



**VILNIUS UNIVERSITY
BUSINESS SCHOOL**

VILNIUS UNIVERSITY BUSINESS SCHOOL
DIGITAL MARKETING

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THE FINAL MASTER'S THESIS (PROJECT)

<i>Skaitmeninio sensorinio marketingo poveikis vartotojų pirkimo ketinimams</i>	<i>The Impact of Digital Sensory Marketing on Consumer Purchase Intentions</i>
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Vilnius, 2026

SUMMARY

VILNIUS UNIVERSITY BUSINESS SCHOOL DIGITAL MARKETING
STUDY PROGRAMME

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THE IMPACT OF DIGITAL SENSORY MARKETING ON CONSUMER PURCHASE INTENTIONS

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Nazarov Master's thesis (project) was prepared in Vilnius, in 2026

Scope of Master's thesis (project) – 57 pages.

Number of tables used in the FMTP - 7
pcs.

Number of figures used in the FMTP - 6
pcs.

Number of bibliography and references - 15
pcs.

The FMTP described in brief:

The master's thesis is devoted to the study of the impact of sensory marketing on the formation of consumers' purchase intentions in the digital environment. The current stage of market relations development is characterized by a high level of competition among brands and rapid digitalization of marketing communications, as a result of which traditional tools of consumer influence are gradually losing their effectiveness. Under these conditions, companies are forced to seek new approaches to audience interaction that are capable of forming emotional connections and stimulating behavioral responses, in particular the intention to make a purchase.

One such approach is sensory marketing, which is based on influencing consumers' sensory perception. While sensory stimuli have long been used in physical environments, their application in the digital space requires additional scientific justification. This thesis combines a theoretical analysis of the sensory marketing concept with an empirical study of its implementation in the online environment, with a particular focus on visual and auditory stimuli, as well as the consistency of the brand's sensory image across different digital channels.

The research problem lies in the insufficient number of empirical studies that comprehensively explain the impact of digital sensory stimuli on emotional brand perception, trust, and consumers' purchase intentions in the digital environment, as well as in the lack of a unified approach to assessing the effectiveness of sensory marketing in online communications.

The object of the research is sensory marketing as a modern concept of influencing consumer perception and behavioral responses in the digital environment.

The subject of the research is the impact of sensory marketing stimuli on the formation of consumers' purchase intentions under conditions of digital interaction.

The purpose of the master's thesis is to examine the impact of digital sensory stimuli on consumers' purchase intentions and to identify effective strategies for applying sensory marketing in the online environment.

To achieve this purpose, the following research tasks were set:

- to analyze the theoretical foundations, stages of formation, and evolution of sensory marketing, as well as the specifics of its adaptation to the digital environment;
- to systematize the types of digital sensory stimuli and reveal the mechanisms of their influence on consumer perception and emotional responses;
- to generalize modern approaches to the application of digital sensory marketing using brand examples;
- to empirically investigate the impact of digital sensory stimuli on the formation of consumers' purchase intentions using survey methods and expert interviews;
- to develop practical recommendations for companies regarding the effective use of digital sensory stimuli to enhance purchase intentions and strengthen consumer loyalty.

The research employed analysis and synthesis of scientific sources, comparison and systematization of theoretical approaches, case study analysis, expert interviews, an online sociological survey of consumers, as well as methods of statistical data processing, including descriptive statistics, correlation analysis, and the index method.

The empirical study was conducted based on the results of a sociological survey of consumers and expert interviews. The findings indicate that visual sensory stimuli, particularly website design, color schemes, and product photo and video content, have a significant impact on positive emotional brand perception, increased trust, and the formation of online purchase intentions. A statistically significant relationship between emotional perception of digital content and brand trust was identified. Auditory sensory stimuli demonstrated an ambiguous nature of influence, combining positive, neutral, and negative emotional reactions. It was also found that the consistency of the brand's sensory image across different digital channels positively affects the formation of consumer loyalty.

The results of the master's thesis confirm the effectiveness of sensory marketing as a tool for influencing consumer behavior in the digital environment. Visual sensory stimuli exert the strongest impact on purchase intentions, while auditory elements require balanced

and contextually justified application. The consistency of the brand's sensory image contributes to increased trust, the formation of loyalty, and consumers' readiness for repeated interaction with the brand.

The results of the master's thesis have been published ...

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INTRODUCTION

The current stage of development of market relations is characterized by a high level of competition between brands and significant information overload in the digital environment. Under such conditions, traditional marketing tools are gradually losing their effectiveness, as consumers are exposed to a large volume of advertising messages on a daily basis, which complicates the process of capturing their attention and forming stable purchase intentions. This situation necessitates the search for new approaches to marketing communication that focus on emotional engagement and deeper brand perception. One such approach is sensory marketing, which is based on the use of sensory stimuli to influence consumers' perception, evaluation, and behavior. Scientific research confirms that engaging the human senses plays a crucial role in shaping consumer experience and can significantly affect purchase-related decisions (Krishna, 2012).

Sensory marketing becomes particularly relevant in the digital environment, where direct physical interaction with a product is not possible. In this context, digital sensory stimuli— especially visual and auditory elements – serve as key tools for creating a positive user experience. Studies show that the quality of online product presentation can reduce perceived risk, enhance trust in the brand, and positively influence consumers' purchase intentions (Flavián, Gurrea, & Orús, 2017). Thus, the study of sensory marketing in the digital environment is highly relevant, as it allows for a deeper theoretical understanding of the mechanisms through which digital sensory stimuli influence consumer behavior and contributes to improving the effectiveness of marketing strategies under conditions of ongoing digitalization.

The relevance of the study is determined by the growing role of sensory marketing in the digital environment, where consumer decisions are strongly influenced by the design of the online experience. Although sensory marketing has been extensively researched in offline environments such as retail and services, there is still a limited amount of research on how digital sensory stimuli - visual, auditory, tactile, olfactory, and even gustatory simulations - influence consumers' online buying behavior. This gap emphasizes the need for a systematic understanding of both the theoretical foundations of sensory marketing and the specific mechanisms of its adaptation to digital platforms.

The object of the study is sensory marketing as a modern concept of influencing the perception and behavioral reactions of consumers in the digital environment.

The subject of the study is the influence of sensory marketing stimuli on the formation of consumer intentions to make a purchase in the context of digital interaction.

The purpose of the study is to examine the impact of digital sensory stimuli on consumer purchase intentions and to identify effective strategies for using sensory marketing in the online environment.

To achieve this goal, the paper provides for the following tasks:

1. To analyze the theoretical foundations, stages of formation and evolution of sensory marketing, as well as the peculiarities of its adaptation to the digital environment.
2. To systematize the types of digital sensory stimuli (visual, auditory, tactile, olfactory, and gustatory) and reveal the mechanisms of their influence on the perception and emotional reactions of consumers.
3. To summarize modern approaches to the use of digital sensory marketing, illustrating them with individual brand examples.
4. To empirically investigate the impact of digital sensory stimuli on the formation of consumer purchase intentions using survey methods and expert interviews.
5. To develop practical recommendations for companies on the effective use of digital sensory stimuli to increase purchase intentions and strengthen consumer loyalty.

The research methods include analysis and synthesis of scientific sources, comparison and systematization of theoretical approaches, case studies, expert interviews, sociological survey, and statistical processing of the data obtained.

The scientific novelty of the work is an attempt to combine traditional concepts of sensory marketing with the latest practices of their implementation in the digital environment. The study substantiates the mechanism of influence of digital sensory stimuli on the formation of consumer intentions and identifies the most effective tools for their use.

The practical significance of the results lies in the possibility of applying the formulated recommendations by marketers and brands to increase the effectiveness of advertising campaigns, optimize the user experience in e-commerce and build long-term consumer loyalty in the digital environment.

CHAPTER 2. THEORETICAL FOUNDATIONS OF SENSORY MARKETING IN THE DIGITAL ENVIRONMENT

2.1. The essence and evolution of sensory marketing

Sensory marketing is one of the most innovative paradigms of modern economic science, formed at the intersection of marketing, neurophysiology, cognitive psychology, and behavioral economics. Its essence lies in the use of five human sensory channels and stimuli - sight, hearing, smell, touch, and taste - to create an emotional connection between a brand and its consumer. Unlike traditional marketing, which operates with rational arguments, sensory marketing is based on subconscious perception of information and aims to form certain associations, trust and loyalty to the brand (Erenkol & Ak, 2015).

In the second half of the twentieth century, the development of neuroimaging technologies (EEG, fMRI, eye-tracking, etc.) began to investigate how the brain responds to marketing stimuli. This was a prerequisite for the emergence of neuromarketing, which is a subsystem of neuroeconomics aimed at studying the cognitive and emotional reactions of consumers (Unknown Author, 2019). Within its framework, sensory marketing occupies a special place as a practical area of application of neuroscientific approaches in branding, advertising, packaging design, and customer experience.

The first attempts to systematically use sensory stimuli in business date back to the 90s of the last century, when American researchers, including Harvard University professor J. Zaltman, developed the ZMET method (Zaltman Metaphor Elicitation Technique), a technology for researching subconscious images and metaphors that influence consumer decisions (Jiménez-Marín et al., 2019). Sensory stimuli - visual, auditory, and tactile - were used to create associative maps that demonstrated the internal emotional state of a person at the moment of contact with the brand (Kulkarni & Kolli, 2022). This technology quickly gained popularity among large corporations such as Coca-Cola, PepsiCo, Nestlé, Procter & Gamble, etc., which confirmed the effectiveness of appealing to emotions rather than rational arguments in consumer behavior.

Gradually, the concept of sensory marketing went beyond scientific experiments and became one of the main tools for building brand loyalty and communicating with the audience. Its evolution took place in several stages. The first (late twentieth century) was intuitive and applied: companies used color, sound, or smell without a deep understanding of the mechanisms of their influence. The second (early twenty-first century) is characterized by a scientific interpretation of perception processes and the active use of neuroscience methods (Gadilkar, 2024). The third stage, which is still ongoing, is an integration one, when sensor technologies become part of strategic marketing management, and neuroscience data become the basis for personalizing communications and creating a holistic customer experience (CEM - Customer Experience Management).

Sensory marketing has a deep philosophical foundation. Human perception is multi-channel, which means that positive associations are formed only when different senses

receive consistent stimuli (Wang et al., 2023). Companies that integrate multisensory solutions into their marketing strategies achieve significantly higher levels of brand awareness and memorability. An example is the use of a "signature smell" in Nike or Samsung stores, which increases the time a customer spends in the retail space and increases the propensity to buy.

In terms of content, sensory marketing covers five main sensory dimensions. The visual component includes color, shape, packaging design, and lighting, which stimulate aesthetic perception and brand recognition (Bhatia et al., 2021). The auditory dimension includes music, intonation patterns, and sound logos that enhance the emotional color of brand communication. The olfactory dimension relies on the use of smells to create associations with cleanliness, freshness, or luxury. The tactile dimension is related to the physical characteristics of materials, texture, weight, or temperature of a product, which contributes to the perception of quality. Finally, the gastro-sensory aspect includes taste characteristics that enhance the effect of pleasure and trust (Kulyniak et al., 2022).

In the evolution of sensory marketing, an important role was played by the realization that 90% of human mental processes occur at the subconscious level (F. Kotler) (Géci et al., 2017). That is why the task of sensory influence is to create a stable emotional trace in the consumer's memory, which turns short-term contact with the product into long-term commitment. Neuroimaging studies have shown that stimulating the limbic system of the brain, which is responsible for emotions, is more effective in making purchase decisions than appealing to cognitive structures.

Sensory marketing has been gradually integrated into the field of branding. Building a neuro-brand requires that every element of communication - name, logo, packaging, smell, music - evoke consistent emotions. A study by Intel showed that different word associations ("achievement", "opportunity") activate the brain response of men and women differently, which allowed them to adjust marketing messages (Jiménez-Marín et al., 2019). Such approaches demonstrate that effective communication is based on neurophysiological patterns, not just social stereotypes.

The further development of sensory marketing is driven by the transition from manipulative to partnership strategies of interaction with consumers. If at the initial stages sensory technologies were perceived as a tool of hidden persuasion, today they are seen as a means of harmonizing emotional experience that helps to meet real human needs (Evtimova, 2020). Instead of "aggressive influence," the concept of "emotional partnership" is used, in which the brand acts as an intermediary between sensory impressions and personal values of the client.

In practice, the evolution of sensory marketing takes place in two interrelated areas. The first is pre-sales, which involves the use of neuromarketing research to optimize design, packaging, advertising materials, and determine the reactions of potential consumers (eye-tracking, EEG, fMRI) (Hultén, 2011).

The second is sales, which is based on the direct impact on the senses when a consumer comes into contact with a product or sales environment. The sensory environment (lighting, music, aroma, temperature) creates a sense of comfort, stimulates the desire to stay in the space longer, which statistically increases sales (Unknown Author, 2024).

The current stage of development of sensory marketing is closely related to digital technologies. Internet marketing is increasingly using eye-tracking tools to build heat maps of websites, identify key areas of user attention, and create visually effective interfaces. All of this helps to increase conversion rates and brand trust, as every detail of a web page is subject to the laws of human perception (Bizel & Ortega, 2021). Combined with analytics, such technologies create a branded customer experience, where every sensory element should become part of the brand's emotional identity.

At the same time, sensory marketing is overcoming the ethical controversies that accompanied early attempts to use neurotechnology in advertising. The public debate about "mind manipulation" has gradually evolved into an understanding that the study of sensory reactions helps businesses create more relevant and enjoyable products for consumers. In this sense, sensory marketing performs a humanistic function by ensuring harmony between the commercial goal of the enterprise and the psychological comfort of the client.

Thus, the evolution of sensory marketing is the result of a deep integration of science and business. From intuitive experiments with smells and colors, it has evolved into a high-tech strategic marketing tool based on neurophysiological measurements and psycho-emotional analytics. Its modern essence lies in an integrated approach to a person as a multidimensional sensory system, where rational thinking interacts with emotional reactions (Nadanyiova, Kliestikova & Kolencik, 2018). This concept opens up new perspectives for building sustainable brands, improving the quality of customer experience, and developing the creative economy in general.

To summarize, it should be noted that sensory marketing in its evolution reflects the general trend of business humanization, when efficiency is measured not only by profit but also by the brand's ability to create an emotionally meaningful experience for its consumer. Its integration into economic practice confirms the transition from the traditional "product - customer" model to the "emotion - experience - value" model, in which the harmonious combination of sensory impressions and cognitive expectations of the consumer becomes a decisive factor for success.

2.1.1 Historical development (from physical retail to digital)

The history of sensory marketing is also the history of the evolution of consumer culture, technological progress, and social transformations. From the first forms of physical trade, when the seller relied on direct contact with the buyer, to modern digital platforms, where the experience of interaction with the brand is formed in a virtual space, the mechanisms of sensory influence have changed, but their essence has remained

unchanged - creating an emotional connection between the product and the person (Erenkol & Ak, 2015).

The initial stage of development of sensory marketing is associated with the era of traditional retail in the XIX - early XX century. At that time, consumer behavior was determined by sensory experience, and the act of buying was of a direct emotional nature. In small shops, a customer could touch the product, smell it, evaluate the texture and quality of the material. This is how primary sensory associations were formed, which later became the basis for commercial branding (Géci et al., 2017). Stores used the smell of freshly baked bread, the shine of metal display cases, or the color of the interior to create an atmosphere of trust. Such simple, yet effective practices can be considered an early form of sensory influence that had no theoretical basis but was based on an empirical understanding of human emotions.

In the first half of the 20th century, the development of industry, mass production, and advertising led to the transformation of the marketing paradigm. There was a need to standardize consumer experiences and manage them through visual and auditory means (Bizel & Ortega, 2021).

Showcases turned into a means of communication, where color and light became the main factors in attracting attention. The first concept of visual branding was born during this period - the creation of a holistic image of a company through a logo, color scheme, and space architecture (Kulkarni & Kolli, 2022). Advertising agencies began to actively use printed graphics, fonts, and colors that stimulate positive emotions. At the same time, the development of radio opened up a new dimension of sensory impact - the audio one. Sound logos, melodies, and advertising jingles became a form of brand sound identity. Thus, sensory marketing began to become systemic, although it had no scientific basis yet.

The second half of the XX century was a period of formation of the scientific foundations of sensory marketing. The emergence of cognitive psychology and human perception research laid the foundation for studying the emotional impact of advertising. In the 1950s and 1960s, F. Kotler, M. Solomon, G. Becker, and other researchers proved that consumer decisions are made not only rationally but also under the influence of emotions that are activated through the senses (Jiménez-Marín et al., 2019). At this time, marketing is beginning to move beyond the classic commodity exchange and is shifting to a communication model centered on consumer experience. Physical stores are transforming into spaces of aesthetic experience: architecture, music, aromatization, and color palette form a unique brand style. Such approaches pioneered the first attempts at multichannel influence, when all sensory elements were coordinated with each other, creating a harmonious atmosphere.

In the 1980s and 1990s, advances in technology and increased competition made emotional brand positioning a crucial factor in market success. It was then that sensory marketing began to emerge as a separate industry within the broader field of

neuromarketing. The use of neurophysiological methods made it possible to study unconscious consumer reactions, which changed the perception of advertising effectiveness (Anand, Pradhan & Barman, 2024). Professor Jerry Zaltman, having created the ZMET technology, proved that subconscious metaphors and images influence consumer behavior more than logical arguments. The first scientific papers appear in which the concepts of sensory branding, emotional design, and cognitive influence are considered as a single system. Companies began to invest in creating their own scents, music, and color palettes, which contributed to the formation of a holistic emotional brand identity.

In parallel with the development of the theory of sensory impact, the practice of multisensory merchandising has evolved. Large corporations began to realize that consumers perceive goods through a combination of sensations, and therefore packaging design, room temperature, smell, music, lighting color, and material texture are part of a single communication field. The concept of "multisensory packaging" (MSPack) became a symbol of this period, as packaging began to be seen not only as a means of protecting goods, but also as a carrier of emotional content. Sensory strategies became a tool to increase loyalty: the aroma of coffee in coffee shops, soft lighting in boutiques, warm color shades in home appliances brands - all aimed at subconsciously creating a sense of comfort and trust (Erenkol & Ak, 2015).

Since the beginning of the XXI century, the scientific understanding of sensory marketing has been further developed within the framework of neuroeconomics and behavioral sciences. The works of D. Kahneman, A. Tversky, and B. Oeyman confirmed the irrationality of decision-making and, therefore, the key role of emotional and sensory factors in the buying process. The term "sensory economy" was coined to reflect the shift from selling goods to selling experiences. Shops, restaurants, banks, and hotels began to create their own sensory environment as a tool for managing consumer behavior. Well-known chains used room aromatization, specially selected music, and space design to reinforce brand identity. Studies by Nike and Samsung have shown that a scented environment can increase the time a customer spends in a store by almost a third, which directly affects sales.

A noticeable change occurred with the advent of the digital age. The emergence of the Internet, mobile technology, and social media created a new context of perception in which sensory marketing had to adapt to the virtual environment. Traditional channels of exposure, such as sight and hearing, became dominant, while touch, smell, and taste stimuli required innovative forms of reproduction (Bizel & Ortega, 2021). Digital sensory marketing has begun to use visual patterns, color psychology, interactive elements, and sound design of interfaces to simulate new sensory experiences. Websites, mobile applications, and virtual stores have become not only informational but also emotional spaces where graphics, animations, musical effects, and even the rhythm of cursor movement influence brand perception.

Digital transformation has changed and transformed the very nature of sensory contact. While in the physical retail environment, consumers used all their senses, in the online environment, the focus has shifted to the visual component. This has led to the emergence of new areas such as neuroimaging of interfaces, color semiotics, visual navigation, and aesthetic UX design. As part of this evolution, the concept of "virtual smell" was formed - a digital simulation of scents through associative images and audio effects (Jiménez-Marín et al., 2019). Marketers began to study how the combination of colors, fonts, and graphic elements could evoke a sense of taste, freshness, warmth, or any other sensation that a brand needed to engage its audience. In this way, they began to understand how visuals could replace physical sensory stimuli.

A key factor in the development of modern sensory marketing was the concept of Customer Experience Management, which integrates physical and digital interaction channels. Modern profitable companies strive to create a continuous emotional narrative in which the user's experience in the offline space logically transitions to the digital format. For example, a customer may first see an advertisement on the Internet, then go to a website, and then enter a physical store, where they will be greeted by a pre-selected scent and music. The effect of the sequence of sensory signals creates a sense of brand stability and builds trust (Hussain, 2019).

The emergence of artificial intelligence, virtual and augmented reality has opened a new stage in the development of sensory marketing. Nowadays, brands can create interactive 3D spaces where the user feels present through a combination of sight, hearing, and tactile simulations. Haptic feedback technologies allow you to recreate the touch, and biometric sensors allow you to capture the user's emotional reactions in real time. It provides the ability to personalize the sensory experience when the system adapts to the emotional state of a person by changing music, colors, or visuals. Thus, there is a combination of physical and digital dimensions, which entails a transition to the era of "sensory intelligence" (Jiménez-Marín et al., 2019).

An important component of the historical development of sensory marketing is the evolution of ethical attitudes towards its impact on the consumer. If in the mid-twentieth century any form of influence on subconscious human reactions was regarded as manipulative, today emotional behavior research is perceived as a tool for improving the quality of consumer experience and customer satisfaction. In today's marketing environment, sensory practices are mostly viewed not as a means of forcing a purchase, but as a form of partnership, where a company creates a positive, comfortable and emotionally appealing environment for making a purchase decision. At the same time, it should be noted that some brands continue to actively use sensory stimuli to increase consumer attention and engagement by integrating relevant visuals, audio, and messages into the structure of advertising communication to generate purchase intentions (Bizel & Ortega, 2021).

The historical development of sensory marketing demonstrates the progression from the intuitive practices of traders to a scientifically based interdisciplinary system that combines psychology, neurophysiology, aesthetics, and digital technology. Each stage - from physical trade to virtual communication - has pushed the boundaries of human sensory experience (Anand, Pradhan & Barman, 2024). If once the smell of bread or the shine of a product created an emotional impulse to buy, today the same functions are performed by the color scheme of a website, music in a mobile application, or the design of a virtual environment. Sensory marketing has become a universal language of interaction between a person and a brand that does not require translation, as it appeals to the basic emotional mechanisms of the human brain.

Thus, it can be argued that the development of sensory marketing is a natural consequence of the digitalization of the economy and the humanization of business processes. It has gone from physical contact in a store to intellectual contact in a virtual space, while maintaining the main goal of building trust, comfort, and positive emotional experience (Evtimova, 2020).

In modern conditions, sensory marketing is turning into a synthesis of science, art, and technology, and its historical evolution shows a gradual merger of the material and intangible dimensions of human perception. It is this unity that forms the basis of a new type of economic interaction, in which the consumer is not only an object of influence, but an active participant in the multisensory communication process.

2.2 Types of sensory marketing and their characteristics

Sensory marketing is a system of strategic tools aimed at creating a holistic emotional experience of the consumer through the use of the senses. It is divided into separate subtypes according to the dominant sensory channel: visual, auditory, olfactory, tactile, and gastronomic. Each of these areas performs a unique function in the process of communication between the brand and the consumer, creating a sense of trust, comfort, recognition, and satisfaction. Analyzing the specifics of each type allows us to understand the logic of emotional impact and its importance in modern marketing strategies (Hultén, 2011).

2.2.1. Visual marketing

Visual marketing is the most developed and oldest area of sensory influence. Human vision perceives more than 80% of external information, so visual cues often determine the first impression of a brand. The basis of visual marketing is the creation of a harmonious image that combines elements of design, color, shape, lighting, composition and spatial organization. Its task is to evoke the desired emotion in the consumer and consolidate it in long-term memory (Jiménez-Marín et al., 2019).

From the perspective of perception psychology, visual marketing works through the mechanisms of association, contrast, and symbolization. Color plays a key role in this

process, as each shade has emotional and cultural connotations. Warm colors (red, yellow, orange) stimulate activity and create a sense of energy, while cold colors (blue, green) are associated with calmness and reliability. The combination of colors determines the character of the brand - for example, blue and white design is often used in the banking sector to emphasize stability, and red and gold colors are used in the food service sector, where it is important to stimulate appetite (Nadanyiova, Kliestikova & Kolencik, 2018).

Visual marketing includes not only color, but also shape, proportions, font, logo, space architecture, and visual communications in the digital environment. The design of a package or web interface should not only be aesthetically pleasing, but also intuitively user-friendly, i.e., it should follow the natural laws of visual perception. Eye-tracking studies show that consumers first fixate their eyes on areas of high contrast, so the location of key design elements (logo, price, slogan) determines the effectiveness of advertising (Bhatia et al., 2021).

Visual images also serve as symbolic codes that create a brand value system in the consumer's mind. For example, the use of natural motifs in packaging design hints at environmental friendliness, and geometric shapes suggest technological efficiency and precision. In the digital environment, visual marketing has evolved towards UX design, where every color, shadow, or animation is subject to the user's logic. Thus, visual marketing forms not only the brand identity but also the psychological sense of harmony between the consumer and the product (Kulyniak et al., 2022).

2.2.2. Audio marketing

Audio marketing covers the impact of sound, rhythm, melody, intonation, and silence as a means of emotionally shaping brand perception. The sound environment can not only accompany communication, but also actively model a person's mood, attention, and behavior. As early as the 1960s, advertising agencies began creating sound logos - short melodies or rhythmic sequences that were as memorable as visual images.

The effect of sound is that rhythm and tone affect heart rate, breathing, and the level of nervous system tension. That is why a slow melody reduces stress and stimulates a customer's longer stay in the store, while a fast tempo increases impulsiveness and choice activity (Kulyniak et al., 2022). Audio marketing is actively used in retail, restaurant business, hotel management, as well as in digital services - from ringtones to music fragments in mobile applications.

Sound design creates a sense of the brand's "acoustic identity". For example, the sound of opening a Coca-Cola can or the startup signal of an Apple computer are elements of emotional recognition (Bhatia et al., 2021). Such short audio cues form conditioned reflexes associated with pleasant sensations. At the same time, in the field of telephone services, banking systems, or mobile applications, audio also has a navigation function, facilitating user orientation (Anand, Pradhan & Barman, 2024).

An important area of audio marketing is the use of silence as a means of psychological influence. Silence can act as an element of drama, reinforcing the meaning of the message or creating a contrast to the musical rhythm. In digital products, the sound balance determines the comfort of use: a large number of audio signals causes fatigue, and at the same time, a harmonious sound structure helps to focus attention (Evtimova, 2020).

Today, audio marketing is often used in podcasts, advertising, and brand gamification. Voice technologies create a personalized contact where the timbre, pace, and rhythm of the voice correspond to the brand's value characteristics. Thus, sound turns into a communication channel that shapes not only the image but also the correct communication between a person and a product.

2.2.3 Olfactory marketing

Olfactory or scent marketing is based on the use of smells to create emotional associations and stimulate consumer behavior. Smell has a unique property - it directly affects the part of the brain responsible for emotions and memory. That's why scent can evoke memories, shape mood, and even change the assessment of product quality.

The first examples of scent marketing emerged in the 1980s, when perfume shops and coffee shops began using natural scents to enhance the brand's atmosphere. Later, this technology spread to hotels, car dealerships, banks, and even government agencies. The smell of freshness, citrus, or woody notes is associated with purity, trust, and stability, while vanilla, coffee, or cinnamon evoke a sense of comfort and security (Bhatia et al., 2021).

Scientific studies show that a scented environment can increase the length of time a customer stays in a retail space by 25-30% and increase sales by 10-15%. This is because a pleasant smell reduces stress levels, stimulates positive emotional perception, and increases attention to detail. In branding, this effect is used to create a "branded smell" that sticks in the consumer's memory (Nadanyiova, Kliestikova & Kolencik, 2018). Such practices are actively used by Singapore Airlines, Abercrombie & Fitch, Samsung, and Nike.

There are two areas of olfactory marketing: emotional and functional. The emotional one is aimed at creating a pleasant experience through the smell of an environment or product, while the functional one is aimed at increasing the perception of quality, for example, the aroma of freshness in household chemicals or the smell of bread in a supermarket (Evtimova, 2020). In digital technologies, devices are being developed that reproduce odors synthetically by combining scent cartridges with virtual reality. Thus, olfactory marketing goes beyond traditional trade and becomes an element of interactive experience.

The ethical aspect of using fragrances is the balance between impact and comfort. Excessive concentration of odors can cause the opposite effect, which can be irritation or distrust. Therefore, modern fragrance marketing is based on the principle of "invisible

presence" when the smell is not imposed, but only accompanies the space, creating a sense of naturalness and harmony (Li et al., 2023).

2.2.4. Tactile marketing

Tactile marketing or sensory marketing is related to the physical sensations that occur when a person comes into contact with a product, its material or surface. Touch is one of the most important channels of trust, as it provides information about the quality, texture, temperature, and weight of an object (Erenkol & Ak, 2015). Psychological research confirms that a consumer who touches a product is more likely to make a purchase decision, even if he or she has not planned it in advance.

In retail, tactile marketing is implemented through the choice of materials for packaging, interior design, furniture, fabrics, and surfaces. For example, smooth textures evoke a sense of premiumity, while rough textures evoke naturalness and environmental friendliness. That's why luxury brands often use soft velvet or matte finishes in their products to enhance the sense of status. Packaging that feels good in the hand creates not only aesthetic but also emotional satisfaction.

In the digital era, haptic marketing is taking on new forms thanks to the development of haptics technologies - systems that simulate touch through vibrations, pressure, or temperature changes. Mobile devices, game controllers, and virtual glasses allow the user to feel the interaction with the product even in a virtual space (Hultén, 2011). It opens up opportunities for "virtual testing" of products, when touch becomes part of the digital experience.

In terms of emotional impact, tactile sensations have the ability to build trust and reduce the psychological distance between the brand and the consumer. That's why textiles, such as napkins, wrappers, and furniture upholstery, are an important element in the service sector, as they unconsciously signal the quality of service. In combination with other sensory stimuli, tactile marketing creates a sense of authenticity, which is the basis of brand loyalty.

2.2.5. Gastronomic marketing

Gastronomic marketing is the rarest, but extremely effective type of sensory influence. Its main goal is to form an emotional connection through taste, which directly activates pleasure and memory (Kulkarni & Kolli, 2022). Taste sensations have the shortest path to the brain's pleasure centers, so the gastronomic experience remains one of the most powerful factors in a brand's emotional identity.

In the food industry, gastronomic marketing is manifested in the creation of branded flavors that are associated with a particular company or product. Classic examples are the taste of Coca-Cola, whose recipe is kept secret, or the unique balance of spices in McDonald's products. Such companies don't just sell drinks or food - they sell experiences

that evoke nostalgia, pleasant emotions, social belonging, and a desire to return (Gadilkar, 2024).

Taste marketing is also important outside the food industry. For example, coffee shops or supermarkets often organize tastings that activate the taste channel, which increases the likelihood of a purchase. Taste is a powerful element of branding, as it can evoke a strong emotional response even without the involvement of consciousness. That's why gastronomic marketing is often combined with aromatic and visual marketing - the color of the product, its shape, and smell form a comprehensive sense of quality (Anand, Pradhan & Barman, 2024).

Thanks to the development of technology, gastronomic marketing is reaching a new level. Restaurants are using multimedia menus that combine video effects, music, and smells to create a synesthetic experience - the simultaneous use of multiple senses. At the same time, the importance of color, temperature, and texture as communication elements is growing in food design. Taste is becoming part of the visual and emotional system of the brand, which reflects its philosophy, culture and values.

From a psychological point of view, gastronomic experience creates a sense of trust, security, and pleasure. People tend to associate a pleasant taste with a positive experience, so taste memory is an important tool for long-term loyalty. Brands that create their own "taste code" create not only a physical but also an emotional sense of belonging to a community.

2.3. Psychological mechanisms linking sensory stimuli and purchase intention

The effectiveness of sensory marketing is based on the ability of a person to perceive the world around them through the system of senses and transform sensory information into emotionally colored representations that determine their behavior as a consumer. The psychological and behavioral mechanisms of sensory influence have a complex multi-level structure that includes cognitive processes (attention, perception, memory), affective reactions (emotions, associations, pleasure), and behavioral components (trust, interest, purchase intent). Together, they form the basis for creating an emotional connection between a brand and a person, turning rational decisions into emotionally motivated actions (Kulyniak et al., 2022).

2.3.1. Attention, perception, and emotional response

The psychological mechanism of attention is primary in the process of sensory influence, since it is through the attraction of attention that relevant stimuli are selected among the information noise. According to D. K. Kahneman, attention is a limited cognitive resource that is distributed among competing stimuli depending on their significance and emotional intensity. Sensory marketing uses this principle by creating stimuli that are highly

salient, such as color contrast, sound rhythm, textural variety, or a smell that differs from the background (Géci et al., 2017).

Visual stimuli, such as color, brightness, size, and shape, attract attention through the mechanism of so-called "selective attention." According to D. Broadbent's concept, a person cannot process all sensory signals at the same time, so the brain filters them according to the principle of significance. Elements that contrast with the environment are perceived as more important and, as a result, more noticeable (Anand, Pradhan & Barman, 2024). That's why marketing messages are often based on visual contrast, motion dynamics, and harmonious color combinations.

Sensory perception is not only a physiological process, but also the result of how a person perceives the information received (Jiménez-Marín et al., 2019). According to R. Gregory, a person "sees not with the eyes, but with the brain," that is, perception is the result of the interaction of sensory data and previous experience. In this context, sensory marketing creates "expectations of perception" when design, smell, or music create a cognitive scenario that sets a person up for a certain emotional state. For example, the smell of coffee in a shopping mall can encourage a consumer to enter a coffee shop even without a prior desire to buy.

An important role in attracting attention is played by the effect of emotional significance, which is the ability of a stimulus to evoke an emotional response (Hussain, 2019). According to A. Damasio's research, emotional stimuli activate the limbic system, which increases concentration. Therefore, sensory cues that evoke pleasant feelings (such as warm lighting or melodic music) contribute to a longer attention span.

Thus, the mechanism of attention and perception in sensory marketing is based on a combination of biological laws (stimulus selection, contrast, adaptation) and psychological factors (expectations, experience, emotional background). It is through this interaction that the consumer's first contact with the brand occurs - the moment when he or she notices, recognizes and feels the product.

2.3.2. Memory, brand associations and trust formation

After the initial attraction of attention, memory plays a key role in sensory impact, as it ensures the preservation and reproduction of the impressions received. Sensory memory, according to the classification of R. Atkinson and R. Shifrin, is the shortest, but it determines which stimulus will be stored in the short-term and then in the long-term memory. For marketing, this means that an emotionally charged sensory signal is more likely to be remembered than a neutral one (Bizel & Ortega, 2021).

Emotions are a key mediator between perception and memory. According to P. Ekman's model of cognitive-emotional interaction, an emotional reaction enhances the information coding processes in the so-called hippocampus, which makes a person better able to remember events associated with emotional arousal. Sensory marketing actively

uses this mechanism: a pleasant aroma, soft lighting, or sound harmony create an emotional background against which brand information is recorded.

G. Zaltman's research has confirmed that 95% of decisions are made at the subconscious level, where images and metaphors play a leading role. Therefore, sensory marketing not only conveys facts, but also creates associative fields - a set of impressions that connect a brand with a certain emotional state. For example, the scent of lavender can evoke a sense of calmness associated with reliability, and a dynamic melody can be associated with modernity and freedom (Hussain, 2019).

According to D. Gebb's concept, associative memory is formed through the repeated combination of stimuli and reactions. When a certain sound, color, or smell is repeated many times in the context of a brand, a stable neural connection is formed between them (Hultén, 2011). This explains why a person recognizes a brand even by indirect cues. This principle is the basis of corporate identity, where each element (logo, music, scent) should be consistent and recognizable.

Memory and emotions determine not only recognition but also loyalty. According to K. Morrison, positive sensory experiences turn into the "emotional capital" of a brand, which increases the trust and commitment of its consumer. The effect is long-lasting, as emotionally colored memories last much longer than rational arguments.

So, in summary, memory, emotions, and associations underlie how a person perceives sensory signals, forming a combination of cognitive and emotional processes. Through these mechanisms, the brand is fixed in the mind not as a set of characteristics, but as a source of a certain mood, feeling or memory. This is what makes sensory marketing a powerful tool for building long-term emotional loyalty.

2.3.3 From emotional engagement to purchase intention

The final effect of sensory exposure is manifested in a change in behavioral attitudes - the formation of trust, interest, and willingness to buy (Nadanyiova, Kliestikova & Kolencik, 2018). Behavioral mechanisms are based on a combination of emotional satisfaction, cognitive coherence, and motivational stimulus. According to A. Aysen's theory of planned behavior, the intention to perform an action (e.g., purchase) is determined by three factors: personal attitude, subjective norms, and perceived control over behavior. Sensory marketing affects all of these components simultaneously, creating an emotionally positive background, socially acceptable associations, and a sense of confidence in the right choice.

Trust occurs when a person's emotional reactions are consistent with their perception of the brand. According to J. L. LeDoux's concept, people tend to trust what evokes stable and predictable emotional reactions. When a sensory experience is repeated (for example, the same scent in a store or the same music in an app), a sense of

consistency and security is created. It provides psychological comfort and increases the propensity to buy (Jiménez-Marín et al., 2019).

Interest as a behavioral state arises from the activation of the brain's reward system. According to D. McClelland's theory of motivation, people seek novelty and pleasure. Sensory stimuli that cause pleasant surprise or aesthetic pleasure stimulate the production of dopamine, which increases the desire to repeat the experience. Therefore, a vivid visual image, pleasant sound, or aroma can become a catalyst for interest in a product even without rational arguments (Gadilkar, 2024).

The intention to purchase a product is the final behavioral response that results from cognitive-emotional integration. As F. Kotler noted, the purchase decision is based not so much on logic as on a sense of rightness. Sensory stimuli create this feeling by providing emotional confirmation of a rational choice. For example, if the packaging is pleasant to the touch, the music in the store creates a calm mood, and the aroma is associated with cleanliness, the consumer is more likely to consider the product to be of high quality.

Sensory marketing also influences behavior through the mechanism of reinforcement. According to B.F. Skinner's theory of operant conditioning, behavior that is accompanied by positive emotions is more likely to be repeated. Therefore, the pleasant sensory experience of interacting with a brand becomes a reinforcement that stimulates repeat purchases. This is the essence of "emotional loyalty" - the consumer returns not only for the product, but for the feeling it evokes (Kulkarni & Kolli, 2022).

Trust and interest in modern marketing are increasingly dependent on brand authenticity. According to F. Schmitt, consumers respond not to the external form, but to the authenticity of emotions. Sensory marketing is becoming a tool for creating "emotional believability" when all the sensations that accompany a product correspond to its essence. If the sensory experience looks artificial or intrusive, it causes distrust. Therefore, a successful brand is one that offers an honest and consistent sensory experience.

So, the behavioral mechanisms of sensory influence are that sensory information is transformed into emotional experience and then into a specific action. This process is a chain: perception, emotion, trust, intention, and finally behavior. It is through this sequence that sensory marketing turns into a powerful regulator of consumer activity, which acts not by force, but through a harmonious combination of pleasure and persuasion (Kulyniak et al., 2022).

2.4. Platforms and digital formats for sensory marketing

In the 21st century, sensory marketing goes beyond physical space and becomes an integral part of the digital ecosystem. The emergence of new media formats, interactive platforms, and virtual environments has radically changed the way brands interact with their audiences. Digital technologies have opened up the possibility of recreating sensory experiences in the virtual dimension, where the consumer's emotional involvement is formed

through audiovisual, tactile, and even simulated stimuli. According to M. McLuhan, each new technology becomes an "extension of human feelings," and thus digital platforms are modern channels of sensory influence (Evtimova, 2020).

In the structure of the modern marketing environment, we can distinguish four key areas of sensory marketing in the digital space: social networks, e-commerce platforms, immersive VR/AR environments, and mobile and gaming platforms. Each of them has its own technical and psychological features, but they are all united by a common goal - to create an interactive, emotionally rich experience that inspires trust, interest, and a desire to interact with the brand.

2.4.1 Social media (Instagram, TikTok, YouTube)

Social networks have become a central arena for implementing sensory marketing in the digital space. They combine visual, audio, and interactive stimuli that create a sense of presence for the user. According to F. Kotler, social platforms are a tool of "empathy marketing" where the main factor of influence is not advertising but experience.

Instagram is primarily a visually oriented platform where color, composition, light and style create an emotional image of the brand. According to research by D. A. Arnold, photographic style and consistency of visual aesthetics form a "sensory identity" that determines the level of user trust. The use of natural shades, warm colors, symmetry, or minimalism activates positive perception. In addition, Instagram's algorithms enhance emotional impact through video formats called Reels, where sound and motion are combined with visuals to create short but intense sensory experiences (Hultén, 2011).

TikTok is characterized by dynamic content that combines visual and auditory stimuli to create a holistic sensory experience where sound, rhythm, and gesture create an instant emotional impact. According to J.H. Montgomery, TikTok is an example of "micro-empathy" - short videos trigger reactions in the brain similar to real emotions, making the platform a powerful tool for emotional persuasion. Sensory marketing is manifested here through the use of branded sounds, rhythmic transitions, color filters, and movement that evoke the effect of engagement and belonging to a particular community (Bhatia et al., 2021).

YouTube, as the largest video platform, provides a multidimensional sensory experience through long-form video content. The combination of image, sound, speech rate, facial expressions, and emotions of the actors creates the illusion of real presence. According to E. Gatfield's "emotional contagion" model, the repetition of emotional images in a video evokes similar feelings in the viewer, which increases brand loyalty. YouTube has also become a platform for neuromarketing research, where eye tracking and facial expressions allow to assess the strength of an emotional response.

Social networks serve as a "virtual sensory space" where brands recreate the atmosphere through audiovisual patterns. The synthesis of sound, color, movement, and

frame dynamics creates a synesthetic experience that builds emotional attachment. That is why Instagram, TikTok, and YouTube are considered to be the leading platforms for visual and auditory branding, where sensory appeal turns into social brand capital (Li et al., 2023).

2.4.2. E-commerce platforms (Amazon, Shopify, brand websites)

E-commerce platforms are an environment where sensory marketing is realized through visual, textural, and behavioral interfaces that compensate for the lack of physical contact with the product. In digital commerce, the task of the marketer is to create the effect of "virtual touch" when the user feels the product without physically having it (Erenkol & Ak, 2015).

Amazon, as the leader of global e-commerce, uses a multi-level touch navigation system. According to R. P. Desmet's analysis, color contrasts, composition of elements, and photographic stylistics create a sense of reliability and simplicity. Product images are highly detailed, simulating a visual inspection in a real store. Amazon's algorithms also personalize the visual flow according to the user's previous emotional reactions, creating an individualized sensory route.

Shopify as a tool for creating online stores offers brands the opportunity to create a unique sensory identity. The choice of fonts, colors, animations, cursor movement, or button responses creates a sense of "live presence" of the product. D. N. Armstrong notes that such micro-interactions activate the user's tactile imagination, causing a sense of touching the product (Erenkol & Ak, 2015).

Brand websites play a special role in sensory branding, as they are not only a point of sale, but also a space for immersion in the brand philosophy. According to D. Norman's user experience (UX) model, every element of the interface should evoke predictable emotions, from calmness to inspiration. The use of video screensavers, moving images, sound effects when hovering over the cursor, visual minimalism, and smooth transitions creates a positive emotional background (Gadilkar, 2024).

Thus, e-commerce is turning into a space of sensory interaction with the consumer, where every click, visual accent, or color shade evokes subconscious associations. This type of sensory impact does not involve physical touch, but its emotional power lies in cognitive simulation - the user "feels" the product through the representations created by the interface.

2.4.3. VR/AR and immersive environments

Immersive virtual reality (VR) and augmented reality (AR) technologies open up a new level of sensory marketing implementation, where the user is immersed in a three-dimensional space and interacts with the brand with all the senses. According to M. Lombard's theory of "presence," the sense of reality in a virtual environment is formed

through multichannel sensory stimulation that activates visual, auditory, and kinesthetic reactions (Evtimova, 2020).

In marketing, VR/AR technologies are used to create showrooms, virtual tours, and product simulations. IKEA, Audi, and L'Oréal are introducing VR applications that allow consumers to "try out" products before buying them: to see the interior, test drive a car, or try on cosmetics. The experience creates deep emotional engagement as it activates not only visual but also spatial memory.

AR technologies in mobile applications complement the real world with virtual elements, creating a "mixed reality" effect. According to G. Gibson, the combination of the real environment with digital objects increases trust, because the brain perceives such experience as authentic. For sensory marketing, this means the ability to create interactive scenarios in which the user does not just observe but participates.

Virtual and augmented reality technologies also allow for the formation of a "sensory narrative" - a sequence of sensations that create a storyline of interaction with a brand (Hussain, 2019). For example, in VR ads for wine or coffee brands, the user goes through the stages of harvesting, roasting, and tasting, experiencing sound, color, and movement. Such an experience creates a cognitive immersion effect, when emotional memory captures the brand not as a product but as an event.

VR/AR is becoming a space for a new ethics of sensory impact. According to D. Hoffman, in virtual interaction, trust arises when aesthetic, sensory, and emotional elements are aligned. Therefore, modern brands strive to create not only technologically sophisticated but also psychologically comfortable immersive environments that stimulate positive feelings rather than overload (Hultén, 2011).

2.4.4. Mobile applications and gaming platforms

Mobile applications and gaming environments are another area of digital implementation of sensory marketing that combines interactivity with personalization. They allow brands to communicate with consumers in a mode of constant emotional contact. According to D.H. Kim, mobile interfaces have become "an extension of the human touch system" because the touch screen and vibration response mimic physical interaction.

In mobile applications, the sensory impact is manifested through the color scheme, smoothness of animations, sound signals, and micro-movements of interface elements. Vibrations when buttons are pressed create the effect of touch, while sound accompaniment creates a sense of completion. It enhances user satisfaction and contributes to the formation of emotional attachment to the brand (Kulyniak et al., 2022).

Gaming platforms, such as PlayStation, Steam, or mobile games with built-in branded scenarios, create the so-called "sensory gaming". According to K. Verbach's concept of gamification, participation in a game activates the dopamine system of the brain,

creating a sense of achievement and joy. That is why brands use game mechanics - rewards, missions, levels - to create a positive interaction experience.

Combined with user behavior analytics, mobile apps allow you to create an individual sensory profile. For example, the system can adapt the background color, sound, or vibration to the user's emotional state. This approach, which F. Cross calls "emotional design," aims to harmonize technology and human feelings (Hussain, 2019).

Mobile technologies also open up opportunities for combination with biometric sensors that record heart rate, facial expressions, and eye movements. This allows brands to test the emotional response in real time, and thus create accurate sensory scenarios. In the future, such systems will become the basis of adaptive marketing that responds to the user's psychophysiological state.

2.5. Analysis of the use of sensory marketing in the digital space

The modern digital economy has created conditions for a radical transformation of sensory marketing. While in traditional commerce sensory influence was realized through the physical environment - smell, texture, lighting, music - in the digital space it has taken on new forms based on interactivity, multimedia and personalization. According to F. Kotler's approach, digital marketing is no longer just a sales tool, but an "environment of emotional experience" in which brands build communication with users through sensory cues (Jiménez-Marín et al., 2019).

Sensory marketing in the digital environment functions at the intersection of perception psychology, cognitive science, and behavioral economics. According to D. Kahneman, 90% of decisions are made automatically by consumers, under the influence of emotional triggers that work before rational thinking. Digital brands have already adapted these principles, using sensory stimuli as a means of managing users' attention, emotions, and behavior. Below we will consider two key areas of application of sensory marketing in the digital space: the practices of using sensory stimuli in digital marketing of leading brands and the relationship between sensory and performance marketing, where sensory triggers directly affect click-through rates and conversion rates (Anand, Pradhan & Barman, 2024).

2.5.1. Practices of using sensory stimuli in digital marketing by leading brands

One of the main trends of modern digital marketing is the transition from informational to emotional and experiential type of communication. This means that the user perceives the brand not as a source of goods, but as a carrier of feelings and values. As M. Solomon emphasizes, in the digital environment, "emotions have become the new currency of trust," and sensory elements are the main means of their formation (Jiménez-Marín et al., 2019).

Leading global companies are actively integrating sensory principles into their digital strategies. Apple, for example, uses visual minimalism, soft transitions, and sound

clarity in its digital communications. The style supports a sense of simplicity, elegance, and intellectual trust. According to D. A. Norman, effective design is not only about functionality, but also about "emotional ergonomics," where every element of the interface evokes a positive sensory response. That is why animations in Apple's operating systems have natural inertia of movement, click sounds have light vibration, and the color palette is based on natural pastel shades (Nadanyiova, Kliestikova & Kolencik, 2018).

The Coca-Cola Company uses a different approach in the digital environment - a multisensory immersion strategy. Its online campaigns include fizzing sounds, droplet movement, and visual waves that create associations with taste and coolness. The elements activate the so-called "sensory memory" - a cognitive process in which a person experiences a taste or smell only through audiovisual stimuli. Damasio's research confirms that such a simulation of sensory experience activates the same parts of the brain as real perception.

The practice of the Starbucks brand, which has developed a unified visual and auditory style across all digital channels, is interesting. Its mobile app uses warm colors, sounds of coffee brewing, deep texture of photos, and light vibration when placing an order. It creates the effect of a "virtual presence" in the coffee shop, which enhances the user's emotional immersion. According to J. Pine, emotional engagement is the basis of the "experience economy," where every interaction should leave a sensory trace in the consumer's memory (Anand, Pradhan & Barman, 2024).

In its digital campaigns, Nike emphasizes dynamic rhythm, fast frame changes, contrasting colors, and up-tempo music. It recreates the physical energy of movement, causing a sense of motivation. Within the Nike Run Club mobile application, the company uses audio stimuli (coaching tips, footstep sounds, music) that are coordinated with visual data of the run. This combination creates a unified emotional and motor experience that strengthens brand loyalty (Jiménez-Marín et al., 2019).

The L'Oréal brand implements sensory marketing in the digital space through AR technologies. In the Try On app, users can try on cosmetics, and the system reproduces realistic colors, lighting, and textures. As Gibson emphasizes, AR technologies transform perception from passive to interactive, creating an "emotional simulation of ownership." The user feels satisfied even before the actual purchase, which increases conversion.

The use of sensory stimuli in digital marketing also has a social aspect. Platforms such as TikTok and Instagram allow brands to create a sensory culture of consumption - from videos with ASMR effect to visually harmonious feeds. According to M. McLuhan, the digital environment functions as an "extension of the nervous system" where sound, color, and movement are transformed into shared sensations of users. In this sense, sensory marketing in digital format becomes a collective experience that defines the common emotional identity of the brand and its consumers (Erenkol & Ak, 2015).

Thus, the leading companies demonstrate that sensory marketing in digital form is not just an additional design element, but a foundation for building trust, emotional stability,

and recognition. All of these brands use the so-called coherence principle, which is the coordination between visual, auditory, and behavioral signals. It is this coherence that creates an authentic experience that turns online communication into a multisensory interaction.

2.5.2. The intersection of sensory marketing and performance marketing (how sensory triggers improve clickability in creatives)

Performance marketing is focused on measurable results - conversions, clicks, subscriptions, sales. However, in the face of digital oversaturation, it is becoming increasingly difficult to grab the user's attention. This is where sensory marketing is not an aesthetic addition, but a strategic mechanism for increasing the effectiveness of advertising. As J.H. Montgomery emphasizes that sensory triggers are "neurocommunication keys" that transfer messages from the level of cognitive perception to the sphere of emotional resonance (Hussain, 2019).

Visual elements - color, contrast, shape - directly affect the click-through rate (CTR) of an ad. According to S. M. Palmer's research, color can increase CTR by 20-40% depending on its psychological relevance to the context. For example, red activates attention and stimulates action, while blue builds trust and enhances the perception of reliability (Kulkarni & Kolli, 2022). In combination with spatial effects, shadows, and animation, colors create the illusion of movement, which, according to Hoffman's model, enhances the orientation response, an automatic reflex that makes a person pay attention to an object.

Audio triggers in digital advertising are used to enhance memorability and create emotional stability. Short sound signals, harmonious chords, and rhythmic jingles form conditioned reflexes that activate the association with the brand. Research by B.F. Skinner and his followers has shown that repeated reinforcement of sound with positive experiences creates a stable behavioral response. In performance advertising, this principle is manifested through the use of short musical motifs in video creatives that encourage the user to press a button or watch to the end (Kulyniak et al., 2022).

Sensory stimuli also affect cognitive ease, a concept introduced by D. Kahneman. Visually balanced, rhythmic, and colorfully harmonious images are perceived as "correct," which increases the likelihood of trust in advertising. In M. Briggs' experiments, it was proved that creatives with a high level of sensory harmony have a 25% higher conversion rate than those with dissonant or chaotic elements.

In the era of short formats (Reels, Shorts, Stories), the first 5 seconds of interaction play a key role. According to N. Henderson's research, the average user makes a decision to view or skip an ad in 1.8 seconds. During this period of time, sensory triggers such as contrasting action, unexpected sound, relevant visuals, or communication determine the fate of the interaction. This explains why modern creatives use rapid rhythm changes along

with visuals, personalization, and ASMR sounds that "grab" attention before comprehending the content (Bizel & Ortega, 2021).

The integration of the sensory approach into performance marketing is based on the principle of "emotional reinforcement of action". According to K. Verbah, user behavior in the digital environment is motivated not only by the expected benefit but also by an instant emotional response. If a visual image, topic, pain, or need resonates with a person, he or she subconsciously seeks to repeat this action - click, subscribe, or follow. Thus, a sensory trigger acts as an "emotional anchor" of behavior.

The use of sensory marketing in performance strategies also helps to increase brand awareness. According to Gebb's research, the repeated combination of sensory signals and specific actions creates stable neural connections that ensure automatic brand recognition even without a logo. Therefore, modern creatives focus not only on content, but also on the "brand's sensory code" - a set of colors, sounds, rhythms, and movements that are repeated in different campaigns (Jiménez-Marín et al., 2019).

In practical terms, sensory marketing can increase not only CTR but also the depth of emotional engagement. Spotify, Adidas, and Samsung are actively creating interactive and emotionally rich content where audio and visual effects are combined in one creative. For example, Samsung's video ads combine the sound of a button being pressed with a visual flash of light to create the effect of real interaction. This approach reinforces the emotional sense of control that stimulates the click.

Thus, the intersection of sensory and performance marketing demonstrates that the effectiveness of digital advertising is determined not only by technical indicators but also by emotional architecture. Sensory triggers - color, sound, rhythm, movement - become the basis for the formation of quick, subconscious reactions that increase the likelihood of action (Jiménez-Marín et al., 2019). Thus, in modern digital communication, effectiveness is measured not only in clicks, but in the brand's ability to evoke feelings that the user wants to repeat.

2.6 Summary of theoretical and practical conclusions

The theoretical analysis allows us to conclude that sensory marketing is one of the key trends in the modern development of marketing communications. Its emergence was the result of the transition from rationally oriented marketing to an emotional and cognitive approach, which focuses on the consumer, his experience, emotions and associative ties with the brand. In traditional environments, sensory impact is realized through physical interaction - sound, aroma, texture, lighting, color - which create an atmosphere that fosters trust and loyalty. At the same time, the digital environment creates new conditions for the implementation of this approach, where physical sensory channels are replaced or simulated by technological means - visual effects, animation, sound backgrounds, video sequences, interactive UX/UI design (Bhatia et al., 2021).

At the current stage of development of marketing science and practice, researchers focus on how sensory stimuli affect a person's internal states - their emotions, perceptions, attitudes towards the brand - and how these states determine behavioral reactions, including the intention to purchase. Based on the analysis of modern theoretical sources and practices, three main areas of conceptual explanation of this process can be distinguished: the stimulus-organism-response (S-O-R) model, the theory of planned behavior (TPB), and emotional-affective approaches that integrate psychological mechanisms of emotional perception into the context of consumer behavior (Gadilkar, 2024). Each of these models offers its own optics for interpreting how sensory experience affects the consumer, and together they create a coherent theoretical basis for building a conceptual model of the study.

2.6.1. The stimulus-organism-response (S-O-R) model in marketing

The Stimulus-Organism-Response (S-O-R) model, proposed by Mehrabian and Russell in 1974, has become a classic paradigm for explaining the relationship between external stimuli, internal states of a person, and their behavioral responses (Nadanyiova, Kliestikova & Kolencik, 2018). The main idea is that any external stimulus affects the internal psycho-emotional state of an individual, which, in turn, causes a certain response. In the marketing context, this means that environmental elements such as design, colors, sound, aroma, texture, rhythm, or speed of action form a certain emotional background that influences the consumer's attitude towards the brand and determines their behavioral response, such as the desire to purchase a product (Hultén, 2011).

The application of the S-O-R model in digital marketing allows us to understand how sensory stimuli reproduced in a virtual environment affect psychological processes of perception. Digital sensory signals - visual images, colors, sound, rhythmic elements of video, micro-animation, or even touch simulation through interactive interfaces - can evoke reactions of arousal, pleasure, or interest. These reactions become intermediate states that determine the level of user engagement, trust in the content, and willingness to make a purchase. Thus, the digital environment is turning into a space in which the modeling of sensory experience becomes a mechanism for shaping behavioral responses (Hussain, 2019).

The S-O-R model is universal in nature and can be adapted for various industries, from retail to online advertising. Its peculiarity is that it allows to take into account both cognitive and emotional processes, without reducing consumer behavior to rational choice. Within this model, the intention to purchase a product is a behavioral response, and sensory marketing stimuli are external factors that initiate appropriate changes in the internal state of a person's organism. This approach provides a logical basis for building the conceptual structure of the study, where the main focus is on the mechanisms of transformation of emotional experience into a specific action (Nadanyiova, Kliestikova & Kolencik, 2018).

2.6.2. Theory of Planned Behavior (TPB) in the context of sensory exposure

The Theory of Planned Behavior, developed by Ajzen in 1991, explains that human behavioral intentions are shaped by three main factors: attitudes toward behavior, subjective norms, and perceived control over one's own actions. In the marketing context, this model allows us to interpret how sensory exposure shapes attitudes toward a brand and product, creating the basis for the intention to purchase a product (Kulkarni & Kolli, 2022).

Sensory marketing, according to TPB, can influence the first component - **attitudinal behavior**, as pleasant sensory stimuli evoke positive emotions that increase the desire to interact with the brand. For example, visual harmony, aesthetic design, high-quality sound, or even a virtual sense of texture can create an impression of pleasantness, trust, and a desire to repeat the experience.

The second component is **subjective norms** - social expectations and approval of behavior. In the digital space, this is manifested through interaction with other users' content, reviews, ratings, and recommendations that reinforce or modify attitudes toward the product. The third element, **perceived behavioral control**, refers to the consumer's awareness of their own ability to make a purchase (Jiménez-Marín et al., 2019). Here, sensory marketing can increase user confidence if a website, app, or advertisement creates a sense of ease, safety, and comfort in the purchase process.

In the context of this study, TPB serves as a methodological framework that explains why the **intention to purchase** can be considered a reliable indicator of future behavior. The theory allows us to connect the emotional aspects of sensory perception with the rational components of decision-making, proving that even emotionally driven reactions go through cognitive processing that determines the final action. Thus, TPB helps to explain how sensory stimuli are transformed into a conscious desire to make a purchase through changes in attitudes and subjective norms.

2.6.3. Emotional and affective approaches to the influence of sensory experience

Emotional and affective theories of consumer behavior focus on the fact that purchase decisions are often made not only on a rational basis but also under the influence of emotional states. According to the affective conditioning approach, sensory stimuli create emotional associations that are fixed in the consumer's memory and further determine his or her attitude towards the brand. A pleasant sound, color scheme, or rhythm of music can become triggers of a positive emotional experience that is activated upon repeated contact with the brand and stimulates a purchase (Li et al., 2023).

In digital marketing, emotional responses are triggered by a combination of visual and audio cues, such as warm colors, harmonious shapes, pleasant backgrounds, or sound effects that inspire trust and pleasure. These emotions become the basis for the formation of associative connections that strengthen brand loyalty. In turn, the more positive these

affective reactions are, the higher the likelihood of purchase intention (Anand, Pradhan & Barman, 2024).

The approaches complement the S-O-R and TPB models by describing the intermediate link between a sensory stimulus and a behavioral response - the emotional state that acts as a mechanism for converting sensory exposure into a motivational impulse. Affective conditioning explains how repeated perception of sensory signals contributes to the formation of emotional loyalty, even without direct awareness of the reasons for such feelings (Kulyniak et al., 2022).

Thus, the emotional-affective approach expands the understanding of consumer behavior by emphasizing the importance of creating sensory experiences that evoke positive feelings and stimulate action. It is this component that allows us to combine elements of previous theories and form a holistic picture of the impact of sensory stimuli on purchase intentions.

2.7. Conceptual framework

On the basis of the theoretical analysis, a conceptual framework was developed that combines the key elements of the three approaches considered - the S-O-R model, the theory of planned behavior, and emotional and affective theories. The main logic of building this framework is to determine the cause-and-effect relationships between the variables: sensory marketing stimuli - emotional and cognitive reaction - intention to purchase (Evtimova, 2020).

According to the S-O-R model, sensory signals that consumers receive in the digital environment act as external stimuli. They affect the internal state of a person - his or her emotional arousal, mood, comfort level, or interest. Internal changes act as an intermediate link between stimulus and response, determining behavioral intent. The theory of planned behavior adds a cognitive dimension to this logic, according to which an emotional reaction is transformed into an attitude toward the brand, which, combined with social norms and the perception of control over the situation, forms a conscious intention to make a purchase. The emotional and affective component reinforces this process, as positive emotions not only create a short-term feeling of pleasure but also strengthen long-term associations with the brand (Bizel & Ortega, 2021).

The conceptual model assumes that digital sensory stimuli influence the intention to purchase a product through a dual mechanism - emotional (creating a sense of satisfaction, trust, aesthetic pleasure) and cognitive (awareness of brand benefits, positive evaluation of experience). As a result, a behavioral intention is formed, which is a prerequisite for real action. This model helps to explain why, even in the absence of physical interaction with the product, the digital environment can reproduce the effect of presence, creating a similar sensory experience (Bhatia et al., 2021).

Thus, the conceptual framework of the study integrates the three approaches into a single system, where sensory marketing is viewed not just as a set of techniques for attracting attention, but as a comprehensive communication strategy that combines emotional, cognitive, and behavioral dimensions. In this system, sensory stimuli are an independent variable, emotional and cognitive state is an intermediate variable, and intention to purchase is a dependent variable. The logic ensures the theoretical and methodological integrity of the study, determining the direction of further empirical analysis of the impact of digital sensory stimuli on consumer behavior.

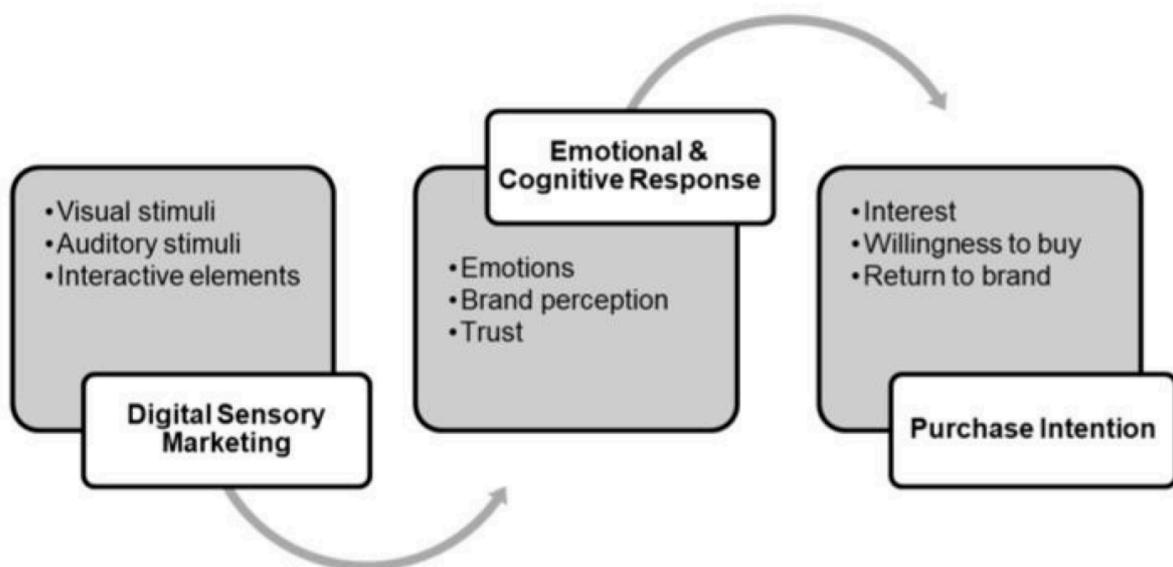


Fig. 1.1 – Conceptual model of the impact of digital sensory marketing on the formation of purchase intention

The proposed conceptual framework defines the logic of the subsequent empirical research. Based on this framework, research questions and hypotheses are formulated regarding the impact of specific groups of digital sensory stimuli on emotional response and the intention to purchase a product. It also specifies the criteria for expert selection, substantiates the parameters for analyzing digital creatives, and determines the criteria for interpreting expert responses. Thus, the framework serves as a “bridge” between theoretical assumptions about the role of sensory experience in marketing communications and practical conclusions regarding how brands should design their digital sensory strategies in order to strengthen purchase intentions and build long-term emotional loyalty among audiences.

CHAPTER 3. EMPIRICAL STUDY OF THE IMPACT OF DIGITAL SENSORY MARKETING ON CONSUMER INTENTIONS

3.1. Methodology and organization of the study

The aim of the empirical study was to determine how digital sensory stimuli influence users' intentions to make online purchases. Two data collection methods were used for this purpose: expert interviews and a consumer survey. Both methods provided information from different perspectives: professional and consumer, which made it possible to compare the opinions of experts and ordinary users.

The expert part of the study involved specialists working in the fields of UI UX design, marketing design, digital branding, multimedia content creation, and advertising. The main criteria for selecting experts were:

- At least two years of experience in digital design or marketing communications;
- Participation in the creation of projects using visual, audio, or interactive elements;
- Understanding of the mechanisms of influence of design and multimedia on user behavior.

Each expert was offered an interview containing open-ended questions. The open format allowed for high-quality, reasoned answers, where experts could express their own opinions, professional experience, and predictions.

The interviews were conducted remotely in written format. This was done in order to:

- 1) Experts could give thoughtful answers;
- 2) Not to limit them in time;
- 3) To avoid the interviewer's influence on the answers.

The questions were divided into two types:

- 1) Specialized – regarding the role of visual elements, sound, website design, VR and AR technologies;
- 2) Analytical – regarding the future development of sensory marketing, advice for companies, and the potential of new technologies.

Responses were transcribed (converted into a single format) and coded according to content categories. The coding method allowed us to identify key themes that were repeated among experts.

Second research method was a consumer survey using Google Forms. This tool allowed us to obtain data from respondents who do not have professional experience in marketing or design but are regular users of online stores and digital services.

The questionnaire consisted of closed questions requiring a single answer to be selected. This was done in order to:

- respondents did not spend much time filling out the questionnaire;
- avoid misinterpretations;

- automate the analysis of results.

The questions concerned the influence of the visual design of the website, video advertising, sound, animation, color, and other stimuli on the desire to make an online purchase.

The results of the expert interviews were processed using thematic analysis, which allows for the identification of meaningful groups of responses. As a result, several key themes emerged related to the impact of sensory stimuli, the importance of design, and the future of digital marketing.

Consumer responses were analyzed using quantitative counting of responses in Google Forms, which made it possible to assess:

- which sensory stimuli users consider important;
- what influences trust in the brand;
- which digital formats attract the most attention.

Thus, the study combined qualitative analysis of expert opinions and quantitative analysis of consumer assessments, which provided a broader understanding of the problem.

Within the framework of the empirical study, a set of hypotheses was formulated that reflects the main assumptions regarding the impact of digital sensory marketing on consumer behavior in the online environment and directly derives from the applied methodology.

Table 3.1

Research Hypotheses of the Empirical Study

Hypothesis	Hypothesis formulation
1	Visual sensory stimuli of the digital environment (website design, product photographs and videos, color scheme) have a significant impact on the formation of positive emotional brand perception among consumers.
2	Positive emotional perception of digital content, formed under the influence of sensory stimuli, contributes to an increase in the level of consumer trust in the brand in the online environment.
3	Auditory sensory stimuli (music background, sound effects) have an ambiguous impact on consumers' emotional reactions and may both enhance positive brand perception and cause negative emotions when used intrusively.
4	The integrity and consistency of the brand's sensory image across different digital channels (website, online advertising, social media) positively affect the formation of consumer loyalty.

The formulated hypotheses clearly outline the cause-and-effect relationships subject to empirical verification within the study and ensure a logical transition from the methodological description to the analysis of the results of expert interviews and the sociological survey. Their verification makes it possible to gain a deeper understanding of the role of digital sensory marketing in shaping emotional brand perception, trust in the brand, and consumers' purchase intentions.

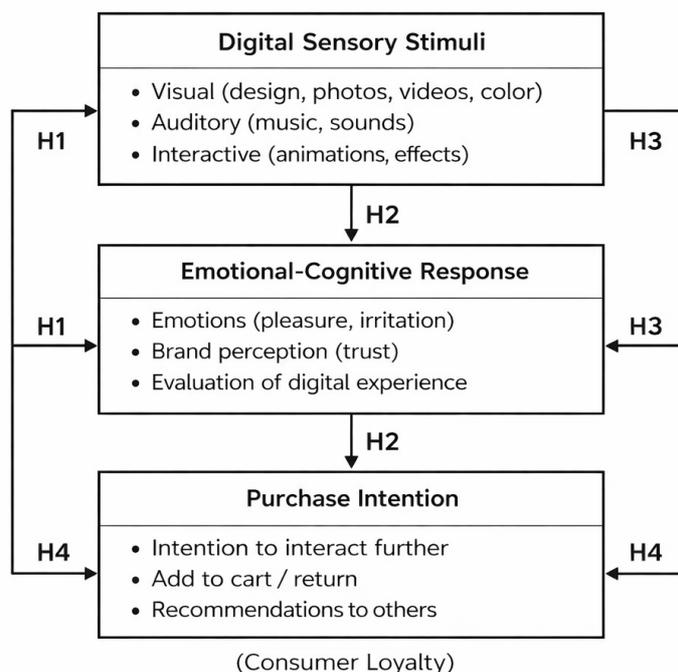


Fig. 3.1 – Conceptual model of implementing the impact of digital sensory marketing on the formation of consumer purchase intentions

The proposed conceptual model reflects the logic of the impact of digital sensory marketing on the formation of consumer purchase intentions in the digital environment. The model is based on the assumption that sensory stimuli integrated into a brand's digital content do not influence consumer behavior directly but realize their effect through internal emotional and cognitive responses.

The initial component of the model consists of digital sensory stimuli, which include visual, auditory, and interactive elements of the digital environment. These stimuli shape the first impression of the brand and activate the consumer's emotional and cognitive perception. In response to sensory influence, an emotional–cognitive reaction emerges, encompassing emotional state, level of trust in the brand, and the overall evaluation of the digital interaction experience.

The emotional–cognitive block performs a mediating function, as it is through this component that sensory stimuli are transformed into behavioral intentions. The final element of the model is purchase intention, which manifests itself in the consumer's readiness to continue interaction with the brand, make a purchase, return to the brand's digital environment, or recommend it to others. Thus, the model demonstrates the sequential and systematic nature of the influence of digital sensory stimuli on consumer purchasing behavior, which is consistent with the theoretical foundations of sensory marketing and the "stimulus–organism–response" model, and also serves as a conceptual basis for the empirical testing of the hypotheses formulated in the study.

3.2. Expert interviews: experts' assessments and forecasts

3.2.1. Expert 1

One of the participants in the expert part of the study was EXPERT 1, a university professor and communications specialist with extensive experience in digital media, multimedia content creation, and the development of visual and audio materials for educational and advertising projects. The expert's professional activity is closely related to the design of digital environments, which provides practical insight into the use of sensory elements in virtual space.

EXPERT 1 defined digital sensory marketing as an approach aimed at creating an online experience that interacts with different human senses. She emphasized that although the digital environment does not allow direct stimulation of smell or taste, it can evoke imaginary sensory associations through visual imagery, sound, motion, and rhythm. According to the expert, the main goal of digital sensory marketing is not to replicate physical sensations, but to create a strong and memorable impression that compensates for their absence.

The expert also noted that digital brands can influence people's feelings in much the same way as physical stores do. She explained that in real space, consumers are influenced by smells, lighting, furniture, music, colors, and other interior elements. In the digital environment, these functions are performed by visual styles, background sounds in videos, animation rhythms, or moving elements on the screen. According to her, correctly selected sensory details can create an atmosphere that will be perceived as emotionally as in an offline store.

An important point was that individual elements of sensory impact must be combined with each other. She noted that visual components are the most significant on the Internet, as they create the first impression, which can be either positive or repulsive. However, according to her answer, visualization becomes much stronger when complemented by sound, video dynamics, or interactivity. She explained that movement and sound work on an emotional level, so people react to them intuitively without analyzing the technical details.

EXPERT 1 believes that the design of a website or app directly influences the user's desire to make a purchase. She noted that a user-friendly interface reduces stress and makes the selection or purchase process easier. If the structure of the website is logical, the buttons are clear, and the design looks professional, the user is more likely to trust the brand. In her opinion, emotionally appealing and functional design can increase the number of purchases because it creates a sense of reliability.

Regarding the use of sound in advertising, the expert emphasized that music and sound can have a stronger emotional impact than text or static graphics. She noted that the right sound can create an atmosphere, evoke nostalgia, or reinforce trust. At the same time,

poor use of audio design creates a negative impression, especially on social media, where users view content quickly and subconsciously respond to emotional cues.

In a question about digital environment, the expert pointed to advances in technology. She noted that modern VR and AR systems can simulate spatial depth and physical textures, creating a psychological sense of touch in humans. She added that even without physical contact, users can imagine the texture or shape of an object solely through realistic images and movement. This allows digital brands to influence touch “through imagination.”

In her response regarding the future of sensory marketing, the expert noted that the role of this area is constantly growing. In her opinion, the development of VR, AR, artificial intelligence, and spatial audio will make online communication more personal and emotional. She predicted that brands will gradually move towards creating “multisensory stories” where different senses work together. This will be important in the education, tourism, and service industries, where impressions are key to decision-making.

Concluding the interview, EXPERT 1 gave advice to companies that want to improve their marketing with sensory elements. She emphasized that brands need to determine which sensory signals are right for them and use them consistently. In her opinion, it is important not to overload the consumer with effects, but to ensure that each element enhances the overall impression. EXPERT 1 also stressed that sensory marketing only works when it is perceived as genuine, so authenticity and consistency with the brand's emotional message are important.

3.2.2. Expert 2

The second expert involved in the study was EXPERT 2, a researcher and associate professor in the field of communication with a doctoral degree and extensive academic and professional experience. The selection criteria for experts included a high level of academic qualification, practical experience in communication and marketing, participation in international research projects, and an understanding of current trends in digital media. EXPERT 2 fully met these requirements.

Her professional background combines academic research with practical experience in advertising and strategic communication. She previously worked in advertising agencies as a strategic planner and copywriter and also managed creative communication projects. This experience provided her with a deep understanding of meaning-making in advertising, the use of sensory stimuli, and the specific features of communication in digital culture. Her academic career includes teaching courses related to digital communication, branding, storytelling, social media, advertising, and creative industries.

EXPERT 2 is actively involved in the international scientific community and regularly participates in conferences in Europe and Latin America, presenting research on digital culture, hybrid content, brand communication strategies, transmedia storytelling, and social

engagement. Her involvement in international academic networks ensures continuous access to current theoretical approaches and methodological developments.

An important criterion for her selection was participation in research projects focused on digital storytelling, branding, social change communication, and audience behavior analysis. This enables the expert to assess sensory interaction not only from a marketing perspective but also from cultural and psychological viewpoints. Her professional profile combines applied communication work with analytical evaluation of digital campaign effectiveness and consumer behavior.

The interview with EXPERT 2 was conducted online via video conference and lasted approximately 35 minutes. The conversation took place in English. At the beginning of the interview, the researcher explained the structure of the discussion and assured confidentiality. After receiving verbal consent, the interview was recorded.

The structure of the interview mirrored that of the previous expert, with a stronger emphasis on strategic and technological aspects. The discussion covered professional experience, the role of sensory elements in digital projects, and the importance of emotional, experiential, and personalized interaction between brands and users.

Particular attention was given to the relationship between interface design, platform structure, and user trust. The expert was asked to identify which digital elements could function as “physical evidence” in online environments and how visual consistency, content organization, loading speed, and usability influence perceptions of brand quality and willingness to interact.

A separate section addressed the role of sound and audio elements in digital communication. EXPERT 2 discussed how consciously planned sound design can shape emotional context, as well as the risks associated with inappropriate audio choices. She also commented on how the combination of audio and video affects message memorability, perception speed, and associative thinking.

Another part of the interview focused on emerging technologies, including VR, AR, mixed reality, interactive avatars, and WebAR. The expert assessed their potential for creating multisensory environments, identified barriers to implementation, and highlighted user groups most likely to adopt such innovations.

In the final section, EXPERT 2 provided recommendations for companies beginning to integrate sensory elements into digital strategies. She emphasized the importance of starting with user needs, gradually introducing technologies, and avoiding excessive complexity. According to the expert, one of the most common mistakes in sensory marketing is prioritizing technological novelty over meaningful user experience.

3.3. Methodology and organization of the study

In order to empirically verify the theoretical propositions outlined in the previous sections of the study, a sociological survey of consumers was conducted to identify the

characteristics of the perception of digital sensory marketing and its impact on the formation of purchase intentions. The survey provided quantitative and qualitative data reflecting users' real reactions to sensory stimuli in the digital environment, as well as tracing the relationship between emotional perception of content, brand trust, and purchasing behavior.

The survey was conducted online using a digital questionnaire, which ensured coverage of respondents from different socio-demographic groups and geographical regions. The total number of participants in the study was 132, which allows us to consider the sample representative for analyzing trends in the perception of digital marketing content. All respondents have experience using online stores and interacting with online advertising, which is essential for the accuracy of the results obtained.

A socio-demographic analysis of the sample showed that young and middle-aged people, who are the most active users of digital communication channels, predominate among the respondents. A significant proportion of respondents have higher or incomplete higher education, which indicates a sufficient level of digital literacy and a developed ability to consciously perceive marketing messages. In terms of gender, the sample is relatively balanced, which avoids a skew in the results toward one gender. Analysis of employment and income levels showed that most respondents have a stable income, which increases the likelihood of participation in consumer decisions in the online environment.

To systematize the socio-demographic characteristics of respondents, it is advisable to present summarized data:

Table 3.1

Sociol-demographic characteristics of respondents

Indicator	Category	Percentage of respondents, %
Age	up to 25 years old	18
	26–35 years old	29
	36–45 years old	26
	46 years old and older	27
Gender	men	38
	women	62
Level of education	average	12
	unfinished higher education	33
	higher	45
	postgraduate	10

Frequency of online purchases	regularly	43
	periodically	38
	rarely	19

The impact of digital sensory marketing elements on consumer responses

The presented data indicate that the sample includes active consumers of digital goods and services, which is relevant for studying the impact of sensory marketing stimuli.

Further analysis focused on examining the features of perception of visual elements of digital content. The survey results showed that for the majority of respondents, the key factor shaping the first impression of a website or online advertisement is the visual component (Fig. 3.2). In particular, a significant proportion of respondents indicated that they primarily pay attention to product photographs, color schemes, and the overall page design, which confirms the dominance of visual stimuli in the digital environment and their direct influence on emotional brand perception.

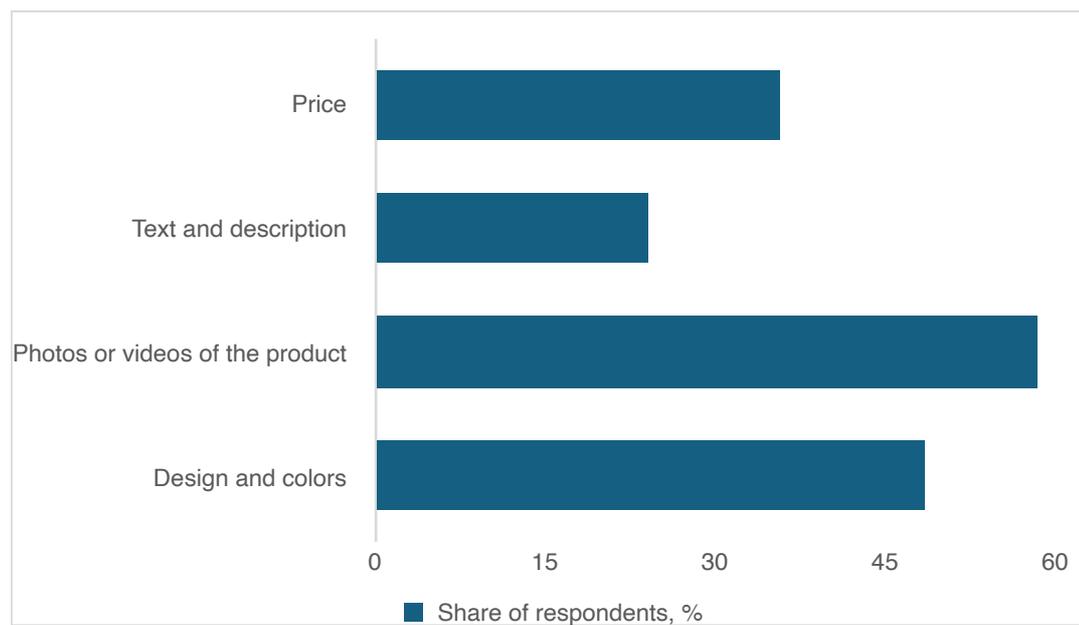


Fig. 3.2 – Factors to which users pay primary attention when visiting a brand's website

At the same time, it was found that excessive brightness or visual overload of content may cause an opposite reaction. Some respondents indicated that aggressive colors, excessive animation, or chaotic placement of elements lead to fatigue, reduced trust, and a desire to leave the website. Thus, visual sensory stimulation should be balanced and aligned with the expectations of the target audience.

Special attention in the study was paid to the role of auditory stimuli (Fig. 3.3). The survey results indicate that attitudes toward music and sound effects in digital advertising are ambiguous. On the one hand, respondents acknowledge that well-selected audio support can enhance emotional brand perception, contribute to better memorability of advertising, and create a positive mood. On the other hand, intrusive or automatically played sounds often cause irritation and reduce the overall effectiveness of communication, which confirms the need for cautious use of auditory elements in digital marketing, taking into account context and user control.

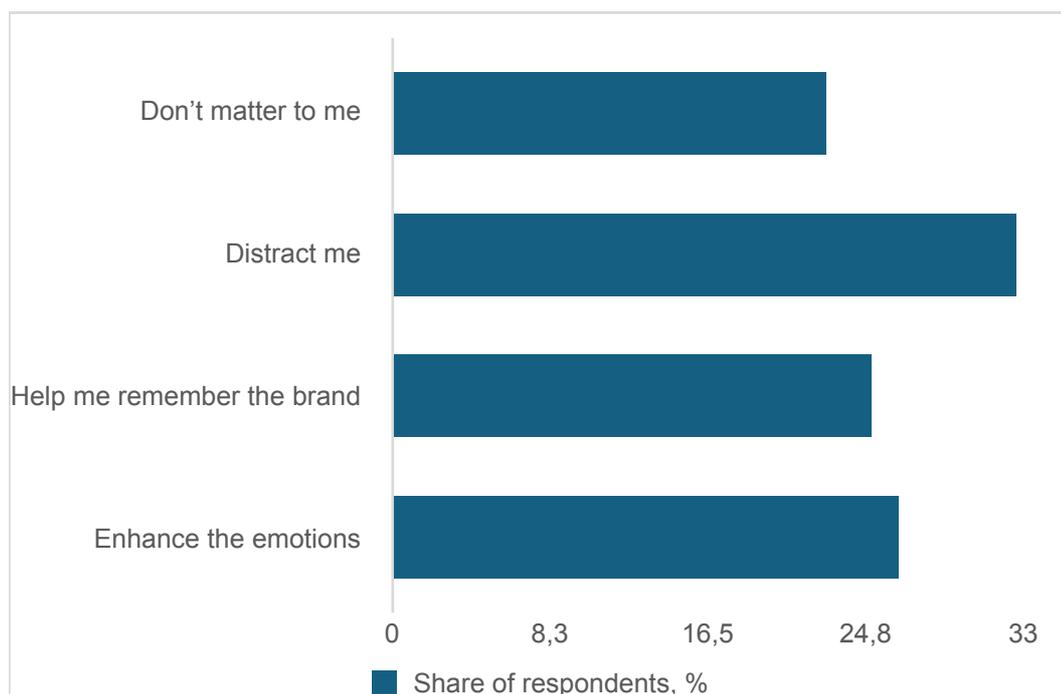


Fig. 3.3 – Consumer reactions to the use of audio elements in online advertising

The analysis of responses regarding the emotional impact of sensory elements showed that the majority of respondents associate positive emotions with a harmonious combination of colors, high-quality images, and a logical content structure (Table 3.3). These characteristics of the digital environment create a perception of brand professionalism and increase the level of trust in the brand. In turn, trust acts as an intermediate link between sensory perception and the intention to make a purchase.

To summarize the results concerning the influence of sensory elements on emotional reactions and purchase intentions, the relevant data are presented in Table 3.2.

Table 3.3

Impact of Digital Sensory Marketing Elements on Consumer Reactions

Sensory element	The main reaction of consumers	Share of respondents, %
Visual design	increased trust	71
	desire to stay on the site	64
Color scheme	mood influence	68
	forming associations with the brand	59
Audio accompaniment	intensification of emotions	42
	irritation	28
Product photos and videos	increase in purchase intent	73
	better understanding of the product	66

The impact of digital sensory marketing elements on consumer responses

The presented data confirm that the visual component of digital sensory marketing has the most significant impact on purchase intentions. High-quality photographs, video reviews, and well-designed layouts contribute to increasing consumers' confidence in making the right choice and reduce the level of hesitation before completing a purchase. The graphical results are presented in Fig. 3.4.

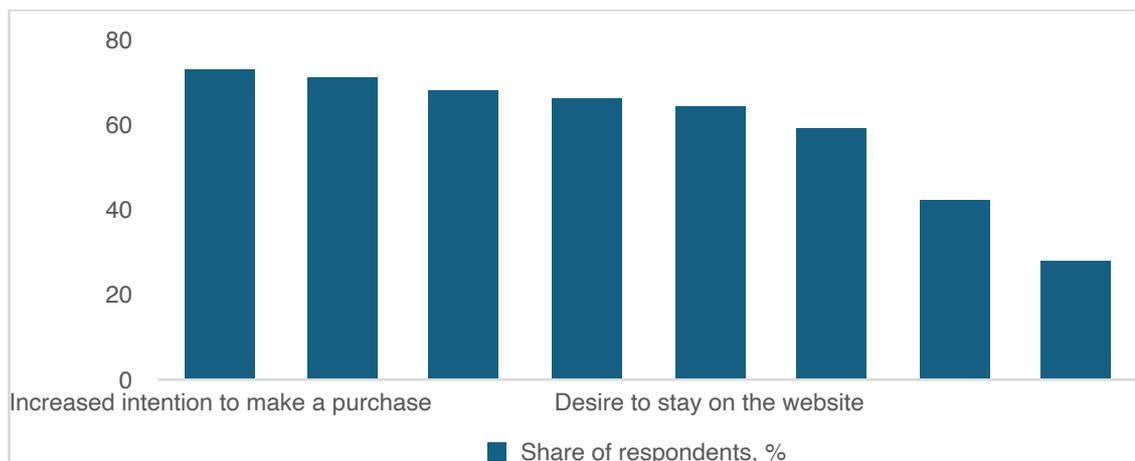


Fig. 3.4– Impact of sensory stimuli in digital advertising on consumer behavioral reactions

An important aspect of the study was the examination of the relationship between emotional reactions to advertising and actual consumer behavior. The survey results showed that positive emotions significantly increase the likelihood of subsequent actions, such as

viewing product details, adding items to the shopping cart, or directly making a purchase (Fig. 3.5).

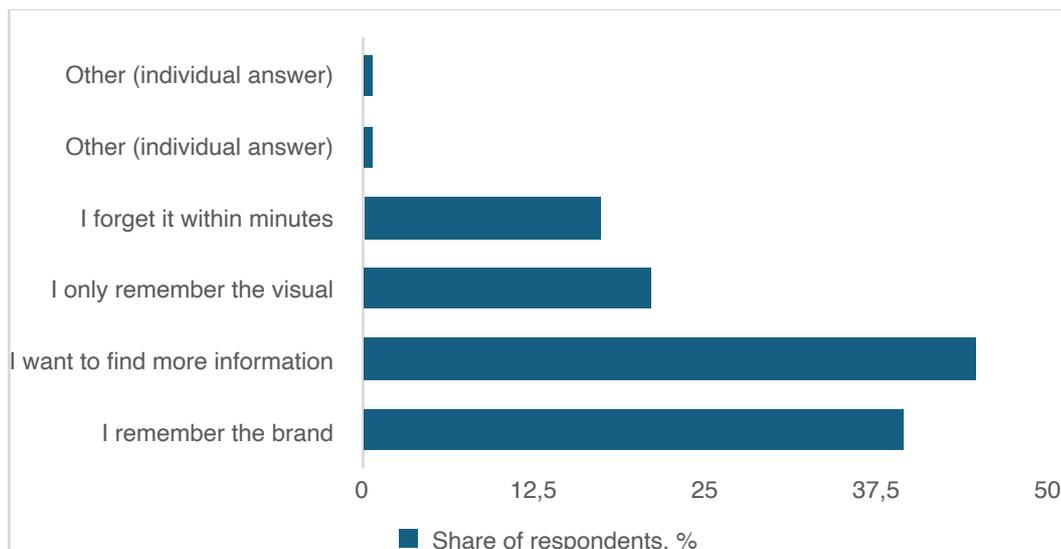


Fig. 3.5 – Consumer behavioral responses after viewing an advertising message

At the same time, neutral or negative emotions often lead to the termination of interaction with the brand. Particular attention should be paid to the role of the integrity of the brand's sensory image. The majority of respondents positively evaluated brands that maintain a consistent style in the design of the website, advertising materials, and social media pages. Consistency in the use of colors, fonts, visual imagery, and communication tone creates a sense of reliability and professionalism, which directly affects the level of consumer loyalty.

Summarizing the results of the sociological survey, it can be concluded that digital sensory marketing plays a significant role in shaping consumers' purchase intentions. The most effective approach is a comprehensive one, which involves a harmonious combination of visual and auditory stimuli oriented toward the emotional needs of the target audience. The obtained results confirm the feasibility of using sensory strategies in digital marketing and may serve as a practical basis for the development of effective marketing campaigns in the digital environment.

3.3. Methodology and organization of the study

A The comparative analysis of expert and consumer assessments within the study of the impact of digital sensory marketing on consumers' purchase intentions makes it possible to gain a deeper understanding of the mechanisms of interaction between the professional perspective of specialists and the actual experience of end users of digital products. Comparative analysis is fundamentally important, as it is precisely the discrepancies or, conversely, the convergence between these two perspectives that form the basis for evaluating the effectiveness of sensory strategies in the digital environment. Expert interpretations are generally grounded in systematic knowledge, professional experience,

and theoretical understanding of communication processes, whereas consumer assessments reflect direct emotional, cognitive, and behavioral reactions to digital stimuli.

One of the key aspects of the comparative analysis was the evaluation of the role of visual sensory elements. During expert interviews, specialists emphasized the decisive role of visual design in shaping the first impression of a brand, creating an emotional background, and increasing user trust. The results of the consumer survey confirm this position. In particular, 58.3% of respondents indicated that they primarily pay attention to product photos and videos, while 48.5% focus on website design and color scheme. At the same time, such rational factors as price (35.6%) and textual description (24.2%) have a less pronounced influence on initial perception. Thus, a high level of consistency can be observed between expert views and actual consumer reactions regarding the dominance of visual stimuli in the digital environment.

When comparing assessments of the impact of visual elements on emotional and behavioral reactions, a significant convergence of positions is also evident. Experts emphasized that visual design is capable not only of attracting attention but also of building trust and stimulating intentions for further interaction with the brand. Consumer survey data demonstrate a similar trend: 71% of respondents reported an increase in trust toward the brand under the influence of visual design, and 64% indicated a desire to stay on the website longer. Moreover, 73% of respondents pointed to an increased intention to make a purchase due to the use of high-quality product photos and videos, which confirms the expert thesis regarding the relationship between sensory perception and purchasing behavior.

Special attention in the comparative analysis was given to auditory sensory elements, whose evaluations proved to be less unambiguous. In their interviews, experts emphasized the potential of sound accompaniment as a tool for emotional enhancement, while at the same time warning against its intrusive use. The results of the consumer survey confirm this caution. Only 42% of respondents indicated that auditory accompaniment enhances the emotional perception of advertising, whereas 28% reported experiencing irritation. In addition, 32.6% of respondents stated that sound in advertising distracts them, and 22.7% reported that auditory elements are irrelevant to them. Expert predictions regarding the polarity of consumer reactions to sound are fully confirmed by the empirical data.

An important point of comparison was the role of emotional reactions as an intermediate link between sensory influence and behavioral intentions. Experts considered emotions to be a key mechanism of sensory marketing, mediating the impact of design on trust and loyalty. Consumer survey data are consistent with this position: 68% of respondents noted the influence of color schemes on emotional mood, and 59% indicated the formation of brand associations. At the same time, 66% of respondents reported that

high-quality visual content contributes to a better understanding of the product, which combines emotional and cognitive components of perception.

The comparison of expert and consumer assessments also demonstrated a shared understanding of the importance of the integrity of the brand's sensory image. Experts emphasized the importance of consistency in style, colors, and visual imagery across different digital channels as a factor in building trust. Consumer results confirm this position: high levels of trust (71%) and the desire to continue interacting with the brand (64%) indicate a positive perception of consistent sensory design.

Overall, the results of the comparative analysis demonstrate a high level of alignment between expert assessments and consumer reactions regarding the role of visual sensory stimuli, emotional impact, and the importance of design in shaping trust and purchase intentions. At the same time, in the case of auditory elements, greater divergence in perception was identified, confirming the need for cautious and context-sensitive use of sound solutions in digital marketing. The obtained results create a logical foundation for further quantitative verification of the formulated hypotheses in the subsequent subsection of the study.

CHAPTER 4. RESULTS AND PRACTICAL RECOMMENDATIONS FOR THE USE OF SENSORY MARKETING IN THE DIGITAL ENVIRONMENT

4.1. Results

Within the empirical part of the study, Hypothesis 1 is tested, according to which visual sensory stimuli of the digital environment (website design, product photographs and videos, color scheme) have a significant impact on the formation of positive emotional perception of the brand by consumers. This hypothesis was formulated based on the theoretical provisions of sensory marketing, as well as the results of expert interviews, within which specialists in digital design and communications emphasized the decisive role of visual elements in shaping the emotional user experience and primary trust in the brand.

The direct testing of Hypothesis 1 was carried out on the basis of the results of a sociological survey of consumers, which makes it possible to quantitatively assess the intensity of the emotional impact of visual sensory stimuli. For data analysis, the percentage distribution of responses, mean values (M), and standard deviations (SD) were calculated – Table 4.1.

Table 4.1

Statistical indicators of the impact of visual sensory stimuli on the positive emotional perception of the brand

Visual sensory stimulus	Indicator of emotional reaction	Share of respondents, %	M	SD
Website design	Positive emotional perception of the brand	71.0	4.12	0.81
Color scheme	Positive impact on emotional state	68.2	3.98	0.87
Product photos and videos	Enhancement of positive emotions	73.0	4.15	0.76
Product photos and videos	Formation of a positive brand image	66.0	4.08	0.79
Integral indicator	Overall emotional perception of the brand	–	4.03	0.84

The obtained results of the quantitative analysis indicate a significant impact of visual sensory stimuli of the digital environment on the formation of positive emotional perception of the brand. The highest mean values were recorded for product photo and video content (M = 4.15), which indicates their leading role in evoking positive emotions and emotional involvement of consumers. High indicators are also characteristic of website design (M = 4.12), which is perceived by respondents as a factor of emotional comfort and brand professionalism.

The color scheme, although demonstrating a slightly lower mean value (M = 3.98), is a significant element of emotional influence, which is confirmed by a high proportion of

respondents who noted its impact on mood. Relatively small values of standard deviation across all indicators indicate the consistency of assessments and the stability of the identified trends within the sample. The results of the sociological survey confirm Hypothesis 1 and are consistent with the conclusions of expert interviews, which emphasized the key role of the visual component in shaping emotional perception of the brand in the digital environment.

To test Hypothesis 2, a quantitative assessment of the relationship between consumers' emotional reactions to digital marketing content and the level of trust in the brand in the online environment was conducted. The empirical basis of the study consisted of the results of a sociological survey of consumers, within which respondents assessed their emotional reactions to visual and auditory elements of digital advertising, as well as their level of trust in brands represented in the digital environment.

Given that the studied variables were measured using ordinal scales, Spearman's rank correlation coefficient was applied to test the hypothesis – Table 4.2.

Table 4.2

Results of correlation analysis between emotional perception of digital content and trust in the brand

Indicator	Emotional perception of content (X ₂)	Level of trust in the brand (Y ₂)
Number of observations	132	132
Mean value	3.92	4.08
Standard deviation	0.61	0.57
Spearman's rank correlation coefficient	–	0.68
p-value	–	less than 0.01

The obtained value of Spearman's rank correlation coefficient, equal to 0.68, indicates a statistically significant direct relationship of moderate strength between positive emotional perception of digital content and the level of consumer trust in the brand in the online environment. The p-value of less than 0.01 confirms that the identified relationship is statistically significant and not random.

Based on the results of the correlation analysis, Hypothesis 2 is confirmed. Positive emotions experienced by consumers under the influence of sensory elements of digital content are statistically significantly associated with an increase in the level of trust in the brand. Thus, the emotional component of digital marketing performs the function of a psychological mediator between visual and auditory perception of content and the formation of trust-based relationships between the brand and the consumer.

Hypothesis 3 is based on the assumption that auditory sensory stimuli of the digital environment (musical accompaniment, sound effects) have an ambiguous impact on

consumers' emotional reactions and may both enhance positive brand perception and cause negative emotions in the case of intrusive or inappropriate use.

Testing of this hypothesis was carried out on the basis of the results of a sociological survey, which included questions regarding the impact of music and sound elements in online advertising and on websites on respondents' emotional states. To quantitatively assess the nature of emotional reactions, frequency analysis of responses was conducted and an index of emotional impact of auditory stimuli was calculated – Table 4.3.

Table 4.3

Calculation of the emotional reaction index to auditory sensory stimuli

Type of emotional reaction	Number of respondents	Share, %
Positive reaction (enhances emotions, helps remember the brand, creates mood)	n_1	42.0
Negative reaction (irritates, distracts, seems unnecessary or intrusive)	n_2	28.0
Neutral reaction (does not affect or is perceived indifferently)	n_3	30.0
Total	N	100.0

Calculation of the emotional impact index of auditory stimuli:

$$I = (P - N) / 100 = (42 - 28) / 100 = 0.14$$

Where P is the share of positive reactions, percent; N is the share of negative reactions, percent.

The results of the empirical study indicate the ambiguous nature of the impact of auditory sensory stimuli on consumers' emotional perception of digital content. The share of positive emotional reactions (42 percent) exceeds the share of negative reactions (28 percent); however, the presence of a significant proportion of neutral responses (30 percent) indicates the absence of a universal emotional effect of musical accompaniment and sound effects. The calculated emotional impact index (0.14) demonstrates a weakly expressed positive predominance, which does not allow auditory stimuli to be considered an unambiguously effective tool for forming positive emotional perception of the brand. On the contrary, the obtained data confirm that sound elements can both enhance the emotional experience of users and cause irritation or emotional rejection in the case of intrusive use.

Hypothesis 3 is confirmed by the results of the sociological survey: auditory sensory stimuli have a polar and context-dependent impact on consumers' emotional reactions in the digital environment, which requires a balanced and adaptive approach to their use in online brand communications.

Hypothesis 4 is based on the assumption that the integrity and consistency of the brand's sensory image across different digital channels (website, online advertising, social media) positively affect the formation of consumer loyalty. To test this hypothesis, the results of a sociological survey were used, reflecting respondents' attitudes toward consistent brand

visual style, trust in the brand, and behavioral intentions, including the desire to return to the website or interact with the brand repeatedly – Table 4.4.

Table 4.4

Impact of consistency of the brand's sensory image on consumer loyalty indicators

Indicator	Share of positive responses, %
Consistent brand style facilitates recognition	68.0
Consistent visual image increases trust in the brand	65.0
Visually neat and harmonious website increases the desire to return	62.0
Consistent style in social media forms a positive attitude	60.0

Average index of the impact of sensory image consistency on loyalty:

$$\text{Loyalty index} = (68 + 65 + 62 + 60) / 4 = 63.75 \%$$

The obtained results indicate the presence of a positive relationship between the integrity of the brand's sensory image and the formation of consumer loyalty in the digital environment. The majority of respondents noted that a consistent brand visual style facilitates recognition, increases trust, and forms a desire for repeated interaction with the brand's digital channels. The calculated average impact index of 63.75 percent indicates a significant role of sensory image consistency in the process of forming consumer loyalty. Thus, Hypothesis 4 is confirmed by the results of the sociological survey: the integrity and consistency of the brand's sensory image across different digital channels positively affect the formation of consumer loyalty by strengthening trust, recognition, and the intention for repeated interaction.

The generalization of the research results made it possible to form a comprehensive model of the impact of sensory marketing on consumers' intention to make a purchase in the digital environment – Figure 4.1.

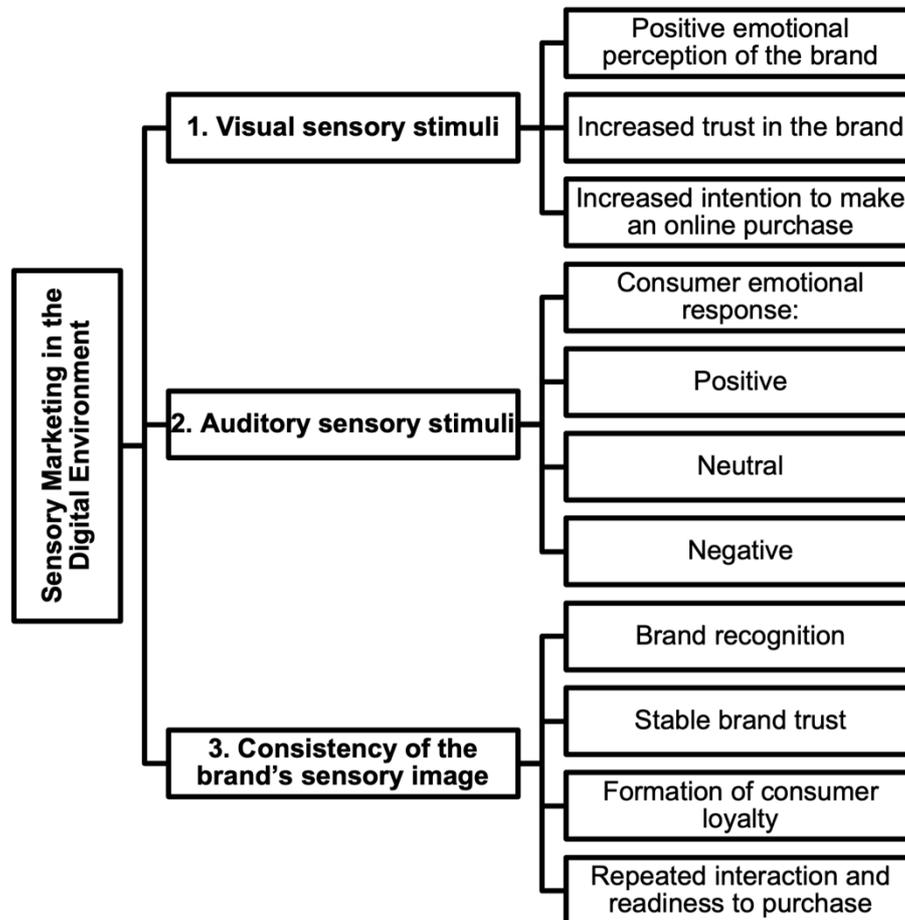


Figure 4.1 – Model of the impact of sensory marketing on the formation of consumers' purchase intentions in the digital environment

The reflects the logic of the impact of key elements of sensory marketing on consumer behavior in the digital environment. In the model, sensory marketing is considered as a set of interrelated digital environment stimuli, among which visual sensory elements play a leading role. The obtained results confirmed that website design, color scheme, and product photo and video content directly shape positive emotional perception of the brand, which in turn contributes to increased consumer trust and a higher intention to make an online purchase.

A separate block reflects the impact of auditory sensory stimuli, which, according to the study results, has an ambiguous character. Musical accompaniment and sound effects can evoke both positive emotional reactions associated with enhanced emotions and brand memorability, as well as neutral or negative reactions in the form of irritation and distraction.

The final element of the model is the consistency of the brand's sensory image across different digital channels. Survey data indicate that a consistent visual style contributes to increased brand recognition, the formation of stable trust and consumer loyalty, which ultimately manifests in repeated interaction with the brand and readiness to make a purchase.

The empirical results obtained in the course of the study allow for a comprehensive finalization of the hypotheses put forward. Hypothesis 1, which assumed that visual sensory stimuli of the digital environment have a significant impact on the formation of positive emotional perception of the brand, was fully confirmed. Quantitative analysis demonstrated high mean values for website design, color scheme, and product photo and video content, indicating their leading role in shaping consumers' emotional responses.

Hypothesis 2, concerning the relationship between consumers' emotional reactions to digital content and their level of trust in the brand, was also confirmed. The results of the correlation analysis revealed a statistically significant positive relationship between emotional perception and brand trust, which confirms the mediating role of emotions in digital brand communication.

Hypothesis 3, which assumed an ambiguous impact of auditory sensory stimuli on consumers' emotional reactions, was partially confirmed. The findings indicate that sound elements in the digital environment can generate both positive and negative emotional responses, depending on the context and intensity of their use. This confirms the situational and context-dependent nature of auditory sensory stimuli in digital marketing.

Hypothesis 4, related to the integrity and consistency of the brand's sensory image across digital channels and its influence on consumer loyalty, was fully confirmed. The survey results demonstrated that consistent visual and sensory presentation of the brand contributes to higher recognition, increased trust, and stronger intentions for repeated interaction.

4.2. Optimizing user experience to increase purchase intentions

In today's digital environment, user experience is becoming not just an auxiliary element of consumer interaction with a brand, but a key factor in shaping purchasing intentions. User experience optimization is seen as a complex process that encompasses sensory, emotional, and cognitive engagement of the user at all stages of interaction with digital platforms. In an oversaturated information space, it is the quality of the experience that determines whether contact with the brand's page will continue or turn into real action, in particular the intention to purchase.

From a sensory marketing perspective, optimizing the user experience involves the targeted management of digital stimuli that are perceived indirectly by the senses through screen and audio channels. Visual, audio, and interactive elements shape the first impression of a product or service, activate emotional responses, and influence the assessment of the value of the offer. That is why the consistency of sensory signals with the expectations of the target audience becomes critically important for reducing cognitive load and increasing the comfort of perception.

Visual optimization of the user experience is not only about choosing an attractive design, but also about creating a clear hierarchy of information. Color schemes, typography,

composition, and page rhythm should help users quickly find their way around, minimize the effort required to search for information, and create a sense of brand integrity. Coordinated color palettes and visual patterns can evoke a sense of trust and stability or, conversely, stimulate impulsiveness, which directly influences purchasing intentions.

The speed of user interaction with a digital product is equally important. Page loading speed, smooth animations, and interface adaptability to different devices form the basic sense of comfort. Any delays or technical complications are perceived as negative sensory stimuli that reduce engagement and can cause emotional rejection. Thus, technical optimization is an important component of the sensory experience, although it often remains outside the classical understanding of marketing tools.

Although sound elements are used sparingly in digital environments, they can have a significant impact on the user's emotional state. Acoustic signals, background sounds, or micro-audio effects can enhance the feeling of immersion, create associations with the brand, and contribute to the formation of a positive emotional background. At the same time, excessive or unmotivated use of sound can have the opposite effect, causing irritation or loss of control over the situation, which negatively affects purchasing intentions.

Personalization plays a special role in the process of optimizing user experience. Adapting content, recommendations, and visual elements to individual user characteristics allows you to increase the relevance of interaction and create a sense of personalization. A personalized touchscreen experience helps form an emotional connection between the consumer and the brand, which in turn increases trust and willingness to make a purchase.

The cognitive aspect of optimizing user experience lies in simplifying the decision-making process. Clear navigation, understandable calls to action, and a logical structure of user paths reduce the number of barriers between intention and action. In this context, sensory marketing serves as reinforcement, with visual or interactive cues gently guiding the user without creating a sense of pressure or manipulation.

The emotional component of user experience is an integral result of the interaction of all sensory stimuli. Positive emotions that arise during contact with a digital platform increase the subjective assessment of the brand and form a tendency to repeat interaction. It is emotional memory that often determines consumer choice in a competitive situation when the functional characteristics of products are similar.

Thus, optimizing the user experience with sensory marketing principles in mind is a strategic tool for increasing purchase intent in the digital environment. A comprehensive approach that combines visual, audio, technical, and personalized elements not only increases the effectiveness of user interaction but also forms a lasting emotional attachment to the brand. As a result, the user experience is transformed from a passive background of interaction into an active factor influencing consumer behavior.

4.3. Prospects for the development of digital sensory marketing

Digital sensory marketing is currently undergoing a period of active transformation, driven by the simultaneous development of digital technologies, changes in consumer behavior, and the growing role of emotional factors in decision-making. The prospects for its further development are linked not only to the improvement of technical tools, but also to a deeper understanding of the psychological mechanisms of perception, memory, and emotional engagement of consumers in the digital environment.

One of the key areas of development in digital sensory marketing is the integration of artificial intelligence and machine learning algorithms into the process of creating personalized sensory experiences. By analyzing behavioral patterns, interaction history, and contextual data, digital platforms can dynamically adapt visual, auditory, and interactive stimuli to the individual characteristics of the user. Such personalization is not limited to product recommendations, but extends to the style of content presentation, the pace of interaction, and the sensory richness of the interface.

Another promising area is the development of immersive technologies, in particular augmented and virtual reality, which significantly expand the boundaries of sensory influence in the digital space. Immersive environments allow you to simulate a multidimensional experience of interaction with a brand, in which the user not only observes but also actively interacts with the digital product. In this context, sensory marketing is moving from indirect influence to creating conditions for maximum presence, which enhances emotional response and increases the subjective value of the offer.

An important prospect is the further development of multisensory strategies in the digital environment. While the main focus today is primarily on visual stimuli, in the future, the importance of combining different sensory channels within a single experience will grow. The coordinated use of color, movement, sound, and tactile simulations through interfaces creates a holistic brand image that makes it easier to identify and remember. This approach helps form lasting associations that stick in the consumer's long-term memory.

The development of the ethical dimension of digital sensory marketing deserves special attention. With the growth of opportunities to influence the emotional state of users, the question of the limits of acceptable sensory stimulation becomes increasingly relevant. A promising direction is the formation of ethical standards for the use of sensory tools, which provide for transparency, voluntary interaction, and the avoidance of excessive manipulation. Adherence to these principles contributes to increased brand trust and the formation of long-term relationships with consumers.

Changes in consumer expectations also determine the prospects for the development of digital sensory marketing. Modern users increasingly value not only the functionality of a product, but also the emotional experience that accompanies interaction with it. In this context, sensory marketing is becoming strategically important as a tool for brand differentiation in a highly competitive environment. Brands that are able to create a

unique digital experience gain a competitive advantage, which manifests itself in increased loyalty and repeat purchases.

Prospects for development are also linked to improvements in methods for assessing the effectiveness of sensory influences in the digital environment. Combining quantitative indicators of user behavior with qualitative data on emotional responses opens up opportunities for more accurate analysis of the impact of sensory stimuli on purchasing intentions. In the future, the role of neuromarketing approaches adapted to digital platforms is expected to grow, allowing for deeper exploration of the unconscious aspects of consumer behavior.

5. CONCLUSIONS

As part of the thesis, a comprehensive study was conducted on the impact of digital sensory marketing on the formation of consumer purchase intentions, which made it possible to combine theoretical analysis of modern scientific approaches with the results of empirical research methods. The chosen topic proved to be relevant in the context of the transformation of marketing communications under the influence of digitalization, growing competition in the online environment, and changes in consumer behavior patterns.

Theoretical analysis has established that digital sensory marketing is an interdisciplinary phenomenon that combines tools from marketing, psychology, design, and digital technologies. Its essence lies in creating conditions for interaction between the brand and the user, in which sensory stimuli contribute to the formation of a positive emotional experience, increasing the level of trust and engagement. Unlike traditional approaches to advertising, sensory marketing in the digital environment is not limited to conveying information about the product, but focuses on experiences, associations, and subjective perceptions.

An analysis of scientific sources revealed that visual stimuli, in particular interface design, color scheme, composition, and the quality of images and video content, play a dominant role in digital sensory marketing. At the same time, the effectiveness of sensory influence increases when the visual, auditory, and structural elements of a digital product are consistent. It has been established that sensory factors act indirectly, forming the emotional background of perception, which is then transformed into the consumer's behavioral intentions.

The results of the expert study confirmed that specialists in the field of digital communication and marketing consider sensory elements to be a component of strategic user experience design. For experts, it is not only the aesthetic aspect that is important, but also functionality, interaction logic, and meeting audience expectations. Expert assessments showed awareness of the risks associated with excessive or uncontrolled sensory stimulation, which can lead to user overload and reduced communication effectiveness.

A sociological survey of consumers revealed users' real reactions to sensory stimuli in the digital environment. The data obtained shows that most consumers respond positively to well-thought-out visual design, high-quality content, and a

convenient structure of digital platforms. At the same time, attitudes toward audio elements are more differentiated, indicating the need for individualization and careful use of sound solutions in marketing communications. The study also confirmed the existence of a link between positive emotional responses and increased willingness to make a purchase.

A comparative analysis of expert and consumer assessments showed that there is both overlap and certain discrepancies between the professional vision and the experience of end users. Experts think in terms of long-term strategies and systemic impact, while consumers focus on immediate sensations and ease of interaction. At the same time, both groups recognize the importance of the emotional component and its impact on brand trust, confirming the relevance of using sensory approaches in digital marketing.

The generalization of the research results gives grounds to assert that the effectiveness of digital sensory marketing depends on the ability of brands to combine technological capabilities with the psychological characteristics of user perception. Sensory stimuli must be integrated into the overall communication strategy and correspond to the context of digital product use. It is this approach that contributes to the formation of a positive experience, which directly influences consumers' purchasing intentions.

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7. ANNEXES

Annex A

Expert interview questionnaire and responses (EXPERT 1)

Question 1. How do you characterize the concept of digital sensory marketing?

Digital sensory marketing involves creating online experiences that engage consumers' senses: sight, sound, touch, and even imagined smell or taste through digital channels. It is focused on replicating or evoking the sensory richness of physical experiences in virtual spaces through immersive visuals, soundscapes, textures simulated via haptic feedback, or interactive design elements. In educational or institutional contexts, this may include multimedia storytelling, three-dimensional visuals, or sound design that make online courses, virtual tours, or recruitment campaigns more engaging and memorable.

Question 2. In your perspective, can internet brands affect people's senses in the same way that physical stores do?

Although digital environments cannot fully replicate the multisensory experience of physical spaces, they are capable of evoking strong sensory and emotional responses through visual, auditory, and interactive design. Elements such as color palettes, motion graphics, or background music can influence mood and perception in a way comparable to lighting and ambient sound in physical stores.

Question 3. What digital aspects (visuals, music, motion, or interactivity) do you believe have the most emotional impact on consumers?

Visual elements remain the strongest sensory trigger in digital environments, as they immediately shape perception and emotional response. However, when visuals are combined with sound and motion, their emotional impact becomes significantly stronger. Dynamic formats such as short videos, animations, and interactive infographics effectively capture attention and convey emotions.

Question 4. How much can the design of a website or app influence a consumer's intention to buy?

Website and application design have a substantial influence on consumer behavior. A well-designed digital interface communicates professionalism, trustworthiness, and ease of use—key psychological factors in decision-making. Clear navigation, intuitive interaction, and emotionally appealing aesthetics reduce cognitive friction and increase the likelihood of conversion.

Question 5. How significant do you think background sounds or music are in online advertising for making a good impression of a brand?

Sound and music play an important role in shaping emotional resonance and atmosphere. Appropriate audio design can evoke nostalgia, create emotional depth, and energize the viewer, thereby shaping brand perception. In online advertising, particularly on social media platforms, audio elements can help messages stand out amid digital clutter.

Question 6. Do you believe it is possible to duplicate feelings like touch and texture in a digital environment?

While direct tactile sensations remain limited in digital media, advances in haptic feedback and sensory simulation increasingly enable the experience of digital "touch." Technologies such as augmented and virtual reality can visually simulate spatial depth and texture, creating a psychological sense of tangibility. Even without physical feedback, carefully designed imagery, motion, and sound can trigger imagined sensations through associative cues.

Question 7. What new technologies, in your opinion, assist in making online encounters more sensory or immersive?

Technologies such as virtual reality, augmented reality, and mixed reality significantly enhance sensory engagement. Haptic devices, spatial audio, and AI-driven personalization further increase immersion. Artificial intelligence tools that adapt visuals and sounds to user preferences enable the creation of personalized sensory experiences that strengthen emotional connection and information retention.

Question 8. In your experience, do sensory features in digital material improve consumer trust or brand connection?

Sensory-rich digital content enhances perceived authenticity and emotional grounding, which contributes to stronger trust and brand connection. Consistency between a brand's message, design, and sensory cues signals reliability and attention to detail.

Question 9. What role do you see sensory marketing playing in the future of digital marketing?

Sensory marketing is expected to play a central role as digital experiences become increasingly immersive and personalized. As technologies such as VR, AR, and artificial intelligence mature, brands will create multisensory narratives that extend beyond visuals and text. This trend will be particularly important in education, hospitality, and lifestyle sectors, where emotional engagement strongly influences decision-making.

Question 10. What advice would you give to companies aiming to strengthen their online marketing through sensory elements?

Companies should begin by identifying sensory cues that align with their brand identity and audience expectations. Consistency across digital touchpoints is essential, including visual style, tone of voice, and sound design. Sensory elements should be tested with users to ensure they enhance rather than distract from the experience. Authenticity remains a key condition for effective sensory marketing, as it enables genuine emotional engagement.

Expert interview questionnaire and responses (EXPERT 2)

Question 1. How do you characterize the concept of digital sensory marketing?

Digital sensory marketing is closely connected to the concept of a post-digital society, in which online and offline experiences increasingly overlap. Sensory engagement remains highly appealing to audiences, and brands that successfully integrate sensory elements into digital communication become more memorable by creating authentic emotional connections. This approach transforms digital interaction from a purely functional process into an experiential one, fostering deeper relationships between consumers and brands.

Question 2. Can internet brands affect people's senses in the same way that physical stores do?

Not in exactly the same way, but digital brands increasingly strive to achieve similar effects. Digital environments now constitute a significant part of everyday reality and often serve as the primary space for interaction. Within the marketing mix, physical evidence remains important even in online contexts, as design, visuals, and interactive features communicate trust, quality, and brand identity.

Question 3. Which digital aspects have the strongest emotional impact on consumers?

Visuals, music, and motion remain essential elements of audiovisual communication and are widely used across industries such as gaming. However, the most significant differentiator lies in interactivity and the illusion of personalized, one-to-one relationships. Interactive features such as chatbots and AI-driven tools create responsive, tailored experiences that feel human-like and significantly enhance emotional engagement.

Question 4. How strongly does website or app design influence purchase intentions?

The influence is substantial. Neuromarketing research demonstrates that even small design details, including button placement, color, and shape, can significantly affect purchase decisions. Usability, navigability, and personalization are critical factors that enhance user confidence, reduce friction, and reinforce trust. Design thus functions as a strategic driver of consumer behavior rather than a purely aesthetic element.

Question 5. What role do sound and music play in digital brand perception?

Background sounds and music shape emotional perception by conveying tone, rhythm, and aesthetic quality. These sensory cues foster emotional associations, enhance memorability, and stimulate engagement. Their relevance remains strong in digital environments, where immersive and emotionally resonant atmospheres help differentiate brands.

Question 6. Is it possible to replicate sensations such as touch and texture digitally?

Technologies that once appeared futuristic are now becoming reality. Innovations such as haptic feedback, wearable devices, and advanced VR interfaces offer promising opportunities for tactile simulation. The main challenge lies in ensuring scalability and cost-effectiveness to enable widespread adoption.

Question 7. Which emerging technologies contribute most to immersive digital experiences?

Virtual reality, augmented reality, mixed reality, and extended reality play a leading role in transforming digital interaction. Haptic technologies allow users to experience textures and vibrations, while AI-powered personalization and digital avatars enhance adaptive engagement. WebAR increases accessibility by enabling AR experiences directly through web browsers. Additional innovations include projection mapping, virtual try-on tools, and experimental brain-computer interfaces.

Question 8. Do sensory features improve consumer trust and brand connection?

Multisensory experiences significantly enhance emotional engagement, perceived quality, and brand attachment. By activating deeper cognitive and emotional processes, sensory branding fosters trust, loyalty, and long-term relationships. In digital environments, sensory cues compensate for the absence of physical interaction by simulating real-world experiences.

Question 9. How do you see the future role of sensory marketing?

Sensory marketing will grow in strategic importance as it follows the diffusion patterns described in Rogers' Innovation Diffusion Model. Adoption will initially be driven by

innovators and early adopters, followed by broader acceptance as technologies become more accessible. Sensory marketing must demonstrate relative advantage, compatibility, and ease of use to scale successfully.

Question 10. What recommendations would you give to companies implementing sensory marketing?

Companies should aim to create seamless online–offline experiences that are emotionally and functionally satisfying. While advanced technologies may still be costly, brands can begin by enhancing interactivity, personalization, and usability. Features such as AI-driven chatbots, interactive content, and gamified experiences are scalable, cost-effective solutions that establish a foundation for future sensory innovation.