

UNIVERSITY OF SOPRON

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PhD THESIS

Traditions and customs related to wood and wood material, and their impact on
environmental attitudes among students in Győr-Moson-Sopron County

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Table of contents

| | |
|--|----|
| 1. Relevance of the topic..... | 1 |
| 2. Aims of the research | 1 |
| 4. Methods used | 5 |
| 4.1 Brief overview of literature and document analysis | 5 |
| 4.2 Overview of the questionnaire survey | 5 |
| 4.3 Statistical calculations and methods | 6 |
| 5. Evaluation of hypotheses | 6 |
| 6. Theses | 8 |
| 7. Proposals | 9 |
| 8. Conclusion | 10 |
| 9. Publications on the subject of the thesis | 11 |

1. Relevance of the topic

In the dissertation, the author examined the influence of folk traditions and customs related to wood and wood products on environmental attitudes in Győr-Moson- Sopron county (from 01 January 2023 vármegye). The topic is relevant because there are uncertainties about the use of wood. On the one hand, wood use is influenced by substitute product manufacturers, who claim that the use of their products has environmental benefits. On the other hand, the media and environmentalists add to the uncertainty; the perception of forest management and the work of foresters is often negative (Kováts-Németh, 2010). Incomplete and incorrect information leads to the development of inappropriate attitudes (Hartl, 2008).

Research shows that the use of wood products has positive effects on physical and mental health. The use of wood products contributes to reducing the effects of climate change.

In this dissertation, the author examined the use of wood and wood material among elementary and secondary school students. The author examined the influence of experiences in the home, school programmes on wood, and knowledge of traditions and customs about wood use on the perception of wood.

2. Aims of the research

The main objective of the dissertation was to get a picture and data on the willingness of the surveyed elementary and secondary school students to consciously use wood in later life when they become adults.

The first objective was to obtain data on the extent to which out-of-school, tree-related educational activities (such as forest programmes, excursions, forest study trips, tree planting programmes or 'campfire' programmes in forest clearings) influence attitudes towards wood and motivate future wood use.

The second aim was to obtain pictures and data on the habits and traditions of the families of the students surveyed regarding wood and wood material use, and whether these habits and traditions influence attitudes towards wood and the intention to use wood materials in the future.

The third objective was to obtain data on the knowledge of students about wood use concerning traditions and customs and how this knowledge influences future wood use.

The fourth objective was to explore whether the impact of the media influences the intention to use wood materials in the future.

3. Hypotheses of the research

1. The author hypothesized that among the students who participated in the survey, higher knowledge about trees and wood use was found among those who have trees in their homes or gardens. She also hypothesized that the affective and conative domains of attitude would also show higher scores.

She formulated separate hypotheses to examine the three domains of attitude. To examine the cognitive domain of attitude, she hypothesized the following:

H0: Students who have trees in their family's garden will not show higher scores in the cognitive domain of attitude compared to students who do not have trees.

H1: Students who have trees in their family gardens will show higher values in the cognitive domain of attitude compared to students who do not have trees.

To examine the affective domain of attitude, she hypothesized the following:

H0: Students who have trees in their family's garden will not show higher values in the affective domain of attitude compared to students who do not have trees.

H1: Students who have trees in their family gardens will show higher values in the affective domain of attitude compared to students who do not have trees.

To examine the conative domain of attitude, she hypothesized the following:

H0: Students who have trees in their family's garden will not show higher values in the conative domain of attitude compared to students who do not have trees.

H1: Students who have trees in their family garden will show higher values in the conative range of attitude compared to students who do not have trees.

2. The author hypothesized that students who participated in extra-curricular tree-related activities (tree planting programmes, forest camps, forest excursions, celebration of special days, school gardening, tree-related activities) would show more positive attitudes towards trees in the cognitive, affective, and conative domains of environmental attitudes compared to students who did not participate in such activities and programmes.

She formulated separate hypotheses to examine the three domains of attitude. To examine the cognitive domain of attitude, she hypothesized the following:

H0: Students who participated in tree-related programmes organized by their school will not show a statistically significant difference in the cognitive domain of attitude, which is in the upper quartile and close to 0.5, and statistically significantly different from 0.25.

H1: Students who participated in tree-related programmes organized by their school will show a statistically significant difference in the cognitive domain of attitude, which is in the upper quartile and close to 0.5, and statistically significantly different from 0.25.

To examine the affective domain of attitude, she hypothesized the following:

H0: Students who participated in tree-related programmes organized by their school will not show a statistically significant difference in the affective domain of attitude, which is in the upper quartile and close to 0.5, and statistically significantly different from 0.25.

H1: Students who participated in tree-related programmes organized by their school will show a statistically significant difference in the affective domain of attitude, which is in the upper quartile and close to 0.5, and statistically significantly different from 0.25.

To examine the conative domain of attitudes, she hypothesized the following:

H0: Students who participated in tree-related programmes organized by their school will show values in the lower quartile of the conative range of attitude, which are not statistically significantly different from 0.5.

H1: Students who participated in the tree-related programmes organized by their school will show values in the upper quartile of the conative range of attitude, which are statistically significantly different from 0.5 and close to 1.

3. The author hypothesized that based on the National Core Curriculum, students would be aware of and familiar with the knowledge of traditions and customs related to trees. There is no difference in knowledge between students studying in cities, towns and villages. Furthermore, she hypothesized that the affective and conative domains of attitude would show no difference between students living and studying in villages and towns or cities.

She formulated separate hypotheses to examine the three domains of attitude. To examine the cognitive domain of attitude, she hypothesized the following:

H0: There is a demonstrable difference in the knowledge, concerning the cognitive domain of attitudes, of students studying in cities, towns and villages on tree-related issues of traditions and customs.

H1: There is no demonstrable difference in the knowledge, in the cognitive domain of attitude, of students studying in cities, towns and villages on the tree-related issues of traditions and customs.

To examine the affective domain of attitude, she hypothesized the following:

H0: There is a demonstrable difference in the affective domain of attitude towards tree-related issues of traditions and customs among students studying in cities, towns and villages.

H1: There is no demonstrable difference in the affective domain of attitude towards tree-related issues of traditions and customs among students studying in cities, towns and villages.

To examine the conative domain of attitudes, she hypothesized the following:

H0: There is a demonstrable difference in the conative domain of attitude between students studying in cities, towns and villages on the tree-related issues of traditions and customs.

H1: There is no demonstrable difference in the conative domain of attitude between students studying in cities, towns and villages on the tree-related issues of traditions and customs.

4. The author hypothesised that in families where wood is widely used, children/students will also show a willingness to use wood material in later life. She hypothesized that tree-related programmes organized by the school would have a positive effect on the willingness of students to use wood and wood material. Furthermore, she

hypothesized that students who have higher than average knowledge of traditions and customs related to wood and wood material use were more likely to consider wood use important.

She formulated separate hypotheses to examine the three domains of attitude. For her first examination, she hypothesised the following:

H0: Students whose families do not use wood extensively do not consider it important to use large amounts of wood nowadays and would not build a house from wood-based materials.

H1: Students whose families also use wood extensively are more likely to consider it important to use large amounts of wood nowadays and would prefer to build a house from wood-based materials.

In her second examination, she explored the impact of tree-related programmes organized by schools, hypothesizing the following:

H0: Students who have not participated in tree-related programmes organized by their school do not consider it important to use a lot of wood today and would not build a house from wood-based materials.

H1: Students who have participated in tree-related activities organized by their school consider it important to use a lot of wood nowadays and would like to build a house from wood-based materials.

In her third examination, she explored the impact of knowledge of traditions and customs on the use of wood, hypothesising the following:

H0: Students who scored below average concerning questions about the wide use of wood in traditions and customs do not consider it important to use a significant amount of wood nowadays and would not build a house from wood-based materials.

H1: Students who scored higher than average concerning questions about the wide use of wood in traditions and customs consider it important to use a significant amount of wood nowadays and would build a house from wood-based materials.

5. The author hypothesized that if wood-related traditions and customs are present in the family, they will influence the child/student's willingness to use wood material in the future. Furthermore, for those students who watch nature films, documentaries, old woodworking tools, and tree-related customs and traditions, the indirect influence of the media is not a determining factor.

To examine the impact of traditions and habits of families on wood, she hypothesised the following:

H0: If tree-related traditions and customs have been introduced in the family, they will not influence the child/student's willingness to use wood in the future.

H1: If tree-related traditions and customs have been introduced in the family, they will influence the child/student's willingness to use wood in the future.

To examine the impact of knowledge communicated by the media, she hypothesized the following:

H0: For students who watch tree-related nature films, documentaries, old woodworking tools, and wood-related customs and traditions, the indirect/influencing effect of the media can be identified as a determining factor.

H1: For students who watch tree-related nature films, documentaries, old woodworking tools, and wood-related customs and traditions, the indirect/influencing effect of the media cannot be identified as a determining factor.

6. No hypothesis was needed in her final examination, in which she wanted to know how many of the 430 students participating in the survey could be said with certainty to show a willingness to consciously use wood and what the influences were that determine a positive attitude towards wood and wood material use. A widely used Conditional Inference Tree method was used for the study.

4. Methods used

Literature and document analysis

Questionnaire survey including trees and wood

Quantitative-statistical analysis of data using SPSS 27 statistical software package (IBM Corp. Released, 2020)

4.1 Brief overview of literature and document analysis

The dissertation showed the great role of using wood and wood material in people's lives in the folk culture. The transmission of our traditions was interrupted. Ethnography was first introduced in the National Basic Curriculum in 1995 (Government Decree 130/1995 (X. 26)).

The dissertation showed the development of environmental education in Europe. The author explored the agreements and conferences through document analysis. Furthermore, the development of environmental education in Hungary from the 1990s to the present day was described. Among the non-traditional school settings of environmental education, forest schools, forestry schools, and nature and environmental days were highlighted, emphasizing their skill and competence-developing effects. By presenting environmental impact and attitude studies and reviewing the results of international surveys, the author obtained a picture and data on the knowledge of Hungarian students and their results based on comparative studies.

The presentation of the influence of the family and the environment on attitude is an important factor for environmental education, since the experiences gained in the parental home are carried on to school by the students, and it is the teacher's task to reinforce or trigger these experiences.

The author examined the contents of the textbooks and workbooks on wood and wood materials and wood tools in the field of ethnography and ethnology. This examination was necessary to compile the survey questionnaire, as it only included questions that the students had encountered in the textbooks.

4.2 Overview of the questionnaire survey

The survey was conducted in Győr-Moson-Sopron County, Hungary, in April, May and June of the 2021 school year, with the permission of the school authorities (the county was renamed Győr-Moson-Sopron vármegye under the Eleventh Amendment to the Fundamental Law of Hungary). The questionnaire contained 49 questions. The questions

measured three domains of attitude: family habits and traditions, school and extracurricular tree-related programmes, and national traditions and customs (the topic was only wood as an economic tool, building material, household tool, and energy source). Ten students tested the survey questions before completing the questionnaire. The questionnaires were completed online using Google Docs by 230 male and 200 female students, a total of 430 students. The questionnaire covered three types of municipalities: village, town (town: 10-25 thousand inhabitants, e.g., Csorna, Kapuvár), city (city: over 25 thousand inhabitants, e.g., Sopron, Győr).

Based on the data of the Hungarian Central Statistical Office (KSH), the questionnaire is representative for Győr-Moson-Sopron vármegye.

4.3 Statistical calculations and methods

The data were subjected to quantitative-statistical analysis by the author using the statistical software package SPSS 27 (IBM Corp. Released, 2020). The questionnaire data did not show a normal distribution ($p < 0.001$) based on the histograms and statistical analyses. Therefore, Mann-Whitney U test, one-sample Wilcoxon test and Spearman correlation were used.

For statistical analyses of the Conditional Inference Tree Method, RStudio 1.1.442 (RStudio Team 2020) built on the R platform (R Development Core Team 2021, version 3.5.1) was used. Two independent evaluators first performed plausibility checks. The main purpose of the statistical analysis was to obtain data on the impacts that participants considered important to wood material use. A Likert scale of 4 or 5 was used to evaluate the "importance of wood."

5. Evaluation of hypotheses

The aim of the research was to examine whether the attitude of students towards the use of wood and wood material is influenced by the presence of trees in their immediate environment, and how students are influenced by the environment around them, family traditions, customs and school wood-related programmes. The author came up with five hypotheses, of which the first three were related to all three domains of attitude. These were subjected to separate statistical tests. She also carried out a predictive analysis of future actions.

She examined whether the presence of trees in the students' environment has an effect on attitude. Her results confirmed her hypothesis that the presence of trees in the immediate environment is important for a positive attitude towards trees, wood material and wood product use in all three domains of attitude.

She examined whether students who participated in extracurricular school activities related to trees (tree planting programmes, forest camps, forest excursions, celebration of special days, school garden maintenance, and attendance at tree-related activities) showed higher scores in the cognitive, affective and behavioural domains of tree-related environmental attitude compared to students who did not experience such activities and programmes. Results were confirmed in all three domains of attitude.

The author obtained data that the students are familiar with and know about traditions and customs related to trees. There is no difference in knowledge between students studying in cities, towns and villages. She further found that there was no difference in the affective

and conative domains of attitude between students living and learning in villages and cities, her hypothesis was confirmed, there is no difference in the domains of attitude (cognitive, affective and conative) and the type of settlement is not an influencing factor.

Based on the results of the research, the author found that the willingness of students to use wood and wood material is influenced by their family's habits and traditions related to wood and wood material use. Tree-related school programs have a positive effect on students' willingness to use wood and wood material. She found that students who have higher than average knowledge of traditions and customs related to wood and wood material use are more likely to consider wood use important. The results of her study confirmed all three of her hypotheses.

Based on the results of the research, the author found that students whose families have wood-related traditions and customs in their families consider wood material use important. The results of the research showed that the knowledge about wood and old woodworking tools acquired from the media did not have an influence on the use of wood. Based on the results of the research, she found that the retention of family traditions and customs influenced the willingness to use wood in the future among the students examined.

The author further investigated the question of the importance of wood as a raw material using the "Conditional Inference Tree" statistical method to obtain a more detailed picture of the influences on the importance of wood use among the students surveyed. The survey results showed that the impact of extracurricular tree-related programmes on students contributes to their perception of the importance of wood.

The presence of trees in the gardens of the students, family habits, extra-curricular tree-related activities and programmes in schools, traditions, customs, and knowledge of old wood crafts, all had a positive impact on the attitude towards wood and wood-related activities.

6. Theses

T.1. The author found that the multifunctionality of forests should be represented in environmental education. In environmental education, we can educate by using the immaterial benefits of forests. Students can learn about the environment and nature protection (e.g., wildlife, water, air, soil, etc.) directly through experience.

T.2. Based on her research, she found that the presence of trees in the immediate environment (at home in the gardens) is important in developing a positive attitude towards wood, wood material and the use of wood products.

T.3. Through quantitative-statistical analysis of survey data, she found that the affective domain of attitude is more prominent than the cognitive domain. The emotional influence can be enhanced when students are involved in a programme related to wood and wood material, and in these programmes, they can be active agents.

T.4. The coordination of educational and parental influences on the use of wood, wood material, and wood products is more important than other factors (e.g., place of residence, media) in children's environmental education. To ensure consistency, it is important to take into account the fact that students can take the environmental education they have learned at school back home to their families. They bring family patterns into the school, and therefore the pedagogical task of environmental education is also to reinforce or challenge the family patterns that students bring from home.

T.5. The results of the research show that the family is the most important source of information for students (more effective than school or media) on wood and wood material use.

T.6. The elements of environmental education at school and out of school (school gardens, the environment with trees, wood equipment at home, wood-related programmes connected to "fire" and old woodworking, reviving and passing on traditions) are permanently determining in creating a positive attitude towards wood, wood material, and wood products (but forest school programmes, travelling camps, celebrating special days, tree planting programmes are of course useful).

T.7. The results of the study show that promoting the use of wood and wood material is as important for students living in villages as it is for students living or studying in towns and cities.

7. Proposals

The author recommends that all schools should have a school garden because the garden in the parental home is similar to a school garden in its temporal and spatial setting. In schools where this is not feasible, at least boxes should be placed in the corridors and windows where students can plant and care for plants.

The author recommends that schools should use as much wood, and wooden tools as possible because the use of wood-based materials has a positive effect on mental well-being, and on physical and mental health.

The results showed that strengthening the two components of attitude promotes environmentally conscious behaviour. The author recommends that teachers should organise as many extra-curricular forest, wood and wood-use-related activities as possible. It is important that such programmes are organised by a qualified professional and can build on the professional knowledge of the forester.

The author also recommends that teachers of ethnography and sciences, and those involved in other areas of environmental education, should take part in a training course on the use of wood material.

The author recommends that parents should also be involved in environmental education programmes and events relating to wood and wood use.

The author recommends that parents should be addressed through advertising, media, and environmental programmes in order to increase their environmental awareness and to promote or increase the use of wood.

In order to promote the use of wood, the author suggests promoting wood and wood material use programmes in which families with children can participate.

The author also recommends that forestry and the work of foresters should be promoted to a wider audience, including students and their families.

Based on the results of the study on wood and wood material use, the author urges the widespread use of wood-based materials.

8. Conclusion

In the dissertation, the author showed that the use of wood and wood material played an important role in folk culture. She pointed out the fact that there is much uncertainty about the use of wood and timber in the present day. The author put forward five hypotheses and conducted an examination using the Conditional Inference Tree Method. She approached her examination from three aspects: family tree-related customs and traditions, school tree-related programmes, and traditions and customs related to wood and wood material contents.

The results of her questionnaire survey were subjected to statistical calculations. Her hypothesis was confirmed in all five hypotheses. Her hypotheses are partly in agreement with the results of Hungarian and foreign research, in two cases she obtained contradictory results: the knowledge about traditions and customs about wood and wood material of the students surveyed did not show any differences, the types of settlement were not an influencing factor. Students' opinion on the use of wood and wood material was not influenced by the media information. The examination using the Conditional Inference Tree Method revealed the influences on students' perception of the importance of wood use. The study also revealed how many of the students who participated in the survey consider wood use important.

The new aspect of the study is that all three domains of attitude towards wood and wood material use have not been explored separately. There has also been no study on the impact of extra-curricular school wood-related programmes on the perception of the importance of wood use. This dissertation also investigates a new method not previously used in research on environmental education.

In the author's opinion, the data from her survey are suitable for conducting further studies.

9. Publications on the subject of the thesis

NMARNÉ, KENDÖL J. ; MOLNÁR, K. ; BERKI, I. ; FEKETE, I. (2022):

Student Knowledge and Attitudes Towards Wood and the Use of Wood as a Raw Material
Acta Silvatica et Lignaria Hungarica: AN International Journal in Forest, Wood and Environmental Sciences 18: 2 pp. 129-150., 22 p

FEKETE, I.; NMARNÉ, KENDÖL J. (2022):

Assessing Attitudes Towards Wood in the Context of Family Habits: Potential for Reuse of Raw Data from a Questionnaire Survey
Journal of Open Humanities Data 8 Paper: 82, 5 p.

NMARNÉ, KENDÖL J. (2021):

Natural Scientific and Ecological Environmental Education in the Training of Kindergarten Teacher Students at the University of Sopron, Hungary
Acta Universitatis Sapientiae Social Analysis 11 pp. 132-143, 12 p.

NMARNÉ, KENDÖL J. (2021):

Attitudes towards wood and wood material use among primary and secondary school students in Győr-Moson-Sopron County

In: Lett, Béla; Gál, János; Horváth, Sándor; Molnár, Katalin; Schiberna, Endre; Stark, Magdolna (szerk.) Tanulmánykötet Mészáros Károly tiszteletére 2021
Soproni Egyetem Kiadó, Sopron, Magyarország. 146 p. pp. 119-126, 8 p.

NMARNÉ, KENDÖL J. (2019):

Possibilities of Recycling in the Repertoire of Undergraduate Kindergarten Teachers

In: Lett, Béla; Gál, János; Horváth, Sándor; Molnár, Katalin; Schiberna, Endre; Stark, Magdolna (szerk.) Tanulmánykötet Mészáros Károly Tiszteletére 2019
Soproni Egyetem Kiadó, Sopron, Magyarország. pp. 111-117, 7 p.

NMARNÉ, KENDÖL J. (2019):

Student environmental awareness on environmental issues in young adulthood
Training and Practice 17: 3-4 pp. 195-210. 16 p

NMARNÉ, KENDÖL J. (2019):

The Significance of Teaching Environmental Protection

In: Kissné, Zsámboki Réka; Koloszár, Ibolya; Horváth, Csaba (szerk.) International educational trends and dimensions without borders: XII International Conference on Training and Practice in Education. Abstract volume.

Soproni Egyetem Kiadó, Sopron, Magyarország. 179 p. pp. 73-74, 2 p.

NMARNÉ, KENDÖL J. (2018):

Exploring the possibilities of attitude formation among secondary school students

In: Belovári, Anita; Bencéné, Fekete Andrea; Nagyházi, Bernadette (szerk.) 11. Training and Practice. International Conference on Education. Responses in pedagogical theory and practice. Abstract volume.

Kaposvári Egyetem Pedagógiai Kar, Kaposvár, Magyarország. 61 p. p. 33

NMARNÉ, KENDÖL J. (2018):

Advent project for strengthening identity.

Fókusz - Vajdasági Ismeretterjesztő és Tudománynépszerűsítő Elektronikus Folyóirat. 2018. január: 159-160 pp. 1-8, 8 p

NMARNÉ, KENDÖL J. (2018):

Respecting Traditions, Folk Traditions with reference to Natural History in Forest Pedagogy.

In: Lett, Béla; Stark, Magdolna; Schiberna, Endre; Gál, János; Horváth, Sándor

(szerk.) Tanulmánykötet Mészáros Károly tiszteletére 2018

Soproni Egyetem Kiadó, Sopron, Magyarország. 86 p. pp. 73-76., 4 p.

NMARNÉ, KENDÖL J. (2017):

Green days in forest pedagogy.

Fókusz - Vajdasági Ismeretterjesztő és Tudománynépszerűsítő Elektronikus Folyóira 2017.

október: 157 pp. 1-7, 7 p.