IMPACT OF CONSUMERS' AWARENESS CONCERNING ECO-LABELLING ON THEIR BEHAVIOR. A PROOF BASED ON LITERATURE REVIEW

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Purpose: Identifying the impact of consumers' awareness concerning eco-labelling on their pro-ecological market behavior.

Design/methodology/approach: A critical and comparative literature review was chosen as a research method.

Findings: Most of the results found in the literature confirm that awareness concerning eco-labelling positively impacts consumers' pro-ecological behavior. Generally the findings indicate that eco-labelling is often worthwhile because it enhances the business rationale for delivering products with eco-components.

Research implications: The change in consumer awareness in the area of eco-labelling leads to the change of consumer behavior towards ecological products. Hence the use of eco-labels can be an important marketing tool in shaping consumer behavior on the market.

Practical implications: The findings indicate that eco-labelling is worthwhile as it enhances the business rationale for delivering products with eco-components.

Originality/value: The identification, estimation and evaluation of the model of direct relation between consumer awareness concerning eco-labelling and consumer pro-ecological behavior on the market.

Keywords: eco-labelling, consumer behavior, sustainable purchasing, environmental marketing.

Category of the paper: literature review.

1. Introduction

With increasing consumer concern about the environmental impact of the goods and services they buy, environmental labelling has emerged as a key tool for making sustainable purchasing decisions (ISO, 2019). Environmental labels provide information about a product or service in terms of its overall environmental benefits. At a time when more and more consumers are motivated to purchase environmentally benign products, this information can positively influence consumer choices (ISO, 2019).

An ecolabel is a marketing tool used by producers to raise awareness about the environmental quality of a product (Brecard et al., 2009; Taufique et al., 2019; Riskos et al., 2021). International Standards Organization (ISO) defines ecolabels as providing information about a product or service in terms of its overall environmental benefits, such as the recyclability of its packaging, or the absence of noxious ingredients (ISO, 2018). Ecolabels are a significant emerging trend in green marketing and green advertising (Riskos et al., 2021) as well as a marketing tool providing consumers important information and promoting green products (Hornibrook, May, Fearne, 2015; Testa et al., 2015). Their role is to inform consumers about the special environmental qualities of products and assure them of the truthfulness of these claims (Atkinson, Rosenthal, 2014; Riskos et al., 2021). Ecolabels enhance transparency and consumer trust towards environmental claims (CEC, 2007; Thogersen, Haugaard, Olesen, 2010). Ecolabelling improves consumer perception about a brand in the name of ecological concern (Taufique et al., 2014; Bickart, Ruth, 2012).

However also an increasing scepticism towards the claims of eco-labels can be observed (Georgakarakou et al., 2020). The commercial benefits of environmental labelling for both buyers and suppliers has given rise to a multitude of environmental claims, labelling schemes and initiatives (ISO, 2019). The increasing proliferation of such labelling has led to concerns of "greenwashing" and exaggerated marketing claims. This has increased the awareness of the environmental impact of products and services, but not without some confusion in the market (ISO, 2019). The following factors are said to hit the credibility of eco-labels (Thogersen, Haugaard, Olesen, 2010; Riskos et al., 2021):

- lack of awareness among consumers,
- lack of trust on certification agencies,
- fake ecolabels,
- lack of monitoring institutions.

As one can notice, the lack of awareness among consumers is the main factor. It should be underlined, that eco-labels are commonly regarded as an exceptional marketing and advertising tool that informs contemporary consumers about the green traits of a product. They provide information that should motivate consumers to exhibit a positive attitude and actual behavior towards green product purchase (Riskos et al., 2021).

Further, growing concerns about the environment led to the emergence of a new type of consumer whose buying behavior exhibits environmental sensitivity (Chamorro, Banegil, 2006; Otto, Kaiser, 2014; Riskos et al., 2021). Modern consumers seem to be really concerned about the eventual negative impact of their buying decisions, which in turn influences their purchasing behavior (Taufique et al., 2017). Eco-labels can be thought of as a crucial green marketing and advertising tool, widely used to provide consumers with knowledge about the green aspects of the product (Sharma, Kushwaha, 2019). Since consumers cannot verify the characteristics of green products directly, they need to rely on eco-labels to authenticate such claims. Eco-labels are said to rapidly impact sustainable consumers behavior without limiting their freedom of choice (Riskos et al., 2021). They also reduce uncertainty and information search costs (Grunert, Wills, 2007; Kollman, Prakash, 2001).

To synthesize the relationship between eco-labelling and consumer behavior, the aim of the paper was specified as follows:

Identifying the impact of consumers' awareness concerning eco-labelling on their pro-ecological market behavior.

Corresponding with the aim, a working hypothesis was derived:

H1: Consumers' awareness concerning eco-labelling positively impacts their pro-ecological market behavior.

The hypothesis was verified on the basis of the critical and comparative literature review.

2. Eco-labels and consumer behavior

Consumer behavior, among others, is the reaction to external stimuluses, whereas the factor which activates them in the market are their needs (Rudnicki, 2012). Diverse offer of competing entities forces the manufacturers to satisfy a wide range of consumer needs. Getting rich of the consumers and their shopping experiences encourage the buyers to a constant search for something new, special, personalized and something that allows for distinction (Berbeka, 2016). The market of products evaluates and is subject to new consumer trends. For example, the trend of healthy lifestyle and care for the proper body condition as well as physical fitness results in the increase of the popularity of eco foods among the consumers (Kowalczuk-Vasilev et al., 2011; IJHARS, 2013).

Issues connected with the product ecology significantly influence consumer behavior in the market. Ecological and social sensitivity and the fact that goods are produces with respect of the natural environment more frequently becomes the determinant of the purchase (Koszewska, 2012). According to the pharmaceutical studies conducted by Eurobarometer, 32% of the Europeans buys and consumes more eco foods (32%) and 16% takes into consideration the carbon footprint of their foods purchases what sometimes influences their purchase decisions

(Report, 2021). Therefore, the purchase of a sustainable product except for the striving for the satisfaction of material needs is particularly important for a responsible consumer.

The term of sustainable products appears in the sustainable development strategy. In publications we may find definitions that are coherent with the above mentioned term such as: sustainable consumption (Cruz, Katz-Gero, 2016) or sustainable consumer (Fuchs et al., 2021). Sustainable products come into existence in the consequence of the enrichment of conventional products in added values mainly connected with ecological issues, guaranteed quality, innovation or ethical behavior of manufacturers (Żuchowska-Grzywacz, Żuchowski, 2020). The packaging of these products is marked by the producer with adequate labels. Most frequently the labels are the marks and ecological certificates which among others allow to distinguish the ecological and organic production from the massive production.

The consumer to a greater extent makes a decision based on the situation factors including the analysis of information placed on the product packaging (Chudzian, Chatys, 2014). A particular role in the market decisions concerning the ecological offer of the product is played by the ecological labelling, the so-called eco-labelling. The task of the eco-labelling is to inform the consumers about the environmental qualification of the product, ecological quality of the products and processes connected with their production. They are deemed as reliable instrument which confirms the ecological features and supports better perception of the product on the market (Wilk, 2016).

There is a huge number of marks and certificates in the world with a large variation depending on the geographical region. The European Union regulated the issue of placing all products on the market as "organic" in 2007 on the basis of the Regulation, establishing the "Euroleaf" with the formal logo of organic production (Council Regulation (EC) No 834/2007). Currently, this issue is regulated at the EU level by the Regulation of 30 May 2018 (Regulation (EU) 2018/848). On the other hand, at the national level in Poland, the relevant and up-to-date legal act is the Act on Organic Farming and Organic Production (Journal of Laws of 2022, item 1370). Certificates issued by accredited organizations guarantee that the product meets stringent requirements regarding health protection, no negative impact on the environment and economic use of natural resources throughout the product's life cycle. The manufacturer and seller should display labels that assure consumers of the guaranteed environmental performance of the products. Reliable ecolabels are a form of promoting sustainable consumption patterns. They also provide consumers with information that helps them choose goods and services with the right level of environmental responsibility. Thanks to compliance with specific criteria, verified in an impartial manner, they enable the standardization of pro-ecological promotional messages (Wilk, 2016).

It should be emphasized that eco, bio or organic markings placed by producers on packaging labels, which are not confirmed by adequate certificates, may unfortunately deliberately mislead consumers. It happens that producers take advantage of the ignorance and lack of awareness of buyers in this regard. Such dishonest marketing communication based on false or

misleading declarations of product compliance with the principles of environmental protection is called greenwashing (Karwowska, 2020). Growing awareness of greenwashing can be dangerous as consumers may lose faith that their green purchasing decisions make sense. Therefore, among others, eco-labelling conducted in a manner consistent with legal regulations contributes to the elimination of this unfavourable phenomenon in the long term.

3. Research method

In our study a critical and comparative literature review was chosen as a research method. We chose it, because literature reviews play a critical role in scholarship because science remains a cumulative endeavour (vom Brocke et al., 2009). A literature review was selected as the method to reach the goal of this research, as quite many studies focusing on the explored topic can be found. This method is especially adequate in a situation where knowledge production in the researched topic is accelerating, at the same time remaining fragmented and interdisciplinary and in the result making it hard to keep up with state-of-the-art research (Snyder, 2019). This is why the literature review as a research method seems to be relevant in this case. A literature review can be defined as a way of collecting and synthesizing previous research (Tranfield, Denyer, Smart, 2003). A literature review is a survey of scholarly sources on a specific topic. It provides an overview of current knowledge, allowing you to identify relevant theories, methods, and gaps in the existing research (McCombes, 2023). An effective and well-conducted review as a research method creates a firm foundation for advancing knowledge and facilitating theory development. It is said to be "analysis of the past and preparation for the future" (Webster, Watson, 2002). By integrating findings and perspectives from many empirical findings, a literature review can address research questions with a power that no single study has. This is because literature reviews play an important role as a foundation for all types of research. They can serve as a basis for knowledge development, create guidelines for policy and practice, provide evidence of an effect, and have the capacity to raise new ideas or directions for a particular field of science. As such, they serve as the grounds for developing future research and theory (Snyder, 2019).

In our study, to search and screen references and then collect data, the query was performed on December 8th-10th 2022 in Google Scholar by typing the phrases *eco-labelling + consumer behavior*. Together 20 studies were considered. Most of the results come from the last five years.

4. Results and discussion

The demand for green products has broadened to a wide variety of sectors (Vermeir, Verbeke, 2006; Kang et al., 2013). A literature review was selected as the method of this research, as quite many studies can be found concerning in this area. Their authors tried to verify the impact of eco-labelling on consumer behavior.

The researchers (Hameed, Waris, 2018) explored the relationship between eco-labels and eco-conscious consumer behavior for green products. Mediation effect of consumer trust regarding green products and their concern for the sustainability of environment have also been analyzed. The findings of research highlight the positive impact of eco-labels on consumers' eco-conscious behavior. The results show full mediation effect of green trust on the relationship between eco-labels and eco-conscious consumer behavior.

Another researchers (Hameed, Waris, Amin ul Haq, 2019) incorporated green trust, environmental concerns, and intrinsic religious orientation as a moderator into the theory of planned behavior (TPB). They aimed to validate the TPB to predict consumers' eco-conscious behavior, and simultaneously assess the moderating effect of intrinsic religious orientation on consumers' attitude towards green products. The results of structural equations modeling (SEM) indicate that all paths in the model are significant, except the path from attitude towards green products to eco-conscious behavior.

The objective of another paper (Song, Quin, Yuan, 2019) was to test the effects of eco-labelling on product attributes, environmental attitude, environmental concern and consequent purchase behavior from the young generation perspective. The intermediary role of product attribute was first investigated in the labelling-driven purchase, and the environmental attitude and concern were tested respectively to better understand the young generation's awareness, compared to previous relevant studies. SEM was used to analyse data. The results showed the impact of eco-label mediated by product attributes on environmental attitude and environmental concern, and how green purchase behavior was influenced through this process significantly.

Another researchers (Garcia de Leaniz, Crespo, Lopez, 2018) developed a model that investigated the relationship between green practices, green image, environmental consciousness and the behavioral intentions of customers. The study examined the direct and moderating role of environmental consciousness in the formation of behavioral intentions based on green initiatives. The authors found that the higher the environmental consciousness of consumers, the greater their intention to spread positive word-of-mouth and pay a premium for eco-labeled products.

Some other study (Harms, Linton, 2015) showed that consumers with pro-environmental attitudes and awareness particularly exhibit green buying behavior. The findings indicate that eco-labelling is often worthwhile because it enhances the business rationale for delivering products with eco-components.

The objective of another paper (Yusiana, Widodo, Sumarsih, 2021) was to analyse an advertisement through the concept of green marketing, one of the supporting elements of communication in promotion is an eco brand and eco-label. The research used multiple linear regression analysis. The results of hypothesis testing demonstrate a significant difference in customer buying behavior between eco-label, eco brand, and environmental advertisement. The partial hypothesis test revealed that the factors (e.g. eco-label, eco brand, and environmental advertisement) had a substantial impact on customer buying behavior.

Another researchers (Adrita, Mohiuddin, 2020) observed the gap between consumers' favourable attitude toward environment and actual purchase behavior of green products, referred to as "green purchasing inconsistency". The purpose of their work was to explain why this gap still exists and to investigate whether the influence of moderator variables can minimize it. To analyse data, SEM was used. The findings suggest that ability can play a key role in motivating the consumers toward more green purchase behavior along with eco-label knowledge, but not with general knowledge of environment.

The purpose of another research (Shabbir et al., 2020) was to analyze the main green marketing approaches and their impact on consumer behavior towards the environment. The findings suggest interesting inferences regarding eco-labelling, green packaging and branding, green products, premium, and pricing, and the environmental concerns and beliefs of consumers that affect their perceptions of the environment. It was found that key factors of green marketing, such as eco-labelling and green products, premium and pricing, have a significant positive influence on consumer beliefs towards the environment.

Another team of researchers (Sheikh et al., 2014) evaluated consumer attitudes about green products and their purchasing decisions. It was stated that brand and gender differentiation have a very low link with green customer behavior, while price, quality, and green marketing (including eco-labelling) have a significant positive correlation.

M. Cheung with a colleague (2019) presented and verified an extended value-attitude behavior model to give details concerning green purchase behavior. SEM discovered that consumers' awareness concerning eco-labels influenced their attitudes toward environmental problems and eco-social profit, which influenced their green purchasing behavior. It turned out that a crucial determinant of green purchase behavior is product information, including eco-labelling.

Another researchers (Seyrek, Gul, 2017) studied factors affecting the consumers' green purchasing behavior. As a result of ANOVA and multiple regression analysis performed, they found that the factors encompassing environmentalism, behaving economically and knowledge concerning eco-certificates have significant and positive effects on green purchasing behavior. Also, green purchasing behavior of consumers depends on their age group and income level.

R. Yadav and G. Pathak (2017) verified whether individual green consumption can help decrease the environmental impact of consumption. The study sought to analyze green product purchasing behavior. SEM was performed to assess the strength of correlations between components. The results fully supported consumers' intention to acquire green items, influencing their green purchase behavior.

Another study (Alkhayyat, Stita, 2021) showed the existence of a strong statistically significant correlation between people's environmental information and knowledge, including knowledge on eco-labelling, towards purchasing an environmentally friendly products – green cosmetics.

Results obtained by other researchers (Riskos et al., 2021) highlight the crucial role of eco-label credibility that positively influences attitude towards green product purchase as well as eco-label involvement. Findings can provide useful guidance to green marketers so that they can generate effective strategies based on eco-labels and favor a positive attitude towards green product purchase that ultimately will enhance green product purchase behavior.

Another scientists (Lehmann, Beikirch, 2020) investigated if available eco-labels have an influence on consumers' choices in electricity tariffs. The study also examines the relative importance of other common attributes of electricity tariffs, namely the type of supplier, the electricity mix, the share of regional generation, and the price. Results using Hierarchical Bayesian analysis show substantial differences in the two survey parts. They found out that on this market eco-labels seem to have a big influence on the consumers' choice behavior. On the contrary, analysis of the general awareness levels reveals that the certification criteria of the eco-labels are unknown to the majority of consumers, often even the labels themselves.

The aim of the study by L. Rutten (2022) was to acquire a broader understanding of how the use of certified eco-labels on clothing affects consumer behavior. It turned out that certified eco-labels generally positively affect attitude towards companies. That is, respondents generally felt more positive towards companies that used certified eco-labels than those that did not use these kind of eco-labels. This was also the case for respondents' purchase intention: respondents had a higher purchase intention for clothing with a certified eco-label than for clothing without such a label.

Another team of reserarchers (Taufique, Vocino, Polonsky, 2016) tried to integrate consumers' knowledge and trust in eco-labels with their environmental knowledge to determine how these affect pro-environmental consumer behavior. The findings suggest environmental and eco-label knowledge is positively associated with attitudes towards the environment, and that positive environmental attitudes and trust in eco-labels affect consumer behavior. This implies that firms, policy-makers and accreditation organisations can educate consumers about eco-labels to increase their pro-ecological behavior.

Then again K. Taufique with colleagues (2016), using the Theory of Reasoned Action looked at attitude-behavior relationship that integrates both general environmental knowledge and knowledge of eco-labels in the model to investigate their role in predicting ecologically

conscious consumer behavior. The authors found out that both general environmental knowledge and eco-label knowledge positively influence consumer attitudes towards environment in driving ecologically conscious consumer behavior. The findings suggest that modern marketing strategies need to focus on educating consumers about eco-labelling along with general environmental knowledge

The purpose of another study (Waris, Dad, Hameed, 2022) was to extend the theory of planned behavior and understand consumers' purchase intention of energy-efficient appliances from the perspective of pro-environmental behavior. This study focuses on knowledge of eco-labels and altruism for the consumers' purchase intention of these appliances. SEM was used for the analysis of data. The findings of the study reveal that altruism and knowledge of eco-labels promote the purchase of energy-efficient appliances. Further, the results indicate that altruism was the key predictor that leads to the consumption of environmentally friendly appliances.

At last, R. Lavuri with the team (2021) examined behavioral differences between Millenials and Gen Z. With the use of SEM it they proved that variables such as media exposure, environmental concern, environmental knowledge (including eco-labelling), and attitude, had a significant impact on the purchase intentions.

Finally, the categorized summary of the critical and comparative literature analysis is shown in Table 1.

Table 1.
Summary of literature review

Author(s) and year	Market	Geographical scope	Method	Character of relationship	Hypothesis supported?
Hemeed, Waris (2018)	Green products	Pakistan	SEM	Direct and indirect	Y
Hameed, Waris, Amin ul Haq (2019)	Green products	Pakistan	SEM	Direct and indirect	Y
Song, Qin, Yuan (2019)	Green products	China	SEM	Direct and indirect	Y
Garcia de Leaniz, Crespo, Lopez (2018)	Hotel services	Spain	SEM	Direct and indirect	Y
Harms, Linton (2015)	Green products	The Netherlands	Multivariate correlation	Direct	Y
Yusiana, Widodo, Sumarsih (2021)	Green products	Indonesia	Multiple regression	Direct	Y
Adrita, Mohiuddin (2020)	Green products	Bangladesh	SEM	Direct and indirect	Y
Shabbir et al. (2020)	Green products	United Arab Emirates	SEM	Direct and indirect	Y
Sheikh et al. (2014)	Green products	Pakistan	Multivariate correlation	Direct	Y
M. Cheung (2019)	Green products	China	SEM	Direct and indirect	Y
Seyrek, Gul (2017)	Green products	Turkey	ANOVA, Multiple regression	Direct	Y

Cont. table 1.

Yadav, Pathak (2017)	Green products	India	SEM	Direct and indirect	Y
Alkhayyat, Stita (2021)	Green cosmetics	Sweden	Correlation	Direct	Y
Riskos et al. (2021)	Green products	Greece	SEM	Direct and indirect	Y
Rutten (2022)	Clothes	The Netherlands	MANOVA, differentiation tests	Direct	Y
Taufique, Vocino, Polonsky (2016)	Green products	Malaysia	Correlation	Direct	Y
Waris, Dad, Hameed (2022)	Energy-efficient appliances	Pakistan	SEM	Direct and indirect	Y
Lehmann, Beikirch (2020)	Electricity tariffs	Germany	Hierarchical Bayesian analysis	Direct	Y
Taufique et al. (2017)	Green products	Malaysia	SEM	Indirect	Y
Lavuri et al. (2021)	Green products	India	Correlation, Multiple regression	Direct	Y

Source: own elaboration.

As can be seen from Table 1, all of the results obtained by different authors unambiguously confirm that awareness concerning eco-labelling impacts consumers' pro-ecological behavior. The analyzed studies were published between years 2015 and 2022. The reviewed works focused on different markets and geographical regions. The analyses were performed with the use of different multidimensional statistical methods, still most of the studies were carried with the use of structural equations modelling (SEM). Hence the assumed causal relationship in majority of cases turned out to be of direct, and in minority of indirect character. Instead of differences between the analyzed papers, encompassing different markets, regions, statistical tools and type of relationship, in all cases the hypotheses assuming statistically significant, positive causal relationship between consumers' awareness concerning eco-labelling and their pro-ecological market behavior were supported.

5. Conclusions

Summing up, in the course of this analysis working hypothesis was supported. As the result of the carried literature analysis it was proved that:

1. The assumed causal relationship between consumer awareness concerning eco-labels and their pro-ecological behavior on the market finds clear and strong confirmation in contemporary scientific works.

2. The reviewed papers examined not only different kinds of products (green products in general, green cosmetics, clothes, energy-efficient appliances), but also some services (hotel services, electricity tariffs).

3. The reviewed studies were carried out in both developing (e.g. Pakistan, Bangladesh) and highly developed countries (e.g. The Netherlands, Germany, Sweden).

4. The results of the most of the reviewed studies were obtained with the use of one of the most advanced methods of exploring causal relationships – SEM (Hair et al., 2014), which allows exploring both direct and indirect causal relationships. Still, in some studies other statistical procedures were used.

Together, the obtained results testify to the important role of ecological certificates as a marketing tool of promoting sustainable products. This means that eco-labels can be used to successfully influence customer behavior on the market.

6. Limitations and future research

As it comes to research limitations, it should remembered that customer behavior can be influenced by many other factors, for example the perception of prices, customer inertia and switching costs, as considered by D. Gremler and S. Brown (1996). Hence the presented research should be treated as a pilotage, forming a starting point for more extensive and detailed analysis, including carrying out own empirical research with the use of both qualitative and quantitative methods. In the second case, the assumed relationships could be examined with the use of different tools of multidimensional exploratory analysis, e.g. neural networks (Lotko et al., 2018) or classification trees (Lotko, Korneta, 2019).

Further research could also discuss several additional topics, such as consumers' purchase power, supplementary products according to the customers' needs, and benefits identified after using green products. Moreover, future research could also aim to explore customer awareness concerning the environmental effects of consumption as well as stopping those effects by using these environmentally or eco-friendly green products (Alkhayyat, Stita, 2021).

References

1. Adrita, U., Mohiuddin, M. (2020). Impact of opportunity and ability to translate environmental attitude into ecologically conscious consumer behavior. *Journal of Marketing Theory and Practice*, *Vol. 28, No. 2*, pp. 173-186, doi: 10.1080/10696679.2020.1716629.

2. Alkhayyat, A., Stita, A. (2021). *Consumer behavior towards green cosmetic products in Sweden.* Vasteras: School of Business, Society & Engineering, Malardalen University.

3. Atkinson, L., Rosenthal, S. (2014). Signaling the Green Sell: The Influence of Eco-Label Source, Argument Specificity and Product Involvement on Consumer Trust. *Journal of Advertising*, *Vol. 43*, pp. 33-45, doi: 10.1080/00913367.2013.834803.

4. Berbeka, J. (2016). Zmiany zachowań turystycznych Polaków i ich uwarunkowań w latach 2006-2015. In: *Teoretyczne podstawy zachowań turystycznych*. Kraków: Fundacja Uniwersytetu Ekonomicznego w Krakowie.

5. Bickart, B., Ruth, J. (2012). Green Eco-Seals and Advertising Persuasion. *Journal of Advertising*, *Vol. 41*, pp. 51-67.

6. Brecard, D. et al. (2009). Determinants of Demand for Green Products: An Application to Eco-Label Demand for Fish in Europe. *Ecological Economics*, *Vol. 69*, pp. 115-125, doi: 10.1016/j.ecolecon.2009.07.017.

7. CEC (2007). *Commission of the European Communities Accompanying Document to the Communication from the Commission to the Council and the European Parliament: Progress Report on the European Union Sustainable Development Strategy*. Brussels: Commission of the European Communities.

8. Chamorro, A., Banegil, T. (2006). Green Marketing Philosophy: A Study of Spanish Firms with Ecolabels. *Corporate Social Responsibility and Environment Management*, *Vol. 13*, pp. 11-24, doi: 10.1002/csr.83.

9. Cheung, M., To, W. (2019). An extended model of value-attitude behavior to explain Chinese consumer's green purchasing behavior. *Journal of Retailing and Consumer Services*, *No. 50*, pp. 145-153, doi: 10.1016/j.jretconser.2019.04.00.

10. Chudzian, J., Chatys, M. (2014). Awareness of Eco-Labeling vs Young Consumers' Preferences. *Roczniki Naukowe Stowarzyszenia Ekonomistów Rolnictwa i Agrobiznesu*, *Vol. 16, No. 6*, pp. 82-88.

11. Council Regulation (EC) No 834/2007 of 28 June 2007 on organic production and labelling of organic products and repealing Regulation (EEC) No 2092/91, OJ L 189, 20.7.2007.

12. Cruz, L., Katz-Gero, T. (2016). Urban Public Transport Companies and Strategies to Promote Sustainable Consumption Practices. *Journal of Cleaner Production, Vol. 123*, pp. 28-33, doi: 10.1016/j.jclepro.2015.12.007.

13. Dz.U. 2022, poz. 1370, Ustawa z dnia 23 czerwca 2022 r. o rolnictwie ekologicznym i produkcji ekologicznej.

14. Fuchs, D. et al. (2021). *Consumption Corridors – Living a Good Life within Sustainable Limits*. London: Routledge Focus.

15. Garcia de Leaniz, P., Crespo, A., Lopez, R. (2018). Customer responses to environmentally certified hotels: the moderating effect of environmental consciousness on the formation of behavioral intentions. *Journal of Sustainable Tourism*, *Vol. 26*, *No. 7*, pp. 1160-1177, doi: 10.1080/09669582.2017.1349775.

16. Georgakarakou, C. et al. (2020). What Features of Green Products Packaging Are More Eye Catching? An Eye-Tracking Exploratory Study about Organic Agricultural Products. *International Journal of Technology Marketing*, *Vol. 14*, pp. 93-124, doi: 10.1504/IJTMKT.2020.10030782.

17. Gremler, D., Brown, S. (1996). Service loyalty: its nature, importance, and implications. In: B. Edwardson et al. (Eds.), *Advancing Service Quality: A Global Perspective*. International Service Quality Association.

18. Grunert, K., Wills, J. (2007). A Review of European Research on Consumer Response to Nutrition Information on Food Labels. *Journal of Public Health*, *Vol. 15*, pp. 385-399, doi: 10.1007/s10389-007-0101-9.

19. Hair, J. et al. (2014). *Multivariate Data Analysis*. Saddle River: Prentice Hall.

20. Hameed, I., Waris, I. (2018). Eco Labels and Eco Conscious Consumer Behavior: The Mediating Effect of Green Trust and Environmental Concern. *Journal of Management Sciences*, *Vol. 5*, *No. 2*, pp. 86-105, doi: 10.20547/jms.2014.1805205.

21. Hameed, I., Waris, I., Amin ul Haq, M. (2019). Predicting eco-conscious consumer behavior using theory of planned behavior in Pakistan. *Environmental Science and Pollution Research, No. 26,* pp. 15535-15547, doi: 10.1007/s11356-019-04967-9.

22. Harms, R., Linton, J. (2015). Willingness to Pay for Eco-Certified Refurbished Products: The Effects of Environmental Attitudes and Knowledge. *Journal of Industrial Ecology*, *Vol. 20*, pp. 893-904, doi: 10.1111/jiec.12301.

23. Hornibrook, S., May, C., Fearne, A. (2015). Sustainable Development and the Consumer: Exploring the Role of Carbon Labelling in Retail Supply Chains: Exploring the Role of Carbon Labelling in Retail Supply Chains. *Business Strategy and the Environment*, *Vol. 24*, pp. 266-276, doi: 10.1002/bse.1823.

24. IJHARS (2013). *Raport o stanie rolnictwa ekologicznego w Polsce w latach 2011-2012*. Warszawa: Główny Inspektorat Jakości Handlowej Artykułów Rolno-Spożywczych.

25. ISO (2018). *Environmental labels and declarations - Type I environmental labelling - Principles and procedures* (ISO 14024:2018). Geneva: International Organization for Standardization.

26. ISO (2019). *Environmental Labels*. Geneva: International Organization for Standardization.

27. Kang, J., Liu, C., Kim, S.-H. (2013). Environmentally sustainable textile and apparel consumption. *International Journal of Consumer Studies*, *No. 37*, pp. 442-452, doi: 10.1111/ijcs.12013.

28. Karwowska, J. (2020). *Co to jest grenwashing?* https://gazeta.sgh.waw.pl/po-prostu-ekonomia/greenwashing-swiadome-czy-nieswiadome-wprowadzanie-klienta-w-blad, 31.05.2023.

29. Kollman, K., Prakash, A. (2001). Green by Choice? Cross-National Variations in Firms' Responses to EMS-Based Environmental Regimes. *World Politics*, *Vol. 53*, pp. 399-430.

30. Koszewska, M. (2012). Impact of Ecological and Social Sensitivity on the Way of Consumers' Behaviour in the Textiles and Clothing Market. *Handel Wewnętrzny*, *Vol. 3*, *No. 5*, pp. 98-108.

31. Kowalczuk-Vasilev, E. et al. (2011). Organic food in opinion of students of different years of Lublin universities. *Problemy Higieny i Epidemiologii*, *Vol. 92*, *No. 4*, pp. 960-964.

32. Lavuri, R., Jusuf, E., Gunardi, A. (2021). Green sustainability: factors fostering and behavioural difference between Millennial and Gen Z: mediating role of green purchase intention. *Economics and Environment*, *Vol. 76*, *No. 1*, pp. 8-38, doi: 10.34659/2021/1/1.

33. Lehmann, N., Beikirch, P. (2020). Eco-Labelling of Green Energy Tariffs - Analysis of the Influence of Eco-Labels on Consumer Behavior. *17th International Conference on the European Energy Market*. Stockholm, pp. 1-6, doi: 10.1109/EEM49802.2020.9221970.

34. Lotko, A. et al. (2018). Using Neural Networks in Modeling Customer Loyalty in Passenger Cars Maintenance and Repair Services. *Applied Sciences*, *Vol. 8*, *No. 5*, pp. 1-16, doi: 10.3390/app8050713.

35. Lotko, A., Korneta, P. (2019). The Role of Online Banking Services Quality in the Shaping of Consumer Loyalty. Proof with the Use of Classification Trees, *Scientific Papers of Silesian University of Technology: Organization and Management Series*, *Vol. 134*, *No. 10*, pp. 121-133, doi: 10.29119/1641-3466.2019.134.10.

36. McCombes, S. (2023). How to Write a Literature Review: Guide, Examples, & Templates. *Scribbr*, *March*.

37. Otto, S., Kaiser, F. (2014). Ecological Behavior across the Lifespan: Why Environmentalism Increases as People Grow Older. *Journal of Environmental Psychology*, *Vol. 40*, pp. 331-338, doi: 10.1016/j.jenvp.2014.08.004.

38. Regulation (EU) 2018/848 of the European Parliament and of the Council of 30 May 2018 on organic production and labelling of organic products and repealing Council Regulation (EC) No 834/2007, OJ L 150, 14.6.2018.

39. Report (2021). *Special Eurobarometer 513*. Climate, Report, European Union. https://europa.eu/eurobarometer/surveys/detail/2273, doi: 10.2834/437, 31.05.2023.

40. Riskos, K. et al. (2021). Ecolabels and the Attitude–Behavior Relationship towards Green Product Purchase: A Multiple Mediation Model. *Sustainability*, *Vol. 12*, p. 6867, doi: 10.3390/su13126867.

41. Rudnicki, L. (2012). *Zachowania konsumentów na rynku*. Warszawa: PWE.

42. Rutten, L. (2022), *The influence of certified eco-labels on clothing on consumer behaviour*. Enschede: Faculty of Behavioural, Management and Social Sciences, University of Twente.

43. Seyrek, I., Gul, M. (2017). Factors Affecting Green Purchasing Behavior: A Study of Turkish Consumers. *International Journal of Academic Research in Business and Social Sciences*, *Vol. 7*, doi: 10.6007/IJARBSS/v7-i1/2607.

44. Shabbir, M. et al. (2020). Green Marketing Approaches and Their Impact on Consumer Behavior towards the Environment - A Study from the UAE. *Sustainability*, *Vol. 21*, *No. 12*, p. 8977, doi: 10.3390/su12218977.

45. Sharma, N., Kushwaha, G. (2019). Eco-Labels: A Tool for Green Marketing or Just a Blind Mirror for Consumers. *Electronic Green Journal*, *Vol. 1*, doi :10.5070/G314233710.

46. Sheikh, F. et al. (2014). Consumer green behaviour toward green products and green purchase decision. *International Journal of Multidisciplinary Science and Engineering*, *Vol. 9*, *No. 5*, pp. 1-9.

47. Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, *Vol. 104*, pp. 333-339, doi: 10.1016/j.jbusres.2019.07.039.

48. Song, Y., Qin, Z., Yuan, Q. (2019). The Impact of Eco-Label on the Young Chinese Generation: The Mediation Role of Environmental Awareness and Product Attributes in Green Purchase. *Sustainability*, *Vol. 11*, *No. 4*, pp. 960-973, doi: 10.3390/su11040973.

49. Taufique, K. et al. (2014). Synthesis of Constructs for Modelling Consumers' Understanding and Perception of Eco-Labels. *Sustainability*, *Vol. 6*, pp. 2176-2200, doi: 10.3390/su6042176.

50. Taufique, K. et al. (2016). Integrating General Environmental Knowledge and Eco-Label Knowledge in Understanding Ecologically Conscious Consumer Behavior. *Procedia Economics and Finance*, *Vol. 37*, pp. 39-45, doi: 10.1016/S2212-5671(16)30090-9.

51. Taufique, K. et al. (2017). The Influence of Eco-Label Knowledge and Trust on Pro-Environmental Consumer Behaviour in an Emerging Market. *Journal of Strategic Marketing*, *Vol. 25*, pp. 511-529, doi: 10.1080/0965254X.2016.1240219.

52. Taufique, K., Vocino, A., Polonsky, J. (2016). The influence of eco-label knowledge and trust on pro-environmental consumer behaviour in an emerging market. *Procedia Economics and Finance*, *Vol. 37*, pp. 511-529, doi: 10.1080/0965254X.2016.1240219.

53. Testa, F. *et al.* (2015). Why Eco-Labels Can Be Effective Marketing Tools: Evidence from a 822 Study on Italian Consumers. *Business Strategy and the Environment*, *Vol. 24*, pp. 252-265, doi: 10.1002/bse.1821.

54. Thogersen, J., Haugaard, P., Olesen, A. (2010). Consumer Responses to Ecolabels. *European Journal of Marketing*, *Vol. 44*, p. 1787, doi: 10.1108/03090561011079882.

55. Tranfield, D., Denyer, D., Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British Journal of Management*, *Vol. 14*, pp. 207-222, doi: 10.1111/1467-8551.00375.

56. Vermeir, I., Verbeke, W. (2006). Sustainable Food Consumption: Exploring the Consumer Attitude - Behavioral Intention Gap. *Journal of Agricultural and Environmental Ethics*, *Vol. 19*, *No. 2*, pp. 169-194, doi: 10.1007/s10806-005-5485-3.

57. vom Brocke, J. et al. (2009). *Reconstructing the giant: on the importance of rigour in documenting the literature search process*. Proceedings of the 17th European Conference on Information Systems, p. 161.

58. Waris, I., Dad, M., Hameed, I. (2021). Promoting environmental sustainability: the influence of knowledge of eco-labels and altruism in the purchase of energy-efficient appliances. *Management of Environmental Quality*, *Vol. 32*, *No. 5*, pp. 989-1006, doi: 10.1108/MEQ-11-2020-0272.

59. Webster, J., Watson, R. (2002). Analyzing the past to prepare for the future: Writing a literature review. *Management Information Systems Quarterly*, *Vol. 26*, p. 3.

60. Wilk I. (2016). Ecolabelling in Marketing Communications. *Marketing i Zarządzanie*, *Vol. 45*, *No. 4*, pp. 393-401, doi: 10.18276/miz.2016.45-35.

61. Yadav, R., Pathak, G. (2017). Determinants of consumers' green purchase behavior in a developing nation: Applying and extending the theory of planned behavior. *Ecological Economics*, *No. 134*, pp. 114-122, doi: 1016/j.ecolecon.2016.12.019.

62. Yusiana, R., Widodo, A., Sumarsih, U. (2021). Integration Consumer Response during the Pandemic Covid-19 on Advertising: Perception Study on Eco Labeling and Eco Brand Products Eco Care. *Inclusive Society and Sustainability Studies*, *No. 1*, *Vol. 2*, pp. 45-56, doi: 10.31098/issues.v1i2.708.

63. Żuchowska-Grzywacz, M., Żuchowski, J. (2020). *Koncepcje wspierające zrównoważony rozwój*. Radom: Wydawnictwo Naukowe Łukasiewicz.

64. Żuchowski, J., Paździor, M, (2022). Safety of the consumers in the context of formal supervision over the food quality. In: A. Palka (Ed.), *The Role of Commodity Science in Quality Management in a Knowledge-based Economy: Food Quality and Safety*, *Vol. 1*. Gdynia: Wydawnictwo Uniwersytetu Morskiego w Gdyni.