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Social Influences on Pro-Environmental Behavior

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Abstract: This study explores how social traps, social pressure, and social integration influence pro-environmental behavior (PEB) among Slovak respondents, with a focus on implications for environmental education. Using a cross-sectional quantitative design and a questionnaire (N = 327), the study found significant demographic differences in the perception of social influences. Women and older respondents were more sensitive to both social pressure and social traps, while higher levels of education were associated with stronger perceptions of social expectations and responsibility. Spearman correlation analysis revealed that social pressure positively correlates with social traps, suggesting that pressure when perceived as external or coercive can paradoxically foster passivity. In contrast, social integration was negatively associated with both pressure and traps, acting as a protective factor and promoting intrinsic motivation. These findings underscore the need for environmental education that goes beyond awareness-raising and addresses the social dimensions of behavior. Integrating social context into educational strategies, such as fostering group identity, peer learning, and critical engagement with social dilemmas can strengthen students' sense of agency and collective responsibility. This study offers theoretical and practical insights for designing multidimensional educational programs that align individual motivation with sustainable social norms.

Keywords: Pro-environmental behavior, Social pressure, Social integration, Environmental sciences, Social trap

1. INTRODUCTION

The increasing severity of global environmental problems such as climate change, loss of biodiversity, pollution, and unsustainable resource exploitation has amplified the urgency of transforming societal behavior towards sustainability. While systemic solutions and technological innovations are indispensable, the everyday behaviors of individuals play an equally critical role in mitigating environmental degradation (Teixeira et al., 2023; Jackson et al., 2012). Among the strategies to achieve sustainable development, fostering pro-environmental behavior (PEB) at the individual and community levels has emerged as a central approach (Liu et al., 2010).

Given the importance of individual action, the role of education—particularly environmental education—has become increasingly central in shaping sustainable mindsets, values, and behaviors across generations. Schools, universities, and informal learning environments serve as key platforms for instilling pro-environmental norms and for empowering citizens to engage in long-term pro-environmental thinking and action (Riper et al., 2020).

Pro-environmental behavior can be broadly defined as actions taken to minimize environmental harm or actively contribute to environmental restoration (Teixeira et al., 2023). These behaviors encompass activities within the private sphere, such as recycling, saving energy, and responsible consumption, as well as public sphere activities including participation in environmental movements and influencing others to adopt sustainable practices (Clark et al., 2003). However, the adoption of such behaviors is shaped by a complex

interplay of internal and external factors, including psychological, social, economic, and structural determinants (Wilson et al., 2004; Gifford & Nilson, 2014).

The scientific interest in pro-environmental behavior emerged in the 1960s and 1970s alongside rising environmental concerns and movements (Lu et al., 2021; Rueda et al., 2023). Initially focused on raising public awareness through educational initiatives, the field gradually evolved to examine deeper psychological, social, and contextual influences on behavior (Craik, 1973; Han et al., 2020). Educational efforts during this period laid the foundation for what is now recognized as a need for multidimensional approaches that go beyond information transmission to include social engagement and value formation. Recent decades have witnessed a significant increase in interdisciplinary research, incorporating perspectives from environmental psychology, sociology, economics, management, and biological sciences (Liu et al., 2021; Zhu et al., 2021).

There is a growing trend in studies with increasing emphasis on social and psychological determinants of behaviour, along with continued exploration of structural and contextual influences (Bhatt et al., 2020; Donthu et al., 2021). Despite these advancements, the field remains methodologically fragmented, often lacking integrative theoretical frameworks capable of fully capturing the complex dynamics of pro-environmental behavior (Song et al., 2021; Grilli & Curtis, 2021).

Education, therefore, not only represents a vehicle for disseminating environmental knowledge, but also a space for cultivating pro-environmental identities, critical thinking, and civic responsibility—dimensions that are essential for long-term behavioral change. Understanding the social dimension of environmental behavior has become increasingly important. Social factors not only influence the formation of attitudes and values but also directly affect individuals' behavioral choices by shaping perceived norms, obligations, and opportunities (Jackson et al., 2012; Mustafa et al., 2020). Among the critical social factors explored in recent research are social traps, social integration, and social pressure.

1.1 Social Traps and Pro-Environmental Behavior

Social traps represent situations where individuals' short-term self-interests conflict with the long-term collective good, often leading to behavior that is detrimental to the environment (Clark et al., 2003; Elliot, 2025). Such traps are characteristic of many environmental problems, where the benefits of unsustainable actions are immediate and personal, while the negative consequences are delayed, diffuse, and borne by the broader community (Stern, 1997).

A classic example of a social trap is overconsumption: individuals may prioritize personal convenience or economic gain over environmental stewardship, contributing to resource depletion and environmental degradation despite understanding the broader consequences (Gifford & Nilson, 2014). The structure of social traps makes them resistant to voluntary behavioral change, as the costs of pro-environmental behavior are perceived as higher or more immediate than the benefits (Keizer et al., 2014).

Addressing social traps requires interventions that realign individual incentives with collective interests. This can be achieved through regulatory frameworks, economic incentives, community-based initiatives, or education aimed at shifting perceptions of costs and benefits (Shao et al., 2019; Flores et al., 2024). In the context of PEB, overcoming social traps is essential for fostering sustained behavioral change at the population level.

1.2 Social Integration as a Stabilizing Factor

In contrast to the fragmenting influence of social traps, social integration serves as a stabilizing and reinforcing factor for pro-environmental behavior (Clark et al., 2003). Social integration refers to the degree to which individuals are connected to their communities and perceive themselves as part of a cohesive

social fabric (APA Dictionary of Psychology, ND; Udall et al., 2021).

High levels of social integration have been linked to stronger internalization of social norms, greater collective efficacy, and higher levels of trust and cooperation—all of which are associated with increased engagement in sustainable behaviors (Gifford & Nilson, 2014; Irkhin, 2020). Individuals who feel connected to their communities are more likely to act in ways that benefit the collective, including engaging in behaviors that protect and sustain the environment (Clayton & Czellar, 2023).
Moreover, social integration enhances the diffusion of pro-environmental norms and practices through social learning and modeling (Steg & Vlek, 2009). Community-based environmental initiatives, such as recycling programs, community gardens, or conservation efforts, often rely on the strength of social integration to achieve widespread participation and success (Mustafa et al., 2020; Flores et al., 2024).

1.3 Social Pressure and Behavioral Motivation

Social pressure, encompassing both explicit and implicit expectations from others, is another significant determinant of pro-environmental behavior (Clark et al., 2003; Lange and Dewitte, 2019). Social pressure can manifest in various forms, including direct persuasion, normative expectations, or the desire to conform to perceived community standards (Gardiokiotis & Crano, 2015).
Research has shown that social pressure can motivate individuals to adopt environmentally responsible behaviors, particularly when such behaviors are seen as socially desirable or morally obligatory (Clark et al., 2003). However, excessive or coercive social pressure may also lead to psychological reactance, reducing motivation or fostering resistance (Gardiokiotis & Crano, 2015; Lange & Brick, 2021).
Effective use of social pressure in promoting PEB involves creating supportive environments where sustainable behaviors are normalized, encouraged, and rewarded, rather than imposed (Lange & Brick, 2021; Steg & van den Berg, 2012). Peer influence, social marketing, and the strategic use of social norms in educational and policy interventions can significantly enhance the adoption of pro-environmental behaviors (Mi et al., 2024; Liu & Tian, 2022).

1.4 Integration of Social Factors into Environmental Education

Given the significant influence of social traps, integration, and pressure on environmental behavior, their incorporation into environmental education programs is essential. Traditional environmental education focused primarily on raising awareness and providing information (Wilson et al., 2004). However, contemporary approaches recognize the need to address the social context of behavior, including fostering social connections, reshaping norms, and building collective efficacy (Alshehri, 2024; Riper et al., 2024).
Educational strategies aimed at mitigating social traps include highlighting the long-term collective benefits of sustainable behavior, using simulations to illustrate the dynamics of environmental dilemmas, and promoting shared responsibility (Han et al., 2020; Kroker et al., 2024). Strengthening social integration can be achieved through community-based projects, collaborative learning, and the development of school-community partnerships (Mustafa et al., 2020).
Incorporating an understanding of social pressure into education involves teaching students about social norms, peer influence, and strategies for resisting negative pressure while leveraging positive social expectations to promote sustainable behavior (Higgs & McMillan, 2006).
The complexity of environmental problems demands a multidimensional approach to understanding and promoting pro-environmental behavior. Social factors such as social traps, social integration, and social pressure play a pivotal role in shaping individuals' environmental actions. Their influence can either facilitate or hinder the adoption of sustainable practices, depending on the social context and the

individual's perception of norms, obligations, and opportunities.

Despite substantial progress in the field of pro-environmental behavior research, significant gaps remain, particularly concerning the interaction between social determinants and individual behavior in specific socio-cultural settings. Understanding how social traps operate, how social integration stabilizes behavior, and how social pressure motivates or discourages action is essential for designing effective interventions.

This study aims to contribute to this growing body of knowledge by examining the perception of key social factors influencing pro-environmental behavior.

It aims to identify demographic differences in perceptions and the relationship between social traps, integration and pressure, and to provide insights that can inform theoretical developments and practical applications in environmental education and policy.

By emphasizing the integration of these social dimensions into educational frameworks—both formal and informal—this study also highlights the importance of equipping learners not only with knowledge, but with the social competencies needed to navigate peer influence, community expectations, and shared environmental responsibilities.

In this way, education becomes not just a tool for awareness-raising, but a platform for building environmental agency and identity through social engagement.

By deepening our understanding of the social dimensions of pro-environmental behaviour, this research seeks to support the development of more effective strategies for promoting sustainable behaviour and advancing the broader goals of environmental stewardship and sustainable development.

2. METHOD

This study employed a quantitative, cross-sectional research design aimed at examining the perceived influence of social traps, social pressure, and social integration on pro-environmental behavior. A standardized questionnaire was used to collect data, with responses analyzed statistically to identify relationships among variables and demographic differences in perception. The research was grounded in environmental psychology and sociology, drawing on theoretical frameworks such as the Theory of Planned Behavior and models of collective action dilemmas. The aim was not only to measure individual attitudes but also to explore how social contexts contribute to environmentally relevant decision-making.

2.1 Participants

The research sample consisted of 327 respondents selected through purposive and convenience sampling. Participants were adults of varying age, gender, education level, and place of residence. The study aimed to include a diverse representation of the general Slovak population to better understand how demographic factors may moderate the perception of social influences on environmental behavior.

Of the total sample:

- 21.1% identified as male and 78.9% as female.
- The age distribution of the respondents was relatively diverse. The largest group consisted of young adults aged 19 to 23 years (35.7%), followed by participants aged 15 to 18 years (25.6%) and those aged 24 to 28 years (18.9%). Smaller proportions were observed in the 29 to 34 (5.7%), 35 to 40 (6.2%), and 41 to 45 (3.5%) age groups. The 46 to 50 category accounted for 2.6%, while the least represented were respondents over 50 years of age (1.8%).
- In terms of educational attainment, the largest share of respondents had completed secondary education with a school-leaving certificate (44.9%). This was followed by participants with higher education (28.2%) and those with primary education (19.4%). The least represented group consisted of respondents with vocational or secondary education without a school-leaving certificate

(7.5%).

- Regarding place of residence, 42.7% lived in a town and 57.3% in a village.

Participation in the study was voluntary, and no financial or material incentives were provided.

2.2 Instrument and Variables

A self-constructed questionnaire was developed to measure respondents' perceptions of three social factors influencing pro-environmental behavior: social traps, social pressure, and social integration. The questionnaire was based on an extensive review of relevant literature (Ryan & Connell, 1989, Crowne & Marlowe 1960, McColl et al., 2001, Hargreaves, 2011). A questionnaire consisting of two main parts. The first part focused on the collection of basic demographic data, namely age, gender, place of residence and level of educational attainment. The second part of the questionnaire focused on three specific areas of social factors that may influence pro-environmental behaviour, social pressure, social traps and social integration. A six-point Likert scale was used to respond to each statement, where 1 represented "strongly agree" and 6 "strongly disagree". The reliability of the scales was verified using Cronbach's alpha, with all three constructs: social traps ($\alpha = 0.88$), social pressure ($\alpha = 0.81$), and social integration ($\alpha = 0.79$), demonstrating high internal consistency.

2.2.1 Social Factors and Their Measurement

The questionnaire contained a total of 32 statements, which were thematically grouped into three key constructs: social traps, social pressure, and social integration. These constructs reflected major social influences that may either hinder or promote pro-environmental behavior.

Social traps were assessed through 10 items that measured the extent to which individuals perceive a conflict between short-term personal gain and long-term collective environmental responsibility. The items were designed to identify passive or delegating attitudes toward environmental action, as well as a tendency to shift responsibility onto institutions. An example statement from this scale is: *"There are environmental problems in society and they should be addressed mainly by governments and big business, not by individuals."*

Social pressure was measured using 12 items that examined the impact of social norms and peer behavior on environmental decision-making. The scale captured both injunctive norms—perceived social expectations—and descriptive norms—observed behavior of others. A representative item states: *"When I see that people in my neighbourhood sort their waste, I sort it too, otherwise I would rather not do it."*

Social integration, measured by 10 items, reflected respondents' feelings of belonging, trust, and connectedness to their social environment, including family, friends, colleagues, and community. This scale aimed to assess the degree of perceived social cohesion and support. An example item reads: *"I feel that I am well integrated into the community (work, family, friends, neighbours, etc.)."*

Together, these three subscales provided a comprehensive view of the social dimensions that shape attitudes and behaviors related to environmental responsibility.

2.3 Data Collection Procedures

Data collection was conducted via an anonymous online survey using a web-based questionnaire platform (Google Forms) (Google LLC, 2023). The survey was active for four weeks, during which participants were recruited through social media, university mailing lists, and environmental community groups.

Before beginning the survey, respondents were presented with a brief description of the study's aims, estimated completion time, and ethical statement. They were required to indicate informed consent before proceeding. Participation was entirely voluntary, and respondents could withdraw at any time without

penalty.
To ensure data quality, responses were screened for completeness. Only fully completed questionnaires were included in the final analysis. No duplicate entries were identified.

2.4 Data Analysis

Statistical analyses were performed using Microsoft Excel and STATISTICA program (StatSoft Inc, 2011). The data were first cleaned and coded according to variable types.
The Shapiro–Wilk test was used to assess the normality of the data. The results indicated that the assumption of normality was not met in any of the evaluated groups. Based on this finding, non-parametric statistical methods were applied in the subsequent analysis (specifically Kruskal-Wallis H test).
To examine the relationships among the three main variables—social traps, social integration, and social pressure—Spearman's rank-order correlation was used. This non-parametric method was selected due to the non-normal distribution of the data and the ordinal nature of the Likert-scale responses. The analysis allowed for the identification of the strength and direction of associations between the selected social factors influencing pro-environmental behavior.

2.5 Ethical Considerations

The research was conducted in accordance with general ethical standards for social science research. Participation in the study was fully voluntary, anonymous, and without any form of compensation. Before completing the questionnaire, participants were informed about the purpose of the study, the approximate duration, and their right to withdraw at any point without providing a reason.
No sensitive personal data were collected, and no questions involved physical or psychological risk to the participants. The data were stored securely and used solely for academic purposes. As the study did not involve vulnerable populations or interventions and met the criteria for minimal risk, formal approval from an ethics committee was not required under current institutional guidelines.

3. FINDINGS AND DISCUSSIONS

1.1. Gender Differences

Statistically significant differences were observed between male and female respondents across all three measured constructs. In the domain of social traps, the difference was highly significant ($p < 0.001$), with women scoring notably higher than men. This suggests that women may more frequently experience or acknowledge situations where individual environmental responsibility is displaced onto institutions or collective actors.
For social pressure, the results also revealed a statistically significant difference ($p < 0.001$), again with higher scores among women. This indicates that women tend to perceive greater societal expectations or normative pressure related to pro-environmental behavior compared to men.
In contrast, social integration showed a statistically significant but less pronounced difference ($p \approx 0.044$). In this case, men reported slightly higher levels of social integration, implying they may feel somewhat more embedded or connected within their communities, or at least perceive their social ties as stronger (Fig. 1).
Overall, these findings reflect gender-based variations in the perception of social influences related to environmental behavior, with women demonstrating greater responsiveness to both collective expectations and perceived environmental dilemmas, while men report marginally stronger feelings of community

connection.

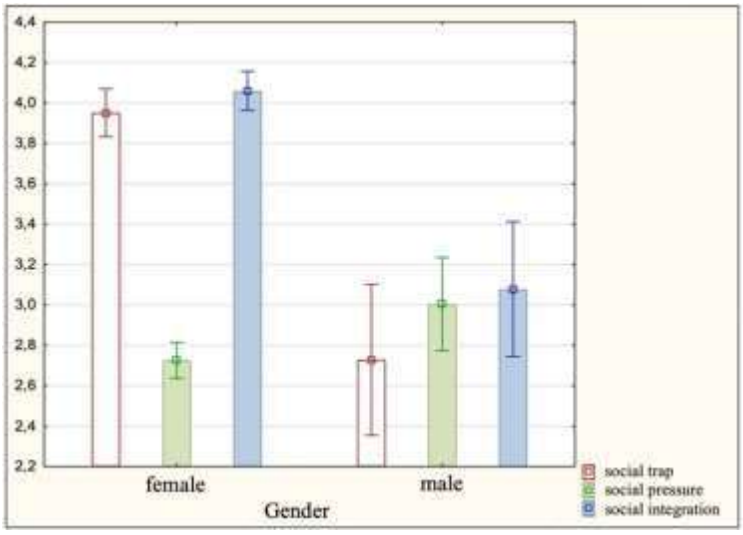

Figure 1: Perceived Social Factors by Gender

3.1.1 Age-Related Differences

Age was analyzed as a factor potentially influencing the perception of the three key social constructs related to pro-environmental behavior. The results revealed statistically significant differences in two of the three constructs.

In the case of social traps, the effect of age was significant ($p = 0.0034$). Higher scores were observed in the 41–45 and 50+ age groups, indicating that older respondents were more likely to externalize responsibility or perceive environmental issues as collective rather than individual concerns.

For social pressure, the differences were also statistically significant ($p = 0.0162$). Respondents in middle and older age groups again reported higher levels of perceived social pressure, suggesting they may feel a stronger sense of social responsibility or perceive greater societal expectations regarding environmental behavior.

In contrast, social integration did not show statistically significant differences across age groups ($p = 0.2786$). This indicates that the feeling of community belonging or connectedness was relatively stable regardless of the respondent's age (Fig. 2).

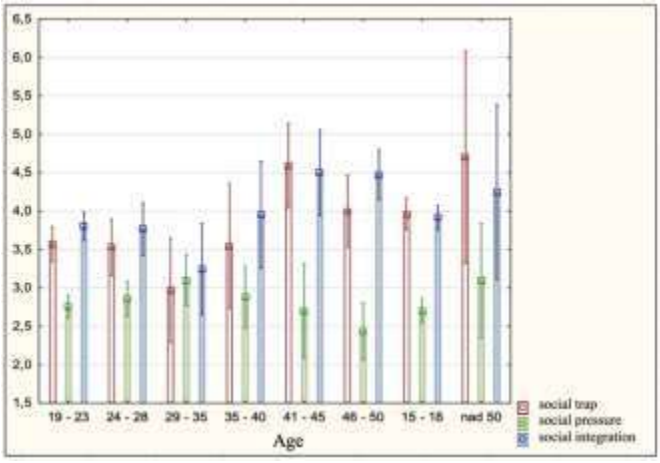

Figure 2: Perceived Social Factors by Age

3.1.2 Educational Level

Education was found to be a significant factor influencing the perception of two out of the three measured social constructs.

In the case of social traps, the difference was highly significant ($p < 0.001$). The highest scores were observed among participants with primary and higher education, while the lowest scores were recorded among respondents with vocational education. This may suggest that individuals with vocational backgrounds are less likely to reflect on or attribute importance to social norms in this context.

For social pressure, the differences were also highly significant ($p < 0.001$). Again, the highest levels of pressure were perceived by those with primary and higher education, whereas individuals with vocational education reported the lowest pressure. One possible interpretation is that those with higher education are more often situated in environments where societal expectations are explicitly communicated as normative. In contrast, individuals with lower formal education may react more strongly to external judgment or social comparison, while those in vocational settings may not experience such expectations within their social circles.

In contrast, social integration did not differ significantly across education levels ($p = 0.175$), indicating that perceived community connectedness is not strongly influenced by educational attainment (Fig. 3).

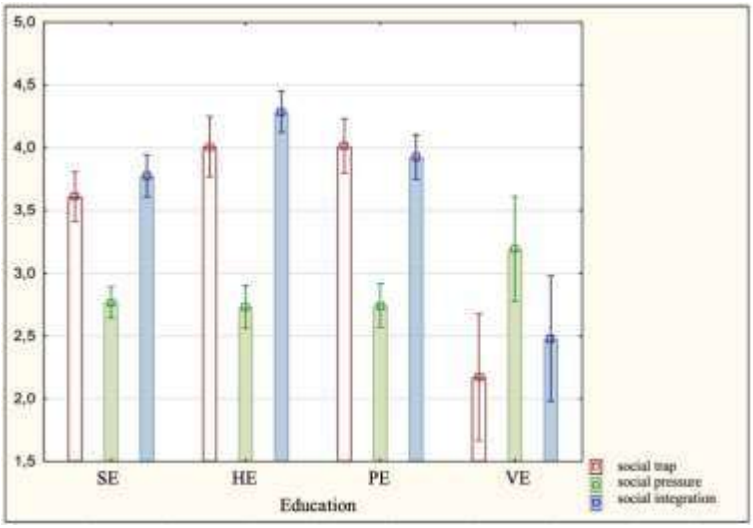

Figure 3: Impact of Education on Social Factors (Primary education- PE; Vocational education- VE; Secondary education with diploma- SE; Higher education- HE)

3.1.3 Place of Residence

The analysis revealed no statistically significant differences in the perception of social factors between respondents living in urban and rural environments.

For social traps, the results showed no significant difference ($p = 0.6143$), indicating that both city and village residents perceive social traps in a similar way.

Regarding social integration, the findings were consistent across both groups ($p = 0.9145$), suggesting that the sense of community belonging and social connectedness does not differ based on place of residence. This implies that interpersonal ties and perceived integration function similarly in urban and rural settings. In the case of social pressure, the difference was also non-significant ($p = 0.5457$) (Fig. 4).

Participants from both cities and villages reported comparable levels of perceived societal expectations related to environmental behavior.
These findings suggest that place of residence does not play a major role in shaping the social dimensions considered in this study.

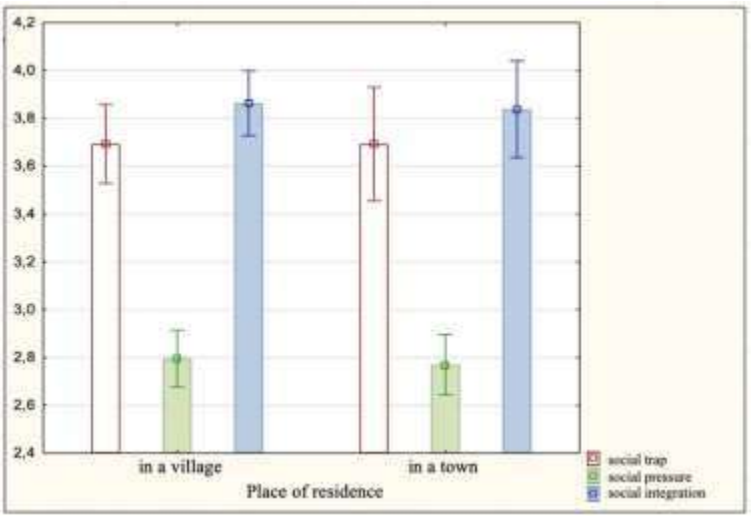

Figure 4: Social Factors by Place of Residence

3.2 Correlation Analysis

Spearman's rank-order correlation was used to examine the relationships between the three core social constructs: social traps, social integration, and social pressure. The analysis was conducted independently of demographic factors such as age or gender and provided insight into how these phenomena interact.
A moderate positive correlation was found between social traps and social pressure ($\rho = 0.6325$; $p < 0.001$). This result suggests that individuals who feel greater societal pressure to behave pro-environmentally also tend to shift responsibility to others or expect others to act first. While social pressure is often associated with motivation, in this case it may paradoxically contribute to passivity, particularly when it leads to hesitation or deferred action. The correlation reflects a potential internal conflict between external expectations and a reluctance to take initiative.
A weak negative correlation was found between social traps and social integration ($\rho = -0.1944$). This indicates that individuals who feel more integrated into their community are less likely to fall into social traps. In other words, a sense of belonging and social connectedness may encourage personal responsibility for environmental issues.
Finally, a weak negative correlation was also observed between social integration and social pressure ($\rho = -0.2330$). This suggests that individuals who experience a stronger sense of social inclusion perceive less external pressure to act pro-environmentally. For them, such behavior may already align with internalized group norms, reducing the need for external prompts or social comparisons (Fig. 5).
In summary, the results indicate a clear relationship pattern: social pressure and social traps are closely linked, pointing to a potential tension between passive and externally driven behavior. In contrast, social integration acts as a protective factor, reducing both perceived pressure and the likelihood of responsibility avoidance. This dynamic highlights the importance of intrinsic motivation and community ties in fostering sustainable environmental behavior.

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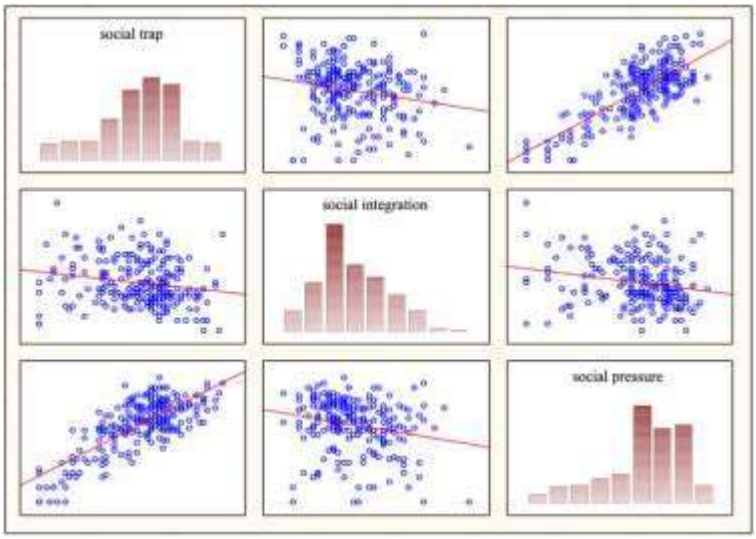

Figure 5: Pairwise scatter plots with fitted regression lines and histograms showing the distributions and bivariate correlations among the three core variables: social traps, social integration, and social pressure. The diagonal panels display variable distributions; the lower triangle contains scatter plots with trend lines. The patterns visually confirm the results of the Spearman correlation analysis discussed above—particularly the strong positive association between social traps and social pressure, and the weaker negative associations involving social integration

The findings of this study highlight significant differences in the perception of social factors depending on respondents' age, gender, and educational attainment. These results confirm the importance of demographic variables as moderators of environmental behavior, aligning with existing research that emphasizes the role of individual characteristics—such as age and education—in shaping attitudes toward sustainability (Tian & Liu, 2022; Mi et al., 2024). Older respondents in this study demonstrated a higher perception of social traps and social pressure, which may be linked to more deeply internalized norms (Mustafa et al., 2020).

Gender-based differences were also observed, with women reporting higher sensitivity to social traps and a greater perception of social pressure. These findings are consistent with previous studies suggesting that women are more likely to internalize moral norms, show heightened environmental sensitivity, and act in accordance with social expectations (Gifford & Nilson, 2014; Lange & Dewitte, 2019). Education also emerged as a significant predictor: respondents with higher or primary education reported greater perception of both social traps and pressure compared to those with vocational education, possibly reflecting differing social environments and value systems across educational groups (Jackson et al., 2012; Liu & Tian, 2022).

In contrast, place of residence (urban vs. rural) was not found to be a significant factor influencing perceptions of the studied constructs. This may reflect a growing homogenization of environmental discourse across Slovakia, along with relatively equal access to environmental information regardless of residential setting (Flores et al., 2024). Although some international studies have pointed to behavioral differences between urban and rural communities, such distinctions did not emerge as significant within the context of this research (Mustafa et al., 2020). Social ties and norms may be shaped independently of geography, especially in societies with well-developed online and community networks (Mi et al., 2024).

Furthermore, correlation analysis among the three studied social factors- social traps, social pressure, and social integration, revealed a complex dynamic in the domain of pro-environmental behavior. A moderately strong positive correlation between social traps and social pressure suggests a paradoxical relationship between perceived pressure to act pro-environmentally and the tendency to shift responsibility onto others.
In contrast, weak negative correlations of social integration with both of the other variables suggest its stabilizing and protective role against passivity and external pressure. These findings resonate with current research and offer valuable implications for both education and environmental policy.

4.1 Social Traps and Social Pressure: The Tension between Norm and Passivity

One of the key findings of this study is that a higher perception of social pressure is associated with a greater tendency to fall into so-called social traps. This phenomenon can be interpreted as a consequence of the conflict between short-term individual interests and long-term collective benefits (Clark et al., 2003; Stern, 1997). As noted by Gifford & Nilson (2014), individuals may recognize the need to act pro-environmentally, yet expect others, such as institutions or the broader collective, to take the initiative.
Our findings suggest that pressure, while often considered a motivational driver, may also have negative effects if perceived as an external norm rather than an internalized commitment. This aligns with the conclusions of Lange & Brick (2021), who argue that excessive or moralizing pressure can trigger psychological resistance, leading to rejection rather than adoption of the behavior.
As demonstrated by Keizer et al. (2014), social traps are particularly resistant to voluntary behavioral change, primarily because the perceived costs of pro-environmental behavior often outweigh the immediate personal benefits. When combined with external pressure, this creates a tension that may become counterproductive, especially in the absence of internal motivation or trust in collective efficacy.

4.2 Social Integration as a Stabilizing Factor

A second important finding of this study is the negative correlation between social integration and social traps. A higher level of community integration reduces the tendency to shift responsibility onto others, which is consistent with the findings of Clark et al. (2003) and Irkhina (2020), who note that strong social ties support the internalization of norms and collective efficacy. Thus, social integration functions not only as a factor that enhances the sense of belonging but also as a mechanism for strengthening personal responsibility.
Within the context of this study, individuals with a higher degree of integration perceived pro-environmental behavior as natural rather than externally imposed. This finding aligns with Steg & Vlek (2009), who identified social learning and modeling as key elements in the diffusion of environmental norms within communities.
Such a mechanism is evident in community-based environmental initiatives, where integration often correlates with higher participation rates (Flores et al., 2024; Mustafa et al., 2020). In practice, this means that in highly integrated environments, there is less need to exert external pressure to encourage pro-environmental behavior, as it becomes an implicit normative standard.

4.3 Social Pressure as a Double-Edged Sword

An interesting finding of this study is the weak negative correlation between social pressure and social integration. This relationship may be interpreted to mean that individuals who are well integrated into society feel less need for externalized pressure, as pro-environmental behavior becomes an internalized norm for them (Irkhin, 2020). In contexts where sustainability is part of the collective identity, individuals do not feel "forced" to act but rather act out of conviction.
Conversely, in environments with lower levels of integration, social pressure may appear to be the only

effective mechanism to encourage pro-environmental behavior. However, as Gardiokiotis & Crano (2015) caution, excessive pressure can provoke a counterproductive psychological reaction.

These insights support the idea that pressure is effective only when perceived as part of a shared social agreement, not as a coercive demand. As Steg & van den Berg (2012) suggest, the successful application of pressure depends on the support of social norms rather than their imposition.

4.4 Education as an Intervention Space

Given the aforementioned dynamics, environmental education has the potential to serve as an effective intervention tool capable of transforming the negative effects of social traps and excessive pressure. Contemporary approaches to environmental education emphasize the need to shift from a purely cognitive model to a socio-normative one that considers community bonds, shared norms, and collective identities (Alshehri, 2024; Riper et al., 2024).

Programs focused on strengthening social integration—such as community gardens, participatory environmental projects, or school-based activities within the "Green School" framework—can effectively foster internal motivation for ecological behavior (Mustafa et al., 2020).

At the same time, it is important to integrate discussions about social traps directly into educational content—for example, through simulation games or case studies that illustrate conflicts between individual gain and collective loss (Han et al., 2020; Kroker et al., 2024).

4.5 Implications for Future Research and Interventions

The findings of this study confirm that the promotion of pro-environmental behavior requires an integrated framework that combines cognitive, emotional, and social factors. In line with the recommendations of researchers (Liu & Tian, 2022), future studies should focus on multi-level models that connect individual motivations with structural and social contexts.

Furthermore, research should place greater emphasis on combined effects for instance, examining how social pressure functions in environments with high versus low levels of integration, or how various forms of social traps correlate with socioeconomic status (Zehui, 2023; Flores et al., 2024). A key component of building cumulative scientific knowledge lies in the standardization of measurement tools and the use of psychometrically validated scales (Mateer et al., 2022).

From a practical standpoint, these insights can inform policy-making and the development of intervention strategies—particularly in contexts where there is a need to reduce passivity, strengthen community bonds, and foster social norms that support pro-environmental behavior as a natural part of everyday social life.

Importantly, future educational interventions should aim to operationalize these findings by designing learning environments that foster social engagement, moral reasoning, and collective responsibility. Educational programs can serve as incubators for pro-environmental norms by providing students with opportunities to reflect on social dilemmas, collaborate in sustainability initiatives, and experience the role of social context in shaping behavior.

Empirical research is needed to test how different educational formats—such as service learning, outdoor education, or participatory simulations—can be used to address social traps and mobilize social pressure in constructive ways.

4.6 Limitations of the Study

This study represents a quantitative survey focused on examining social factors influencing pro-environmental behavior. Respondents were recruited through random sampling, and data collection was

conducted via an online questionnaire distributed primarily through university and community networks. While this approach allowed for effective outreach to a broad public, the composition of the sample limits the generalizability of the findings to the entire Slovak population.

Additionally, participants who chose to take part in the study may have already been motivated by environmental issues or held specific sustainability-related attitudes, introducing a potential self-selection bias. Since the study relied on subjective self-assessment, it is not possible to determine with certainty to what extent the reported attitudes translate into actual behavior, particularly given the possibility of socially desirable responses.

The use of a Likert-scale methodology provided quantifiable data on the perception of specific factors but did not allow for deeper qualitative exploration of individual motivations or contextual variables that may influence the formation of social traps or the effectiveness of integration. These aspects remained beyond the scope of this research.

While the correlation analysis offered valuable insight into the relationships between social traps, pressure, and integration, the cross-sectional design of the study precludes any causal inference between variables. As a result, the interpretation of findings remains descriptive in nature.

Despite these limitations, the study provides analytical generalization that extends understanding of the social determinants of pro-environmental behavior within the context of post-socialist Central Europe. It also offers a theoretical foundation and practical considerations for future research and educational initiatives.

4. CONCLUSION

This study contributes to the growing understanding of how social factors shape pro-environmental behavior, particularly within the context of post-socialist Central Europe. The results highlight the complex interplay between social traps, integration, and pressure and how these dimensions can either hinder or facilitate sustainable action. Importantly, the findings emphasize that social pressure is not inherently beneficial; when perceived as coercive, it may lead to psychological resistance and passivity. On the other hand, social integration consistently emerged as a stabilizing force, reinforcing internal motivation and fostering shared responsibility.

For environmental education, these findings suggest a clear direction: educational interventions must address not only individual knowledge and attitudes but also the social environments in which learners operate. Schools and other learning settings should aim to cultivate a sense of belonging, promote cooperative experiences, and encourage reflection on social dilemmas. By framing sustainability as a collective endeavor embedded in everyday social life, education can empower individuals to move beyond compliance and toward committed, value-driven engagement with environmental issues.

Future research should continue to explore how educational strategies can effectively leverage social dynamics, particularly through participatory, community-based, and experiential learning formats. Such approaches can transform education into a key tool for building not only environmental literacy but also socially rooted environmental responsibility.

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