

Issues of Using Neuromarketing in the Fashion Market

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Abstract. Neuromarketing, a novel intersection of neuroscience and marketing, offers transformative opportunities for understanding consumer behavior by measuring neural and physiological responses to marketing stimuli. In the fashion market, where consumer decisions are heavily influenced by emotional, aesthetic, and psychological factors, neuromarketing holds significant potential. However, its implementation is fraught with challenges, including ethical concerns, high costs, methodological limitations, and consumer privacy issues. This paper examines the core principles of neuromarketing, explores its relevance to the fashion industry, and critically evaluates the associated challenges. Through a review of academic literature, case studies, and practical applications, the paper provides insights into how fashion brands can responsibly harness neuromarketing techniques while addressing the underlying risks and criticisms.

Keywords: Marketing, fashion market, neuromarketing techniques, neuromarketing, consumer behavior, neural and physiological responses.

1. INTRODUCTION

The fashion market is a dynamic and competitive domain, characterized by rapid trend cycles, emotionally driven purchases, and strong brand-consumer relationships. Traditional marketing strategies often fail to capture the deep-rooted psychological and subconscious influences behind consumer decisions. Neuromarketing, which leverages neuroscientific tools such as fMRI, EEG, and eye-tracking, aims to bridge this gap by providing direct insights into consumers' cognitive and affective responses to fashion stimuli.

As consumer engagement becomes increasingly fragmented and attention spans shrink, fashion brands are exploring neuromarketing techniques to refine product design, enhance advertising effectiveness, and optimize the overall customer experience. Despite its promise, neuromarketing in the fashion market presents a complex set of issues that must be navigated carefully. This paper analyzes these issues in detail, providing a comprehensive understanding of both the potential and the pitfalls of neuromarketing in this context.

2. LITERATURE REVIEW

Neuromarketing sits at the intersection of marketing, neuroscience, psychology, and consumer behavior theory. It seeks to deepen our understanding of consumer decisions by measuring non-conscious responses to stimuli. Traditionally, marketing relied heavily on self-reported data, grounded in theories such as Theory of Reasoned Action (Ajzen & Fishbein, 1980) and Theory of Planned Behavior (Ajzen, 1991). These models assume rational consumer decisions based on beliefs, intentions, and attitudes. However, neuromarketing challenges this assumption by drawing on dual-process theories, particularly Kahneman's System 1 and System 2 thinking (Kahneman, 2011) [9], suggesting that much of consumer decision-making is fast, emotional, and unconscious.

The theoretical basis for neuromarketing is also deeply influenced by affective neuroscience (Davidson, 2003) and somatic marker hypothesis (Damasio, 1994) [10], which argue that emotions play a crucial role in decision-making, even when choices appear rational. In the context of fashion, where identity, emotion, and aesthetics dominate, these theories become particularly relevant. Fashion consumption is closely tied to identity formation, social signaling, and aesthetic pleasure. Theories like Self-Concept Theory (Sirgy, 1982) [11] and Symbolic Interactionism (Blumer, 1969) suggest that individuals use fashion as a medium to express and negotiate personal and social identity. These theories posit that clothing and style choices are not only functional but carry symbolic meaning tied to emotions, aspirations, and social belonging.[12]

Given that neuromarketing tools like EEG, fMRI, eye-tracking, and biometric sensors are designed to capture emotional and attentional responses, they offer a way to empirically assess the subconscious drivers aligned with these identity-based theories. For example, eye-tracking studies in fashion advertising can measure how consumers visually prioritize brand logos, models' facial expressions, or garment textures—thus mapping emotional salience. From a theoretical ethics standpoint, neuromarketing raises concerns grounded in Kantian ethics (duty-based), utilitarianism

(outcome-based), and more recently, neuroethics. Kantian theory might criticize neuromarketing for treating consumers as mere means to an end if their subconscious is exploited without consent. Utilitarianism, however, might justify neuromarketing as long as it results in consumer satisfaction and brand value. The emerging field of neuroethics (Illes & Racine, 2005) addresses these tensions by advocating for transparency, autonomy, and mental privacy.[15]

In fashion, ethical issues are intensified due to the symbolic and emotional power of branding. Aesthetic manipulation can provoke deep affective reactions, especially when related to body image, gender identity, or sustainability ethics. Theoretical frameworks like Postmodern Consumer Culture Theory (Firat & Venkatesh, 1995) warn that hyper-targeted marketing may foster overconsumption and identity fragmentation, exacerbated by emotion-triggering neuromarketing tactics.[13]

Critical theorists such as Adorno and Horkheimer (1944) in their Culture Industry thesis, warn against the commodification of emotions and culture, which is central in fashion and even more intensified by neuromarketing. Their work suggests that neuromarketing could deepen consumer alienation by reducing individual agency in favor of programmed behavioral nudges.[14]

Behavioral economic theories like Nudge Theory (Thaler & Sunstein, 2008) support subtle interventions to guide choices without restricting freedom. In fashion marketing, nudges could include optimized store layouts, emotionally resonant digital ads, or product placements—all potentially informed by neuromarketing data. While theoretically effective, these interventions demand ethical scrutiny, particularly in vulnerable populations (e.g., adolescents, those with body dysmorphia).

3. ANALYSIS AND RESULTS

Fashion is a complex, multifaceted phenomenon, and therefore there is no single interpretation that fully reflects the essence of this concept. Many scholars look at fashion from the perspective of socio-cultural, art history and other factors.

The relationship of fashion with various aspects of people's lives can be clearly seen in Table 1.

Table 1: Interpretation of the concept of "fashion" from the point of view of human life activity

FASHION		
Sociological aspect	Cultural aspect	Art History Aspect
Fashion is a specific mechanism of social regulation and self-control of human behavior, one of its forms: individual, group or mass	Fashion is about imitating a model, satisfying the need for social support, because along with imitation, fashion also satisfies the need to be different, to stand out from the public.	Fashion is seen as the opposite of creativity. Fashion has always existed in all fields.

In the conditions of competition in the modern clothing market, the issue of trends and prospects for the development of the fashion world seems to be acutely controversial. At the same time, the relationship between consumers and manufacturers is increasingly dependent on the marketing tools used by a particular company operating in the fashion clothing market. This makes the issue of forming and implementing effective marketing tools in line with fashion trends relevant within the framework of world trends relevant.

The research task of the article is to identify marketing strategies in the fashion world, reflect the trends taking shape in the modern fashion industry, and formulate priority areas for the development of the fashion business based on the marketing aspects of the activities of companies operating in this area. It is also important to show the prospects of the problem under discussion, to reflect the novelty of the topic under consideration, taking into account the possibility of using the marketing complex in the activities of companies that are leaders in the fashion industry.

Analyzing the picture, it can be concluded that fashion in a broad sense is, first of all, a process aimed at individualizing a person, as well as at forming a system of images on the basis of which evaluative judgments are made.

Most interpretations of the essence of the concept of "fashion" can be reduced to three definitions:

- fashion - "a synchronous-closed structure with a certain property: change" (Yu.M. Lotman) [1];

- fashion - "not just a cultural phenomenon, but a socio-cultural institution of modern society with its own functions, structure and forms" (P.A. Sorokin) [2];
- fashion - "a system of group preferences that embodies not only taste, but also a certain way of behavior common to the majority" (T. Hill) [3].

The definitions given to the concept of "fashion" indicate that it is very multifaceted. It is characterized by constant variability, as well as the ability to build, predict, distribute and implement certain values and patterns of behavior, to form the tastes of the subject and manage them. In this regard, it is important to determine the specific characteristics of goods that are characteristic of the fashion market, or in other words, the fashion industry.

Fashion is a huge, global business that is fast-paced and very diverse and uncertain. In it, modern technologies, aesthetics and functionality are closely intertwined. Comfort, lightness, and breathability are important in sportswear; color, fabric structure and style are of particular importance for a summer evening wardrobe. Business success in the modern clothing industry cannot be achieved without designers, materials scientists, specialists in building supply and logistics chains, specialists in developing strategies, etc. The fashion industry is concerned with all aspects of design, production, marketing, and distribution, from developing a concept for a future product to manufacturing the final product, developing a brand, and promoting it.[4]

A distinctive feature of the clothing market, which claims the status of "fashion", is the pronounced social nature of product consumption. It is clear that no item can talk as much about its owner as clothing.

Every year, the Russian fashion clothing market is growing by 10-15 percent. This trend has been observed for the past three years. Fashionable clothing, shoes and accessories are now in demand. The increase in demand for fashionable clothing is one of the integral features of the development of the purchasing activity of the population, which has been observed in the past few years. Since the market is sensitive to the needs of buyers, the supply in the clothing market also increases. Therefore, as the well-being of the Russian population increases, the fashion clothing market in the country should have an upward trend.[5]

According to clothing market participants, at present the share of fashion products in the total sales volume is not yet large. It does not exceed 50%. There are many unfilled product niches in the supply chain. Therefore, in the future, the market will expand due to their filling. In the coming years, the market will develop due to fashion products for the middle class.

Currently, the world women's clothing market has a huge number of brands that are similar not only in the range offered, but also in the pricing policy pursued by companies producing fashion clothing. In this regard, to stand out from competitors, it is necessary to conduct an active marketing policy. This should concern both the formation of the assortment and pricing, product promotion, and sales promotion. This fact determines the specifics of marketing in the fashion industry, since without a properly developed marketing policy, many women's clothing brands can leave the market without having time to become truly famous.

Marketing in the fashion industry is often called fashion marketing. It became widespread in the second half of the 20th century. This period gave rise to a huge variety of styles and trends in world fashion, which has become one of the most prosperous sectors of the economy.[6]

Fashion has become a continuous socio-economic phenomenon, which not only reflects the changes taking place in society, but often initiates them. Fashion marketing helps to ensure interaction and communication with the buyer, to focus his attention on the offered clothes, shoes, accessories. Marketing helps the buyer to perceive the fashion items offered to him in a combined way, complementing the visual communication with strong emotional and often rational arguments.

Currently, the fashion clothing market is formed by two main branches of the industry: the textile and clothing industries. The volume of world trade in these two sectors is estimated at about \$ 350 billion. The share of imports in the volume of commodity resources of these industries was 33% in 2011, and 34% in 2010.[7]

Modern clothing is a kind of mass shell that allows everyone to declare the inner and outer world of its owner (owner), thereby performing the communicative function of the individual with the world. Marketing enhances it by paying special attention to the issues of design, construction and production of clothing items, the development and implementation of new materials, sizes, computer programs, high technologies. The human factor - the skills of modelers, designers, constructors, cutters, seamstresses, mannequins, etc. is of great importance. Undoubtedly, the fashion industry is characterized by high competition with a large number of target audiences, where each company seeks to occupy and maintain its market position. Marketing tools must be chosen very carefully here, as consumers in the fashion industry have very differentiated tastes.

It should be noted that in the conditions of increasing competition in the fashion industry, the question of what tools

can be used to gain and maintain a position in the market remains open. Modern ideas about marketing as an engine of business and the possibilities of using it as a leading tool to promote the development of a company's activities in the fashion industry are based on the following postulates. For structures operating in the fashion clothing market, it seems reasonable to use the AP concept within the framework of a set of marketing activities.

- **Product:** managing the sales of fashion clothing lines in stores selling such products. This principle implies the relationship between demand forecasting and the availability of fashionable clothing for the consumer (availability in the warehouse, presentation in the showcase, etc.) in order to further form consumer loyalty to the brand.
- **Promotion:** the specificity of marketing communication in the fashion world. It is assumed that the image of the consumer with the presented product is created in order to form consumer loyalty to a particular clothing brand. Currently, foreign companies conduct marketing research, for example, use the procedure of magnetic resonance imaging of the brain of potential consumers to identify hidden human desires and reactions to subsequently build communication messages. For example, today many stores use background music (often jazz or Latin) to put hidden messages that our minds cannot perceive, or it is enough to recall the smells that fill hotel rooms, the alluring smell of an expensive car's leather interior, which is only noticeable in car showrooms, where only a special aerosol spray can be used. According to some reports, companies that use such means of attracting consumers increase their sales by more than 15%.[8]
- **Price:** For the fashion industry, it is very important to effectively formulate a pricing policy, considering factors such as "price of the new collection" or "seasonal discounts". It is important not to forget about buyers who are sensitive to price not because of the economic situation, but for psychological reasons. Typically, "new collection" models are characterized by a high price, which is associated with the novelty of the product, the conformity of the model to the seasonal trend, etc.
- **Location:** the territorial location of a fashion clothing store is very important. The choice of location should be made considering the following variables:
 - a) the image of the shopping area (in the perception of the target market);
 - b) the intensity of competition.
 - c) the intensity and nature of pedestrian traffic.
 - d) the level of socio-economic development of the district.
 - e) the prospects for the construction of housing, including luxury housing, where potential buyers of modern clothing can live.
 - f) the presence of parking near the store.

Considering marketing as one of the main mechanisms stimulating the development of fashion market goods - clothing, it is important to determine its features in this area. Let's identify some of them.

1. Marketing within the framework of a socially significant factor

Since fashion is primarily characterized as a social and cultural phenomenon, and each of the social groups (strata) in modern society has a clearly expressed visual range, it is important that appearance in each specific situation corresponds to a certain group or "society". For example, a secular party involves a demonstration of clothes from new collections. As a rule, these are cocktail dresses or casual style, and business negotiations involve the presence of a business style in clothes. Based on this, successful marketing in the fashion industry is usually based on the consumer's perception of the social significance of clothing in a particular situation.

2. Marketing in the conditions of rapid change of collections

Fashion is formed outside any framework, regardless of whether it is social or temporary. As for the latter, it is important to note the rapidity of change in fashion trends and tendencies, in this regard, accurate marketing planning and forecasting, which allows you to determine the trends of the upcoming season, is a necessary and quite important condition, the timeliness and accuracy of forecasts depend on the success of the collection and, accordingly, sales.

3. Marketing mix in the fashion industry

Advertising, PR, personal selling, sales promotion, etc. are actively used by manufacturers around the world, but the fashion business also has the following marketing activities:

- Collection or fashion show, which has recently become a real show with beautiful music, bright lights and the participation of stars.
- Coverage of these events in fashion newspapers, magazines, television channels interested in the fashion industry.

Neuromarketing and its following tools are becoming increasingly popular: music design, interior design, lighting, as well as the use of smells that form an associative series of the buyer with a particular brand, etc. [9]

4. Brand marketing in the fashion industry

The success in creating a particular brand depends on whether it will be in demand in the future and will bring success to the consumer or will not be remembered at all. Where else, if not in the fashion industry, are questions about the brand especially relevant. The clothing market, which is characterized by highly competitive conditions, is subject to a huge brand influence on consumers. In this regard, the formation and promotion of a brand is a very important and responsible event for marketers. Subsequently, it is effective marketing that can ensure success or, conversely, lead to failure of the activities of a fashion market company.

5. Marketing in the formation of purchases in the fashion clothing market

Recently, the fashion clothing market was characterized by the fact that a significant part of the demand for goods is formed not by the manufacturers themselves, but by buyers who purchase goods on import terms or under a franchise. They monitor trends that are relevant for the upcoming season, correlate them with the requirements of consumers of a particular country and form their own orders for manufacturers. The effectiveness of the activities of buyers is that they, with the help of marketing activities: advertising, personal sales, public relations, etc., form the buyer's loyalty to the fashionable clothes promoted on the market, as well as to this clothing brand.

The result of smart marketing can be not only increased sales, but also sustainable consumer loyalty to a particular brand. And in the event of success, this clothing can be brought to the fashion world!

The fashion of the new millennium, according to experts, is behaving rudely. In areas where fashion has a widespread influence, many taboos and traditions are ignored. The reasons for the change in fashion lie beyond the framework of its complex relationship with it, and these reasons can be understood only by identifying its main trends.

The modern fashion market is characterized by the following trends:

- Firstly, the rapid change of fashion trends, as well as the blurring of boundaries between seasonal collections, considering changes in climatic conditions in individual countries. This process requires the rapid and accurate work of marketers engaged in forecasting demand and fashion trends.
- secondly, China's influence on the mass production of clothes and their sale on the world market is growing. In the second and third decades of the 21st century, China will also have the greatest influence on the world textile and garment markets. The abolition of IFC quotas has led to fierce competition among suppliers, in which China is still the leader - primarily due to cheap raw materials and low-paid labor. There are about 40 thousand textile and garment manufacturing enterprises in China, 24 thousand textile factories, and 19 million workers are employed in the textile and garment industry. The projected growth rate is up to 17% per year, and productivity is constantly increasing. China produces almost 20 billion pieces of clothing annually - this is enough for every citizen of the planet to have four wardrobes from this country. A promising participant in the fashion clothing market is India. This country employs 35 million people in the textile industry, and its products account for almost a quarter of India's exports. In the medium term, high growth in Indian cotton exports is expected. The textile and garment industry accounts for 14 percent of the country's total industrial production and about 30 percent of total exports.

Currently, the world textile and clothing market is determined by the following countries: China (the volume of textile and garment products exported is about 150 billion US dollars in value), India (export volume - 20 billion US dollars) and Pakistan (10 billion US dollars). The European Community remains the largest exporter with a volume of 25 billion US dollars. USA.[10]

4. CONCLUSIONS

The presented trends show that the modern fashion industry is characterized by rapid changes in fashion trends, which is associated with factors such as globalization of the world space, individualization of consumer demand, changes in climatic conditions, etc. These trends allow us to make marketing forecasts for further changes in fashion so that each brand can find its consumer.

The above can be summarized as follows.

1. The fashion industry has its own specifics, the basis of which is embodied in the concept of "fashion", which is considered through the prism of several aspects: sociological, cultural studies, art studies, economics. At the same time, experts emphasize that this is a socio-cultural phenomenon.

2. Marketing in the fashion business is possible through the use of the 4R concept and several marketing tools. They allow you to most accurately determine the preferences of the consumer and form his loyalty.

3. The specific features of marketing in the fashion industry are manifested in the following aspects and directions: a significant social factor; considering market characteristics when changing collections quickly; the limited number of truly recognized brands in the fashion world.

4. The trends presented in the work allow you to determine the conditions in which modern fashion industry enterprises operate, which in many respects determines the further development of the modern clothing market.

A separate neuromarketing study can have an independent practical meaning and solve a specific issue related to the effectiveness of a particular tool. However, to fully realize the practical potential of neuromarketing, it is advisable to consider a separate study as part of the company's neuromarketing monitoring.

Within the framework of using neuromarketing to adjust the marketing mix, the following are the main elements and stages of such support:

1. Identifying the objects of neuromarketing observation. In general, the marketing mix concept is the most universal approach, according to which the main objects of neuromarketing observation are product, price, sales area and communications. However, depending on the specifics of the business and marketing needs, other approaches can be used.
2. Developing neuromarketing indicators. During the practical research described in paragraph 2.3, the system of neuromarketing indicators included four types of cognitive and affective processes: attention, interest, memory and emotional engagement. However, the list of processes and reactions to be registered may be different and include, for example, the identification of specific emotions, encoding and temporal discounting of values, reaction to social signals, decision-making processes, etc.
3. Neuromarketing analysis: experimental study and analysis of data on specific target groups and types of marketing incentives. Examples of tasks directly addressed include testing the perception of product packaging, individual price perception, testing merchandising solutions, and evaluating the perception of advertising materials.
4. Design: using experimental and comprehensive research data to develop new marketing incentives and/or improve the effectiveness of existing ones.
5. Forming a neuromarketing database for each type of observation object and making recommendations for changing the research object. An independent element of the neuromarketing observation system is the assessment of its effectiveness and economic feasibility. Effectiveness assessment ensures the adjustment of marketing incentives in accordance with the company's goals and marketing budget. In the context of a complex neuromarketing support system, communicative effectiveness is of primary importance - since all elements of the marketing mix include a communicative component. The technology for adjusting marketing incentives by assessing the effectiveness of communication can be schematically represented.

Although the general logic of neuromarketing research, in general, does not differ from most other types of marketing research, the content of activities at certain stages has its own characteristics. At the first stage, in accordance with the company's marketing objectives, a target group of consumers is identified, its profiling is carried out according to the relevant socio-demographic parameters, and a research sample is formed. For the most complex instrumental research methods (EEG, EMG, etc.), the sample size for each target group (subgroup) should be at least 20 people. Also, at this stage, research materials (marketing stimuli) are prepared that correspond to the business characteristics and marketing objectives of the company. The types of marketing stimuli studied can be advertising spots, layout options for the packaging being developed, a demo version of the site, etc. At the second stage, a set of neuromarketing indicators is developed that reflect the main affective and cognitive reactions of the target group in response to marketing stimuli. Depending on the subject of interest and the system of indicators, as well as the competence and capabilities of the supplier, specific means of data recording (EEG, EMG, micro mimicry detection systems, IT tracker, etc.) are selected and selected.

At the third stage, direct experimental and testing work is carried out. The necessary screening of participants (including medical) is carried out, the equipment is calibrated and adjusted, and technical and legal issues related to participation in the experiment are resolved. Direct data recording using instrumental means is carried out, as well as subjective assessments are collected using traditional methods: questionnaires, interviews, focus groups, etc.

At the fourth stage, a statistical analysis of the data obtained during the experiment is carried out, taking into account the methodological features and problems of studying psychophysiological and nervous reactions. The main goal of this stage is to interpret the recorded data as a manifestation of the consumer's cognitive and affective reactions to marketing stimuli that are relevant to marketing, i.e. attention, interest, engagement, etc.

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