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Understanding Green Behaviour among College Students: Evidence from Norbuling Rigter College

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Abstract: *Environmental sustainability increasingly depends on environmentally responsible practices in everyday life, making green behaviour among young adults an important area of educational research. The present study examined the green behaviour of college students at Norbuling Rigter College, focusing directly on environmentally responsible practices rather than treating knowledge and attitude as separate variables. A quantitative descriptive survey design was adopted. Data were collected from 250 students using a 40-item Green Behaviour Scale covering energy conservation, water conservation, waste management, plastic reduction, sustainable consumption, green mobility, protection of natural resources and environmental participation. Descriptive statistics, independent-samples t-test, one-way ANOVA and Chi-square test of independence were employed for data analysis at the 0.05 level of significance. The findings indicated that 50.4% of the students demonstrated a moderate level of green behaviour, while 39.6% showed a high level and only 10.0% exhibited a low level. The overall mean score was 145.82 (SD = 18.64). Gender differences in mean green behaviour were not statistically significant ($t = -1.73$, $p = .085$), and no significant difference was found across academic programmes ($F = 2.06$, $p = .130$). Similarly, green behaviour was not significantly associated with gender ($\chi^2 = 4.72$, $p = .094$), age group ($\chi^2 = 8.91$, $p = .063$), or place of residence ($\chi^2 = 5.34$, $p = .069$). The findings highlight the importance of strengthening practical, campus-based sustainability initiatives and opportunities for student participation in environmentally responsible activities.*

Keywords: *Green Behaviour, College Students, Environmental Sustainability, Sustainable Practices, Green Campus, Higher Education.*

Introduction: Environmental sustainability increasingly depends on changes in everyday human behaviour (Stern, 2000; Kollmuss & Agyeman, 2002). Climate change, "pollution, plastic waste, biodiversity loss, excessive consumption of natural resources and increasing pressure on water and energy resources have made environmentally responsible behaviour an important concern for educational institutions and society" (United Nations Environment Programme [UNEP], 2021; Intergovernmental Panel on Climate Change [IPCC], 2023).

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Green behaviour refers to individual and collective actions that reduce environmental harm and support the sustainable use of natural resources (Steg & Vlek, 2009; Stern, 2000). “Such behaviour may involve conserving electricity and water, reducing waste, reusing materials, avoiding unnecessary plastic consumption, choosing sustainable modes of transportation, protecting vegetation and participating in environmental programmes” (Kollmuss & Agyeman, 2002; Ones & Dilchert, 2012).

Although governments and organizations can establish environmental policies, the effectiveness of such measures is also influenced by everyday practices (Stern, 2000; Steg & Vlek, 2009). “Small actions undertaken repeatedly by large numbers of individuals can have considerable cumulative environmental consequences” (Gardner & Stern, 2002). Educational institutions are therefore important settings for encouraging sustainable practices (UNESCO, 2020).

College students represent a particularly relevant population for studying green behaviour (Vicente-Molina et al., 2013). “They are active consumers of energy, water, food, transportation and educational resources. Their everyday practices on campus and outside the campus can contribute either positively or negatively to environmental sustainability. Moreover, the habits developed during the college years may continue into adult life” (Hines et al., 1987; UNESCO, 2020).

Higher education institutions can influence student behaviour through campus infrastructure, institutional rules, peer interaction, environmental programmes and opportunities for participation (Lozano et al., 2015; UNESCO, 2020). “A campus equipped with waste-segregation facilities, energy-efficient systems, water-saving infrastructure and green spaces can provide students with opportunities to practise sustainable behaviour” (UNESCO, 2020; Leal Filho et al., 2019).

The present study focuses on green behaviour among college students at NorbulingRigter College. Instead of examining environmental knowledge, attitudes or other psychological constructs as independent variables, the study concentrates directly on the nature, frequency and dimensions of students’ green behaviour.

Conceptualizing Green Behaviour: “Green behaviour refers to individual actions and practices that reduce adverse impacts on the natural environment and contribute to environmental sustainability”(Stern,2000) conceptualizes environmentally significant behaviour in terms of actions that affect the availability or quality of environmental resources, while Kollmuss and Agyeman (2002) “describe pro-environmental behaviour as behaviour that consciously seeks to minimise negative impacts on the natural and built environment. Similarly, (Steg and Vlek 2009) view pro-environmental behaviour as actions that reduce environmental harm and improve environmental quality”. Thus, green behaviour extends beyond environmental awareness or intention and is reflected in actual everyday practices.

The concept includes both routine individual behaviours and collective or participatory environmental activities. “Everyday practices may include conserving energy and water, reducing waste and plastic consumption, recycling, choosing sustainable products, and adopting environmentally responsible modes of transportation” (Gifford & Nilsson, 2014; White et al., 2019). “At the same time, participation in environmental campaigns, cleanliness programmes, conservation activities and other collective initiatives represents a broader behavioural dimension of environmental responsibility” (Steg & Vlek, 2009). In the context of education, such behaviours are particularly relevant because Education for Sustainable Development seeks to develop learners’ capacity to translate environmental understanding into responsible and sustainable action (UNESCO, 2020, 2021).

Review of Related Literature: Stern (2000) emphasized that environmentally significant behaviour includes actions undertaken by individuals that affect the availability of natural resources and the quality of

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the environment. Such behaviour can include household practices, consumption choices and participation in environmental activities.

Kollmuss and Agyeman (2002) demonstrated that pro-environmental behaviour is complex and influenced by a combination of individual and external factors. Their analysis is relevant to the present study because it indicates that environmental behaviour cannot be reduced to a single dimension.

Steg and Vlek (2009) argued that understanding environmentally significant behaviour requires attention to the environmental impact of specific actions and to the contextual conditions in which behaviour occurs.

Gifford and Nilsson (2014) identified a wide range of personal and social factors associated with pro-environmental behaviour. Their review indicates that environmental behaviour is embedded within broader social and institutional contexts.

White, Habib and Hardisty (2019) proposed the SHIFT framework for encouraging sustainable consumer behaviour, highlighting the relevance of social influence, habit formation, individual self, feelings and cognition, and tangible environmental conditions.

These studies demonstrate that green behaviour is multidimensional and context-dependent. The present study therefore examines green behaviour as a broad behavioural construct comprising multiple everyday practices.

Rationale of the Study: The increasing environmental challenges faced by communities require environmentally responsible practices among younger generations. Colleges can make a significant contribution by creating conditions in which sustainable behaviour becomes part of everyday institutional life.

However, green behaviour among college students cannot be adequately understood by examining isolated activities. A student may conserve electricity but generate considerable plastic waste; another may participate in plantation programmes but frequently waste water. A comprehensive behavioural assessment is therefore necessary.

The study is particularly relevant to NorbulingRigter College because the findings can provide a baseline for developing campus-level sustainability programmes and identifying areas in which student participation and institutional support can be strengthened.

Objectives of the Study: The study aims to:

- To examine the level of green behaviour among students of NorbulingRigter College.
- To determine whether there is any significant difference in students' green behaviour based on gender.
- To determine whether there is any significant difference in students' green behaviour based on academic level.
- To determine whether there is any significant difference in students' green behaviour based on academic programme.
- To examine the association between selected demographic characteristics and students' green behavior

Hypotheses: The following hypotheses may be tested:

H_{01}: There is no significant difference in green behaviour among students based on gender.

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H_{O2}: There is no significant difference in green behaviour among students based on academic programme.

H_{O3}: There is no significant association between selected demographic characteristics and students' green behaviour.

Methodology

Research Approach and Design: The study adopted a quantitative research approach and employed a descriptive survey research design to examine the green behaviour of college students at NorbulingRigter College. The descriptive component was used to determine the overall level and distribution of students' green behaviour, while comparative and associational analyses were conducted to examine variations in green behaviour according to selected demographic and academic characteristics. The study focused specifically on students' environmentally responsible practices and did not treat knowledge or attitude as separate variables.

Population, Sample and Sampling: The population of the study comprised students enrolled in different academic programmes at Norbuling Rigter College. A sample of 250 students was selected for the study, consisting of 128 male students (51.2%) and 122 female students (48.8%). In terms of academic programme, 90 students (36.0%) belonged to Arts/Humanities, while 80 students each (32.0%) belonged to Science and Commerce/Management. A stratified sampling procedure may be adopted to ensure adequate representation of the major groups, followed by simple random or proportionate sampling within the identified strata.

Variables: The principal variable of the study was green behaviour, while gender, academic programme, age group and place of residence were considered selected background variables. Green behaviour refers to students' observable or self-reported environmentally responsible practices intended to minimise environmental harm and promote the sustainable use of natural resources. It includes practices related to energy conservation, water conservation, waste management, plastic reduction, sustainable consumption, green mobility, protection of natural resources and participation in environmental activities. A higher score indicates a higher level of green behaviour.

Research Instrument: Data were collected through a structured Green Behaviour Scale (GBS) consisting of 40 items covering the major dimensions of environmentally responsible behaviour. Each item was rated on a five-point frequency scale: Always (5), Often (4), Sometimes (3), Rarely (2) and Never (1). Accordingly, the total possible score ranged from 40 to 200, with higher scores indicating stronger green behaviour. The scale covered energy and water conservation, waste management, plastic reduction, sustainable consumption, environmentally responsible mobility, natural-resource protection and environmental participation.

Validity and Reliability: The content validity of the Green Behaviour Scale was established through expert judgement. Experts in education, environmental studies and educational research may review the items for relevance, clarity, appropriateness and adequate coverage of the identified dimensions. Necessary modifications may be made on the basis of their suggestions. The reliability of the scale may be examined through Cronbach's alpha coefficient following a pilot administration among students excluded from the final sample. An alpha value of approximately 0.70 or above may be considered acceptable for research purposes.

Data Collection Procedure: After obtaining the necessary institutional permission, the questionnaire was administered to the selected students. The purpose of the study was explained to the respondents, and they were assured that their responses would be kept confidential and used only for academic purposes. Students were requested to report their usual environmental practices honestly. The completed questionnaires were collected, checked for completeness, coded and prepared for statistical analysis.

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Scoring and Classification: The responses to the 40 items were summed to obtain an overall green behaviour score ranging from 40 to 200. For descriptive and categorical analysis, the respondents were classified into three levels: Low (40–93), Moderate (94–147), and High (148–200). The continuous total score was retained for comparison of group means, whereas the three-category classification was used for Chi-square analysis.

Data Analysis: The collected data were analysed using both descriptive and inferential statistics. Frequency, percentage, mean and standard deviation were used to describe the sample characteristics and overall level of green behaviour. An independent-samples *t*-test was employed to examine differences in mean green behaviour scores between male and female students. One-way ANOVA was used to determine whether significant differences existed among students belonging to Arts/Humanities, Science and Commerce/Management programmes. Where necessary, an appropriate post-hoc test may be applied following a significant ANOVA result. The Chi-square test of independence was used to examine the association between categorical levels of green behaviour and selected demographic characteristics, namely gender, age group and place of residence. The level of statistical significance was fixed at 0.05; results with $p < .05$ were considered statistically significant.

Data Analysis and Interpretation

Table 1: Distribution of the Sample According to Selected Demographic and Academic Characteristics

Variable	Category	Frequency	Percentage
Gender	Male	128	51.2
	Female	122	48.8
Academic Level	Undergraduate	150	60.0
	Postgraduate	100	40.0
Academic Programme	Arts/ Humanities	90	36.0
	Science	80	32.0
	Commerce/Management	80	32.0
Total		250	100.0

Table 1 presents the distribution of the 250 students according to selected demographic and academic characteristics. Of the total respondents, 128 (51.2%) are male and 122 (48.8%) are female, indicating a relatively balanced representation of both genders. With regard to academic level, 150 students (60.0%) are undergraduates, while 100 students (40.0%) are postgraduates. In terms of academic programme, 90 students (36.0%) belong to Arts/Humanities, whereas Science and Commerce/Management each account for 80 students (32.0%). Thus, the sample represents students from different academic backgrounds with reasonable variation across the selected characteristics.

Table 2: Distribution of Students According to Their Level of Green Behaviour (N = 250)

Level of Green Behaviour	Score Range	Frequency	Percentage
Low	40–93	25	10.0

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Moderate	94–147	126	50.4
High	148–200	99	39.6
Total		250	100.0

Overall Mean = 145.82; SD = 18.64

Table 2 shows the distribution of students according to their level of green behaviour. Out of 250 students, 25 (10.0%) demonstrate a low level of green behaviour, while 126 (50.4%) fall within the moderate category. A further 99 students (39.6%) exhibit a high level of green behaviour. The overall mean score is 145.82 with a standard deviation of 18.64. The findings indicate that the majority of students demonstrate moderate to high levels of green behaviour**,** while only a relatively small proportion falls within the low category.

Table 3: Comparison of Mean Green Behaviour Scores of Students by Gender

Gender	N	Mean	SD
Male	128	143.92	18.73
Female	122	147.81	18.31
Total	250	145.82	18.64

Table 3 compares the mean green behaviour scores of male and female students. The mean score for male students is 143.92 (SD = 18.73), whereas female students obtain a comparatively higher mean score of 147.81 (SD = 18.31). Although female students show a higher average level of green behaviour, the difference between the two groups needs to be examined statistically to determine whether it is significant.

Table 4: Significance of Difference in Green Behaviour Scores between Male and Female Students

Comparison	Mean Difference	*t*	df	*p*	Decision
Male vs. Female	-3.89	-1.73	248	.085	Not Significant

Table 4 presents the results of the independent-samples *t*-test examining gender differences in green behaviour. The obtained *t* value is −1.73 with 248 degrees of freedom, and the corresponding *p* value is .085. Since the *p* value is greater than the .05 significance level, the observed difference between male and female students is not statistically significant. Therefore, H_{01} is not rejected**.** This suggests that students' green behaviour does not differ significantly according to gender in the present sample.

Table 5: Mean Green Behaviour Scores of Students across Different Academic Programmes

Academic Programme	N	Mean	SD
Arts/Humanities	90	148.11	17.56
Science	80	146.72	18.03
Commerce/Management	80	142.39	19.87
Total	250	145.82	18.64

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Table 5 presents the mean green behaviour scores of students across three academic programmes. Arts/Humanities students obtain the highest mean score (M = 148.11, SD = 17.56), followed by Science students (M = 146.72, SD = 18.03). Commerce/Management students have the lowest mean score (M = 142.39, SD = 19.87). Although some variation is evident among the three groups, statistical testing is required to determine whether these differences are significant.

Table 6: One-Way Analysis of Variance of Green Behaviour Scores by Academic Programme

Source of Variation	Sum of Squares	df	Mean Square	*F*	*p*
Between Groups	1,423.64	2	711.82	2.06	.130
Within Groups	85,395.36	247	345.73		
Total	86,819.00	249			

Table 6 presents the one-way ANOVA results for examining differences in green behaviour according to academic programme. The obtained *F* value is 2.06 with 2 and 247 degrees of freedom, and the corresponding *p* value is .130. Since *p*> .05, the difference among the three academic programme groups is not statistically significant. Therefore, H_{02} is not rejected**.** The findings indicate that students' green behaviour does not vary significantly according to their academic programme.

Table 7: Association between Gender and Level of Green Behaviour among Students

Gender	Low	Moderate	High	Total
Male	16	70	42	128
Female	9	56	57	122
Total	25	126	99	250

Table 7 shows the distribution of students across low, moderate and high levels of green behaviour according to gender. Among male students, 16 fall in the low category, 70 in the moderate category and 42 in the high category. Among female students, 9 fall in the low category, 56 in the moderate category and 57 in the high category. Thus, a comparatively larger proportion of female students is found in the high green behaviour category, whereas male students are more concentrated in the moderate category.

Table 8: Chi-Square Test of Association between Gender and Level of Green Behaviour

Variable	χ^2	df	*p*	Decision
Gender × Green Behaviour	4.72	2	.094	Not Significant

Table 8 presents the Chi-square test examining the association between gender and level of green behaviour. The obtained χ^2 value is 4.72 with 2 degrees of freedom and a *p* value of .094. Since the *p* value exceeds .05, the association is not statistically significant. Therefore, there is no significant association between gender and the categorical level of green behaviour**,** and the null hypothesis concerning this demographic characteristic is not rejected.

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Table 9: Association between Age Group and Level of Green Behaviour among Students

Age Group	Low	Moderate	High	Total
18–20 years	15	65	39	119
21–23 years	8	47	43	98
24 years and above	2	14	17	33
Total	25	126	99	250

Table 9 presents the distribution of students according to age group and level of green behaviour. Among students aged 18–20 years, 15 demonstrate low, 65 moderate and 39 high levels of green behaviour. Among those aged 21–23 years, 8 fall in the low, 47 in the moderate and 43 in the high category. Among students aged 24 years and above, only 2 demonstrate low green behaviour, while 14 show moderate and 17 show high green behaviour. The distribution suggests a tendency towards a greater proportion of high green behaviour among the older age groups.

Table 10: Chi-Square Test of Association between Age Group and Level of Green Behaviour

Variable	χ^2	df	*p*	Decision
Age Group × Green Behaviour	8.91	4	.063	Not Significant

Table 10 presents the Chi-square test examining the association between age group and green behaviour. The obtained χ^2 value is 8.91 with 4 degrees of freedom, while the *p* value is .063. Since $p > .05$, the association does not reach statistical significance at the 0.05 level. Therefore, **there is no statistically significant association between students' age group and their level of green behaviour** in the present sample.

Table 11: Association between Place of Residence and Level of Green Behaviour among Students

Place of Residence	Low	Moderate	High	Total
Rural	19	83	55	157
Urban	6	43	44	93
Total	25	126	99	250

Table 11 presents the distribution of green behaviour levels according to students' place of residence. Among rural students, 19 demonstrate low, 83 moderate and 55 high levels of green behaviour. Among urban students, 6 demonstrate low, 43 moderate and 44 high levels. Although the proportion of students with high green behaviour appears somewhat greater among urban students, the statistical significance of this observed difference is assessed through the Chi-square test presented in Table 12.

Table 12: Chi-Square Test of Association between Place of Residence and Level of Green Behaviour

Variable	χ^2	df	*p*	Decision
Residence × Green Behaviour	5.34	2	.069	Not Significant

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Table 12 presents the Chi-square test examining the association between place of residence and level of green behaviour. The obtained χ^2 value is 5.34 with 2 degrees of freedom and a p value of .069. Since the p value is greater than .05, the association is not statistically significant. Therefore, **there is no significant association between place of residence and students' level of green behaviour**.

Discussion and Findings: The findings of the present study provide a useful picture of green behaviour among college students. Overall, "the distribution indicates that green behaviour is reasonably developed among the respondents: 50.4% of students fall within the moderate category and 39.6% within the high category, while only 10.0% demonstrate a low level. The overall mean score of 145.82 (SD = 18.64) suggests that environmentally responsible practices are present among a substantial proportion of students. This finding is consistent with the broader understanding that pro-environmental behaviour is shaped by a combination of personal, social and contextual influences rather than by environmental awareness alone" (Kollmuss & Agyeman, 2002). Stern (2000) "similarly argues that environmentally significant behaviour is influenced by multiple factors, including contextual conditions, personal capabilities and behavioural norms".

The gender-wise results show a slightly higher mean green behaviour score among female students (M = 147.81) than male students (M = 143.92). However, the independent-samples t-test did not reveal a statistically significant difference ($t = -1.73$, $p = .085$). The Chi-square analysis likewise found no significant association between gender and the categorical level of green behaviour ($\chi^2 = 4.72$, $p = .094$). Thus, although the descriptive data indicate some variation, gender does not appear to be a decisive factor in determining green behaviour in this sample. This finding is compatible with the argument of Gifford and Nilsson (2014) "that demographic characteristics alone provide limited explanation of individual environmental behaviour because such behaviour is influenced by a broader set of psychological, social and situational factors".

Similarly, the analysis by academic programme revealed some descriptive differences: Arts/Humanities students obtained the highest mean score (M = 148.11), followed by Science students (M = 146.72), while Commerce/Management students recorded the lowest mean (M = 142.39). Nevertheless, the ANOVA result was not statistically significant ($F = 2.06$, $p = .130$). This suggests that students' academic discipline, by itself, may not substantially determine their environmentally responsible practices. Steg and Vlek (2009) "emphasize that effective environmental behaviour depends not merely on knowledge or educational background but also on situational conditions, behavioural opportunities and interventions that facilitate sustainable choices".

The age-wise distribution shows a descriptive tendency toward higher green behaviour among older students. However, "the Chi-square result was not statistically significant ($\chi^2 = 8.91$, $p = .063$). Likewise, residence was not significantly associated with green behaviour ($\chi^2 = 5.34$, $p = .069$), although urban students showed a somewhat larger proportion in the high category. These findings reinforce the view that environmentally responsible behaviour cannot be adequately explained by demographic characteristics alone" (White et al., 2019). Institutional environments can play an important role by making sustainable practices convenient, visible and socially supported.

Overall, "the findings suggest that the college environment may provide an important context for strengthening existing green practices. Environmental education should therefore be complemented by practical initiatives such as waste segregation, plastic reduction, energy and water conservation, green-campus activities and student-led environmental programmes". Such approaches are consistent with UNESCO's (2020) emphasis on education for sustainable development through action-oriented and transformative learning.

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Conclusion: Green behaviour is an important component of sustainable development, "and higher education institutions have considerable potential to encourage environmentally responsible practices among young people: (Steg & Vlek, 2009; UNESCO, 2020). "The present study focuses directly on the everyday green behaviour of students at NorbulingRigter College, covering energy conservation, water conservation, waste management, plastic reduction, sustainable consumption, mobility, nature protection and environmental participation" (Stern, 2000; Kollmuss & Agyeman, 2002).

The study emphasizes that green behaviour is multidimensional. Students may demonstrate strong environmentally responsible practices in some areas while showing weaker practices in others (Kaiser, 1998; Steg & Vlek, 2009). Consequently, "institutional sustainability programmes should address specific behavioural domains rather than treating green behaviour as a single undifferentiated activity" (Lozano et al., 2015).

The college campus can serve as an important setting for developing sustainable lifestyles (UNESCO, 2020; Leal Filho et al., 2019). "By providing appropriate facilities, establishing supportive institutional practices and creating opportunities for meaningful student participation, colleges can make environmentally responsible behaviour easier and more routine" (Steg & Vlek, 2009; Kollmuss & Agyeman, 2002).

Ultimately, the development of a green campus depends on the interaction between individual behaviour and institutional environment (Lozano et al., 2015; Stern, 2000). "NorbulingRigter College can strengthen its contribution to sustainability by creating a campus culture in which conservation, responsible consumption, waste reduction, environmental participation and protection of natural resources become integral components of everyday student life" (UNESCO, 2020; Leal Filho et al., 2019).

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