

The Importance of Information in Shaping Sustainable Human Behaviour

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Abstract. As the climate crisis has become a growing issue in recent decades, sustainable development has become a focus of attention for the international community. In 2015, the United Nations launched the Sustainable Development Goals (SDGs), which call on countries to grow their economies and meet their social needs with the least possible damage to the environment. The aim is to preserve natural resources for future generations. As a result, various policies have been introduced and integrated in different countries to address the problematic aspects of sustainable development. One of the most important catalysts for sustainable development is the promotion of sustainable consumer behaviour. Sustainability requires a fundamental change in individual behaviour. Achieving Sustainable Development Goals will help ensure that future generations can meet their needs. Research to date shows that individuals still do not behave sustainably. Understanding what factors influence sustainable individual behaviour and how to persuade people to behave sustainably is therefore of growing scientific interest. The external and internal factors influencing an individual's behaviour are based on information sources. The aim is to explain how, in what way, and at what level, initial information data is perceived and used by the individual. As a result, a study was carried out to investigate the impact of information in shaping sustainable individual behaviour in Lithuania.

Keywords: *sustainability, human behaviour, information, information management, sustainable human behaviour.*

Introduction

Relevance of the article

The individual has always been and still is, surrounded by materialistic temptations and desires. The desire for personal security, power, status, and, above all, physical comfort has persisted throughout human civilisation. As a result, we already have the following negative outcomes: carbon emissions from fossil fuels have reached record highs, the global average sea level has risen by 20 cm between 1900 and 2018, and heat waves, forest fires, and air pollution have increased (Guinot et al., 2022). Concentrations of the main greenhouse gases have continued to rise over the past few years, and global average surface temperatures between 2017 and 2021 are among the warmest ever recorded (United Nations, 2022; Guinot et al., 2022). The frequency and intensity of extreme weather and climate events have increased in all regions of the world (United Nations, 2022; Galarraga et al., 2011), driven by us humans, our daily activities, and our overwhelming desire to satisfy our personal desires.

Due to environmental problems and the increasing scarcity of resources, sustainable individual behaviour is becoming increasingly important in society. Individuals directly contribute to or exacerbate environmental problems through the use of 'polluting' services, and consumption of various goods that subsequently pollute the environment (Schrader et al., 2011). An individual's choice to consume one or another group of goods triggers corresponding responsibilities toward their family, community, and the environment (Gebauer et al., 2008). Individuals are increasingly starting to integrate sustainable, environmentally friendly choices into their daily lives. Nowadays, it has become routine for some individuals to separate waste (Concari et al., 2020), save electricity (Abrahamse & Steg, 2009), conserve water resources, and choose a product or a service with an ecolabel (Grankvist & Biel, 2001). In addition to individuals with sustainable behaviour, other groups of individuals have emerged with different mindsets and approaches to sustainability. Other individuals are simply apathetic towards any sustainable behaviour, they deny the ideology of sustainability and do not plan to change their habits. These observed differences in individual behaviour and the way society is divided naturally raise the question of what has been or is still being missed in the communication of sustainability and its importance to the public.

Level of problem investigation

Changing people's behaviour is rarely a simple or easy process. Information campaigns are commonly used to promote sustainable behavioural change, often with the aim of changing attitudes

or providing or increasing knowledge about environmental/ecological issues, thus promoting behavioural change (Štreimikienė & Mikalauskiene 2021; Diliene J. et al., 2021). Unfortunately, such a superficial approach to behavioural influences is often an ineffective way to change an individual's behaviour (Pee & Pan, 2022).

Rarely is there an attempt to obtain feedback from the consumer as to whether the information obtained has been influential in changing the individual's behaviour in the long or short term (Chawla 1999; Chawla, 2010; Linder et al., 2018).

Scientific problem

Scholars in environmental psychology (Manning, 2009; Kollmuss & Agyeman, 2010) and behavioural economics (Lehmann, 1999; Huffman et al., 2003) have long pointed out that insights from behavioural science are not generally used to design information campaigns and dissemination strategies aimed at promoting environmentally friendly behaviour (Linder et al., 2018;). It is worth highlighting that there is currently not a great deal of scientific work on how information influences individual behaviour over time (Hines et al., 2010; Clayton et al., 2016). Although theoretical frameworks have been developed to explain how the environmental knowledge gap influences an individual's environmental awareness and, consequently, environmentally friendly behaviour (Mikalauskiene, 2014; Pinheiro & Farias, 2015; Otto & Pensini, 2017; Liobikienė & Poškus, 2019), definitive answers to the questions of how the possession of information impacts on environmentally friendly consumer behaviour, in the long run, are often not provided.

Object of the article – the importance of information in shaping sustainable individual behaviour.

Aim of the article – To present the findings of research by scholars studying sustainable behaviour and to introduce them to the public, together with the results of an empirical study carried out in Lithuania.

Objectives of the article:

1. Theorise the identity of an individual's sustainable consumption behaviour.
2. To investigate which information sources impact the Lithuanian population and find out what would most influence people to behave sustainably.

Methods of the article

The insights and views of Lithuanian and foreign authors are analysed. The research methods used for the theoretical analysis were comparative and descriptive analysis of scientific literature; comparative and descriptive analysis of information sources; synthesis of the analysed data, and the method of generalisation. The quantitative method of data collection used in the study was a questionnaire survey. Quantitative analysis of survey data. Synthesis method.

1. Sustainable behaviour of individuals and factors promoting it.

At the landmark Sustainable Development Summit in 2015, the United Nations Member States adopted the Sustainable Development Goals (SDGs) to move towards sustainability (United Nations, 2016). SDG 12 deals with responsible consumption and production, aiming to change an individual's behaviour's current pattern and structure to a more sustainable one. The 12th MDG emphasises the need to provide relevant information and raise awareness among individuals about sustainability and lifestyles that are compatible with the environment (United Nations, 2016).

Sustainable behaviour is complex and challenging to grasp, encompassing many different aspects (Elhoushy, & Lanzini, 2020). Scholars understand sustainable individual behaviour differently, and it is composed of many elements and interpretations. Some features include buying 'sustainable' products, recycling, using energy-efficient appliances, making ethical investments (from an environmental point of view), switching to organic food, changing vehicles, buying recycled goods, and adopting minimalist consumption behaviour (Kernpton et al., 2008). A large body of research links sustainable consumer behaviour to the environmental impact of such behaviour. It is argued that everyday consumption choices indirectly or directly affect the environment. Ecological aspects are high on the political agenda in the policy field, particularly in policymaking related to sustainable consumption (Jackson et al., 2005). This link between individual behaviour and the environment is often referred to as environmentally appropriate

individual behaviour. This relationship is defined as the extent to which human behaviour influences the availability of materials or energy from the environment or changes the structure and dynamics of ecosystems or the biosphere (Stern, 1999). Stern (1999) refers to behaviours that directly or indirectly cause environmental change, such as the disposal of household waste or deforestation. In research, there is still no consensus or definition to describe sustainable individual behaviour (Geiger et al., 2018; Quoquab et al., 2019).

Many researchers refer to the meaning of 'sustainable behaviour' presented at the Oslo Symposium as 'the use of goods and services that meet the basic needs of the individual and provide a better quality of life while minimising the use of natural resources, the emission of toxic materials and waste and pollutants, and the life cycle of such materials, so as not to compromise the needs of future generations (Organisation for Economic Co-operation and Development, 1999). This definition constrains sustainable consumer behaviour from an environmental perspective (Geiger et al., 2018; Quoquab et al., 2019). This implies an emphasis on improving the quality of life while reducing the use of natural resources.

In some research, the definition proposed by the Oslo Symposium has been criticised because it originated in the political sphere and did not call for societal changes (Baker, 2007). Therefore, these scholars, drawing on Brundtland (World Commission on Environment and & Development, 1987), conceptualise sustainable individual behaviour as an integrative perspective that encompasses two dimensions - socio-ecological and ecological (Geiger et al., 2018). This definition refers to the scarcity of resources, which threatens the environment and human well-being (Leach et al., 2013). Sustainable development requires interaction between three systems: social, economic, and environmental, and a good balance between them. These three systems influence in parallel the definition of sustainable individual behaviour. Sustainable individual behaviour is defined in this paper as actions determined by internal and external factors that meet the needs of the individual with the least possible damage to the environment and future generations.

Researchers studying the motives behind individuals' sustainable behaviour have approached it from different perspectives (Piligrimiene et al., 2020). Most research can be roughly categorised into behavioural economics, social and environmental psychology contexts (Liu et al., 2017), or external and internal approaches.

Environmental psychology focuses on identifying an individual's intrinsic motives for sustainable consumption behaviour. Some believe sustainable consumption behaviour determined by internal factors is more sustainable than external factors (Liu et al., 2017). Meanwhile, social context-based sustainable consumer behaviour assesses the importance of the structural context of society. A wide variety of social context-based factors have been studied (Milfont & Markowitz, 2016), such as politics (Mikalauskiene, 2014; Dilienė J. et al., 2021; Štreimikienė, & Mikalauskiene, 2021) and the social environment surrounding an individual (Piligrimiene et al., 2020). Researchers argue that sustainable individual behaviour's psychological (internal) drivers are fundamental. Even small changes in personal/societal behaviour can have a significant cumulative positive impact on avoiding potentially catastrophic global environmental change (Quoquab et al., 2019). Cultural and social contextual factors cannot be ignored, as individual behaviour cannot 'escape the structural circumstances surrounding it' (Liu et al., 2017).

The psychological (internal) influences on the individual that determine the link between ideological identity and beliefs about climate change are identity-protective cognitions (Kahan et al. 2007), i.e., people adapt their beliefs and worldviews to their personal and social identities (Welsch, 2022). Methods used to construct identity-protective knowledge include varying individuals' attention (through selective exposure or avoidance) and processing of information (through reasoning) (Garrett et al. 2011) in a way that is consistent with their values and worldview. For identity-protective cognition, partitioning by ideological stance can translate into partitioning by beliefs about climate change.

Gifford (2011) argues that people who are unaware of or sceptical about climate change's existence, origins, and impacts are unlikely to promote sustainability or take action to support climate policies. Conversely, those who are aware of the current problem, but lack knowledge about

the causes and extent of climate change, may not know what actions (individual and collective) can be taken and how different effective measures are. Therefore, sound science-based knowledge about climate change and mitigation options is an essential prerequisite for effective climate policy. An obvious source of more accurate knowledge on climate change is the education of individuals in various educational institutions. Indeed, educational attainment has long been identified as a consistent predictor of environmental perceptions and concerns (Welsch, 2022). Hornsey et al. (2016) report that a meta-analysis of nearly 200 academic surveys and studies revealed that an individual's education is one of the strongest correlates of belief in climate change. A study by Hornsey et al. (2016) found that prevailing political ideology and individual affiliation is a stronger predictor of belief in climate change than any other demographic variable.

Researchers argue that an individual has a strong incentive to behave sustainably when receiving information from governing institutions and scientific discourses. While this is undoubtedly an essential source of knowledge, it becomes problematic when used as a master narrative to hegemonise local and lived understandings that underpin social and ecological relations (Gobbo, 2022). Information provision alone, without structural (material, cultural, semiotic) behavioural changes, is not enough for individuals to practice what they learn as 'good' or 'right' behaviour about natural resource conservation (Shove 2010).

The external and internal determinants of an individual's behaviour are based on information sources and how, in what way, and at what level the initial information data are perceived and used by the individual. Consequently, researchers have questions about the assimilation of knowledge and its role in shaping sustainable individual behaviour (Elhoushy & Lanzini, 2020). Suppose we assume that an individual acts based on rational, ethical expertise about a given situation; then, it is crucial to provide information about environmental problems and possible solutions to them to develop awareness and the ability to make choices. According to this approach, knowledge about unsustainable practices changes attitudes and, as a result, behaviour (Stern 2000).

2. Present study

Aim of the research – to find out which information sources are most influential in influencing or encouraging individuals to make sustainable choices.

Objectives of the research:

1. Investigate which sources of information are most influential in an individual's choice of sustainable behaviour in Lithuania.
2. Identify the need for information related to promoting sustainable behaviour.

Research methods

An empirical study was carried out in 2022. The questionnaire was based on a theoretical analysis of the scientific literature. The questionnaire had two parts: the first part contained closed-ended questions to identify the socio-demographics of the respondents. The second block of questions consisted of statements to which the respondents were asked to apply a Likert scale assessment: "strongly agree, agree, no opinion, strongly disagree, disagree". The questionnaire was distributed via social networks (Facebook, LinkedIn).

The research data analysis and the discussion of the results

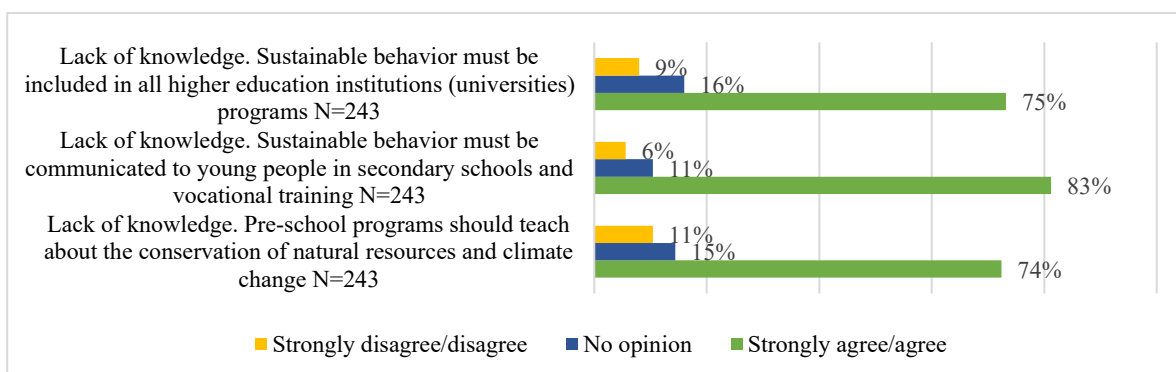
243 respondents took part in the survey. The age distribution of the respondents showed that the first and largest age group is between 49 and 58 years old – 36.2%. The second largest age group of respondents is 39 to 48 years old, 21.8%. The third largest age group was 31 to 38 – 14.8%. The fourth largest age group was 59 to 65 years old, with 14.0%. The age groups: under 25 years – 4.9% and 26-30 years – 4.9% had the same number of respondents. The lowest number of respondents was in the age groups 66 to 75 years and older, 3.3%.

The distribution of respondents by education shows that most respondents have a university degree – 67.1%. 23.5% had a non-university higher education, 4.9% had a vocational education, 4.1% had completed secondary education, and 0.4% had incomplete secondary education. This data

shows that most respondents have developed values, are educated, and have a clear view of current global issues.

The next set of statements was designed to determine what information sources influence respondents to purchase sustainable goods and services. Respondents identified three primary dominant information sources. Firstly, they rely on science-based knowledge 80% (N=243), secondly on the opinion of family members and relatives 75% (N=243), and thirdly, respondents indicated that they are influenced by information on social media 68% (N=243). These results suggest that most respondents are educated and that the Covid-19 pandemic has affected how humanity “approaches science-based information in its daily activities”. During the pandemic, respondents became accustomed to scientific information on one topic or another and the conclusions and advice provided by scientists. Respondents appreciated the importance of the work done by scientists. Respondents are ‘turning to science’ and trusting the research done by scientists. Public speaking by scientists influences individual behaviour. The results also highlight the importance of the immediate environment and social media as sources of information.

The last group of statements was designed to determine what information gaps respondents identified in promoting sustainable behaviour (Fig. 1). Respondents perceive a lack of knowledge and indicate that this situation needs to be changed in educational institutions, including secondary schools, vocational training 83% (N=243), university programs 75% (N=243), and preschool programs 74% (N=243). The views expressed by respondents suggest and confirm the previous insight that people want accurate and precise information as early as possible – in all educational and personal skills development settings. Environmental awareness must start from a young age and be promoted throughout an individual’s life.



Source: created by the authors.

Fig. 1. Information gaps respondents identified in promoting sustainable behaviour

Noteworthy is the choice of respondents to classify places of worship as an institution that educates and enlightens people about the current environmental situation 52% (N=243). These results show that some people would trust and be influenced to behave sustainably if the topic of sustainability were developed in religious communities and sustainability and its principles were discussed in places of worship. Places of worship have the potential to reach and influence groups of individuals of all ages and social classes. Places of worship do not offer a service or a product to the individual. It is therefore assumed that the individual would not accept the information received as ‘green brainwashing’ and that this information flow would not lead to a rejection reaction.

Conclusions

1. During the Covid-19 pandemic, people got used to receiving and accepting information validated by scientists. The information received periodically from a scientific source influenced the individual’s choices. This post-pandemic period is an excellent opportunity for scientists to become even more vocal about sustainability and its issues. Doing so in a coherent, clear way, communicating the problem, and sharing research results in a way that is engaging to the public and in all the information sources and formats that are available and most frequently chosen by

respondents will increase the chances that individuals will learn about the need for sustainable behaviour and the choices they can make about this way of living.

2. The promotion of sustainable behavioural change requires practical, explicit communication of information knowledge initiated by the highest authorities and governments through the use of scientists, complementing educational institutions, teacher and vocational training policies, and curricula with environmental and sustainable behavioural science (including seminars (etc.) to include places of faith in the information sources/objects that can be used for the dissemination of sustainable behaviours).
3. Most scientific sources are in a foreign language. Integrating intelligent technologies such as online translators into people's daily lives would make scientific knowledge available.

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