

NONCONFORMITY AND FOREST NATURE DEFICIT AMONG POLISH RESIDENTS

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Abstract

Forest nature deficit can be understood as a limited or complete lack of human contact with forests, which carries negative biological, social, emotional, and functional consequences. Contact with forest environments provides well-documented, multidimensional health benefits—from strengthening immunity and reducing stress through phytoncides and negative air ions, to the relaxing effects of essential oils, as well as supporting circadian rhythm regulation and improving sleep quality. Forests also promote creativity, exploration, and physical activity, serving as a key space for both psychological and physical well-being. Limited access to such experiences may lead to reduced activity, weaker psychological resilience, and lower readiness to take on new challenges. As part of a research project funded under the OPUS competition by the National Science Centre, Poland, the Forest Nature Deficit Questionnaire (QDFN) was developed—the first psychometric instrument in Poland designed to measure forest nature deficit. Nonconformity, understood within the interactionist framework of psychology, is a source of motivational energy that activates an individual's potential toward independence, creative expression, and the ability to resist social pressure. It can be measured, among other tools, using the Nonconformity Scale included in the Creative Behaviour Questionnaire. To date, no studies have examined the relationship between nonconformity and forest nature deficit. The present presentation introduces pioneering findings based on a sample of more than 1,000 Polish residents, opening new perspectives for analyzing personality determinants of human contact with nature.

Keywords: *Forest nature deficit, Forest Nature Deficit Questionnaire, nonconformity, personality.*

1. Introduction

Whereas in the past the proximity of nature constituted an integral element of everyday human functioning, today contact with the natural world is significantly limited for many people, often occurring only occasionally, fragmentarily, or even exceptionally (Schroeder, 2021). This phenomenon carries important consequences, as numerous empirical studies indicate that the natural environment plays a crucial role in maintaining physical, mental, and social health (Hartig, Mitchell, De Vries, & Frumkin 2014). Its deficit may lower individuals' quality of life and increase the burden on healthcare systems (Louv 2006). Nature deficit manifests itself in somatic dimensions (e.g., higher risk of metabolic and cardiovascular diseases) (Korcz, 2025), psychological dimensions (higher levels of stress, depression, and anxiety) (Siah et al., 2023), and social dimensions (weakened interpersonal bonds and reduced social capital) (Korcz, Kamińska, & Ciesielski, 2024). This highlights the growing importance of research into the role of the natural environment as a protective factor buffering the negative consequences of contemporary lifestyles. Within this broader context, the forest represents a specific and particularly significant space in which the manifestations of nature deficit acquire clear ecological, psychological, and social dimensions. Despite an increasing number of studies on the benefits of spending time in forests, there remains a lack of clear evidence identifying the consequences of *not* having such contact. In-depth analyses and clear research conclusions answering key questions are still missing: 1. Do contemporary societies indeed experience a forest nature deficit, and do we have tools enabling its reliable assessment? 2. What factors shape this phenomenon?

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Forest Nature Deficit has so far remained an unexplored issue, which prompted its inclusion in an interdisciplinary psychological–environmental research project. It has been defined as the absence or infrequent personal contact with forests that may lead to negative biological, social, emotional, and functional outcomes. Based on a meta-analysis of studies on the significance of forests for human functioning (Korcz, 2025), four components of forest nature were identified: biological component – influencing the functioning of the human body. Social component – referring to relationships with others, with oneself, with forest nature, and with the cultural heritage of forests. Emotional component – concerning the effects of forest environments on emotions and well-being. Functional component – encompassing the role of the forest in cognitive, sensory, physical, recreational, and creative development.

The components described above were reflected in the development of the Forest Nature Deficit Questionnaire (QDFN), created within the project as the first instrument in Poland designed to diagnose forest nature deficit. In the search for psychological determinants, the study focused on identifying the relationship between nonconformity and forest nature deficit. Nonconformity can be analyzed in four research domains: as individual behavior, as group behavior, as a personality structure (Jackson & Tremblay 2002), and as an aspect of creative personality (Bernacka 2020, Mróz et al., 2023, Necka et al., 2006, Song et al., 2012). In Popek's (2015) theory, nonconformity is defined as a relatively stable disposition toward autonomy and independence in thinking, evaluating, and acting, grounded in one's own value system. It includes such characteristics as adaptive flexibility, dominance, tolerance, self-organization, originality, independence, openness, coherence, perseverance, activity, courage, self-criticism, and high self-esteem (Popek, 2015, Grohman & Szmidt, 2012). To date, nonconformity has not been examined in the context of forest nature deficit; however, it plays a particularly important role in situations in which the individual is confronted with social norms, values, customs, and social pressure (Mróz et al., 2023).

The aim of the present study was therefore to investigate the relationship between nonconformity and forest nature deficit among Polish residents. It was hypothesized that nonconformity would be significantly related to the level of forest nature deficit.

2. Methods

2.1. Participants

A total of 1070 individuals participated in the study (52% women, 48% men), aged 18 to 74 years ($M = 46.39$; $SD = 15.15$). Education levels: 4.7% – primary education, 24.8% – vocational education, 34.3% – secondary education, 36.2% – higher education. Overall, 58.8% of participants lived in urban areas and 40.2% in rural areas; 6.4% of respondents reported never going to the forest.

2.2. Measures

Nonconformity was measured using the Creative Behaviour Questionnaire (CBQIII) (Bernacka et al., 2016). The questionnaire contains 13 statements describing nonconformist traits, rated on a 5-point scale. Higher scores indicate higher levels of nonconformity. Test reliability in the present study: $\alpha = 0.76$. Forest nature deficit was measured using the original Forest Nature Deficit Questionnaire (QDFN) (Korcz, Bernacka, Kobyłka, & Kamińska, unpublished). The scale consists of 15 items rated on a 5-point scale. Higher scores indicate a higher level of deficit. Test reliability in the present study: $\alpha = 0.97$.

2.3. Procedure

The study was conducted online through an external research company specializing in public opinion surveys. The research procedure was carried out in accordance with the ethical standards of the Polish Committee on Ethics in Science and the 1964 Declaration of Helsinki and its later amendments. The project received approval from the Ethics Committee for Scientific Research Involving Humans of the Forest Research Institute in Sękocin Stary (No. 1/2025), issued on 06.05.2025.

3. Results

Correlation analysis revealed a significant relationship between nonconformity and forest nature deficit: Spearman's $\rho = -0.25$; $p < 0.01$. The result confirms the hypothesis regarding a significant association between the variables.

4. Discussion

The aim of the study was to examine the relationship between nonconformity and forest nature deficit. The findings showed that nonconformity was weakly and negatively associated with forest nature deficit—higher nonconformity was linked to a lower deficit. This mechanism may stem from ways of

achieving well-being. Individuals high in nonconformity experience psychological comfort when initiating change and seeking meaning and purpose in their actions (Popek, 2015).

Nonconformist individuals with a low forest nature deficit tend to: experience physical relaxation and improved bodily functioning; view the forest as a space for reflection and encounters with oneself, other people, and the environment; feel calm, relaxed, and more mindful; perceive the forest as a place that stimulates the senses, develops imagination, inspires innovation and creativity; and are more inclined to experiment and learn through direct experiences of forest nature (Korczyk, 2025). Because nonconformity enhances autonomy and well-being, it increases readiness for personal contact with the forest, which is reflected in lower levels of forest nature deficit.

5. Conclusion

The study demonstrated a significant relationship between nonconformity and forest nature deficit, indicating that individuals with higher levels of nonconformity are less likely to experience a lack of contact with the forest. This association may result from their greater autonomy, tendency to independently seek well-being, and openness to experience, all of which support direct engagement with nature. For such individuals, forest contact serves a regenerative and inspiring function, enhancing both well-being and readiness for creative activity. The findings highlight the importance of promoting attitudes that support autonomy and conscious use of natural resources as factors reducing forest nature deficit.

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