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MASTER THESIS

**“Consumer Perception of Environmental Sustainability of E-Retailers of Consumer
Packaged Goods: Influence on Decision-Making”**

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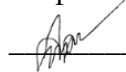
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**ЗАЯВЛЕНИЕ О САМОСТОЯТЕЛЬНОМ ХАРАКТЕРЕ ВЫПОЛНЕНИЯ
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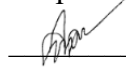

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Описание цели, задач и основных результатов исследования	<p>Цель данного исследования – изучить влияние подсказок, воспринимаемых как сигналы экологической устойчивости, на решения о покупке потребительских товаров в онлайн среде розничной торговли.</p> <p>Для достижения поставленной цели были сформулированы и решены задачи исследования. Во-первых, была рассмотрена концепция экологической устойчивости, литература по маркетингу потребительских товаров, особенности продажи товаров через онлайн-каналы, литература в области поведения потребителей, теории сигналов и сенсорного маркетинга, а также исследованы аспекты потребительского поведения в области готовности покупать и намерения делиться сарафанным радио относительно опыта совершения покупок, результатом которого стали сформулированные гипотезы.</p> <p>Во-вторых, были определены объекты манипуляций в рамках выбранного метода исследования – эксперимента, а именно визуальная и вербальная подсказки, сигнализирующие об экологической устойчивости, а также было подтверждено их восприятие как сигнализирующих экологичность. В-третьих, был проведен эксперимент, в котором приняло участие 180 человек, с около 45 респондентами на каждую из 4 специально разработанных для исследования версий сайтов с манипуляциями эксперимента.</p> <p>В результате, были получены практические рекомендации и теоретические дополнения к существующему направлению исследований, а именно, что подсказки, сигнализирующие об экологической устойчивости в онлайн среде, положительно влияют на склонность покупать представленный товар, усиливают положительное отношение к вебсайту, а также стимулируют намерения распространять сарафанное радио о потребительском опыте на сайте.</p>
Ключевые слова	Поведение потребителей, онлайн розничная торговля, экологичность, маркетинг сигналов, потребительские товары, эксперимент

ABSTRACT

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Master Thesis Title	Consumer Perception of Environmental Sustainability of E-Retailers of Consumer Packaged Goods: Influence on Decision-Making
Description of the goal, tasks and main results of the research	<p>The aim of this research is to examine the impact of the introduction of cues perceived as signaling environmental sustainability on the purchase decisions of consumers of packaged goods in the online retail environment.</p> <p>In order to achieve the goal, the research objectives were set and accomplished. First, the literature on the concept of environmental sustainability was reviewed, consumer product marketing literature, the specifics of selling products through online channels, the literature on consumer behavior, cues signaling theory, and sensory marketing, and aspects of consumer behavior in the areas of buying likelihood and intention to share word-of-mouth regarding shopping experiences were investigated and used as a background for hypotheses formulation. Secondly, the objects of manipulation within the chosen research method, the experiment, were identified, namely visual and verbal cues signaling environmental sustainability, and their perception as signaling sustainability was confirmed. Third, an experiment was conducted in which 180 people participated, with around 45 respondents for each of the 4 versions of the experiment manipulation websites specifically designed for this study.</p> <p>The main results of the study are practical recommendations and theoretical contributions to the existing line of research, namely that cues signaling environmental sustainability in the online environment positively influence the product buying likelihood, reinforce perceived positive attitudes toward the website, and encourage intentions to spread the word-of-mouth about the consumer experience on the online retail website.</p>
Keywords	Consumer behavior, online retail, environmental sustainability, signaling marketing, consumer goods, experiment

CONTENTS

INTRODUCTION	7
Relevance of the study	7
Research gap	8
Research questions	8
Research overview	9
1. LITERATURE REVIEW	11
1.1 Environmental sustainability of consumer packaged goods	11
1.2 Characteristics of consumer packaged goods and their marketing	13
1.2.1 Characteristics of consumer packaged goods	13
1.2.2 The role of packaging in the marketing of consumer packaged goods	14
1.3 Sales of consumer goods in the e-retail environment	17
1.4 Discussion on consumer choice of packaged goods	22
1.4.1 Overall understanding of consumer choice	22
1.4.2 Consumer choice models for products with low consumer involvement: cue and signaling theory	23
1.4.3 Consumer buying likelihood	26
1.4.4 Word-of-mouth intentions	29
2. RESEARCH MODEL AND METHODOLOGY	33
2.1 Research overview	33
2.1.1 Research methodology	33
2.1.2 Data analysis tools	33
2.1.3 Product categories and websites	34
2.2 Pretesting	35
2.3 Main experiment	40
3. RESULTS	48
3.1 Socio-demographic characteristics	48
3.2 Experimental data analysis	48
3.3 Verification of the research hypotheses	61
4. DISCUSSION AND CONCLUSION	64
4.1 Main findings	64
4.2 Theoretical contributions	65
4.3 Managerial implications	66
4.4 Limitations and directions for future research	68
CONCLUSION	69
REFERENCES	72

APPENDIX	80
Appendix 1 – pre-test.....	80
Appendix 2 – main experiment results analysis	83

INTRODUCTION

Relevance of the study

These days, consumer trends have changed to a large extent – people are becoming more concerned about the environment, where consumption waste is one of the main causes of the concern. Consumer demands for product convenience only enhance the environmental anxiety because retailers offer those product alternatives that satisfy consumer needs. Packaging that is difficult to recycle, made of layers of different materials, one of which is plastic, is perceived by consumers as environmentally unsustainable, however, such packaging effectively fulfills its utilitarian function and offers consumption convenience. At the same time, consumers are increasingly willing to make individual contributions to a more environmentally sustainable society.

On the other hand, one trend in terms of increasing consumer convenience in grocery shopping is the growing popularity of e-retailing and delivery services, which differ in consumer perception from conventional brick-and-mortar stores. In the e-retail environment marketing specialists have less opportunity to influence how consumers perceive the product presented – rely mostly on consumers' senses, namely vision. Therefore, marketers often use signaling and sensory marketing theories, the analogue of which has been used for many years – since the advent of self-service stores, as the marketing function of packaging containing graphical labels, verbal descriptions, and illustrations. In other words, marketers who promote products online can use elements of website design in forms of verbal and visual cues, and combinations of several of them as well as other techniques to stimulate a particular behavior or simplify the process of product selection – what consumers need for an easier and efficient selection process in an online environment. Therefore, website cues signaling environmental sustainability can be used to help consumers make a better choice of products that fit their needs – the need for more environmentally sustainable options. Additionally, e-retail market is expected to grow, namely in Russia 7.5 fold within a few years, but the popularity of this shopping channel is contributing to consumers' environmental concern and is generally understudied in terms of consumer behavior.

Linking the trends discussed above to the specifics of consumer products marketing, it is important to consider how the perceived environmental sustainability of e-retail environment for consumer packaged goods affects consumers' choice. Indeed, product marketing differentiation is important for such goods where environmental sustainability signaling can be used as a competitive advantage for consumers who use simplified consumer decision-making models – use their senses, for instance vision, and word-of-mouth. However, the perception of options offered to consumers in an online environment is different from traditional retail. That is why it

is important to study how website environmental sustainability signaling by visual and verbal cues affects consumers' choice, which makes this research topic relevant and practically applicable for marketers working with electronic sales channels.

Research gap

The existing research on consumer perception and choice of packaged goods that are perceived as environmentally sustainable owing to diverse signaling attributes is limited in the domain of e-retail. Therefore, there is high need for marketers to have a clear understanding of how consumers perceive environmental sustainability signaling in the online retail environment, whose rapid development and fast adaptation to consumers' tastes has outpaced the research in the domain, and how this affects their choices of goods.

Additionally, there is lack of experimentation methodology in the domain of studying the consumer behavior when it comes to packaged goods and especially in the domain of e-retail environment that would reveal real behavioral patterns of consumer decision-making process. Moreover, some distinct attributes that signal environmental sustainability have not yet been studied, especially considered separately, thus the research will cover some of them.

Apart from that, there has been no research on the effect of post-purchase behavior of consumers when it comes to transmitting word-of-mouth intentions regarding the website shopping experience where there is environmental sustainability signaling present.

Therefore, the aim of this study is to examine the impact of the introduction of cues perceived as signaling environmental sustainability on the purchase decisions of consumers of packaged goods in the online retail environment.

Research questions

Responding to the following research questions is necessary to contribute to the aforementioned theoretical research gap and achieve the aim of the research:

How do cues signaling environmental sustainability of consumer packaged goods presented in the online retail environment can influence consumers' willingness to buy the product.

How do cues signaling environmental sustainability of consumer packaged goods presented in the online retail environment can influence consumers' attitude towards the e-retail website.

How do cues signaling environmental sustainability of consumer packaged goods presented in the online retail environment can influence consumers' word-of-mouth intentions about the e-retail website shopping experience.

To summarize the section with the literature review, the following hypotheses directions were developed, while the formulations of the hypotheses themselves are presented in the literature review section:

1. Introducing cues perceived as signaling environmental sustainability on a website will increase the buying likelihood of the product presented, reinforce the user's positive attitude towards the website, enhance the perceived website efficiency, and encourage intentions to share positive word-of-mouth about the experience on the website;
2. Verbal cues will have a stronger influence on the factors being studied than visual cues;
3. Both cues will have a stronger influence on the studied parameters than one of the cues.

Research overview

In order to achieve the research goal of this master's thesis, the following research objective should be accomplished:

1. Analyze the literature on perceptions of environmental sustainability;
2. Understand the characteristics of consumer products and features of their marketing as well as the role of packaging and other sensory mechanisms that influence consumer decision-making;
3. Examine the e-retail environment peculiarities of selling fast-moving consumer goods;
4. Describe the process of consumer choice, the theory of cues and signaling, likelihood of buying and the word-of-mouth intentions;
5. Formulate research hypotheses relevant for the theoretical and practical contribution;
6. Conduct a preliminary empirical study to understand what cues about environmental sustainability are perceived as such and select those cues for the main research;
7. Perform a primary empirical study in the form of an experiment to determine how the introduction of environmental sustainability signaling cues on an online store's website affects product buying likelihood, attitudes toward the website presented, and a consumers' intention to spread the word-of-mouth about their experience with the website;

8. Analyze the results and provide managerial implications and further research areas.

In this paper the object of the research is environmental sustainability signaling in the context of e-retail environment of consumer packaged goods, while the subject is consumer perception and decision-making.

Experimental methodology was chosen to achieve the goal of the study because it reveals real patterns of human behavior. In an experiment, researchers intentionally manipulate one or more variables and examine what effect these manipulations have on the dependent variable, leaving other factors untouched. In our case, the experiment consisted of two parts: a preliminary research designed to identify cues that individuals perceive as signaling environmental sustainability, and a main study where the previously identified cues are manipulated and the effect on the dependent variables of our interest is examined.

For this purpose, the author of the study selected a product category of laundry detergents and created a layout of a powder pack with description, as well as developed a website for the experiment, the elements of which were subjected to manipulation. After going through the experiment with this product and on the developed website, respondents were asked to fill out a feedback form to collect information about their experience on the site and with the product.

In terms of data analysis, before testing the hypotheses, we first need to identify the factors that influence the buying likelihood of the product presented, consumer attitudes toward the website, and the word-of-mouth intentions about their experience with the website. To do this, exploratory factor analysis is used to identify factors when adapted scales are applied. Once the factors are identified, hypotheses are tested comparing versions of websites with different combinations of cues signaling environmental sustainability between themselves and between a baseline version of a website without cues.

In terms of the structure of the paper, it consists of four parts. The first part covers the review of the literature relevant to the topic and the formulation of research hypotheses. This is followed by the research methodology part, which spells out the purpose for which a particular method is used – an experiment and special data analysis tools such as explanatory factor analysis, ANOVA, and t-tests. After that comes the part with main analysis results, which is followed by a part with discussion, conclusions, and limitations of the study.

1. LITERATURE REVIEW

1.1 Environmental sustainability of consumer packaged goods

The term “sustainable marketing” was first used in an article by Sheth and Parvatiyar (1995) on the role of environmental aspects in marketing. The authors defined it as an approach that focuses on sustainable development and protection of the Earth’s ecological ecosystems in the production, distribution and sale of goods (Sheth & Parvatiyar, 1995). Although the modern definition of sustainable marketing is much broader and includes not only environmental aspects, but also measures that should be taken in parallel in, for instance the social and governance spheres, this paper focuses on the environmental part of the phenomenon of sustainability. In this regard, green marketing definition might be of greater use since it focuses mainly on the environmental part of the sustainability concept. Green marketing is the actions of positioning the environmental benefits of products in the minds of consumers to influence their purchase decision-making (Chen & Chai, 2010). According to the authors, environmentally sustainable product is one that includes “strategies in recycling or with recycled content, reduced packaging” or the use of less toxic materials to decrease the impact on the natural environment.

Although the authors emphasized the importance of government intervention in promoting environmentally sustainable society initiatives, consumer attention to the environment is now gaining even more importance. Consumer concerns about emerging environmental issues have increased significantly over the past few years, and the coronavirus pandemic has only heightened this concern (Kachaner, Nielsen, Portafaix, & Rodzko, 2020). Despite the fact that the COVID restrictions and the economic downturn that followed to decrease the use of disposable products and especially plastics in 2020 by 2.2% from 2019 levels mostly due to decreased economic activity, single-use plastics from the self-protection equipment has significantly contributed to the waste volume (OECD, 2022).

According to the Boston Consulting Group report (Kachaner et al., 2020), nowadays people are more concerned about the environmental problems and are more willing to change their behavior to help addressing some of them on the individual level: 70% of respondents across developed and developing countries believe that they are now more aware of certain human activities being harmful to the environment, which in turn has adverse effect on humans. For instance, comparing pre- and post-COVID impact rates, 38% more people aged 25-34 believe their personal actions can help reduce unsustainable waste (Kachaner, Nielsen, Portafaix, & Rodzko, 2020). This is especially important for products that are packed into packaging that combines several materials one of which is plastic that became one of the greatest consumer environmental concerns (Eriksson, Feber, Granskog, Lingqvist, & Nordigården, 2020).

According to the report by Eriksson et al., 2020, complex packaging consisting of several layers made of different materials, one of which is plastic, is perceived as the least sustainable option by citizens of 9 out of 10 countries participated in the global survey. Indeed, the volume of waste of complex product packaging containing plastic, which is one of the greatest contributors to the municipal solid waste formation, soared from 156 megatons (Mt) in 2000 to 353 Mt in 2019, from which only 9% of the volume was recycled, leaving 72% of waste in landfills and uncontrolled dumpsites and the remaining 19% incinerated (OECD, 2022), and thus has increased consumer concern about the environmental problems.

Another important consideration is the increased consumer demands for product convenience and changing business models that adapt and respond to variations in consumer choices. These trends have also contributed to the amount of waste which is especially evident in the area of packaged goods, since nowadays consumers seek for more safe, convenient, and hygienic consumption models (Nguyen, Parker, Brennan, & Lockrey, 2020). Nguyen et al. (2020) mention that economic growth leads to greater and more complex consumer needs, as well as the creation of convenient products and consumption patterns – coffee on the go, various kinds of yogurts with multiple mixing trays and tubes, and other packaging and disposable solutions. This fact inevitably goes hand in hand with an increase in the amount of packaging and disposable products used, in other words, increases the amount of waste generated, thus leads to an increase in consumer concerns.

However, on the contrary, nowadays as people have become aware of the problem of consumption waste, one the main sources of which is consumer goods garbage (Magnier & Schoormans, 2015), packaging became a source of discrepancy between what consumers want, and consequently what product manufacturers and retailers offer them, and what recycling companies and interest groups demand from the government in order to preserve the environment (Lindh, Olsson, & Williams, 2016). This happens due to the fact that the perceived sustainability does not correlate with scientifically based conclusions about neutral or minimum effect of certain types of product packaging (El Dehaibi, Goodman, & MacDonald, 2019).

In turn, manufacturers of consumer products are forced to offer those products that allow them to make more profit – by offering the option that best meets the needs and values of consumers and look like the most sought-after choice. There are diverse examples even on the Russian market when companies create sustainable products, launch marketing campaigns to educate people about responsible consumption and waste management, or form new sustainable business models. Such initiatives not only contribute to conserving the planet's resources, but also serve as a necessary response to the changing values of consumers that determine the long-

term competitiveness of companies. To conclude, sustainable consumption is a new reality that companies must embrace in order to be at the forefront of competitive consumer choice.

1.2 Characteristics of consumer packaged goods and their marketing

1.2.1 Characteristics of consumer packaged goods

Consumer packaged goods (CPG), being short-term and convenience goods, are numerous in alternatives, but relatively homogeneous, characterized by low markups, and multiple competitors (Kotler & Keller, 2012). Also called fast-moving consumer goods (FMCG), packaged goods are consumed on a regular basis and meet the basic needs of individuals – for food, hygiene, appearance and are divided into categories: processed foods, beverages, fresh foods, cleaning products, and others (Malhotra, 2014).

Consumer goods are experience goods, a complete view of the quality and characteristics of such goods is formed as a result of their consumption and use (Lotfizadeh & Lotfizadeh, 2015). Since such goods are being bought frequently, making it necessary for manufacturers to encourage repeat purchases and respond quickly to changing consumer preferences in order to be competitive and generate profits, they have low margins, therefore the decision to buy them is often made with a low level of consumer involvement (Seitz, 2013). Indeed, frequent purchase and low price of such goods, which together significantly reduces the perceived risk of buying consumer products, and decreases the required level of consumer involvement in their purchase (Jain, 2019). In other words, the cost of error in making the wrong choice is low, thus consumers use simplified models for selecting FMCG products.

In response, marketers and developers of such products use simpler mechanisms to influence consumer behavior when it comes to the purchase of consumer goods (Clement, Kristensen, & Grønhaug, 2013). Indeed, unlike pre-selection products and special demand goods, CPGs have a smaller set of characteristics that are important to consumers (Vibhuti, Tyagi, & Pandey, 2014), which also contributes to the importance of low-involvement marketing tools to affect consumers' perception and choice, in other words, differentiation is becoming increasingly important.

Consumer goods are represented by numerous alternatives that differ slightly from one another, therefore differentiation of FMCG products plays a crucial role in their successful trade and creation of competitive advantages in three main areas: quality, price and distinctive features (Kotler & Keller, 2012). Indeed, product, as the first element of the marketing mix, is the object of product strategy, and the tools of positioning and differentiation are applied to it. According to Kotler and Keller (2012), work on product design differentiation consists of creating a product

that is attractive in terms of appearance and functions, meets the needs of consumers, and “provides functional and aesthetic benefits”. Ampuero and Vila (2006) defined consumer product differentiation as manipulation of product parameters to influence how a product is perceived in the eyes of consumers. Due to the complexity of creating competitive advantages in the area of intrinsic product features that cannot be changed without physically changing the product and at the same time be marketable and in the position of product-market-fit: general quality, smell, look, taste, and sound; extrinsic product features differentiation, which is defined as marketing work on characteristics that are not part of the physical product, and thus can be manipulated easily: price, brand affiliation, promotional tools used, shop settings and atmospherics where they are being sold (Krishna, Cian, & Aydınoğlu, 2017), gains momentum quickly because of emergence of a large number of grocery alternatives and the advent of self-service stores all of which shape the way consumers perceive a given product (Underwood & Klein, 2002).

Because of the nature of buying such goods and the availability of diverse options, marketers have to develop products that match consumers’ values, thus the role of FMCG product differentiation is increasing. Indeed, consumer goods are presented by numerous alternatives of diverse brands, however, their intrinsic attributes are often similar (Duan et al., 2008). Given consumer trends in preference for eco-friendly products, differentiation with a focus on environmental sustainability can be a competitive advantage for a brand. However, research shows that some eco-friendly products may be perceived as less effective at accomplishing the tasks for which they are created since their first versions did not demonstrated high performance. Moreover, it often happens that individuals cannot recognize ecologically sustainable products, however would prefer such alternatives. Therefore, differentiating product packaging as environmentally sustainable can be a more effective solution to this challenge.

1.2.2 The role of packaging in the marketing of consumer packaged goods

Packaging is defined as the shell in which goods are being placed and which has, firstly, the utilitarian function of holding the goods, ensuring their storage, transportation and protection from adverse environmental conditions (Emblem & Emblem, 2012), and, secondly, informing the customer about the product and promoting its sales (Ampuero & Vila, 2006). Marketing function of packaging is closely tied to the informational function and ensures that the packaging acts as a “silent salesman”, which attracts the consumer’s attention, allows the product to get into a set of alternatives and communicates the value that the product can provide to the consumer (Kotler & Keller, 2012).

There are different types of packaging that are used on different supply chain stages and perform diverse functions (Emblem & Emblem, 2012):

- Primary – everything that surrounds the product and at the end of the product use becomes consumption waste;
- Secondary – designed for more efficient handling of 1 or more primary packages through the whole supply process;
- Tertiary – designed for convenient and safe transportation.

Primary packaging, according to Emblem and Emblem (2012), is one with which consumers interact the most, therefore forms the product perception based on this experience. It is no coincidence that the previous sentence argues that the perception of packaging also shapes the product perception. The fact is that, researchers have not reached a conclusion about whether packaging is an independent element or part of the product, neither in terms of the marketing mix nor in terms of consumer perception, especially for consumer packaged goods, which are characterized by low consumer involvement in their choice (Underwood, 2015). In other words, according to Vladić et al. (2016), consumers tend to attribute certain characteristics of product packaging to the product itself. This is why it is important to understand how packaging of consumer packaged goods can be associated with environmental sustainability and how its environmental sustainability might affect consumer decision-making process especially in the e-retail environment, where only packaging, website design elements, and product verbal descriptions can be manipulated in order to affect consumer choice.

What makes packaging to perform its functions, according to Silayoi and Speece (2007), is its attributes that can be divided into several categories. Table 1 illustrates different approaches of how product packaging can be structured in terms of its attributes.

Authors	Packaging attributes classification
Ampuero and Vila (2006)	<ul style="list-style-type: none"> • Graphical: color, typography, graphical shapes, and images • Structural: shape, size, and materials
Silayoi and Speece (2007)	<ul style="list-style-type: none"> • Visual: graphic, color, size, images, and shape • Informational: labeling, verbal information, and development technology
Steenis et al. (2017)	<ul style="list-style-type: none"> • Structural: materials • Graphical: color, graphical objects, • Verbal: informational, labeling

Table 1. Classification of packaging attributes (Ampuero and Vila, 2006; Silayoi and Speece, 2007; Steenis et al., 2017)

For the purposes of the master's thesis it is worth focusing on the classification of consumer product packaging elements as visual and verbal. Visual product packaging attributes shape the general product perception in the eyes of consumers. Indeed, color, design, graphic figures, and pictures allow to attract the attention of consumers (Krishna, Cian, & Aydınoglu, 2017), increase consumer attention to less familiar products (Underwood & Klein, 2002), and elicit an initial emotional response from consumers (Underwood, 2015). In addition, materials, labels, and color can be used by consumers to identify if the product belongs to a particular product category, for instance if the product is environmentally sustainable (Magnier & Schoormans, 2015), thus making consumers form inferences if the product meets their expectations and include it in their consideration set (Ampuero & Vila, 2006). Moreover, visual packaging attributes are perceived fast, look more attractive and persuasive, and thus form stronger and more vivid associations and stimulate the formation of emotions that enhance the perception of qualities of the product (Underwood, 2015). The same approach might be utilized in order to communicate environmental sustainability of the product, however, analysis of perception of the attributes in the online context is not yet sufficient (Zeng, Durif, & Robinot, 2021).

Verbal product packaging attributes perform functions that require a more conscious consumer involvement into the decision-making process – it informs about properties and characteristics of the product (Krishna, Cian, & Aydınoglu, 2017). Verbal information helps consumers determine the product category by confirming the information that the consumer received when first looked at the product and recognized the visual attributes of the package (Magnier & Schoormans, 2015). It allows consumers to compare expectations and requirements for the product with how it is presented in the eyes of consumers (Krishna, Cian, & Aydınoglu, 2017).

A special place among the visual elements of packaging are labels, indicating that the product belongs to a particular category. They allow consumers to quickly determine whether a product belongs to a particular product category (Lee, Bae, & kim, 2020). Standardized labels and other cues are used to help consumers more easily absorb incoming information. These standardized labels more easily convey the information needed to make a decision and ultimately stimulate a response from consumers. In other words, in an effort to decrease the asymmetry of information and the risks perceived by consumers regarding environmentally sustainable products, companies mark their products with green product labels, or in other words, they

increase consumer confidence (Lee, Bae, & kim, 2020). Also, such labels are being often used by product manufacturers in an effort to nudge consumers think that certain product is environmentally sustainable (Murphy and Ross, 2010). The same strategy might be used in the e-retailing environment, which will be covered in further section of the paper.

1.3 Sales of consumer goods in the e-retail environment

In addition to the emergence of new consumption patterns, another consumer trend is e-retail and food delivery services that are becoming popular these days. E-commerce, according to Doherty et al. (1999), can be defined as a system via which a product is being bought, sold, and transferred from the manufacturer to the end consumer with the use of information and communication technology (ICT). One of the forms of e-commerce is e-grocery or e-retail, which is the focus of the master's thesis, and which can be defined as a service of delivery of grocery goods from traditional supermarkets via apps and websites in a form of an online store (Online grocer, 2022).

Nowadays, almost all that is possible to buy in a brick-and-mortar store is available online with lots of delivery options, which is also a result of increasing consumer demand for more convenient consumption patterns. This has triggered a significant growth in e-grocery especially in the Russian market which is expected to reach 1 trillion rubles in 2025 (Interfax, 2021).

Digital sales channels for packaged goods are characterized not only by rapid growth in their popularity, but also by significant differences compared to traditional stores, and their rapid development has outpaced scientific research in this field (Silayoi & Speece, 2007). Indeed, in order to be successful in trading goods online, it is necessary to find the right products for this sales channel, thus among the first products sold online in the 1990s were compact discs (CDs), chocolate, and wine¹. Moreover, consumer behavior in the online environment varies greatly from that in physical stores, just as marketing efforts to differentiate products vary. Indeed, in online stores there is no possibility to use such promotional tools as music, placement of goods on dedicated and highlighted shelves and at the cashier service for impulse purchases, which greatly affects the behavior of consumers (Doherty, Ellis-Chadwick, & Hart, 1999). Indeed, "spatial and temporal separation between the firm and consumer" (O'Cass & Carlson, 2012) decreases consumers' level of trust and willingness to purchase, therefore e-retailers should understand how different technologies used on the websites increase the value of interaction with the website and stimulate consumer choice.

¹ The world's first secure e-commerce transaction was accomplished on August, 11, 1994, with the sale of a Sting CD through Shop Direct, the UK's leading digital retailer

Another important differentiating factor about online stores is that the products are intangible and can be studied before their consumption only by the eyes of consumers (Alba, et al., 1997). In other words, CPG, which are experience goods, cannot be fully evaluated when purchased through e-grocery platforms, thus impose additional risk when making choices (Vladić, Kecman, Kašiković, Pál, & Stančić, 2016). The fact is that an e-grocery customer has access to only one of the five senses – vision, which makes the shopping experience in an online store significantly different from that in a traditional supermarket, therefore, Vladić et al. (2016) note the importance of FMCG product packaging in online retail and believe that its perception in this sales channel is insufficiently researched.

In order to mitigate the risks associated with the purchase of goods via e-retailers, websites use diverse design elements that highlight product attributes, signal certain product characteristics, and communicate product information in a convenient, easy to perceive, and sufficient way (Park & Kim, 2006).

While Doherty et al. (1999) highlight several advantages related to e-commerce: highly expandable accessibility, direct communication that allows proper study of consumer behavior, cost savings, and possibility to expand markets and sales channels, it also has some limitations. Several of the most influential ones are: technical complexity, consumer security concerns, and marketing issues (Doherty, Ellis-Chadwick, & Hart, 1999).

Indeed, some research shows that one of the most important reasons consumers avoid online shopping is the lack of or difficulty in finding information about the product that is communicated to customers through website design elements (Eighmey & McCord, 1998). In more detail, clarity and ease of access to desired information were important for increasing consumer satisfaction with online shopping. For some consumers, visual information is not enough to make purchase decisions, therefore, in the online shopping environment that lacks the haptic and olfactory cues, which are at the disposal of the consumer in the offline store environment, only visual and verbal cues can be manipulated with an aim of eliciting response from website visitors (Wu, 2013).

Speed of making purchases is crucial for online customers, thus in order to encourage online sales, marketers can visually emphasize their product offerings through visual elements such as discount labels, special promotions, and others (Stell & Paden, 2002). Indeed, in terms of consumer behavior, shopping for CPG is a low-involvement process, thus people spend as little time and effort as possible and rely on their previous experience and the extrinsic attributes of the product in order to choose certain alternatives with minimized risks and cognitive resources expended (Seitz, 2013). In confirmation of this, in traditional retail marketers face the problem of the limited time consumers spend when making purchase, which on average is 7-10 seconds

studying the product item including holding it in their hands (Streicher & Estes, 2016). In addition, authors identified through an eye-tracking experiment that consumers, on average, pay attention to less than 50% of product offerings during the decision-making process, spending around 50 seconds at one product category (Clement, Kristensen, & Grønhaug, 2013). The similar logic can be applied to the e-grocery environment, since the selection of food and other non-durables is very fast – is done right in an app or on a website (Silayoi & Speece, 2007). Thus, in order to make a website more relevant to consumers, online retailers can provide additional information that is important to the needs of particular target audiences (Bertsch, Busbin, & Wright, 2002), for instance visual and verbal cues signaling environmental sustainability.

However, as the popularity of delivery services increases, so does the environmental anxiety of citizens who receive products packed in additional, often unnecessary packaging. Both of these trends are mutually reinforcing, contributing to more waste, and ultimately shaping consumer concern about the environment and their preferences. Therefore, the value of researching this aspect of consumer behavior when it comes to buying grocery online increases both for scientists who study consumer behavior and marketers and product developers who work on the creation of offers of consumer packaged goods that are perceived as the most beneficial in the eyes of consumers.

Numerous constructs have been developed by researchers to measure consumer attitudes toward websites, the content presented on them and the overall design of webpages. Table 2 illustrates some of the classifications that can be used for research in this study.

Construct	Measuring scales
General website performance (Lin, 2007)	<ul style="list-style-type: none"> • Actual usage • Behavioral intention • Perceived usefulness • Perceived ease of use • Compatibility • General attitude
Attitude towards the website (Wang, Beattym S., & Mothersbaugh, 2009)	<ul style="list-style-type: none"> • General attitude • Website performance <ul style="list-style-type: none"> ○ Accuracy of information ○ Innovativeness ○ Velocity of response

	<ul style="list-style-type: none"> ○ Transactions convenience ○ Functionality ○ Design ○ Layout
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Table 2. Website attitude measurement constructs classification (Lin, 2007; Wang at al., 2009)

Indeed, several factors influence a website user’s attitude towards the experience of visiting a web page, which ultimately affects consumers’ likelihood of purchase from the website, propensity to return on the website for repeat purchases, and the word-of-mouth intentions (Wang, Beattym S., & Mothersbaugh, 2009). One such factor is website performance, which is not only technically correct operation of the web page, but also the general attractiveness, aesthetic appeal, organized layout, animation, and other content that shapes the positive attitude towards the website (Lin, 2007).

Website content, according to Coker (2013), is also crucial when it comes to the perception of website experience. The author, together with the results of other studies argues that the main element that is important in terms of content on the website is product information, which in addition to being relevant and easy to view, should also have the property of perceived novelty and quality to improve the attitude of the user of the website. Indeed, a text-only website is perceived by consumers as less engaging, valuable, and providing less positive experience compared to one that contains animation, graphics, video, and text (Wang, Hong and Lou 2010).

In other studies, it has been proven that the overall perception of the design of the online store and the individual objects that fill it, allows marketers to capture attention of customers, impact their emotions, and assist users in communicating information in an easy way (Cai & Xu, 2011) and also creates special atmospherics (Eroglu, Machleit, & Davis, 2003). It was mentioned that cues in the online retail environment are similar to those of traditional supermarkets (Wu, 2013), thus it is possible to use similar signaling techniques online as they are used in the brick-and-mortar stores. In general, website design elements are represented by several classifications, which are illustrated in the table 3.

Authors	Classification
Karimov et al. (2011)	<ul style="list-style-type: none"> ● Visual design that creates first impression ● Content design that communicates information ● Social cues design that allows communication

Tung et al. (2009)	<ul style="list-style-type: none"> • Low task-relevant cues, for instance page layout, colors, fonts, animation and multimedia, additional pictures • High task-relevant cues, that is product textual descriptions and pictures, price, terms of sale, delivery, return, and navigation
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Table 3. Classification of online store website design elements (Karimov et al., 2011; Tung et al., 2009)

These characteristics shape the way consumers perceive products online and forms the idea of the website. Indeed, stores provide photos, verbal descriptions of products, testimonials that serve as a sign of quality, and other signals designed to facilitate decision-making and reduce the likelihood of poor consumer choice (Tung et al., 2009). Moreover, users of online stores have the opportunity to visit other websites and compare different alternatives, which encourages retail chains to create the most comfortable environment possible for consumers to make choices. Another important area of studying consumer behavior is consumer's perception of value that certain products deliver to the consumer via the mentioned design elements of a website, which eventually affects consumers' decision-making (Cai & Xu, 2011).

An important area of research is the analysis of how some website design elements are perceived as more influential in shaping consumer choice, while others have less impact on it (Fagerström & Ghinea, 2013). According to the authors, the former includes verbal information and product descriptions. Indeed, when exploring different product alternatives, it is important for consumers to consider product features before making a purchase decision, thus they rely on product information that they can study before making purchases, which is mostly provided in the verbal form. The second group includes signaling markers designed to attract consumers' attention, such as labels, colors, pictures, and other more abstract, mostly visual information. Consumers may lack the credibility, when examining such information, that a particular graphic feature presented on a website allows them to categorize a product or attribute a particular characteristic. However, such content is more easily perceived by the website users, thus can be used to assist consumers in quickly identifying the product alternatives that best suit them (Karimov et al., 2011). In other words, people are more likely to believe persuasive and easy-to-understand verbal information than visual content, which needs to be recognizable in order to more accurately signal certain product information (Li, Daugherty, & Biocca, 2001). On the other hand, visual information is easy to perceive, is quicker to remember and allows consumers to identify the product and helps determine whether a product belongs to a certain category, such as a class of environmentally sustainable products almost instantly, thus is a useful marketing instrument.

Another important characteristic that affects the attitude of consumers to the website is its innovativeness. Digital user interaction with a marketplace or brand encompasses the visual display of a company's offerings and the use of recommendations from other users, and the constant evolution of the Internet has created a new experience that provides much more interaction and matching content to the needs of individuals (O'Cass & Carlson, 2012).

1.4 Discussion on consumer choice of packaged goods

1.4.1 Overall understanding of consumer choice

Consumer behavior is the study of how, from a marketing point of view, consumers choose, use, and dispose of products as well as how they perceive the process of interaction with them which is determined by preferences, perception patterns and values of an individual, attitudes to external environment in which they live as well as socio-demographic and economic characteristics of people (Clement, Kristensen, & Grønhaug, 2013). Consumer choice is part of the concept of consumer behavior, which can be defined as “the process of selecting, purchasing, using, and disposing of goods and services by individual buyers to meet their needs” (Kotler & Keller, 2012).

In general, consumer choice usually starts from the marketing stimuli that triggers the cognitive process of individuals, who perceive the stimuli taking into account consumer psychology and personal characteristics which influence the choice process (Kotler & Keller, 2012). Psychological processes happening in the minds of consumers play a crucial role in consumer perception and form preconditions for determining consumer choices. Indeed, motivation and satisfaction of needs is one of the driving forces that motivate consumers to choose certain products, but since consumer goods satisfy basic needs, for instance for food and hygiene, buyers have low motivation to choose them carefully (Adhikari, 2019). Emotions allow marketers to elicit consumers' reactions to marketing messages communicated to them and form emotional associations around brands, and thus assist marketers in promoting products (Raichle & Snyder, 2007).

Although, the model presented above helps to understand how consumers make decisions in general, it does not take into account the specifics of FMCG products. Therefore, there is a need for a specific model that will describe consumer choice process of packaged goods, taking into account current trends of consumption of such goods. Thus, it is important to understand consumer perception in a slightly different way that is, according to Clement & Suurmets (2021) who applied the concept of neuromarketing theory, as the process of identification, interpretation, and organization of data that is gathered from the environment by human body's

sensors and processed in human brain with a view to understand the environment, which eventually affects consumers' choice.

1.4.2 Consumer choice models for products with low consumer involvement: cue and signaling theory

Consumer goods are low involvement goods that are numerous in numbers, but relatively homogeneous, that people buy frequently at a relatively low price, therefore the cost of error in making the wrong choice is quite low, thus consumers use simplified models for selecting FMCG products, for instance they trust previous shopping experience, use cues they perceive by their senses, and choose those products about which they have heard from other people, that is, they trust the word-of-mouth effect (WOM). Of particular interest from the marketing point of view are the signaling and cue utilization theories.

Signaling theory

Signaling theory allows two parties when interacting, for instance an e-commerce store and a potential customer when choosing a website or an item to buy, to reduce the impact of asymmetry of information and facilitate the decision-making process (Spence, 1974). Indeed, according to the author, information regarding the object of choice and the resulting asymmetry greatly affects the process of individuals' choices, therefore companies use signals to help the other side of the choice to make the right decision.

Signaling theory introduces several concepts that are important for understanding its operation, namely (Connelly, Certo, Ireland, & Reutzel, 2011):

1. Signaler – an insider in the form of a product, a company that has an underlying quality;
2. Signal – intentionally communicated information about the positive, unnoticeable qualities of the signaler;
3. Receiver – third parties who have no information about the signaler, but would like to receive this information;
4. Feedback – countersignals sent by receivers that signalers use in order to adjust upcoming signals to enhance credibility;
5. Signaling environment – setting in which the signaling takes place.

All the above mentioned concepts are of particular importance when it comes to the e-commerce environment because the signaler, signal, feedback, and signaling environment has its peculiarities.

The use of the signaling theory is particularly important for those objects whose characteristics are superior to their counterparts, which is what the signals sent by that party should indicate (Connelly, Certo, Ireland, & Reutzel, 2011). According to the authors, by doing this, the party who controls the object of choice can gain an advantage because the party making the choice will have the information, or interpret the signal, that the object of interest has greater value in an obvious form, thereby affecting the perception of the quality of the object of choice.

Quality is often one of the most frequent objects of signaling theory due to the fact that it covers extensive characteristics of the object of choice, and due to the fact that it is quality that is a universal criterion for making choices. In the context of signal theory, quality refers to the basic, unobservable ability of an object with an underlying characteristic to satisfy the needs or requirements of an external observer of the signal (Connelly, Certo, Ireland, & Reutzel, 2011).

Issues of product quality are particularly relevant when it comes to experience goods, for instance, consumer goods whose characteristics are difficult to learn before consuming or using the product (Boulding & Kirmani, 1993). In contrast to conventional retail, where product quality can be observed during the selection process, e-retail does not allow customers to explore products properly before making choices (Mavlanova, Benbunan-Fich, & Koufaris, 2012). Indeed, according to the authors, in e-commerce the shopping channel background in terms of product selection sometimes prevents consumers from making proper choices, therefore display signaling of certain website features that carry information about the signaler's characteristics can facilitate customers' product exploration that leads to better evaluation of product qualities and helps e-commerce business to control and affect consumers' behavior.

As for the methods by which signals can be conveyed to the target audience, labeling is one of the most commonly used tools to enable consumers to make more informed choices (Vecchio & Annunziata, 2015). In fact, according to the authors, labeling serves as a tool to help consumers because it aims to improve the amount and often the nature of the information available to facilitate consumers' decision-making.

However, consumer attribute elicitation techniques, which require more cognitive effort on the part of individuals and are therefore perceived as more important and essential, also deserve important attention (Bech-Larsen & Nielsen, 1999). Since the attributes of search, experience and trust are generally distinguished, information about the characteristics of the product and how it is sold: its packaging, store settings and environment can be obtained by the consumer before the purchase, and are therefore one of the key parameters that determine consumer choice (Fishbein & Ajzen, 1980). Therefore, often when consumers pay attention to high-involvement cues such as verbal descriptions of a product, they elicit a stronger response from the consumer and may to a greater extent stimulate a certain behavior (Sengupta,

Goodstein, & Boninger, 1997). However, according to the authors, visual cues should not be neglected due to the fact that they are more easily perceived and assimilated by individuals, which increases the effectiveness of making a choice and stimulates a positive attitude towards the object of choice, especially in the low consumer involvement conditions of choosing FMCG products.

SOR model

The model which is very much similar to the one created by Kotler and Keller (2012) is the Stimulus-Organism-Response model by Jacoby (2002). The author argues that consumer behavior depends on three aspects, that are stimuli from the external environment – Stimulus, which affects the person with its own internal characteristics – Organism, and which, in turn, determines the behavioral response to these stimuli – Response (Jacoby, 2002):

- Stimulus – purely external stimuli such as brand, logo, packaging, price, store environment, and promotion;
- Organism – peoples’ long-term memory that includes emotive and cognitive systems, and experience consisting of intentions, values, attitudes, and expectations;
- Response – peoples’ physical and physiological responses as well as purchase and use of products;
- Intersections – biological changes in response to the environment, moments of high consciousness and attentiveness, automatic reactions to the external stimulus, and peoples’ learning from their experiences, changing beliefs and attitudes.

In the online retail environment people can assess certain product characteristics mainly due to the visual assessment of the alternatives provided to the consumer and signals used, for instance through the website cues, or product packaging (Pickett-Baker & Ozaki, 2008). One of the most effective methods of highlighting characteristics of consumer packaged goods, especially in the online environment, appears to be sensory marketing.

Sensory marketing

Sensory marketing is the process of creation of cues for consumers’ senses that affect the perception of characteristics of certain product attributes with a view to affect consumer behavior (Krishna, 2012). According to the author, the use of sensory marketing instruments that influence consumers’ vision, hearing, smell, taste, and touch in a special way, allows consumers to make their own conclusions about the properties of the product. Indeed, perception affects a person’s attitude towards their environment and different triggers in it, and thus consumer’s

behavior, which is a reaction to what is happening in this environment (Braeutigam & Lee, 2017). Perception, in turn, is carried out by the work of a system of organs that perceive the 5 senses (Clement, Kristensen, & Grønhaug, 2013), and thus triggers behavioral or cognitive responses in humans that might influence the product perception (Raichle & Snyder, 2007). Figure 1 highlights how sensory marketing works.

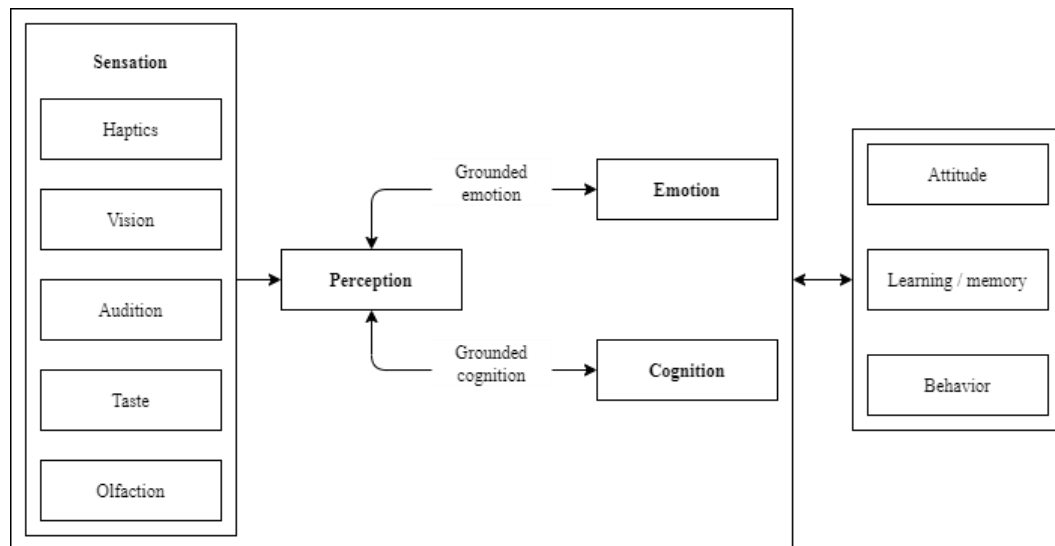


Figure 1. *Conceptual model of sensory marketing by Krishna (2012)*

The model presents how the theory of senses can be applicable to the marketing concepts of perception, cognition, emotions, learning, choice and formation of attitudes. Indeed, grocery shoppers usually do not pay much attention when choosing packaged goods, but instead they make their choice based on the response to marketing and other stimuli (Adhikari, 2019). Compared to traditional advertising, in which consumers have to be convinced of the truth of the communicated message, this type of marketing is more effective since consumers are not imposed certain characteristics of the product by means of marketing communication, and the idea of the product is formed in the eyes of the consumer on their own, based on the actual information, and what is a valuable characteristic of the product for the consumer (Krishna, 2012).

1.4.3 Consumer buying likelihood

Numerous studies point to the importance of assessing the extent to which consumers are willing or intend to buy consumer products, especially when it is assumed that they have a quality of minimal environmental damage, in other words, if they are in the category of environmentally sustainable. Indeed, as it was already stated in the previous subsections of the

paper, consumers' values about the environment, health safety, and overall product appeal, which shape attitudes toward various products, influence the extent to which people are willing to buy certain consumer products (Kim & Chung, 2011). In particular, consumers who are concerned about food health and safety and are more environmentally conscious will be more willing to buy products characterized or perceived as environmentally sustainable (de Magistris & Gracia, 2008). Moreover, an important part of the research is devoted to the study of consumer intention in relation to the purchase of sustainable goods.

A crucial concept in understanding the process of consumer choice is consumer values and attitudes. Pickett-Baker and Ozaki (2008) state that consumer values, which are enduring beliefs that shape attitudes and justify certain actions, are crucial when analyzing how people make purchase choices, and that pro-environmental values might trigger pro-environmental behavior. Indeed, the authors mention that attitudes determine both peoples' values and ultimately affect their behavior.

Some studies show that there is a significant difference between consumer attitudes toward environmental sustainability and actual consumer choices. In other words, consumers declare their willingness to make more sustainable choices, but in reality do not behave in accordance with their articulated pro-sustainable behavior (Prothero, et al., 2011). Based on the authors' analysis, there are two main reasons for this: consumers' "willful ignorance" of information about the ethics of products and the potential for negative conclusions about the functional characteristics of environmentally sustainable products.

Vermeir and Verbeke (2006) also state that there is a gap between consumer attitude and actual behavior towards sustainable products consumption and mention that real purchase intentions of consumers are influenced by such psychosocial variables as attitudes, beliefs, and subjective norms rather than demographics (Vermeir & Verbeke, 2006).

Consumer attitude concept is highly related and is determined by the notion of consumer values that can be defined as a belief about desirable end states or an overall evaluation of the usefulness of the product, based on the perception of what is obtained and what is given (Kim & Chung, 2011). Indeed, an individual's values, such as life goals or standards, are the guiding principles in his life, therefore values can influence the shaping of an individual's attitudes, guiding him toward certain consumer decisions that satisfy his values (Ajzen, 1991). According to the author, attitudes toward behavior refer to personal evaluations positive or negative for performing the behavior, therefore an individual is more likely to undertake a certain behavior if he has a positive attitude toward that behavior, for example, when it comes to buying sustainable products. In this regard, three main classifications of constructs and measures were analyzed and summarized in the table 4.

Construct	Measuring scales
Three main consumer values and three other factors that affect attitudes towards buying environmentally sustainable products (Kim & Chung, 2011)	<ul style="list-style-type: none"> • Environmental concern • Health consciousness • Attitude • Subjective norm • Past experiences • Purchase intention
Two dimensions of environmental attitudes that influence consumers' decisions of consumer products (Chen & Chai, 2010)	<ul style="list-style-type: none"> • Environmental protection intentions • Personal norms
General and individual consumers' concern affecting consumers' attitudes towards environmental aspects of consumer goods (de Magistris & Gracia, 2008)	<ul style="list-style-type: none"> • General consumers' concerns on environmental damages • Individual environmental conservation practices

Table 4. Consumer sustainability attitude measurement constructs classification (Kim & Chung, 2011; Chen & Chai, 2010; de Magistris & Gracia, 2008)

Measuring a consumer's overall propensity or intention to buy a particular product is also an important part of the work of a marketers of consumer goods that are characterized as environmentally sustainable. Indeed, intention is an aspect of human cognitive activity, characterizing his willingness to commit a certain behavior, which is considered a precursor to actual behavior (Ajzen, 1991). Therefore, the conclusion of the analysis of determinants of intention to make a purchase often converges with the actual commission of purchase. Table 5 below highlights some items used by different researchers to measure consumers' intention to buy a given product.

Construct	Measuring scales
Willingness to choose and buy (Wiedmann, Hennigs, Behrens, & Klarmann, 2014)	<ul style="list-style-type: none"> • Willingness to buy the product in general • Willingness to pay a greater price for a certain product
Several dimensions related to people's needs (Wu, 2013)	<ul style="list-style-type: none"> • Need in the product • Likelihood or consideration to buy
Product availability (Kim & Chung, 2011)	<ul style="list-style-type: none"> • Likelihood to buy the product if it is

	available to a given consumer
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Table 5. Product purchase intention constructs measurement (Wiedmann, et al., 2014; Wu, 2013; Kim & Chung, 2011)

1.4.4 Word-of-mouth intentions

In general, word-of-mouth is an informal non-commercial communication between consumers about products, services, their characteristics, and consumer experience of purchasing and using them via opinions and other verbal communication (Roy, Lassar, & Butaney, 2014) in three major forms: negative, positive, or neutral (Anderson, 1998). It has several benefits when compared to traditional promotion – it instills a sense of trust and is easily accepted among the people (Liu, 2006). This communication form has a greater influence on consumer choice than other forms of communication, however empirical research on the factors that encourage consumers to share their shopping experiences through e-commerce interfaces remains limited (O’Cass & Carlson, 2012). Despite the fact that consumers are more willing to apply the practice of WOM when it comes to high-involvement goods, importance of the word-of-mouth effect is crucial for promoting FMCG goods on e-retail platforms, therefore marketers integrate WOM into the product marketing mix (Dost, Phieler, Haenlein, & Libai, 2019).

According to a study of a major consulting company, 67% of sales of consumer goods happen thanks to the effects of WOM (Liu, 2006). A more recent McKinsey report has proven that for CPG it is important to generate large sales volumes in order to gain market leadership, in which increased brand loyalty thanks to the effects of repeat purchases and WOM serves as one of the main tools of achieving this (Kopka, Little, Moulton, Schmutzler, & Simon, 2020). Indeed, WOM is one of the keys in the marketing strategy of e-retailers because it allows them to greatly influence the way consumers make decisions (Roy, Lassar, & Butaney, 2014).

Nowadays, with the increasing number of electronic resources for shopping and society as a whole moving more and more into an online environment, the importance of the electronic word-of-mouth (eWOM) effect is increasing. Having become a reliable and convenient source of information for online shopping, eWOM should be taken into account by website designers and e-retail managers (Phan, Rivas, & Bat, 2019). According to the authors, marketers need to understand the process of consumer interaction with online sales channels and encourage consumers to form positive conclusions about the site and brand, which helps spread positive feedback to other people and ultimately increase sales.

Many authors have determined that for a consumer to be inclined to share their positive experiences regarding shopping in an online environment, several prerequisites must be in place.

First, what matters is the consumer’s loyalty to the brand or the website – his or her propensity to re-purchase on that site (Polites, Williams, Karahanna, & Seligman, 2012). Secondly, the amount of time spent on the website is very important to determine the word-of-mouth effect, as stickiness allows to measure the ability of websites to attract and retain customers (Li, Browne, & Wetherbe, 2006). Third, as has been argued in other studies, the quality of the website and the content presented is key (Eroglu, Machleit, & Davis, 2003).

Dost et al. (2011) mention that WOM for FMCG products takes place mostly in the offline environment, since people are talking about the products they buy mostly when meeting people personally. According to the authors, this might happen because of differences between online and offline communication channels, especially, when it comes to low-involvement FMCG goods, about which people tend to spread WOM via offline channels rather than using online communication.

Word-of-mouth in relation to environmental features of a product, in other words WOM about product sustainability claims, may positively contribute to consumer attitudes toward certain products, something that has not yet been studied (Olsen, Slotegraaf, & Chandukala, 2014). Indeed, the majority of research is made in the domain of how exposure to the word-of-mouth effect affects the propensity of consumers to choose environmentally sustainable products, for instance Gani (2017) came to the conclusion that the purchase of environmentally sustainable products is influenced by the word-of-mouth effect, which was examined by the extent to which positive attitudes towards ecologically sustainable products and the word-of-mouth effect are positively, though slightly, associated with purchase intentions of such goods. Additionally, Pickett-Baker and Ozaki (2008) state that the effect of word-of-mouth is one of the most influential forces when it comes to purchasing food and home care products, thus making the research in the area of studying whether ecologically sustainable signaling at a website makes consumers want to share information about such a website relevant.

There are certain ways how the transmitting WOM intentions can be analyzed when it comes to the consumer choice process. Table 6 highlights two classifications of measurement constructs that can be used in our analysis.

Construct	Measuring scales
Four measurement scales for WOM effects (Goyette, Ricard, Bergeron, & Marticotte, 2010)	<ul style="list-style-type: none"> • Intensity • Positive valence • Negative valence • Content

Two measurement scales for WOM intention (Packard & Wooten, 2013)	<ul style="list-style-type: none"> • Object knowledge • Confidence
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Table 6. WOM intentions measurement scale constructs (Goyette, et al., 2010; Packard & Wooten, 2013)

In our study we focus mainly on positive transmitting WOM intentions of consumers when it comes to the e-retail website purchase experience.

With respect to the research questions outlined in the introduction and based on the results and assumptions of the literature review section several hypotheses were formulated:

H1.1: Introduction of environmental sustainability cues into a website will increase consumers' general attitude towards the website compared to a version of the same website without the cues;

H1.2: Introduction of a verbal environmental sustainability cue (statement about the packaging ease of recycling) into a website will increase the consumers' general attitude towards the website compared to a version of the same website with a visual cue only (the Blue planet symbol);

H1.3: Introduction of both verbal and visual environmental sustainability cues (statement about the packaging ease of recycling and the Blue planet symbol respectively) into a website will increase the consumers' general attitude towards the website compared to a version of the same website with only one of the cues presented;

H2.1: Introduction of environmental sustainability cues into a website will increase the consumers' website efficiency perception compared to a version of the same website without the cues;

H2.2: Introduction of a verbal environmental sustainability cue (statement about the packaging ease of recycling) into a website will increase the consumers' website efficiency perception compared to a version of the same website with a visual cue only (the Blue planet symbol);

H2.3: Introduction of both verbal and visual environmental sustainability cues (statement about the packaging ease of recycling and the Blue planet symbol respectively) into a website will increase the consumers' website efficiency perception compared to a version of the same website with only one of the cues presented;

H3.1: Introduction of environmental sustainability cues into a website will increase the consumers' willingness to buy the product presented on the website compared to a version of the same website without the cues;

H3.2: Introduction of a verbal environmental sustainability cue (statement about the packaging ease of recycling) into a website will increase the consumers' willingness to buy the product presented on the website compared to a version of the same website with a visual cue only (the Blue planet symbol);

H3.3: Introduction of both verbal and visual environmental sustainability cues (statement about the packaging ease of recycling and the Blue planet symbol respectively) into a website will increase the consumers' willingness to buy the product presented on the website compared to a version of the same website with only one of the cues presented;

H4.1: Introduction of environmental sustainability cues into a website will increase the consumers' word-of-mouth intentions towards the website compared to a version of the same website without the cues;

H4.2: Introduction of a verbal environmental sustainability cue (statement about the packaging ease of recycling) into a website will increase the positive word-of-mouth intentions towards the website compared to a version of the same website with a visual cue only (the Blue planet symbol);

H4.3: Introduction of both verbal and visual environmental sustainability cues (statement about the packaging ease of recycling and the Blue planet symbol respectively) into a website will increase the positive word-of-mouth intentions towards the website compared to a version of the same website with only one of the cues presented.

2. RESEARCH MODEL AND METHODOLOGY

2.1 Research overview

2.1.1 Research methodology

With the aim of testing the hypotheses outlined in the literature review, experiment methodology was chosen since it allows to compare consumer perception of products presented in different versions of e-retail environments with different sets of cues signaling environmental sustainability. We predicted that experiment participants would rate a product described as coming in the e-grocery environment that signals environmental sustainability higher than a product in a conventional online retail environment, thus we will also create a baseline version without the signaling cues.

An experiment is a procedure conducted under conditions controlled by researchers to discover an unknown effect and to understand whether a change in independent variables results in a change in the dependent variable in isolation of the effects of other factors (Hakim, 2000). Indeed, the methodology of the experiment has already been used in numerous studies on consumer psychology, for instance Shimp and Bearden (1982) studied the influence of perceptions of extrinsic product cues on decision making and purchase behavior.

After defining the hypotheses, the experimental methodology section of this paper will be completed in a few steps:

1. Selection of appropriate product categories and websites creation;
2. Identification of the dependent, independent and control variables;
3. Pretesting the cues placed that describe the independent variables;
4. Designing a survey to collect feedback from the respondents' experience;
5. Conducting the main experiment and analyzing the results.

2.1.2 Data analysis tools

Since the study is characterized as explanatory and quantitative, we intend to use factor analysis and multi-factor ANOVA with binary categorical explanatory variables coming as distinct subject and explaining how the presence/absence of sustainability signaling cues on the e-grocery website affects likeliness to choose the product as well as how it affects consumers' perception of the website in terms of the general attitude and intentions of transmitting word-of-mouth about the experience on the website. A similar method of data analysis was used by Boulding and Kirmani (1993) to analyze perceptions of product quality by manipulating the

length and depth of the warranty commitment. Although the authors analyzed perceptions of personal computer quality in response to changes in warranty terms, signaling theory is largely applicable to consumer products (Connelly, Certo, Ireland, & Reutzel, 2011) and a similar research method can be applied to FMCG goods.

In addition to this, we, firstly, intend to conduct t-tests checking statistical significant difference in the consumer perception of the cues and its influence on the perceived environmental sustainability of the product.

In our research we are going to apply similar logic to the two independent dummy variables, the manipulation of which would influence the dependent variables:

- Independent variables:
 - Visual – a graphical icon that is associated with sustainability “the Blue planet symbol”:
 - Present – 1;
 - Absent – 0;
 - Verbal – a clear and explicit statement about the environmental sustainability of the product:
 - Present – 1;
 - Absent – 0.
- Dependent variables:
 - Consumer’s expressed product buying likelihood;
 - Attitude towards the website:
 - General attitude;
 - Perceived website efficiency;
 - Transmitting word-of-mouth intentions.

2.1.3 Product categories and websites

One product category of consumer products was chosen, namely, laundry detergent as it is a common product, which consumers choose more carefully because of the peculiarities of its consumption – use for washing children’s clothes. Moreover, laundry detergents are less likely to be subject to impulse purchases, which is important in this experiment.

Moreover, laundry detergents have already been used in a study of how different product packaging-related claims affect consumers’ intention to purchase goods in conventional grocery environment (Magnier & Schoormans, 2015).

In all cases, specially designed product layouts without recognizable brand names were used for the experiment. This was done in order to avoid distorting the results of the study, otherwise, the use of an icon, logo or trademark of a well-known brand could have caused cognitive reactions that would have affected the unbiasedness of the experiment participants.

2.2 Pretesting

The purpose of the preliminary study was to determine whether or not the independent variables affect the website's and product's perception as environmentally sustainable. In order to do this, two surveys were designed in which respondents were asked about their perceptions of visual and verbal cues that illustrate the independent variables signaling environmental sustainability.

A special experimental methodology was used that ensures that “cue” and “no cue” options are not mixed, in other words everyone evaluated one visual and one verbal version with and without the cues separately. As for cues, we have chosen one visual (the Blue planet symbol) and one verbal cue (description of the product that its packaging is easily recyclable). The cues were selected by analyzing 7 marketplaces: 4 Russian, 1 Dutch, 1 British and 1 Finnish. It was determined that different e-grocery stores use different verbal and visual cues to signal the environmental sustainability, the best choice of price and quality, and also illustrations of the key characteristics that are important for consumers. In our case, we used cues signaling environmental sustainability, one of which we thought might evoke general associations about the environmental friendliness of the product, thus would be perceived more easily – visual, and the other that states in specific form that the product is easily recyclable, thus demanding more consumer attention, concentration, and involvement – verbal. We have chosen such approach because, as stated in the literature review, people make purchases of consumer goods very quickly, because their buying process is characterized by low involvement (Jain, 2019), so we need signals that allow us to rapidly identify the right product for the consumer (Seitz, 2013), while the concept of environmental friendliness is quite complex, interpreted differently (Lindh, Olsson, & Williams, 2016), therefore requiring a clearer explanation from the verbal website description (El Dehaibi, Goodman, & MacDonald, 2019).

54 respondents in total took part in the preliminary experiment, 28 for the “cue” option and 26 for the “no cue” option. First, we asked our respondents to look at the given option in a sentence “Please first study the product below and then respond to the following questions”. For the “cue” option, we presented a screenshot of a fictional website with the product photograph with a visual label of “the blue Earth symbol” placed on it and then asked questions about the

product description perception. Secondly, we showed a screenshot of a fictional website with the product verbal description where it was clearly and distinctively stated that “the packaging is easily recyclable” and then also asked the same questions. After that, we posed several general questions as well as asked about the participants’ environmental concern. We applied the same logic for the “no cue” versions of the product descriptions. The screenshots of the mentioned product descriptions are provided in figures in the Appendix 1.

For more relevant results, we were guided by a special technique of sequencing questions starting from the general product sustainability perception, then questions about the performance of product packaging marketing function, followed by the section with participants’ attention towards the cues presented, after which all other question sections were placed. The exact formulation of the pre-test survey questions is provided in the Appendix 1.

Results

Overall, most of the participants have carefully studied the product descriptions (mean equals 6.5 and 6.6 for visual and verbal cue versions respectively), however the websites with the verbal description were, on average, more easily perceived by individuals (mean equals 4.3 for the “visual cue” version, while the mean for the “verbal cue” version is 5.9). Perhaps this was due to the incorrect use of the word “description”, which implies a narrative description of the product, or because there was an insignificant amount of information about the product. In the main study we replaced the word “description” by “website content”.

Moreover, consumers expressed confidence in those screenshots that present websites that reflect verbal descriptions of products (mean for “visual cue” version is 4.46, while mean for the “verbal cue” version is 5.26), thus one of the hypotheses can be preliminary confirmed that consumers’ intentions to buy a product are driven by more conscious analysis of the alternatives presented relying on the verbal description of the products.

What is also crucial is that for participants of the experiment it is important to pay attention to product characteristics when it comes to choosing laundry detergents.

Manipulation check

For checking whether the respondents captured the symbols we used one-sample t-tests the results of which are presented in the table 7 below.

Question	Cue	Mean	Std. deviation	T	DF	2-tailed sig.
I noticed a visual cue about the	Visual	2.5357	1.93	-9.20	54	<.001

environmental sustainability	Verbal	1.6786	1.47	-1.87	54	0.067
I noticed the verbal information about the environmental sustainability	Visual	2.3929	1.45	-2.41	54	0.019
	Verbal	6.3929	1.26	-11.03	54	<.001

Table 7. Manipulation check one sample t-test statistics and results (SPSS output)

The analysis allows us to conclude that respondents captured the signs of environmental sustainability when they were presented on the screen for both of the cues, however verbal information, which is given clearly, was perceived by individuals more vividly than visual information, as confirmed by the literature review. Therefore, we can use the signs further in the main experiment, but before doing this, we need to analyze to what extent people associate the cues with environmental sustainability.

Several tests were conducted to determine which cues used on the websites are perceived by consumers as reflecting the environmental sustainability of the website and product, but before doing the tests it is important to check the reliability of the scales.

Scales

In order to determine how much the cues presented on the web page affect the perceived environmental sustainability of the product, questions measuring the three constructs were combined into one scale and the scale reliability was calculated using the Cronbach's alpha coefficient. Table 8 shows the results of the Cronbach's alpha calculations used in order to test the reliability of the scale for the perceived sustainability and other factors of interest.

Scales	N of items	Cronbach's alpha
Perceived sustainability	5	0.949
Product description familiarity	2	0.555
Perceived performance of the product	2	0.797

Table 8. Cronbach's alpha coefficients for the pretest scales (SPSS output)

Almost all the scales turned out to be reliable except only the product description familiarity scale with Cronbach's alpha of 0.555, therefore we will use only the question "Know1" because it has non-reverted scales of answers.

Pretest Analysis

In order to understand statistical significance of difference of the perceived environmental sustainability of the websites and products presented on them between versions with and without cues, independent-sample t-tests were used. The output of the tests is provided in tables 9-12 below.

Pair	T	DF	Sig. (two-sided)	Mean difference	Std. Error Difference
“visual cue” vs “visual no cue”	5.763	53	0.000	2.078	0.365
“verbal cue” vs “verbal no cue”	10.023	53	0.000	3.267	0.325
“visual cue” vs “verbal cue”	-4.334	54	0.000	-1.7	0.392

Table 9. Independent samples t-test, factor “perceived environmental sustainability” (SPSS output)

The test results show that in terms of perceived environmental sustainability, the versions of the websites with cues were perceived as statistically significantly different from the versions without cues, and the presence of the cues increased perceived environmental sustainability. For a preliminary analysis of the more significant effect of verbal cues, we also compared the versions with visual and verbal cues with each other. The results allow us to tentatively confirm that verbal cues had a greater effect on perceived ecological sustainability.

Pair	T	DF	Sig. (two-sided)	Mean difference	Std. Error Difference
“visual cue” vs “visual no cue”	0.379	53	0.706	0.207	0.547
“verbal cue” vs “verbal no cue”	1.709	53	0.093	0.623	0.364
“visual cue” vs “verbal cue”	-4.327	54	0.000	-1.785	0.412

Table 10. Independent samples t-test, factor “ease of getting product information” (SPSS output)

As for the perceived ease of reviewing product information, the results of the t-test show that the introduction of cues to the site does not increase the ease of finding information about a product. This fact is logical, as the respondents were presented only fragments of information about the product, which do not allow them to make a purchase decision. However, it was shown that the version with verbal cues helped the consumers to a greater extent to find the necessary information about the product, as evidenced by the p-value of 0.000 and the mean difference value.

The result of this test is a preliminary conclusion that verbal information about the product is more important for consumers, rather than visual, much less unfamiliar environmental cues.

Pair	T	DF	Sig. (two-sided)	Mean difference	Std. Error Difference
“visual cue” vs “visual no cue”	1.629	53	0.109	0.812	0.498
“verbal cue” vs “verbal no cue”	2.22	53	0.031	0.698	0.314
“visual cue” vs “verbal cue”	-2.818	54	0.007	-1.071	0.38

Table 11. Independent samples t-test, factor “confidence in the product description” (SPSS output)

In terms of confidence in describing product information, the test showed that respondents were more likely to believe verbal information, which also confirms its greater importance to consumers.

Pair	T	DF	Sig. (two-sided)	Mean difference	Std. Error Difference
“visual cue” vs “visual no cue”	2.338	53	0.023	0.874	0.374
“verbal cue” vs “verbal no cue”	1.086	53	0.282	0.408	0.376
“visual cue” vs “verbal cue”	-1.728	54	0.09	-0.571	0.33

Table 12. Independent samples t-test, factor “familiarity with the product description”
(SPSS output)

Lastly, comparing versions with and without visual cues and with and without verbal cues, visual cues had a greater effect on perceived novelty of the content. As for comparing versions with visual and with verbal cues, again, the verbal cue was perceived as something newer. This makes sense, because nowadays marketplaces do not indicate in the product description section that its packaging is easy to recycle.

The outcome of this subsection is that the selected cues indeed signal environmental sustainability and can be used further in the main experiment. Moreover, the pretest shows that verbal cues have more significant effect on the consumers’ perception of environmental sustainability, they contribute more to the ease of finding product information, they inspire more confidence in consumers, and finally they are perceived as content that is more unfamiliar to marketplace users.

2.3 Main experiment

The hypotheses outlined in the first part are tested in the context of the impact of the visual and verbal cues signaling environmental sustainability offered on the website, which were proven to be perceived as communicating environmental sustainability in the preliminary experiment.

The main experiment consists of 3 steps which respondents go through one channel – a specially created website that leads to the appropriate branches of the experiment, depending on the respondent’s random choice. This approach was chosen in order to provide the greatest comfort to respondents, whose online participation is not possible to observe and control. The whole procedure is presented below:

1. Familiarizing participants with the instructional landing page;
2. Visiting one of the 4 main pages with the product description and website design elements manipulated;
3. Filling out a survey form to convey information about the respondents’ experience of participating in the experiment.

The landing page and 4 product pages were developed in a codeless site-building interface called bazium.com, which was chosen due to the fact that it allows multiple links leading to different pages of the site, as well as due to the flexibility of configuring the web page to more accurately depict the familiar e-grocery retail websites.

Landing page

Before the experiment began, participants were shown an introductory landing page created by the author with instructions in Russian, due to the fact that the experiment itself and the target audience of the study is Russian-speaking. The purpose of the landing page is to explain the procedure of the experiment, clarifying what is required of respondents to successfully complete the experiment, and announcing the features and time to complete the experiment. The screenshot of the landing page is presented in figure 3 below.

Спасибо, что нашли время принять участие в эксперименте для магистерской диссертации!

Весь процесс займет около 10 минут. Перед началом работы, пожалуйста, ознакомьтесь с инструкциями, они ниже

Представьте, что Вы хотите купить средство для стирки одежды. В процессе поиска товаров Вы зашли на сайт-маркетплейс, представленный на следующей странице (кнопка для перехода ниже)

После перехода на сайт для эксперимента Вам необходимо обратить внимание на содержимое сайта, представленный продукт и его описание, а также

ответить на вопросы в форме, нажав на кнопку "К форме обратной связи"

Убедитесь, что Вы выполнили все три этапа эксперимента

Шаг 1

Прошли эту вводную страницу

Шаг 2

Посетили и изучили вебсайт и ознакомились с представленным на нем товаром и его описанием

Шаг 3

Заполнили анкету, чтобы поделиться Вашим опытом

Давайте начнем эксперимент! **Нажмите на одну из кнопок ниже**, изучите содержимое сайта, описание товара и ответьте на вопросы в форме обратной связи по кнопке "К форме обратной связи!"

Нужно еще 10 респондентов

Нужно еще 12 респондентов

Нужно еще 9 респондентов

Нужно еще 11 респондентов

Figure 3. Main experiment landing page (screenshot of the website developed by the author)

The creation of the landing page also allowed to establish a single hub after which respondents could head to the test and control pages of the experiment. Moreover, since the object of the study is shopping for FMCG products in an e-grocery context, creating a fictitious e-grocery website would increase the value of data analysis and formulating recommendations

for real marketplaces as it will be perceived as more like a real e-retailing website. The landing page has the following structure which is provided in table 13.

Stage	Statement translated from Russian
Greetings	Thank you for taking the time to participate in the experiment for my master's thesis!
Time of participation and introduction to instructions	The entire process will take about 10 minutes. Before you begin, please read the instructions
Setting the situation	Imagine that you want to buy a laundry detergent for clothes. While searching for products, you went to the marketplace site shown on the following page (the button to go to the end of this page)
Sequence of actions	Please, make sure that you have fulfilled all the steps of the experiment! <ol style="list-style-type: none"> 1. You have passed this introductory page 2. You have visited and studied the marketplace (at the link below) and examined the product on it 3. You filled out a questionnaire form to submit information about your experience
Call to action to proceed to one of the 4 versions	Let's begin the experiment! Click one of the buttons below, explore the site content, product description, and respond to the feedback form! <ul style="list-style-type: none"> • Button 1 • Button 2 • Button 3 • Button 4

Table 13. Landing page layout (description created by the author)

After completing these preparatory steps, we published the website on the Internet using the following link: <https://pikkee.ru/thesis-experiment>.

Product pages

From this landing page, participants have access to 4 versions of the website with different combinations of visual and verbal environmental sustainability cues. By opening them, the respondents are introduced to the website, its content in the form of photos and product

descriptions, as well as the design elements of the website, which are manipulated by the experiment settings depending on the option chosen on the previous stage and the respective link.

Experiment setup is given in table 14, while the 4 versions of the websites for each of the experiment branches are presented below in figures 4-7:

- Website 1: “both cues” - <https://pikkee.ru/with-vis-with-verb;>
- Website 2: only “visual cue” - <https://pikkee.ru/with-vis-without-verb;>
- Website 3: only “verbal cue” - <https://pikkee.ru/without-vis-with-verb;>
- Website 4: “no cues” - [https://pikkee.ru/without-vis-without-verb.](https://pikkee.ru/without-vis-without-verb;)

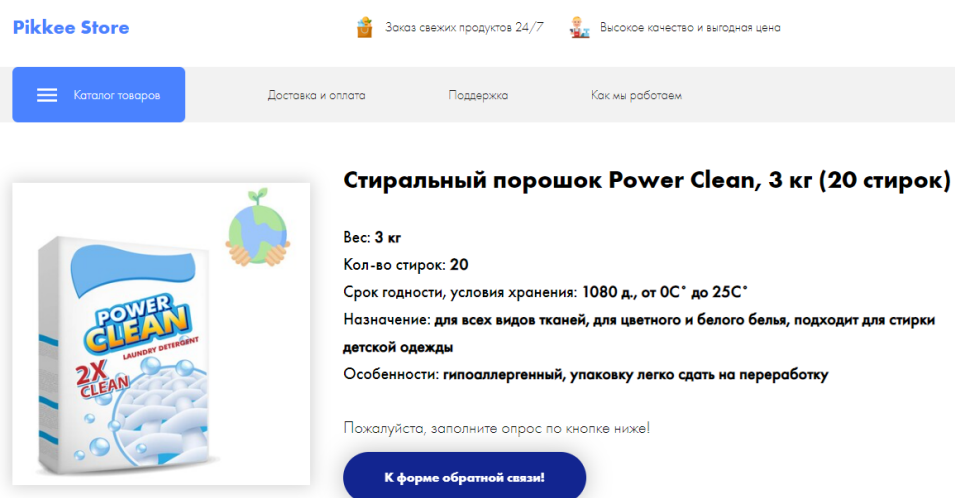


Figure 4. Main experiment “both cue” version (screenshot of the product prototype created by the author)

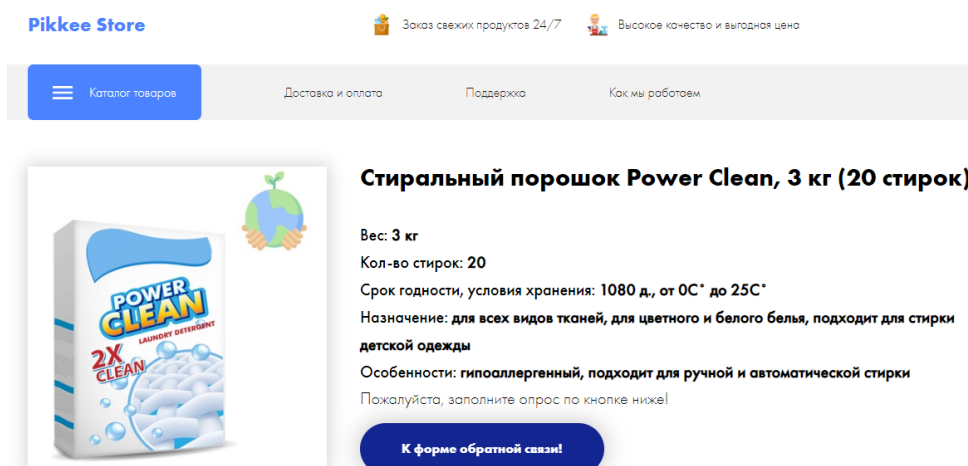


Figure 5. Main experiment only “visual cue” version (screenshot of the product prototype created by the author)

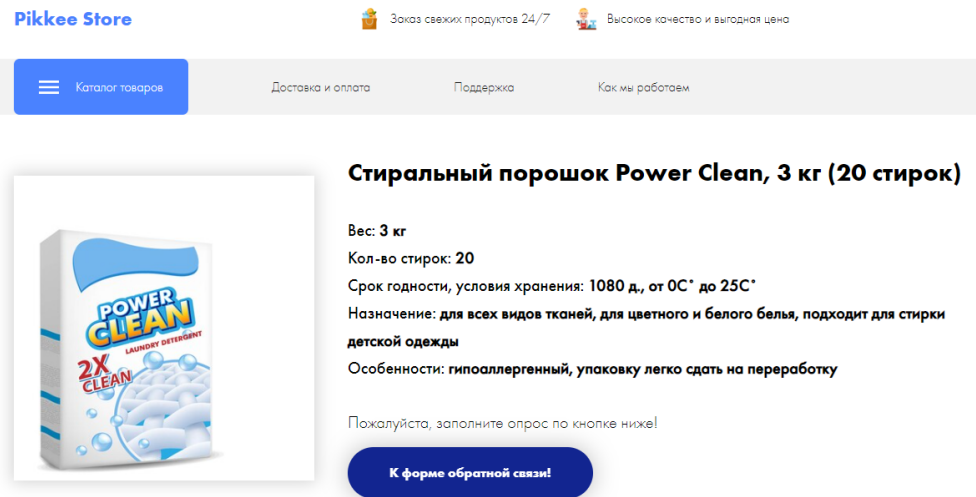


Figure 6. Main experiment only “verbal cue” version (screenshot of the product prototype created by the author)

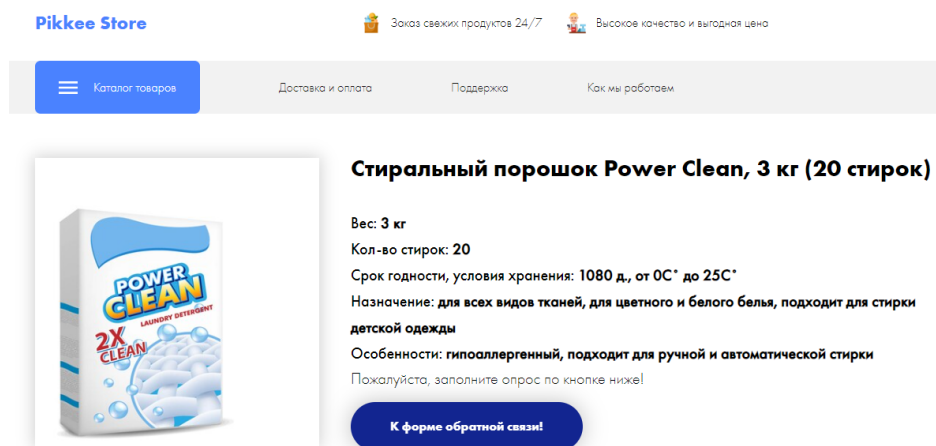


Figure 7. Main experiment “no cues” version (screenshot of the product prototype created by the author)

In order to make the content of the website look more like a traditional marketplace it was filled with content familiar to users of e-grocery platforms. To do this, the content of 8 websites was analyzed: 4 Russian, 1 Dutch, 1 British and 1 Finnish. Thus, equally neutral product descriptions, picture sizes and stickers were selected, reflecting the actual websites where consumers have the opportunity to buy goods. In general, each website contains the following elements highlighted in table 14:

Website part	Content
--------------	---------

Heading	<p>Fictional name of the store</p> <p>Service characteristics:</p> <ul style="list-style-type: none"> • 24/7 fresh food ordering; • High quality and favorable price.
Website menu	<ul style="list-style-type: none"> • Product catalog; • Delivery and payment; • Customer support; • How we work.
Product description	<p>Visual attributes:</p> <ul style="list-style-type: none"> • Photograph; • Ecologically associated label (visual cue present or not); <p>Verbal attributes:</p> <ul style="list-style-type: none"> • Product name – “Power Clean Laundry Detergent, 3 kg (20 washes)” • Weight – 3 kg; • Number of washes – 20; • Shelf life and storage conditions – 1080 d., 0° to 25° • Purpose – for all types of fabric, for colored and white clothes, suitable for washing children’s clothes; • Special features – hypoallergenic, the package is easy to dispose of for recycling (verbal cue present), suitable for hand washing and automatic washing (verbal cue absent).
Technical hints for experiment participants	<ul style="list-style-type: none"> • Statement urging to fill out a feedback form • Button with “To the feedback form” statement

Table 14. Product page content (description created by the author)

What is important is that a statement about the sustainability of the product packaging was chosen as a verbal cue about the sustainability of the product. The fact is, as the literature review showed, product packaging is a marketing tool when it comes to FMCG products. Moreover, the environmental sustainability of household products, which includes laundry detergent, can greatly underestimate the perceived effectiveness, and thus value of the product, therefore, the environmental sustainability statement of the packaging was chosen.

In order to maintain the integrity and the same amount of information about the product, in those versions where verbal cues were not used, people were offered neutral statements about

“the hypoallergenicity of the product”, as well as “the possibility of using it in manual and automatic washing modes”, testing the wording of which showed their neutrality.

Participants are then prompted to click a button to share their experience of viewing the option selected in the previous step by filling out a form with questions.

Survey design

The final step in participating in the experiment was to fill out a feedback form. Diverse authors used semantic differential scales in order to analyze how the perception of product and website attributes affects consumer attitude and decision-making. The majority of scales used were 7-point Likert scales, for instance, Eroglu et al. (2003) used a 7-point Likert scale to characterize certain aspects of consumer perception of warranty-related product cues. Zeng et al. (2021) used the same scale to ask about the consumer perceptions of eco-design product attributes. However, Wiedmann et al. (2014) used different scales, from 7-point to 10-point, to measure consumers' willingness to pay and inclination to recommend products. To make it easier for respondents to complete the survey, we chose a 7-point Likert scale for all the questions where we measure attitude towards the website, product buying likelihood, and WOM intentions.

For the purpose of the study, namely to compare how the visual and verbal cues about the environmental sustainability presented on the website affect consumer behavior in terms of the product buying likelihood, influence attitudes toward the website, and the word-of-mouth effect toward the presented website, a questionnaire was developed that experiment participants fill out after visiting the landing page and product pages. The wording of the questions is in Russian and their order remains the same for all 4 versions. The translated formulation of the questions used in the main experiment is presented in Appendix 2.

Survey distribution strategy

With the view to recruit a sufficient number of respondents, online channels were chosen to disseminate information about the study. Thus, the author's internal network of contacts was used, as well as an external mailing via the university's corporate mail. Also, both free and paid posting of information about the study was used. To motivate participation in the experiment, which can take up to 10 minutes of time, a tactic was chosen to create a desire to win a cash prize – for each of the four versions of the website there was a reward in the form of a certificate to one well-known Russian marketplace of goods, which is not affiliated with the object of this study.

3. RESULTS

3.1 Socio-demographic characteristics

There were 180 participants in the experiment, which equals about 45 observations per experimental website.

Gender and age

In terms of gender and age characteristics of the sample, the proportion of women who participated was slightly higher than men (53.9% vs. 46.1%), but the difference was not significant. The average age of the respondents was about 25 years old with a standard deviation of about 6 years, which corresponds to the most active target audience of online store users. A table with distribution of the data is presented in Appendix 2.

Education and financial status

Most participants in the experiment, as expected, have or are pursuing a bachelor's or master's degree, but the survey also included 15 percent with a specialized secondary education. In terms of respondents' income level, it is slightly skewed toward the average and slightly above average. Education and financial status table is also highlighted in the Appendix 2.

3.2 Experimental data analysis

Because we use different scales to measure the effect of manipulations of independent variables on dependent variables, rather than using a ready-made validated previous study, this study will use explanatory factor analysis.

Cue perception manipulation check

Before the main data analysis, we need to check how people responded to the question regarding whether they noticed the environmental sustainability cues presented to them, when they were presented or not. To do this, we will check respondents' answers to relevant questions in the manipulation check section.

Visual cue check is applicable for the combined subsamples 1 and 2 where visual cue was present, while verbal is applicable to the combination of subsample 1 and 3 where verbal cues were present. As it can be seen from table 15 the mean for noticing the visual cue about product sustainability was 5.07 and statistically significantly different to the middle scale value of 4. The

same conclusion can be applied to the verbal cue option, which has a mean value of 5.49 and statistically significantly different from 4.

Question	N	Mean	Std. Deviation	Sig (2-tailed)
I noticed the visual sign about the environmental sustainability (MC4)	89	5.07	2.215	0.000
I noticed the verbal description about the environmental sustainability (MC5)	90	5.49	1.984	0.000

Table 15. Manipulation check one sample t-test statistics and results (SPSS output)

Next, we compared the statistical difference in responses among the pairs of respondents from 1 and 2 as well as 1 and 3 subsamples. The results of the t-test for the two independent samples indicate, first, that the pairs of subsamples are homoscedastic according to the Levene’s test, and, second, that the answer to the question “I noticed the visual sign about the environmental sustainability” and “I noticed the verbal description about the environmental sustainability” respectively is not statistically significantly different in the two pair of subsamples. The results of the test for the two pairs of subsamples are presented in tables 16 and 17.

Subsample	Mean	SD	Levene’s significance	T-Sig (2-tailed)
1	4.86	2.319	0.252	0.394
2	5.27	2.115		

Table 16. Variance analysis for noticing visual cue (SPSS output)

Subsample	Mean	SD	Levene’s significance	T-Sig (2-tailed)
1	5.69	2.054	0.682	0.342
3	5.29	1.914		

Table 17. Variance analysis for noticing verbal cue (SPSS output)

Next, we analyzed respondents’ responses for outliers to provide more data quality. To do this, we constructed boxplots and looked at the outlier and extreme values that counted 15. The analysis removed 7 observations, namely 83, 108, 143, 147, 157, 165, and 166 due to lack of response completion logic, and checked but kept the other 8 responses, which we decided to

keep due to possible doubt as to what exactly the cue presented was communicating. Results of the boxplot analyses is presented on figure 8.

We will proceed further to the main analysis based on the cleared data sample with 173 observations.

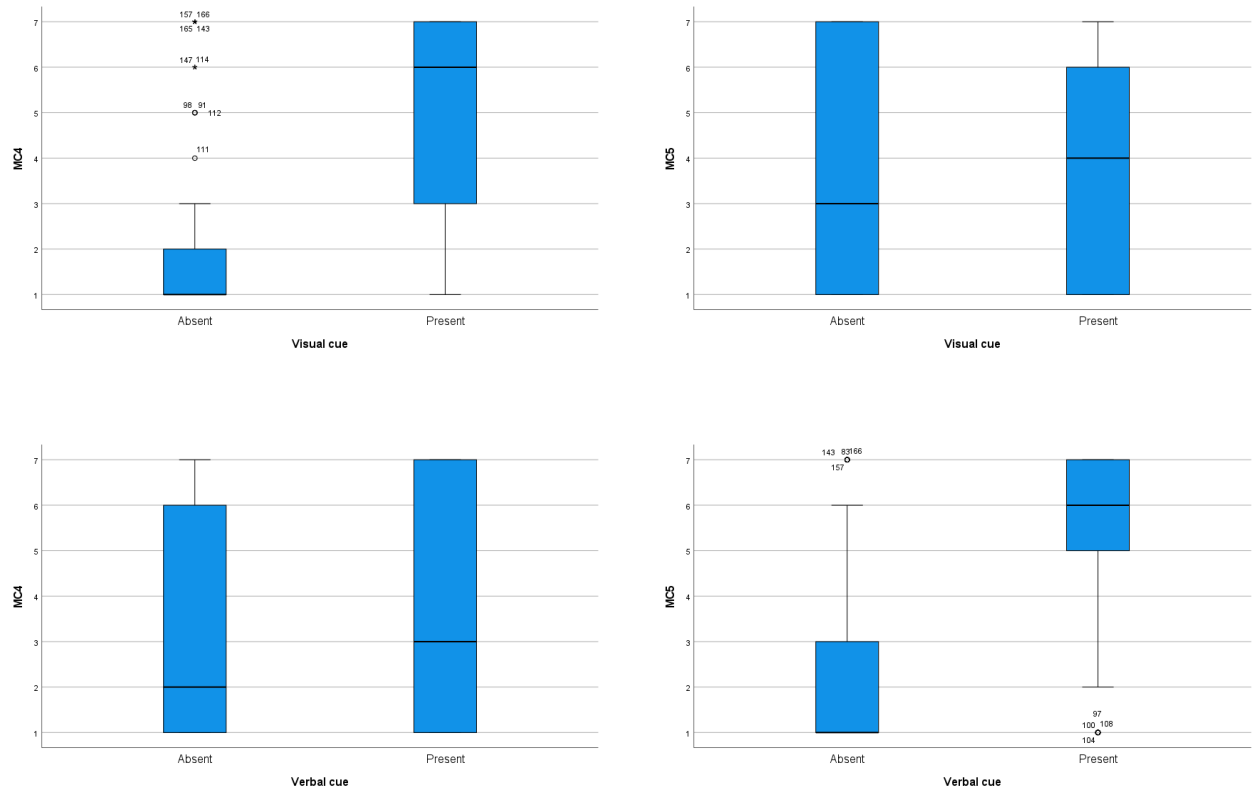


Figure 8. *Boxplot outlier analysis output (SPSS output)*

Factor analysis

To conduct an ANOVA analysis, it is necessary to examine how selected questions that examine different aspects of consumer attitudes toward submitted sites actually form into separate factors based on the consumer experience data gathered after filling in the survey form.

To begin with, the general attitude of a website visitor was studied, which, according to the literature review, is divided into 4 domains “general attitude”, “perceived usefulness”, “perceived performance”, and “design influence” measured by 15 different questions. To differentiate real factors, we conducted an exploratory factor analysis with principal axis extraction method, since it is appropriate for exploratory factor analysis, is better able to recover weak latent factors – we believe that there might be latent constructs behind the data collected that cannot be measured directly (Field, 2009). As for rotation mode, we have chosen direct oblimin since it captures possible high correlations between the factor items. Regarding the method, we used Anderson-Rubin as a solution to the problem of correlated factors.

In order to receive an appropriate result of the determinant analysis and avoid multicollinearity we excluded 2 questions, namely GA3 and GA4. Now the determinant of the correlation matrix is 0.00002668 which is higher than the cut-off value of 0.00001. KMO sampling adequacy measure is 0.915 in our case which is higher than the cut-off value of 0.5. Bartlett's sphericity test is significant, which can be seen in the table 18 below. As a result, we can proceed to the interpretation.

Determinant	KMO-sampling adequacy value	Bartlett's sphericity significance
0.00002668	0.913	0.000

Table 18. Attitude factor preliminary explanatory factor analysis

Total variance table identified 3 factors that in combination explain 76.9% of variance, thus we identified 3 factors that also have eigenvalues greater than 1. According to the structure matrix table 19, we can create a table of items that measure the respective factors.

Item	Factor 1 weight	Factor 2 weight	Factor 3 weight
I like the overall design of this retail website (DI2)	0.880	0.495	0.381
My attitude towards the website is positive (GA1)	0.844	0.563	0.240
How much would you like to use or avoid this site while shopping? (DI6)	0.843	0.586	0.255
Once you were on the site, how much did you enjoy exploring its contents? (DI4)	0.828	0.637	0.560
How much time would you like to spend on this site? (DI5)	0.762	0.523	0.463
Considering the content provided on the webpage, I prefer this website for making purchases online (GA2)	0.753	0.683	0.470
This website enables me to easily find product information (PP2)	0.588	0.844	0.290
The content presented on the website helped me in studying the information	0.502	0.835	0.661

about the product better compared to other online stores (PU1)			
This website is convenient (PP1)	0.700	0.819	0.306
Using this website would provide access to useful shopping information (PU3)	0.540	0.806	0.411
Using this website helped me to save time while making purchases (PU2)	0.445	0.743	0.395
This website contains innovative features compared to other e-retail marketplaces (DI3)	0.570	0.520	0.839
The website presented contains content that is new to me compared to other e-retailers (DI1)	0.409	0.515	0.681

Table 19. Factor structure matrix (SPSS output)

As a result of the analysis, we identified 3 factors where:

- Factor 1 (GAF1) is represented by items DI2, GA1, DI6, DI4, DI5, and GA2 – can be named “perceived general website attitude”;
- Factor 2 (GAF2) is represented by items PP2, PP1, PU3, PU1, and PU2 – can be named “perceived website efficiency”;
- Factor 3 (GAF3) is represented by items DI3 and DI1 – can be named “perceived novelty of the website content”.

In order to calculate the factors weighted for the individual questions, we will use an average of values of questions’ answers to respective factors, thus the resulting factors would be GAF1 - “perceived general website attitude” consisting of an average of answers to the questions DI2, GA1, DI6, DI4, DI5, and GA2. GAF2 - “perceived website efficiency” consisting of an average of answers to the questions PP2, PU1, PP1, PU3, and PU2. GAF3 - “perceived novelty of the website content”.

Second parameter of our interest is the product buying likelihood, which was measured by 3 questions. Factor analysis with the same parameters showed that appropriate results for using only one factor, which we can name “buying likelihood of the product presented”. Necessary statistics are provided in table 20 below.

Determinant	KMO-sampling adequacy value	Bartlett's sphericity significance
0.05	0.761	<.001

Table 20. Buying likelihood preliminary explanatory factor analysis (SPSS output)

We can proceed further with the factor that we calculate by multiplying the answers for the three questions measuring the factor by respective factor matrix coefficients, thus we will use factor BLF - “buying likelihood of the product presented”.

Third parameter of interest of this study is the WOM intentions, which consisted, based on literature review, on 2 constructs, namely positive valence and content measured by 2 questions each. The same settings exploratory factor analysis was applied and resulted in only one factor that measures general word-of-mouth intentions, and thus was called respectively. Statistics that highlight its appropriateness for further use are highlighted in table 21 below.

Determinant	KMO-sampling adequacy value	Bartlett's sphericity significance
0.024	0.772	<.001

Table 21. Word-of-mouth intentions preliminary explanatory factor analysis (SPSS output)

As a result of the analysis it is possible to proceed further with the calculated factor WOMF called “word-of-mouth intentions”.

Post-hoc analysis of reliability of the calculated scales that were measured as a result of multiplication of the factor matrix coefficients and the answers to the respective measures shows that the scales are reliable, which is highlighted in the table 22 below.

Factor	Cronbach's alpha
Perceived general website attitude (GAF1)	0.925
Perceived website efficiency (GAF2)	0.900
Perceived novelty of the website content (GAF3)	0.777
Buying likelihood (BLF)	0.947
Word-of-mouth intentions (WOMF)	0.928

Table 22. Post-hoc scale reliability analysis for general attitude factor (SPSS output)

Multi-factor ANOVA analysis

We can proceed to the multifactor-analysis followed all its necessary assumptions, namely:

- about the independence of the groups and the corresponding data – two things ensured that the data were independent between the 4 versions of websites analyzed: respondents were asked to complete only one version of the experiment, and that the distribution per version of the experiment was organized randomly - depending on how many additional respondents were needed to make the results representative;
- about group homoscedasticity – we conducted a statistical homoscedasticity analysis using Levene’s test, which showed that the variance between groups is not statistically significantly different;
- about normality of the distribution of the dependent variable – almost all the dependent variables in the form of the obtained factors turned out to be non-normally distributed, except only GAF3, that is the perceived website content novelty, however since ANOVA is robust to non-normality of data, we can rely on the central limit theorem as we have more than 30 observations for each of the subsamples, and since we have enough number of participants per version (at least 45) we can assume that we are measuring continuous data and finally can proceed to the ANOVA analysis.

The perception of the cues in terms of signaling environmental sustainability was checked first. To this end, the results of the tests are highlighted in the table below, which demonstrates the coefficients for the two questions measuring, whether the “website content made people think about environmental sustainability” (MC2) and whether the “website content helps visitors to identify the product as environmentally sustainable” (MC3). Appendix 2 shows the descriptive statistics for the parameters measured, while tables 23-26 highlight ANOVA analyses outputs for general and pair-wise between subject comparisons.

Criteria	Type III sum of squares	Mean square	F	Sig
Website content made people think about environmental sustainability (MC2)	218.527	72.842	22.395	<.001

Table 23. Main ANOVA analysis for the factor MC2 (SPSS output)

Criteria	Type III sum of squares	Mean square	F	Sig
Website content helps visitors to identify the	324.396	108.132	39.550	<.001

product as environmentally sustainable (MC3)				
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Table 24. Main ANOVA analysis for the factor MC3 (SPSS output)

As it was expected, the two cues presented again were perceived as signaling environmental sustainability in two domains, namely nudging people to think about the environment and facilitating the identification of the product presented as environmentally sustainable from the website content.

Criteria	Version I	Version J	Mean difference (I-J)	Sig
Website content made people think about environmental sustainability (MC2)	Both	Visual	0.569	0.711
		Verbal	-0.779	0.309
		Neither	2.315	0.004
	Visual	Verbal	-1.348	<.001
		Neither	1.746	<.001
	Verbal	Neither	3.094	<.001

Table 25. Pair-wise post-hoc ANOVA analysis for the factor MC2 (SPSS output)

The analysis shows that in terms of the website content making people think about environmental sustainability (MC2) there were statistically significant differences between the version with neither of the cues and the rest, however the effect was comparable when it comes to differences between the “both cues” and “visual cue” and “verbal cue” versions. Also, there were statistically significant differences between the versions with visual and verbal cues, more specifically, the version with verbal cue had a more significant positive effect as it has a greater mean (5.045 compared to 3.698).

Criteria	Version I	Version J	Mean difference (I-J)	Sig
Website content helps visitors to identify the product as environmentally sustainable (MC3)	Both	Visual	0.818	0.197
		Verbal	-0.566	0.530
		Neither	3.082	<.001
	Visual	Verbal	-1.384	0.003
		Neither	2.264	<.001
	Verbal	Neither	3.648	<.001

Table 26. Pair-wise post-hoc ANOVA analysis for the factor MC3 (SPSS output)

Regarding the analysis of the fact that the website content helping visitors to identify the product as environmentally sustainable (MC3), the same conclusion might be made in terms of a statistically significant difference of all the versions to the version without cues as well as that there is a statistically significant difference between the visual and verbal cue versions. This time verbal cue again made more significant positive contribution to the dependent variable.

These conclusions are logical and correspond to the theoretical analysis, which showed that verbal cues contribute to more effective persuasion of certain information compared to visual cues since they require more consumers' attention and are perceived as more persuasive than visual symbols or labels.

As for the factors that measure the process of consumers' decision-making as it can be seen from the Appendix 2, there are differences in means of the versions of websites, which should be further tested statistically.

The effect of presence or absence of visual and verbal cues on the consumer decision-making factors was analyzed using one-way ANOVA. The Levene's test results highlight that the "perceived general website attitude" (GAF1), "perceived website efficiency" (GAF2), "perceived novelty of the website content" (GAF3), and "buying likelihood" (BLF) have statistically significant differences in variances, while "word-of-mouth intentions" (WOMF) has equal in-group variance. Therefore, for the first group it is possible to apply Dunnett's T3 test for pair-wise post-hoc analysis, while for the "word-of-mouth intentions" factor we will use Gabriel's test. ANOVA analysis output is provided in tables 27-30, 32-35 and 38-39 below for the main and post-hoc statistical significance differences where we apply Dunnett's T3 test for factors that are different in variances (GAF1-3 and BLF), while Gabriel's test for distributions that have equal variances between the subsamples (WOMF).

Dependent variable	Type III sum of squares	Mean square	F	Sig	R ²
Perceived general website attitude (GAF1)	55.75	18.583	12.267	<.001	0.18

Table 27. Main ANOVA analysis for the factor "perceived general website attitude" (SPSS output)

Dependent variable	Version I	Version J	Mean difference (I-J)	Sig
Perceived general website	Both	Visual	-0.18	0.987

attitude (GAF1)		Verbal	-0.64	0.046
		Neither	0.94	0.009
	Visual	Verbal	-0.46	0.313
		Neither	1.12	0.002
	Verbal	Neither	1.58	<.001

Table 28. Pair-wise post-hoc ANOVA analysis for the factor “perceived general website attitude” (SPSS output)

As it was expected, the introduction of the cues statistically significantly affected the “perceived general website attitude” (GAF1), moreover the introduction of the environmental sustainability cues, and in general, their introduction positively affected the factor, therefore we can accept the hypothesis H1.1. However according to the ANOVA analysis output, we cannot accept the hypotheses H1.2 and H1.3. Indeed, verbal cue version was expected to have a greater effect on the consumer’s positive attitude toward the website than the visual cue, but the corresponding significance index does not allow for confirmation of this hypothesis. However, the highest mean of the factor is observed for the version of the site that has only verbal cue and there was a significant difference between the versions with both cues and with verbal cue, the latter contributing to a greater level of general attitude towards the website. This may be due to the fact that consumers do not believe only in the abstract symbol presented to them that alludes to sustainability. Consumers may think of such symbols as greenwashing, thus they do not perceive it as signaling actual environmental sustainability. Consumers need more convincing proof in a form of a verbal description of this fact. Moreover, it was expected that both cues would contribute more to the positive attitude towards the website compared to the versions of the website with one of the cues, but this hypothesis could not be confirmed either. Perhaps this is due to the fact that consumers do not care how many environmental sustainability cues are present on the site in order for it to affect their attitude. For them verbal cue could be enough to make a decision in favor of the product keeping all other things constant.

Dependent variable	Type III sum of squares	Mean square	F	Sig	R²
Perceived website efficiency (GAF2)	28.736	9.579	7.98	<.001	0.12

Table 29. Main ANOVA analysis for the factor “perceived website efficiency” (SPSS output)

Dependent variable	Version I	Version J	Mean difference (I-J)	Sig
Perceived website efficiency (GAF2)	Both	Visual	0.07	1
		Verbal	-0,42	0.326
		Neither	0.73	0.041
	Visual	Verbal	-0.49	0.10
		Neither	0.67	0.05
	Verbal	Neither	1.15	<.001

Table 30. Pair-wise post-hoc ANOVA analysis for the factor “perceived website efficiency” (SPSS output)

The introduction of cues had a statistically significant effect on “perceived website efficiency” factor (GAF2), namely cues positively contributed to the perceived efficiency of the website in forms of helping users to find useful information about the product, saving shopping time, and making the website easy to use, as expected, therefore, we can accept H2.1. However, it turned out to be that there is no significant difference between the versions with both cues and with one of the cues which was unexpected, thus we reject H2.3, while, on the other hand, as expected, users felt greater efficiency from using the website in the case of the presented verbal cue compared to the version with the visual cue – the difference in mean is more than 0.49, and at the 10% level of statistical significance we would accept H2.2 (p-value is 0.1). However, in our case we are inclined to use an alpha significance level of 5%, therefore we need to conduct an additional t-test to compare the two versions, the output of which is presented in table 31.

T	DF	Sig. (two-sided)	Mean difference	Std. Error Difference
-2.408	85	0.018	-0.487	0.202

Table 31. Independent samples t-test, factor GAF2 visual vs verbal cue versions

The output of the test shows statistically significant difference between the two versions of the website with only verbal and only visual cue at 5% level of significance where the verbal cue contributed to a greater extent to the perceived efficiency of the website, thus we can accept H2.2.

Dependent variable	Type III sum of squares	Mean square	F	Sig	R ²

Perceived novelty of the website content (GAF3)	110.613	36.871	14.296	<.001	0.20
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Table 32. Main ANOVA analysis for the factor “perceived novelty of the website content” (SPSS output)

Dependent variable	Version I	Version J	Mean difference (I-J)	Sig
Perceived novelty of the website content (GAF3)	Both	Visual	0.24	0.989
		Verbal	0.05	1
		Neither	1.96	<.001
	Visual	Verbal	-0.19	0.994
		Neither	1.72	<.001
	Verbal	Neither	1.91	<.001

Table 33. Pair-wise post-hoc ANOVA analysis for the factor “perceived novelty of the website content” (SPSS output)

Factor “perceived novelty of the website content” (GAF3), which is beyond interest in terms of hypothesis testing because it was not originally highlighted based on the literature review, was positively affected by the introduction of the cues signaling environmental sustainability. However, the impact of implementing environmental sustainability cues on the website can also be analyzed and described. In general, the website content was perceived as new and innovative in the eyes of the experiment participants, which is logical given that such cues are rarely used on websites, and their use for environmental sustainability signaling is not currently happening. However, this does not differ between the versions with one of the cues. This fact is an interesting observation, because in the competition of marketplaces these days, differentiation is very important and gives a competitive advantage, where the perceived novelty of content is one of the possible sources of this competitive advantage.

Dependent variable	Type III sum of squares	Mean square	F	Sig	R ²
Buying likelihood of the product presented (BLF)	56.656	18.885	12.182	<.001	0.18

Table 34. Main ANOVA analysis for the factor “buying likelihood” (SPSS output)

Dependent variable	Version I	Version J	Mean difference (I-J)	Sig
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Buying likelihood of the product presented (BLF)	Both	Visual	-0.05	1
		Verbal	-0.65	0.072
		Neither	0.97	0.007
	Visual	Verbal	-0.59	0.097
		Neither	1.02	0.003
	Verbal	Neither	1.62	<.001

Table 35. Pair-wise post-hoc ANOVA analysis for the factor “buying likelihood” (SPSS output)

The third factor of interest in terms of hypothesis testing, namely “buying likelihood of the product presented” (BLF), was statistically significantly positively influenced by the introduction of the sustainability signaling cues which allows us to accept hypothesis H3.1. What is also important is that there was a statistically significant difference between the pairs of versions with both cues and with only verbal cue and between a pair of visual and verbal cue options, however again, on the 10% level of significance (p-values are 0.072 and 0.097 respectively), thus we need to dig deeper into the t-test pair-wise comparisons. Tables 36 and 37 show the results of the t-test for comparing the pairs of versions.

T	DF	Sig. (two-sided)	Mean difference	Std. Error Difference
-2.551	87	0.012	-0.647	0.254

Table 36. Independent samples t-test, factor BLF both cues vs verbal cue versions

T	DF	Sig. (two-sided)	Mean difference	Std. Error Difference
-2.462	85	0.016	-0.594	0.241

Table 37. Independent samples t-test, factor BLF visual vs verbal cue versions

The t-tests showed that there is statistically significant difference between the pairs of “both cues” and “verbal cue” and between “visual cue” and “verbal cue” versions and the version with the verbal cue contributed more positively to the consumers’ buying likelihood. This is an interesting observation because, as it was mentioned for the general attitude factor, consumers may associate the visual cue with greenwashing, which would be less of an incentive for them to buy the product presented on such a website compared to a version with the verbal cue only that might be perceived as a more reliable environmental sustainability signaling cue,

and thus contributing to a greater buying likelihood. Thus, we can accept hypothesis H3.2, however reject H3.3 because there is no significant difference between the options with both cues and with visual cue.

Dependent variable	Type III sum of squares	Mean square	F	Sig	R ²
Word-of-mouth intentions (WOMF)	59.207	19.736	7.802	<.001	0.12

Table 38. Main ANOVA analysis for the factor “word-of-mouth” (SPSS output)

Dependent variable	Version I	Version J	Mean difference (I-J)	Sig
Word-of-mouth intentions (WOMF)	Both	Visual	-0.09	1
		Verbal	-0.32	0.915
		Neither	1.21	0.003
	Visual	Verbal	-0.24	0.981
		Neither	1.30	0.002
	Verbal	Neither	1.53	<.001

Table 39. Pair-wise post-hoc ANOVA analysis for the factor “word-of-mouth” (SPSS output)

Final factor of interest of this master’s thesis is the “word-of-mouth intentions” (WOMF) towards the website in response to the introduction of the environmental sustainability signaling cues. In general, the introduction of the cues statistically significantly positively affected consumers’ willingness to spread positive word-of-mouth around the website and experience of making purchases from it. However, there were no statistically significant differences between the versions with both cues and with only one of them and between the verbal cue and with visual cue, therefore we can accept H4.1, while hypotheses H4.2 and H4.3 should be rejected.

3.3 Verification of the research hypotheses

To summarize, the analysis confirmed half of the hypotheses, which can be seen from the table 40.

Hypotheses	Formulation	Status
H1.1	Introduction of environmental sustainability cues into a website will	Accept

	increase consumers' general attitude towards the website compared to a version of the same website without the cues	
H1.2	Introduction of a verbal environmental sustainability cue (statement about the packaging ease of recycling) into a website will increase the consumers' general attitude towards the website compared to a version of the same website with a visual cue only (the Blue planet symbol)	Reject
H1.3	Introduction of both verbal and visual environmental sustainability cues (statement about the packaging ease of recycling and the Blue planet symbol respectively) into a website will increase the consumers' general attitude towards the website compared to a version of the same website with only one of the cues presented	Reject
H2.1	Introduction of environmental sustainability cues into a website will increase the consumers' website efficiency perception compared to a version of the same website without the cues	Accept
H2.2	Introduction of a verbal environmental sustainability cue (statement about the packaging ease of recycling) into a website will increase the consumers' website efficiency perception compared to a version of the same website with a visual cue only (the Blue planet symbol)	Accept
H2.3	Introduction of both verbal and visual environmental sustainability cues (statement about the packaging ease of recycling and the Blue planet symbol respectively) into a website will increase the consumers' website efficiency perception compared to a version of the same website with only one of the cues presented	Reject
H3.1	Introduction of environmental sustainability cues into a website will increase the consumers' willingness to buy the product presented on the website compared to a version of the same website without the cues	Accept
H3.2	Introduction of a verbal environmental sustainability cue (statement about the packaging ease of recycling) into a website will increase the consumers' willingness to buy the product presented on the website compared to a version of the same website with a visual cue only (the Blue planet symbol)	Accept
H3.3	Introduction of both verbal and visual environmental sustainability cues (statement about the packaging ease of recycling and the Blue planet symbol respectively) into a website will increase the consumers'	Reject

	willingness to buy the product presented on the website compared to a version of the same website with only one of the cues presented	
H4.1	Introduction of environmental sustainability cues into a website will increase the consumers' word-of-mouth intentions towards the website compared to a version of the same website without the cues	Accept
H4.2	Introduction of a verbal environmental sustainability cue (statement about the packaging ease of recycling) into a website will increase the positive word-of-mouth intentions towards the website compared to a version of the same website with a visual cue only (the Blue planet symbol)	Reject
H4.3	Introduction of both verbal and visual environmental sustainability cues (statement about the packaging ease of recycling and the Blue planet symbol respectively) into a website will increase the positive word-of-mouth intentions towards the website compared to a version of the same website with only one of the cues presented	Reject

Table 40. Verification of the research hypotheses (created by the author)

4. DISCUSSION AND CONCLUSION

4.1 Main findings

This study was aimed at understanding how environmental sustainability signaling at e-retail environment in forms of visual and verbal cues influences consumers' behavior, namely buying likelihood of the FMCG product presented, shapes attitude towards the website, and affects the word-of-mouth intentions around the website shopping experience.

In this paper we have reviewed the literature on environmental sustainability and the marketing of consumer products in this regard. Next, we examined trends in consumer choice and increasing comfort level requirements for shopping, one of which is the rapid development of electronic sales channels for FMCG goods, which we analyzed in more detail. After that we studied how different content – verbal, visual and their combinations are perceived by website visitors and, what value each of them has. There was also an analysis of the literature in the field of consumer choice, where we analyzed the decision-making process, the concept of consumer perception, and signaling and sensory marketing theories. The last step before formulating research hypotheses was a more detailed analysis of the literature in the areas of buying likelihood and post-purchase behavior – the willingness to share word-of-mouth about the shopping experience.

In general, the main experiment showed that the introduction of the environmental sustainability signaling cues on the website has an overall positive impact on users' attitudes. Indeed, it stimulated an increase in consumers' attitudes toward the website presented, as well as a greater incentive to share the word-of-mouth regarding the buying experience on this website, and facilitated the perceived product buying likelihood, which Olsen et al. (2014), noted as an unexplored area of research. Moreover, the study revealed an interesting fact, although expected after analyzing the theory, that the verbal cue stimulates response in consumers to a greater extent than the visual cue (Lindh, Olsson, & Williams, 2016). Indeed, the verbal cue and both cues were more likely to make people think about environmental sustainability, but there was no difference between the two options. This might happen because as El Dehaibi et al. (2019), claim that environmental sustainability is a complex concept, which can be interpreted in different ways, thus requires clear verbal explanation. In terms of easing the process of identification of the product presented on the website as environmentally sustainable, the option with the verbal cue outperformed the others, but the option with both cues.

Regarding the effect of environmental cues on consumer choice, the buying likelihood of the product presented on the website was positively influenced by the introduction of the cues, and the main effect was due to the verbal information presented. Moreover, there was a

difference between the “visual cue” and “verbal cue” options, however only on the 10% level of significance, thus with a greater possibility of committing the type II error.

Next, the cues presented did increase the overall attitude of visitors to the website as well as the website’s perceived efficiency and content novelty. Overall, visitors’ general attitude toward the website has seen a positive effect from the introduction of visual and verbal cues, however there was no difference between the three versions containing different combinations of cues. Regarding the websites’ perceived efficiency, the cues positively affected this factor, and the verbal cue contributes the most, however with a greater possibility of type II error. This corresponds very much with the theory that is covered in the literature review part, namely that consumer goods are low-involvement products for the choice of which consumers are not willing to spend a lot of time, especially when they use digital sales channels (Seitz, 2013). That is why visual cues can be used to optimize consumers’ time and effort. Additionally, the website version with both cues was perceived as effective as the version with one of the cues. Moreover, web page visitors were more likely to note the novelty of the content presented on the web page when the cues were presented.

Last, but not least, the consumers’ intention to spread positive word-of-mouth around the website was affected positively by the introduction of the cues, and the verbal cue version of the website contributes the most to the increase in consumers’ intention of sharing word-of-mouth.

4.2 Theoretical contributions

This study expanded existing understanding of how environmental sustainability signaling cues influence individuals’ decision-making process regarding the purchase of packaged consumer goods in a rapidly growing and under-researched e-retail context. More specifically, it experimentally proved how visual and verbal cues about environmental sustainability presented on a website influence overall attitudes toward that site, user intention to share positive word-of-mouth about the experience of visiting it, and propensity to buy the product presented. Moreover, the paper allows us to close such research gaps as the analysis of the influence of distinct product attributes signaling environmental sustainability, namely the clear verbal statement about the ease of packaging recycling and the abstract graphical symbol nudging consumers to think about the environment, on individuals’ purchase decisions, which was mentioned by Zeng et al. (2021), as well as the consideration of environmental sustainability signaling in the e-retail environment via an experimentation methodology (Lee, Bae & Kim, 2019). Moreover, the work is generalizable to most FMCG laundry detergents and other

chemical products that are characterized as similar in terms of consumers' decision-making, which was said to be important by Boulding & Kirmani (1993).

The study conducted allows us to contribute to the understanding how verbal cues are more important in explaining more complex concepts such as environmental sustainability and form more comprehensive conclusions about the product (Lindh, Olsson, & Williams, 2016) compared to visual cues, which only push consumers to general conclusions about a product's environmental sustainability which corresponds to the current research (Jain, 2019).

Future studies would benefit from determining how much time an e-retail website user devotes to examining the cues presented, thus would allow to analyze the extent to which an individual is involved to the product selection process. The answers to these questions can be obtained by using a more advanced method of experimentation compared to the existing research in this area – eye-tracking equipment for e-commerce website users (Clement, Kristensen, & Grønhaug, 2013).

Although there are limitations in the research, this work can provide valuable guidance for brand managers and people working with consumer e-retail platforms, and can be one of the starting points for further research in the field of consumer behavior in the context of e-retail.

4.3 Managerial implications

From a managerial perspective, this study uncovered the potential of using environmental sustainability signaling on a website through verbal and visual cues. Various consumer cues, including those that signal environmental sustainability, are a common marketing and product differentiation tool used in the promotion of consumer products. Indeed, labels and markings about sustainability presented on product packaging have become an integral part of product promotion, that is especially important for such homogeneous product category as FMCG and laundry detergents where a wide range of alternatives with similar characteristics keep them from standing out. Moreover, such important product information as user experience shown in the online shopping environment can be expanded to include information about environmental sustainability of the product, which might be of vital importance for certain consumers who care about their personal carbon footprint. Thus, this study proves that such information increases the product buying likelihood, positively contributes to the overall website attitude and its perceived performance as well as enhances the word-of-mouth intentions about the website shopping experience.

A final interesting fact is that website users are more likely to spread the word of mouth about the shopping experience on the site with the cues presented, which may also be related to

the perceived innovativeness of the website's content. This factor can also be largely important for brand managers especially those who are transforming the perception of a particular brand from conventional to environmentally sustainable.

As a result, we can present a list of recommendations that can be used by other companies selling FMCG products online and e-retail platform managers who wish to improve the user experience and relevance of product information in terms of environmental sustainability:

- To increase the overall attitude of the website, managers can introduce visual signs of environmental sustainability, as well as markings of other important aspects related to the consumption or use of the product and by doing this target a special audience or use it as an excellent differentiation technique. This tactic has long been used by marketers on product packaging, but websites use such cues to a lesser extent (Ampuero & Vila, 2006);
- In order to enhance the level of trust of consumers into the information signaling environmental sustainability, promotional professionals should look closely at verbal descriptions. This can occur because labels that often spread vague information about sustainability can be perceived as greenwashing, in other words consumers need a clear verbal description of the product environmental sustainability fact, which corresponds to what Shrum, McCarty & Lowrey, 2015 found out in their research;
- For raising the spreading word-of-mouth intentions effect around the website shopping experience, product managers can use both visual and verbal cues since their effect on the WOM intentions is almost indifferent between the three versions of websites. This research-based recommendation correlates with the findings that electronic service content, site design, and ability to interact affect word-of-mouth intention (Roy, Lassar, & Butaney, 2014);
- Finally, with the view to increase the buying likelihood of the product presented, marketers can introduce both visual and verbal environmental sustainability signaling cues, however a more influential factor is the verbal description. This is an important aspect for some people who are more concerned about the carbon footprint, because such information can help to make a choice in favor of a particular product option, and presented verbally is perceived as more trustworthy.

4.4 Limitations and directions for future research

This study covered a product page where the effect of visual and verbal cue manipulation was studied and conclusions were drawn. In further research, the object of the study may not be an individual product page, but a page with a category and a variety of products presented on the page. In other words, it is possible to study how different product cues about environmental sustainability affect the attention of e-retail website users within an entire product category.

Another limitation of this study is the selected product category. Laundry detergents represent only one example of FMCG products related to home goods. Future research could find the same patterns, but with other personal care products. Moreover, the product category can be replaced in order to study the peculiarities of a more frequently bought FMCG products such as foods and beverages and how environmental sustainability signaling cues contribute to their selection process in the online environment.

Another limitation and direction for further research could be consideration of different price changes in response to the introduction of diverse environmental sustainability signaling cues.

CONCLUSION

The development of consumer sales channels – the use of e-retail, coupled with increasing consumer awareness and concern about the environment are contributing to an increase in consumer behavior and decision-making studies of the perception of this new paradigm of e-shopping. Moreover, due to the homogeneity of the properties of consumer products and the limited functionality of their marketing in the online context, managers working with the promotion of products in the online environment have little opportunity to differentiate offers – the impact on the potential customers is limited. One solution to this problem is to stimulate the perception of e-retail sales channels' differentiation through various cues signaling the environmental sustainability of the e-retail environment and the products that are sold in it.

Therefore, the aim of this study is to examine the impact of the introduction of cues perceived as signaling environmental sustainability on the purchase decisions of consumers of packaged goods in the online retail environment. By cues we mean various signals that communicate certain information to consumers, and in our case it is a specially designed visual label and a verbal statement placed in the section describing the characteristics of the product.

With the view to achieve this goal, the research started from the analysis of the theoretical background in the form of scientific articles and books, profile reports and conference materials to form the basis for the practical part of the study, the outcome of which is the first chapter of the paper. More specifically, the consumer product marketing literature was reviewed, the specifics of selling products through online channels were examined, the literature on consumer behavior, cues signaling theory, and sensory marketing were analyzed, and aspects of consumer behavior in the areas of buying likelihood and intention to share word-of-mouth regarding shopping experience were investigated.

Much attention has been paid to the peculiarities of marketing of consumer goods, the main of which is the low involvement of consumers in the process of choice due to the homogeneity of product characteristics, the high frequency of their purchases and availability of a large number of alternatives as well as the low cost of their purchase. It was also highlighted that marketers working in online sales channels have at their disposal a much more limited number of tools to influence consumer behavior – they have access only to one of the five senses, namely vision, and the distance between buyer and seller is considerable. Moreover, an important feature of shopping in the online environment is that consumers tend to spend as little time and effort as possible on the shopping process: they use simplified methods of decision-making and trust their previous experience and the word-of-mouth effect. Moreover, it was determined in the section with the theory of cues signaling that verbal and visual cues are used

for different purposes and are suitable for different stages of consumer choice. It was concluded that visual cues in the form of graphic objects, symbols and pictures are perceived by individuals faster, require less cognitive effort to review and analyze, and that they are generally easier to perceive. In other words, they are used to increase the effectiveness of marketing tools in online sales channels and simplify the process of making purchases. On the contrary, verbal signals in the form of verbal descriptions are used to explain more complex concepts and characteristics of products. One such characteristic is the environmental sustainability.

The second chapter detailed the methodology of the study, describing the reasons and procedure for using the experiment, the parameters manipulated and the variables studied, as well as the methods of data analysis. The experiment was conducted in two stages. In the first, preliminary stage, the parameters of manipulation – visual and verbal cues signaling environmental sustainability were determined. The former cue is a specially designed, unused in online sales channels “the Blue planet symbol” in vector format, which represents the care for the planet. It does not explicitly declare sustainability, but rather encourages or nudges users to think about the environment. The second cue, on the other hand, was more pronounced in terms of signaling environmental sustainability – a verbal “statement about the packaging ease of recycling”. Both cues were statistically tested for perceived sustainability signaling, and both were proven to be perceived as such. Moreover, it was determined that verbal cues have more significant effect on the consumers’ perception of environmental sustainability, they contribute more to the ease of finding product information and inspire more confidence in consumers.

The main experiment was conducted to analyze how the chosen environmental sustainability signaling cues influence the consumers’ decision-making in the online environment context. For the main experiment, web pages with different manipulations of the environmental sustainability cues defined in the previous step were specially created, and participants were then asked to fill out a feedback form about their experience of going through the experimental websites. In the end, 180 people participated in the main experiment, with around 45 respondents for each of the 4 versions of the experiment.

The third part of the paper analyzed the collected data on the respondents’ experience of going through the experimental web pages and formulated conclusions. As a result, it was determined that the environmental sustainability signaling cues presented indeed have a positive effect on consumer attitudes toward the website, its perceived effectiveness in helping consumers make choices, encouraging users to share the word-of-mouth about their shopping experience on the presented website, and positively influencing their buying likelihood of the product presented. Moreover, verbal signaling has been proven to have a greater positive effect.

The final section of the paper covers recommendations for the practice of environmental sustainability signaling, the scientific contributions made as a result of the study, and the limitations of the paper as well as the future directions for further research were formulated.

As a result of the study, the goal of the work, that is examine the impact of the introduction of cues perceived as signaling environmental sustainability on the purchase decisions of consumers of packaged goods in the online retail environment was fully achieved, and answers to all the research questions were obtained. More specifically, we answered how do cues signaling environmental sustainability of consumer packaged goods presented in the online retail environment can influence consumers' willingness to buy the product, attitude towards the e-retail website presented and word-of-mouth intentions about the e-retail website shopping experience that turned out to be positive.

Indeed, the rapid development of technologies that increase the comfort level of shopping in the form of e-retail services, as well as the increasing importance of environmentally sustainable consumer choice stimulates the use of more and more modern methods to differentiate the shopping process, one of which is the signaling of e-retail context environmental sustainability. The use of this method can not only bring marketplaces to a new level of compliance with the needs of modern consumers, but also contribute to sustainable development and increase environmental literacy of people.

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APPENDIX

Appendix 1 – pre-test

Pre-test survey questions

1. Perceived sustainability of a product with the given cues presented (Zeng, Durif, & Robinot, 2021):
 - a. A product with this description is environmentally sustainable
 - b. A product with this description is easily recyclable
 - c. This product description displays and describes the product it contains and additional messages that it is environmentally sustainable
 - d. This product description enables and promotes product category identification to environmentally sustainable
 - e. This product description includes better information on how the product can be disposed of safely
2. Ease and reliability of the cues perception:
 - a. I carefully studied the product description
 - b. It was easy for me to get product information from the description presented
 - c. I trust the product description provided
3. The degree to which the respondent is attentive towards the cues provided:
 - a. I noticed the visual signs about the environmental sustainability of the product
 - b. I noticed the verbal information about the environmental sustainability of the product
4. Knowledge of the product with the description provided:
 - a. I saw similar product descriptions
 - b. This product description is new to me
5. Purchase involvement scales (Mittal, 1989):
 - a. In selecting from the many types and brands of this product available in the market. I would not care at all as to which one I buy (1), or I would care a great deal as to which one I buy (7)
 - b. There is very little difference between the different brands in this product category
6. General checks:
 - a. About the product (Shimp & Bearden, 1982):
 - i. I am confident that the laundry detergent presented would work effectively
 - ii. Considering the description provided, the purchase of the detergent presented would not be risky for me
 - b. About the website (Eroglu, Machleit, & Davis, 2003):
 - i. I was satisfied with my shopping experience at the site
 - ii. Given a choice, I would not go back to the site
7. Consumers' environmental concern (Laroche, Bergeron, and Barbaro-Forleo, 2001):

The Earth is a closed system where everything eventually returns to normal, so I see no need to worry about environmental state

Compared with other people I have good knowledge on how to live sustainably, for instance recycle wastes

I am worried about the impact on the environment of everyday objects made of non-recyclable materials

Packaging recycling will reduce pollution

8. What is your age:
- Younger than 18
 - 18-24
 - 25-29
 - 30-34
 - 35-39
 - 40-44
 - 45-49
 - 50-54
 - 55 and older

The semantic differential (SD) scales were used with the options to make the scales ordinal:

- Strongly disagree
- Disagree
- Rather disagree
- Cannot answer that definitively
- Rather agree
- Agree
- Strongly agree

Pre-test experiment object design

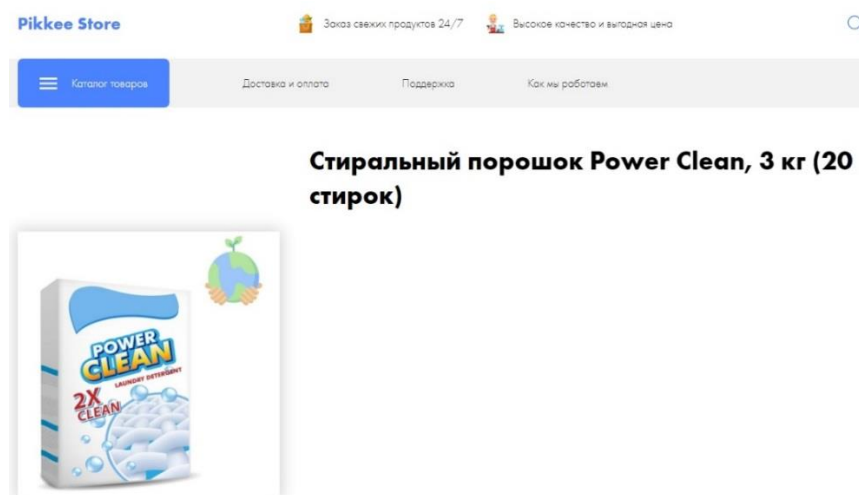


Figure 15. Pretest visual "cue" version

Стиральный порошок Power Clean, 3 кг (20 стирок)

Вес: 3 кг
Кол-во стирок: 20
Срок годности, условия хранения: 1080 д., от 0С* до 25С*
Назначение: для всех видов тканей, для цветного и белого белья, подходит для стирки детской одежды
Особенности: гипоаллергенный, упаковку легко сдать на переработку

Figure 16. Pretest verbal “cue” version

Стиральный порошок Power Clean, 3 кг (20 стирок)



Figure 17. Pretest visual “no cue” version

Стиральный порошок Power Clean, 3 кг (20 стирок)

Вес: 3 кг
Кол-во стирок: 20
Срок годности, условия хранения: 1080 д., от 0С* до 25С*
Назначение: для всех видов тканей, для цветного и белого белья, подходит для стирки детской одежды
Особенности: гипоаллергенный, подходит для ручной и автоматической стирки

Figure 18. Pretest verbal “no cue” version

Appendix 2 – main experiment results analysis

Main experiment survey questions

1. BL1-3, Buying likelihood:
 - a. I am willing to buy this laundry detergent (Wiedmann, Hennigs, Behrens S., & Klarmann, 2014);
 - b. If I would need laundry detergent in the future, I would purchase the product presented (Wu, 2013);
 - c. If the product presented is available, I would buy it (Kim & Chung, 2011);
2. Attitude towards the website:
 - a. GA1-4, General attitude:
 - i. My attitude towards the website is positive (Machleit and Wilson, 1988);
 - ii. Considering the content provided on the webpage, I prefer this website for making purchases online (Lin, 2007);
 - iii. I would be satisfied with my shopping experience at the website (Eroglu, Machleit, & Davis, 2003);
 - iv. Given a choice, I would use the website again (Eroglu, Machleit, & Davis, 2003);
 - b. PU1-3, Perceived usefulness (Lin, 2007):
 - i. The content presented on the website helped me in studying the information about the product better compared to other online stores;
 - ii. Using this website helped me to save time while making purchases;
 - iii. Using this website would provide access to useful shopping information;
 - c. PP1-2, Perceived performance (Zeithaml et al., 2002):
 - i. This website is convenient;
 - ii. This website enables me to easily find product information;
 - d. DI1-6, Website design influence (Eroglu, Machleit, & Davis, 2003):
 - i. The website presented contains content that is new to me compared to other e-retailers;
 - ii. I like the overall design of this retail website;

- iii. This website contains innovative features compared to other e-retail marketplaces (Lin, 2007);
 - iv. Once you were on the site, how much did you enjoy exploring its contents? (1 - didn't like it at all / 7 - liked it a lot);
 - v. How much time would you like to spend on this site? (1 - very little time / 7 - a lot of time);
 - vi. How much would you like to use or avoid this site while shopping? (1 - avoid / 7 - use);
3. Word-of-mouth intentions:
- a. PV1-2, Positive valence (Goyette, Ricard, Bergeron, & Marticotte, 2010):
 - i. I would recommend this website to my friends/colleagues;
 - ii. I would speak of positive experiences about this website to friends/colleagues;
 - b. C1-2, Content (Goyette, Ricard, Bergeron, & Marticotte, 2010):
 - i. I would discuss with others the content contained on this website;
 - ii. I would tell others about the content contained on this website;
4. MC1-5, Manipulation check:
- a. For me design attributes of online stores are important, such as labels, highlights, and banner;
 - b. The content of the website made me think about environmental sustainability;
 - c. The content provided on the website contributes to the product's identification to a category of sustainable;
 - d. I noticed the visual sign about the environmental sustainability;
 - e. I noticed the verbal description about the environmental sustainability;
5. Moder1, What people think of environmentally sustainable chemical products (possible moderation):
- a. Environmentally sustainable household chemical products are less effective than conventional alternatives;
6. E1-2, Consumers' environmental attitudes:
- a. Expertise in buying environmentally sustainable products (Kim & Chung, 2011):
 - i. I know many details about what products are considered as environmentally sustainable;

- ii. Please report the number of environmentally sustainable products purchased in the past three month (from “have not purchased” to “purchased a lot”);
 - b. GC, General consumer concern on environmental damages (de Magistris & Gracia, 2008):
 - i. Unless we do something, environmental damage will be irreversible;
 - c. IEP1-2, Individual environmental practices (de Magistris & Gracia, 2008):
 - i. I practice environmental conservation tasks;
 - ii. I recycle my garbage in different containers;
 - d. EPI1-2, Environmental protection intentions (Chen & Chai, 2010):
 - i. If all of us, individually, made a contribution to environmental protection, it would have a significant effect;
 - ii. Everyone is responsible for protecting the environment in their everyday life;
- 7. Socio-demographic questions:
 - a. Gender
 - i. M;
 - ii. F;
 - b. Age: ____
 - c. Who in your family usually makes decisions about household products?
 - i. Me;
 - ii. Not me (parents, partner, etc.);
 - iii. It depends on the product;
 - d. Indicate your level of education (are you studying or have you already graduated)
 - i. Secondary
 - ii. Secondary special
 - iii. Bachelor's / Specialist
 - iv. Master's Degree
 - v. Aspirant
 - vi. Other: ____
 - e. Please describe your family's financial situation or, if you live alone, your financial situation

- i. “We can barely make ends meet. We don't even have enough money for groceries.”
 - ii. “We have enough for groceries, but it is difficult to buy clothes.”
 - iii. “We have enough money for groceries and clothes, but we have to save to buy a refrigerator or furniture.”
 - iv. “We can easily buy a refrigerator and furniture, but we have to save for more.”
 - v. “We can afford to buy a car, an apartment, and more.”
8. If you want to participate in the drawing of OZON gift certificates, specify your e-mail address. I will send a certificate to it in case you win. PS please don't forget to submit the form by clicking on the button below.

Participants' descriptive statistics

Website version	Female. %	Mean age (SD)	Decisions	N of respondents
“both cues”	56	26.2 (7)	Myself – 46.7% Not myself – 24.4% Product-specific – 28.9%	45
“visual cue”	52.3	24.09 (4.7)	Myself – 50% Not myself – 20.5% Product-specific – 29.5%	44
“verbal cues”	53.3	25.18 (5.5)	Myself – 48.9% Not myself – 22.2% Product-specific – 28.9%	45
“no cues”	54.3	24.04 (4.9)	Myself – 37% Not myself – 23.9% Product-specific – 39.1%	46
Total	53.9	24.87 (5.6)	Myself – 45.6% Not myself – 22.8% Product-specific – 31.7%	180

Table 41. Gender and age descriptive statistics (SPSS output)

Website version	Education. %	Financial status. %
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“both cues”	Secondary – 0 Secondary professional – 8.9 Bachelors – 33.3 Masters – 57.8	Low – 0 Lower mid – 11.1 Middle – 57.8 Upper mid – 28.9 High – 2.2
“visual cue”	Secondary – 2.3 Secondary professional – 18.2 Bachelors – 36.4 Masters – 43.2	Low – 4.5 Lower mid – 11.4 Middle – 47.7 Upper mid – 36.4 High – 0
“verbal cues”	Secondary – 4.4 Secondary professional – 15.6 Bachelors – 37.8 Masters – 42.2	Low – 0 Lower mid – 8.9 Middle – 46.7 Upper mid – 40 High – 4.4
“no cues”	Secondary – 2.2 Secondary professional – 17.4 Bachelors – 45.7 Masters – 34.8	Low – 0 Lower mid – 8.7 Middle – 47.8 Upper mid – 41.3 High – 2.2
Total	Secondary – 2.2 Secondary professional – 15 Bachelors – 38.3 Masters – 44.4	Low – 1.1 Lower mid – 10 Middle – 50 Upper mid – 36.7 High – 2.2

Table 42. Education and financial status descriptive statistics (SPSS output)

Factor and ANOVA analysis descriptive statistics

Criteria	Version	Mean	Standard deviation	N
Website content made people think about environmental sustainability (MC2)	Both	4.27	2.168	45
	Visual	3.70	1.871	43
	Verbal	5.05	1.67	44
	Neither	1.95	1.378	41

	Total	3.77	2.113	173
Website content helps visitors to identify the product as environmentally sustainable (MC3)	Both	4.91	1.743	45
	Visual	4.09	1.862	43
	Verbal	5.48	1.663	44
	Neither	1.83	1.263	41
	Total	4.12	2.138	173

Table 43. MC2 and MC3 descriptive statistics (SPSS output)

Visual cue	Verbal cue	N	Perceived general website attitude (GAF1)		Perceived website efficiency (GAF2)		Perceived novelty of the website content (GAF3)		Buying likelihood (BLF)		Word-of-mouth intentions (WOMF)	
			Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
1	1	45	4.86	1.29	5.24	1.26	4.39	1.86	5.14	1.49	4.46	1.70
	0	43	5.04	1.32	5.17	1.07	4.15	1.72	5.19	1.39	4.55	1.66
0	1	44	5.5	0.87	5.65	0.79	4.34	1.40	5.79	0.78	4.78	1.33
	0	41	3.92	1.38	4.50	1.19	2.43	1.36	4.17	1.18	3.25	1.63
Total		173	4.85	1.34	5.15	1.16	3.85	1.78	5.09	1.36	4.28	1.68

Table 44. Descriptive statistics for decision-making factors (SPSS output)