durbin–Watson statistic and standardized residuals were inspected for the PSR model. Independent-samples t-tests, preceded by Levene's test, were used to test H4, with Welch's correction where variances were unequal ($p < .05$), and Cohen's d was used as the effect size [36]. Statistical significance was set at $\alpha = .05$, two-tailed.

4 Results

4.1 Participant profile

Most of the 216 respondents were female (65.7%), undergraduates (63.0%), and from rural areas (73.1%). Half reported monthly family incomes below ₹10,000 (Table 1).

Table 1. Demographic profile of the respondents (N = 216).

Variable	Category	n	%
Gender	Male	74	34.3
	Female	142	65.7
Course of Study	PUC/ITI	11	5.1
	Undergraduate	136	63.0
	Postgraduate	69	31.9
Residential Arrangement	Hostel/PG	111	51.4
	Day scholar (living with family)	101	46.8
	Rented room (living alone)	4	1.9
Parental Status	Both parents alive	186	86.1
	Mother only alive	27	12.5
	Father only alive	2	0.9
	Neither parent alive	1	0.5
Disability Status	Yes	15	6.9
	No	201	93.1
Monthly Family Income (₹)	Below 10,000	108	50.0
	10,001–50,000	69	31.9
	50,001–100,000	24	11.1
	Above 100,000	15	6.9
Place of Residence	Urban	44	20.4
	Rural	158	73.1
	Semi-urban	11	5.1
	Tribal/agency area	3	1.4

4.2 Descriptive statistics, reliability, factor structure, and levels

All scales showed good to excellent internal consistency (Table 2). Scores were moderately high and negatively skewed, but skewness and kurtosis stayed within ±1, so the data were treated as approximately normal.

Table 2. Descriptive statistics, normality indices and reliability of the study variables (N = 216).

Variable	Items	Possible range	Observed range	M	SD	Skew-ness	Kurtos-is	Cronbach's α
Empathy	16	16–80	23–72	53.13	10.48	−0.66	−0.19	.833
Personal respons-ibility	15	15–75	15–75	53.86	13.59	−0.96	0.72	.960
Social responsibil-ity	20	20–100	20–100	72.10	18.44	−0.87	0.63	.972
PSR total	35	35–175	35–175	125.95	31.28	−0.93	0.76	.982

Note: SE of skewness = 0.17; SE of kurtosis = 0.33.

The factor structure of the responsibility items was examined using exploratory factor analyses with principal axis factoring (Table 3). Each subscale showed excellent sampling adequacy (KMO = .948 and .955) and a significant Bartlett's test ($\chi^2(105) = 2647.98$ and $\chi^2(190) = 4062.88$, both $p < .001$), with one factor above an eigenvalue of 1 (9.626 and 13.031) and loadings ≥ .70. When all 35 items were analyzed together (KMO = .960; $\chi^2(595) = 7484.83$, $p < .001$), the Kaiser criterion suggested two factors, but the second eigenvalue (1.319) was below the 95th percentile of eigenvalues from 2,000 random datasets of the same size (1.82) and explained only 2.8% of the variance, while the first factor explained 60.7% of the variance. All 35 items loaded between .70 and .85 on the first factor, whether they were written for personal or social responsibility, and only a few items had loadings of .31 to .39 (absolute values) on the second factor, which correlated with the first factor at −.12. Therefore, a single general responsibility factor best describes the data, and the personal and social subscales are not empirically distinct from one another.

Table 3. Exploratory factor analysis of the responsibility items (N = 216).

Indicator	Personal responsibility (15 items)	Social responsibility (20 items)	All items (35 items)
Kaiser–Meyer–Olkin (KMO)	.948	.955	.960
Bartlett's χ^2 (df)	2647.98 (105)	4062.88 (190)	7484.83 (595)
Bartlett's p	< .001	< .001	< .001
Eigenvalue above 1 (Kaiser criterion)	1 factor	1 factor	2 factors
First eigenvalue	9.626	13.031	21.606
Second eigenvalue	0.720	0.937	1.319
Parallel analysis, 95th percentile (1st; 2nd)	1.58; 1.44	1.70; 1.55	1.98; 1.82
Factors supported by parallel analysis	1	1	1
Variance explained by first factor (%)	61.64	63.34	60.70
Variance explained by second factor (%)	—	—	2.80
Communalities	.492–.683	.531–.743	.490–.739

Indicator	Personal responsibility (15 items)	Social responsibility (20 items)	All items (35 items)
Loadings on first factor	.701–.826	.728–.862	.700–.851

Note: Principal axis factoring. For the 35-item analysis, the two-factor solution was rotated with oblimin (factor correlation = –.12). The parallel analysis used 2,000 random datasets with N = 216 participants in each dataset.

Most students were in the moderate band for empathy (67.6%), personal responsibility (71.3%), social responsibility (73.6%), and overall PSR (70.8%) (Table 4). The low empathy band was the largest of the low bands (18.1%).

Table 4. Levels of empathy and responsibility (N = 216).

Variable	Low: score range, n (%)	Moderate: score range, n (%)	High: score range, n (%)
Empathy	≤ 42: 39 (18.1)	43–63: 146 (67.6)	≥ 64: 31 (14.4)
Personal responsibility	≤ 40: 33 (15.3)	41–67: 154 (71.3)	≥ 68: 29 (13.4)
Social responsibility	≤ 53: 30 (13.9)	54–90: 159 (73.6)	≥ 91: 27 (12.5)
PSR total	≤ 94: 32 (14.8)	95–157: 153 (70.8)	≥ 158: 31 (14.4)

Note: Cut-offs were the sample mean ± 1 SD (low = below M − 1 SD; high = above M + 1 SD) applied to the integer scores.

4.3 Association between empathy and responsibility (H1)

Empathy was strongly and positively correlated with overall PSR (r = .806), personal responsibility (r = .801), and social responsibility (r = .777) (all $p < .01$; Table 5). All three coefficients are large by conventional benchmarks [36], and empathy shared 65%, 64%, and 60% of its variance with these variables. H1, H1a, and H1b are all supported. Personal and social responsibility were highly correlated (r = .905), consistent with the single dominant factor found in the factor analysis.

Table 5. Means, standard deviations and Pearson correlations (N = 216).

Variable	M	SD	1	2	3	4
1. Empathy	53.13	10.48	—			
2. Personal responsibility	53.86	13.59	.801**	—		
3. Social responsibility	72.10	18.44	.777**	.905**	—	
4. PSR total	125.95	31.28	.806**	.968**	.983**	—

Note: **p < .01 (two-tailed).

4.4 Prediction (H2 and H3)

Empathy significantly predicted overall PSR, personal responsibility, and social responsibility, explaining 65.0%, 64.2%, and 60.4% of the variance, respectively (Table 6). Each one-point increase in empathy was associated with a 2.41-point increase in PSR. Overall, PSR significantly predicted empathy (R^2 = .650). H2 and H3 are supported. Because each model has one predictor, the standardized coefficient equals the correlation in both directions; therefore, the models express one association and do not show which construct precedes the other.

Table 6. Simple linear regression models predicting responsibility from empathy and empathy from PSR (N = 216).

Outcome	Predictor	B	SE B	β	t	95% CI for B	R^2	F(1, 214)
PSR total	Empathy	2.41	0.12	.806	19.94	[2.17, 2.64]	.650	397.53
Personal responsibility	Empathy	1.04	0.05	.801	19.60	[0.94, 1.14]	.642	384.24
Social responsibility	Empathy	1.37	0.08	.777	18.05	[1.22, 1.52]	.604	325.84
Empathy	PSR total	0.27	0.01	.806	19.94	[0.24, 0.30]	.650	397.53

Note: All $p < .001$. The constant for the empathy model was 19.10 (SE = 1.76). For the total PSR model, adjusted $R^2 = .648$, Durbin–Watson = 1.91, and standardized residuals ranged from −6.45 to 4.84.

4.5 Gender differences (H4)

Female students scored slightly higher than male students on every variable, but no difference was statistically significant, and the effect sizes were negligible to small (d = 0.01–0.22; see Table 7). H4 was not supported for any of the four components.

Table 7. Independent-samples t-tests comparing male and female students (N = 216).

Variable	Male M (SD)	Female M (SD)	Levene's p	t (df)	p	Mean difference [95% CI]	Cohen's d
Empathy	51.65 (11.29)	53.90 (9.99)	.087	−1.50 (214)	.134	−2.25 [−5.21, 0.70]	0.22
Personal responsibility	53.15 (14.95)	54.23 (12.87)	.057	−0.55 (214)	.582	−1.08 [−4.92, 2.77]	0.08
Social responsibility[a]	71.96 (20.78)	72.17 (17.17)	.034	−0.08 (125.95)	.941	−0.21 [−5.78, 5.36]	0.01
PSR total[a]	125.11 (34.94)	126.39 (29.30)	.034	−0.27 (127.46)	.787	−1.29 [−10.68, 8.11]	0.04

Note: Male, n = 74; female, n = 142. [a]Equal variances not assumed (Welch's t-test). Mean difference = Male − Female.

5 Discussion

Empathy and personal and social responsibility were strongly related among Generation Z students, and this relationship did not differ by gender. The findings are interpreted below in light of the literature and sets out what they can and cannot show.

5.1 Levels of empathy and responsibility

Because items were rated on five-point scales, the approximate item means were 3.32 for empathy, 3.59 for personal responsibility, 3.60 for social responsibility, and 3.60 for PSR, all above the scale midpoint, with negative skew. This is consistent with the ethical orientation attributed to Generation Z [7, 8], although self-report scales are open to socially desirable responding. The predominance of the moderate band (Table 4) should be interpreted cautiously. Because the bands were defined as the sample mean ± 1 SD, approximately two-thirds of any approximately normal distribution falls in the middle band by construction, so the classification describes relative standing within the sample and not absolute levels. Nearly one in five students was in the low empathy band, which is the group that empathy-building activities would most obviously target.

5.2 Empathy and responsibility

The strong correlations (r = .777–.806) support H1, H1a, and H1b and are consistent with the theory that empathic concern motivates action for others' welfare [3, 2] and with evidence that Generation Z's responsibility is anchored in moral identity and social responsibility [7, 8]. The coefficients are nonetheless very large, and three design features may have inflated these values. Both constructs were self-reported in the same session; therefore, shared method variance and response styles may have contributed. Some empathy items refer to concern for others, which conceptually overlaps with social responsibility content. The outcomes were attitudes and dispositions, not observed behavior, whereas empathy–prosocial associations vary with the way the constructs are measured [4]. Therefore, the relationship is best described as strong and theoretically coherent, and not as evidence that empathy produces responsible actions.

5.3 Prediction and direction

Empathy accounted for 60–65% of the variance in the responsibility measures. A one-standard-deviation difference in empathy (10.48 points) went with roughly 25 PSR points (0.81 SD). Predicting empathy from PSR (H3) gives an equivalent result, but that is a property of simple regression and not a separate finding: with a single predictor, the standardized slope equals the correlation in both directions. Theory favors empathy as the antecedent [3, 2], yet service-learning and social–emotional programs seem to raise empathy [23, 19], so a reciprocal process is plausible. Only longitudinal or experimental designs can tell these possibilities apart. The large standardized residuals (−6.45 to 4.84) show that a few students' responsibility scores sat far from what empathy predicted, which may reflect atypical or inattentive responding.

5.4 Personal and social responsibility

Empathy was marginally more strongly related to personal responsibility (β = .801) than to social responsibility (β = .777); however, the difference was very small and should not be interpreted as a differential effect. This is explained by factor analysis. When all 35 items were analyzed together, they formed one dominant general factor on which every item loaded at .70 or above; parallel analysis did not support a second factor, and personal and social items were not separated (Table 3). Together with the correlation of .905 and reliabilities above .95, this indicates that the responsibility scale functions mainly as a single measure of general responsibility and that the personal and social subscales are not empirically distinct in this sample. The results for H1a and H1b and the personal and social responsibility models in H2 should therefore be read as two views of one construct, with overall PSR being the more defensible outcome. This is consistent with the content of the items, many of which overlap across the two subscales (e.g., following rules, helping others, and caring about society).

5.5 Gender differences

H4 was not supported, since no significant gender differences were found. Female students scored slightly higher on all four variables, and the direction of the empathy difference matched the female advantage that is commonly reported [26, 24, 27, 25]. The null result also agrees with studies that found no significant difference among university students [28]. Two cautions apply. With 74 male and 142 female students, the power to detect d = 0.22 at α = .05 is only about .33, and the smallest difference detectable with 80% power is about d = 0.40, so a small empathy difference cannot be ruled out. The negligible differences in responsibility (d = 0.01–0.08) add to a sparse literature [29,

18] and suggest that male and female students in this sample endorse personal and social responsibility to a similar degree.

5.6 Implications

Education and Practice. The close link between empathy and responsibility supports building empathy into education for responsible citizenship, although these data cannot show that raising empathy will raise responsibility. Several approaches have been proposed or tested. Mandatory service-learning with critical reflection was associated with gains in cognitive empathy among prospective medical students, although the durability of the gains is uncertain [19]. Empathy mapping combined with simulation has been used to strengthen nursing students' empathic skills and communication confidence [20], and feedback-based practice has been proposed as a way to learn empathic responses [21]. A social–emotional learning curriculum improved social and emotional competencies, including empathy, among elementary school students [23], and an academic coaching program improved empathy skills and self-perceived emotional intelligence among health science students in a pilot study [37]. These models were developed mainly in school and health-profession settings; therefore, colleges and social work practitioners would need to adapt and evaluate them locally.

Targeting and Inclusion. About 20% of students fell into the low empathy category (Table 4), so these students could be prioritized for intervention programs. Since no significant gender differences appeared in empathy or responsibility, there is no need to design separate programs for male and female students on the basis of these constructs. The study did lack the power to detect small differences, though.

Institutional and Policy Support. Programs like these need institutional commitment to be implemented more widely. Colleges could build empathy and responsibility components into student development programs, train educators to deliver them, and share best practices across institutions. Educational authorities could also endorse these initiatives and support their evaluation, and awareness activities on empathy and responsibility could complement the programs. These recommendations come from the present study and the existing literature; they were not empirically tested here.

6 Limitations and future research

The cross-sectional correlational design supports association and statistical prediction but not causation or direction. All data were self-reported; therefore, social desirability may have raised scores, and shared method variance may have strengthened the correlations. Convenience sampling through an online form in a single district, with a predominantly female (65.7%), undergraduate (63.0%), and rural (73.1%) sample, limits generalizability, and the unequal gender groups left the comparison underpowered for small effects. The responsibility scale was researcher-developed, all its items were positively worded, and several overlap in content (for example, items on following rules and on helping others). Reliability coefficients above .95 for the responsibility scales may therefore reflect item redundancy and acquiescence, and the very high correlation between personal and social responsibility (r = .905) raises questions about their discriminant validity. Exploratory factor analysis of all 35 items supported a single dominant factor and not separate personal and social factors, so the subscales lacked discriminant validity, and a confirmatory factor analysis was not conducted. A few cases were poorly fitted by the regression model (standardized residuals −6.45

to 4.84). Empathy scores ranged up to 72, which exceeds the 64-point maximum of the original 0–4 scoring of the Toronto Empathy Questionnaire [30]; therefore, published norms cannot be applied directly. Levels were defined relative to this sample and not to external norms. Finally, only gender was examined as a demographic correlate, although income, residence, and disability status were also recorded.

Future studies should use longitudinal, cross-lagged, or experimental designs. These can show whether empathy comes before responsibility, follows it, or works together with it. It also matters to separate cognitive empathy from affective empathy, because the two relate differently to well-being and social outcomes [16]. Moral identity is worth testing as a mediator [8]. Researchers should also measure responsible behavior as well as attitudes, since Generation Z's intentions and actions are known to diverge [9]. Before this scale is used more widely, a confirmatory factor analysis on an independent sample should settle whether one factor or two fits better. Probability samples from several districts, with income, rural–urban residence, course level, and disability included as correlates, would also strengthen the evidence.

7 Conclusion

Among 216 Generation Z students in the Hassan District, empathy was strongly and positively related to personal responsibility, social responsibility, and overall PSR, accounting for 60–65% of the variance in each. PSR also predicted empathy, but the symmetry of single-predictor models means that the direction cannot be inferred. Male and female students did not differ significantly on any variable. The findings suggest that empathy and responsibility develop together, and that empathy-building and service-learning programs merit testing as ways to strengthen personal and social responsibility in this generation. Factor analysis indicated that the responsibility items form a single dominant factor; therefore, the personal and social subscales were not empirically distinct.

Declarations

Ethics approval and consent to participate: The study was approved by the college-level ethics committee, and informed consent was obtained from all the participants.

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Conflict of interest: The authors declare no conflicts of interest.

Data availability: The data were collected through Google Forms for academic purposes and are available from the corresponding author upon reasonable request.

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