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Reserves for enhancing the effectiveness of neuromarketing research into consumer behaviour in brand development by enterprises

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Abstract. Improving the effectiveness of innovations in consumer behaviour research, including the scientific exploration of new phenomena influencing buyer choices through marketing stimuli based on objective data from neurobiological experiments, is gaining considerable importance – particularly in digital environments and with the use of artificial intelligence technologies. This article aimed to provide a critical analysis of the methodological foundations and potential applications of neurobiological tools in the practical marketing activities of food industry enterprises. Based on this analysis, the article offered proposals for improving neuromarketing research projects and enhancing their effectiveness. The study presented the results of integrated marketing research combining physiological process measurements with consumers' self-assessed decision-making data during product selection tasks. These tasks were designed to assess consumer perception and the commercial potential of alternative packaging design concepts for a specific tea brand. An eye-tracking system was employed, with objectively recorded patterns compared against the results of a participant survey evaluating the packaging design concepts. The generalised findings indicated that categorical differences enabling effective differentiation of the unique value propositions of a brand – or, in their absence, price – were more influential in purchasing decisions than packaging design or informational content. The study identified opportunities for cost reduction and added value in the outcomes of neurobiological experiments by anticipating traditional pre-testing of hypotheses and draft materials, thereby improving research design and marketing decisions aimed at consumers. Promising directions for future research were identified and proposed, aimed at refining the methodology and design of neurobiological experiments in marketing. It is hoped that the study's results will support both researchers and practitioners in identifying and realising reserves for enhancing marketing effectiveness, brand development, and business growth

Keywords: marketing; consumers; purchasing goods; brands; packaging; experiments

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Introduction

The value of neurobiological research is increasingly recognised globally, with commissioning budgets consistently rising and the findings becoming a significant component in the development of companies' marketing strategies. The methodological basis of neuromarketing and related innovative concepts and practices, along with the correctness of its application in the design and interpretation of experimental results, requires additional attention and scholarly examination. The formation of scientifically unfounded expectations among clients by specialists regarding the potential for objective explanations and predictions of irrational consumer behaviour driven by emotions, memories, etc., as well as breaches of scientific and professional ethics, contradict the requirements of marketing and business effectiveness and social responsibility. These issues impede progress and diminish the effectiveness of applied neurophysiological research in marketing.

Research data from G. Ahluwalia *et al.* (2024) demonstrated the dependence of consumer rationality levels on subjective information processing characteristics, the influence of marketing stimuli, and so forth, particularly in the era of Marketing 6.0. Studies by T.Y. Copaja Arocutipa *et al.* (2025) revealed significant shifts in buyer preferences under the influence of brand names and product pricing parameters, confirming the results of numerous other experiments. The conclusions of J.L.P. López & C.R. Monroy (2023) argued that only neuromarketing-related brain activity studies possess the potential for objective explanation and scientific examination of the "hidden psychological traps" inherent in consumer decision-making and product selection processes. P. Mikalef *et al.* (2023) underscored that information crucial for specialists regarding consumer purchasing decisions, traditionally acquired through questionnaires and similar formats of marketing research, needs to be more effectively supplemented with objective physiological data, including through tracking buyers' gaze during product selection. Their research, based on advancements in theories of dynamic attention (forecasting algorithms utilising ensemble machine learning models) and examining the priority and influence of elements of product offerings in consumer choice from available alternatives, provided valuable insights into critically significant information signals that are not subjectively consciously perceived or are ignored by buyers during surveys. It was argued that the study of physiological data, particularly saccades and other eye movement patterns, can aid in determining the attractiveness of goods to consumers and the effectiveness of buyer interactions with various elements and formats of perceived information. Furthermore, it can help understand the patterns and assess the dynamics of changes in these characteristics of purchasing decision-making over time. However, the accurate interpretation and prediction of cognitive process parameters in decision-making solely based on eye movements and pupil characteristics in the perception of visual and other stimuli remain problematic and require additional scientific validation.

Among the results of research by scholars on neuromarketing issues relevant to the subject area of this article, the conclusions of A.A. Mansor & S. Mohd Isa (2020) are noteworthy within the discourse contrasting traditional and contemporary marketing research methods and technologies. They demonstrated the expediency of a systematic re-evaluation of the prerequisites for applying and the effectiveness of both classic and innovative marketing methods, taking into account the enhancing and unique ideas of the latter. The research by J.M. Penrod (2023) on the development of cognitive neuroscience technologies and psychological theories of human decision-making since the latter half of the 20th century also highlighted the priority of convergence as a trend and explanatory basis for the current progress in neuromarketing. F.R. Mashrur *et al.* (2022) viewed neuromarketing as a domain of innovative synergy between cognitive neuroscience tools and marketing, which is significantly influenced by the advancement of artificial intelligence technologies. This includes the identification of new phenomenology in consumer perception of stimuli and decision-making, necessitating further research and deep scientific understanding. Based on the conclusions of L. Alvino *et al.* (2020), who identified seven neurobiology tools for studying consumer behaviour to enhance the effectiveness of advertising, branding, customer experience, pricing, product development, etc., the integrated use of iMotions and GRAIL platforms for experiment results is advisable. Consolidating and systematising researchers' recorded brain activity and other physiological responses on a common platform will reduce time and costs for experimenters and facilitate the identification of important interconnections between cognitive and emotional reactions and neurophysiological processes.

The findings of P.B. Puprediwar & T. Tapas (2024) demonstrated that for the effective development of neuromarketing and to enhance its significance for businesses, it is essential to address current issues concerning ethics and the high cost of experiments, limitations in participant sample size, and the reliance on laboratory settings. Furthermore, it is necessary to form effective combinations with traditional research methods to augment the explanatory potential of accumulated data. R. Hadi *et al.* (2023) explored the prospects of marketing research and the changing landscape of socio-economic interactions and consumer behaviour with the progression of the Metaverse, highlighting aspects of responsibility for academics and practitioners that are traditionally relevant to the domain of experiments involving human biology and consciousness, and neuromarketing. S. Hemker *et al.* (2021) emphasised in their conclusions the necessity of fully ensuring ethical standards in marketing research and consumer data confidentiality, given the increasing scale of offering customisation and interaction personalisation in marketing. The demand for corporate social responsibility is growing, becoming a guarantor of consumer trust and loyalty, and consequently, the long-term effectiveness of companies. Y.P. Mada (2024)

underscored the importance of balancing the advantages, disadvantages, and limitations of neuromarketing, particularly concerning the prevention of consumer manipulation, which is as critical as issues of research ethics and ensuring the protection of confidential consumer information. Research by S. Chatterjee *et al.* (2023) demonstrated that neuromarketing holds significant potential for enhancing customer loyalty and improving other marketing outcomes for firms, thereby increasing their business value. Increasing the effectiveness and popularisation of neuroscience experiments in marketing will secure the necessary support from business leaders for further progress.

Identifying promising opportunities for methodological improvement and addressing current challenges and solutions to enhance the effectiveness of neuromarketing experiments within companies' brand management systems requires additional research. The article aimed to explore the possibilities of increasing the effectiveness of neuromarketing research in brand promotion and development through in-depth pre-testing and marketing audits of experimentation projects, including reducing ethical conflicts related to influencing participants' physiology.

Materials and Methods

Consumer testing of new packaging design concepts for various tea products of a specific brand was conducted at the request of retail companies interested in enhancing the competitiveness and effectiveness of their private label offerings. This involved employing neuromarketing research methods and simulating a retail shelf environment. The research utilised integrated Varjo headsets and software, which allowed for the demonstration of the retail environment to experiment participants with high resolution (approximately 35 pixels per degree of visual angle / 4K rendering per eye) and a high level of immersion, as well as providing accurate eye-tracking data.

The authors, specialists with relevant training and experience in academic and practical work, and members of the Ukrainian Marketing Association, were involved in the preparation and execution of the research project. The ICC/ESOMAR International Code on Market, Opinion and Social Research and Data Analytics (2016) was adhered to throughout the research process. Adherence to this code guarantees that respondents will not be harmed in any way during their participation in the research procedures. The specialists were briefed on the marketing information provided by the retail chains interested in the experimental data. All procedures stipulated by the project were conducted on the premises of the Marketing Institute at Kyiv National Economic University named after Vadym Hetman and the Agency of Industrial Marketing.

Men and women aged 30-60, with average and below-average incomes, who were regular consumers of inexpensive classic tea, were recruited to participate in the testing. The sample size and design stipulated the involvement of 300 participants in the testing and interviews, with 150 participants testing each of the two lines of packaging concept designs, each consisting of 3 product varieties. After participants were familiarised with the product display in the category, they were asked questions evaluating their purchasing experience, specifically the following:

Q15. Which tea brands did you notice on the shelf?

Q17. Which variants of the Svoia Liniia brand tea do you recall seeing on the shelf?

Q21. Which type of tea from the shelf did you feel inclined to purchase?

Q25. Please rate the packaging design of the Svoia Liniia tea variants using a 5-Wpoint scale according to the following criteria:

- Overall appeal;
- Ease of finding the necessary information;
- Uniqueness;
- Likelihood of purchase.

Q27. To what extent do you agree with the following statements about the Svoia Liniia tea variants? Please respond using a 5-point scale:

- Classic;
- A confident choice;
- High-quality tea;
- A brand I trust for its quality;
- Good value for money;
- Suitable for family tea time;
- Ideal for everyday and any occasion.

To mitigate potential bias and inaccuracy in consumer responses, and to facilitate better interpretation and analytical processing of the research results, subjective evaluations were compared with biosensor data. This approach reduced the extent to which the quality of retrospectively obtained information from participants' responses was dependent on their memory, perception of questions, and the precision of their verbal formulations.

Tracking eye movements while participants examined the product display on the shelf provided objective data regarding consumers' purchasing experience for subsequent quantitative analysis in conjunction with the results of interviews with the neuromarketing experiment participants. The sequence and duration of viewing the product arrangement on the shelf, both overall and for specific items and areas of focus, were taken into account. The use of other biosensors in the testing was not planned, as there is a lack of objective evidence supporting the validity of conclusions drawn from electroencephalography data regarding participants' levels of motivation, engagement, cognitive processing, and other characteristics important for evaluating product displays in marketing experiments. Specialists trust in such conclusions, and the demand for them is low. The duration of focus and level of attention on a particular product variant, design concept, or packaging element can be attributed to their importance or attractiveness in consumer choice, as well as the difficulty or complexity of their perception, among other factors. The visibility of different Design Concept variants of the brand's products on the shelf was assessed based on consumers' spontaneous and prompted recall. Purchase intent was gauged by consumers'

stated desire to buy specific product offerings from the shelf, both without and with price display, respectively.

Detailed evaluation of the designs involved consumers articulating the strengths and weaknesses they identified in specific packaging variants, as well as the elements and concepts overall that appealed to the testing participants. Consumers elaborated on their evaluations using criteria such as the difficulty or ease of finding necessary information on the packaging, the perceived price-quality ratio, the uniqueness of its appearance and design solutions, confidence in their choice, and the likelihood of purchasing the products. Brand image characteristics, based on the subjective perception of the different Design Concept variants of the brand's products on the shelf, were evaluated using criteria related to consumers' perceived trust in the brand's quality, the suitability of the specific brand of tea for family tea time, and everyday consumption and any situation. Based on the neuromarketing experiments, the methodology was reviewed, and the stages and elements of the research project that could be improved to enhance the effectiveness of execution, the accuracy of evaluations, and the quality of conclusions were identified.

Results and Discussion

With the evolution of consumer choice and the increase in its variability, alongside the simplification of subjectively acceptable purchasing behaviour algorithms, the proportion and significance of impulse and rapid routine purchases are increasing. Approximately half of the products displayed on shelves remain unnoticed by consumers, and the average time it takes for food items to be placed in a retail shopper's basket is 20 seconds (Blyznyuk, 2023). Factors related to product packaging design account for around 70% of all impulse purchases and determine the effectiveness of marketing communications with target audiences throughout the cycle of product selection, purchase, and use (Product packaging testing…, n.d.). Neuromarketing research simulating purchasing situations and using biosensors to record consumer states during purchase decision-making significantly reduces the risks of decreased effectiveness in brand development and companies' marketing activities.

The results of the conducted neuromarketing research into Ukrainian consumers' perception of different tea packaging designs (Fig. 1) using iMotions and GRAIL platforms showed that when brand differentiation based on product quality and characteristics is limited, design gains influence in the perception and price expectations regarding companies' offerings to target audiences in the market.

Figure 1. Tea packaging design concepts tested
Source: compiled by the authors

The testing results revealed that consumers did not differentiate between various product varieties within the brand's offerings and did not perceive or understand their intended uniqueness and value (Fig. 2). Similarly, the brand umbrella effect did not materialise, as the study found a significant difference in the parameters of product perception under the influence of price.

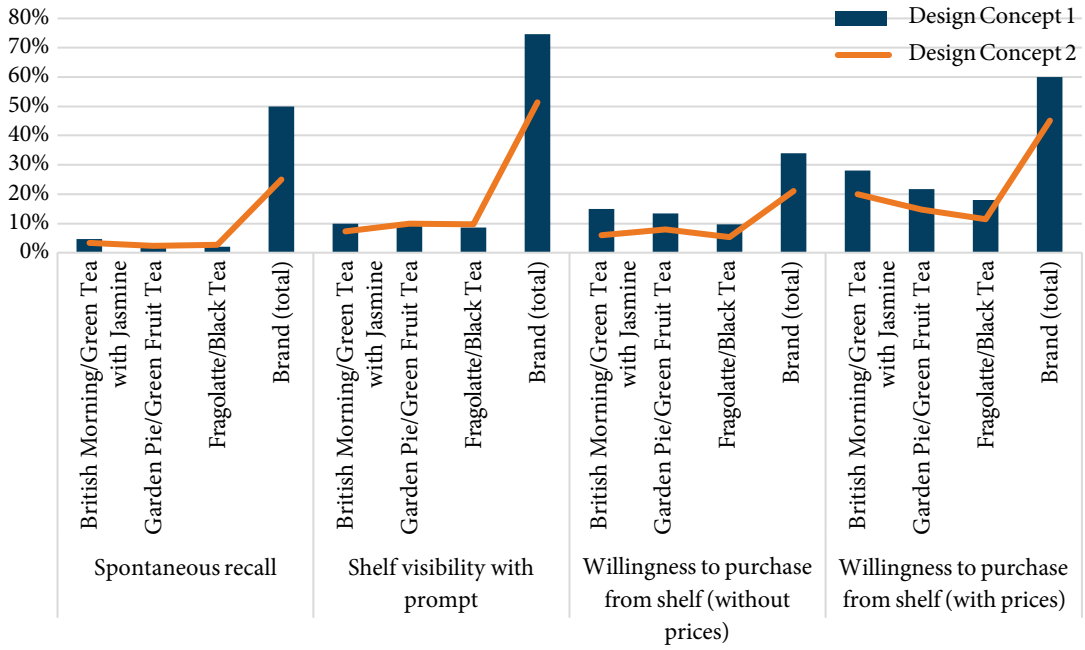

Figure 2. Parameters of perception of packaging design concepts on the shelf
Source: developed by the authors

Preliminary identification of consumer perception/attitude parameters towards the brand, which preceded the detailed testing of design concepts, showed that only about 34% of participants considered purchasing the brand's products under variant 1, and 21% for variant 2. After the experiment, participants viewed the shelves with prices, 60% of them (in the respective group) expressed a desire to buy products of Design Concept 1 and 45% for Design Concept 2.

In the researchers' conclusions, a higher correlation between price and the brand value demonstrated by packaging design is noted. Although experiments by S. Kaheh *et al.* (2021), which investigated the influence of price factors on choice between competing product offerings, including well-known brands, also showed that buyers often preferred to purchase a lower-priced product for a similar item, even if the participant had previously favoured a well-known brand option. This is further supported by the results of testing Design Concepts 1 and 2, which did not reveal opportunities for implementing premium pricing effects for the brand. The relationship between spontaneous brand recall and the desire to purchase products from its line at the proposed prices was also observed and is indicative here. A scenario contrary to that anticipated for branded goods is evident in tea selection – an emphasis on the option with an attractive price, with the final purchase decision being made based on the acceptability (absence of objections, rejection, negative experience) of certain brands or characteristics of a specific product variety. Price itself is not directly a value for consumers, and the excessively applied dumping pricing in Ukraine contrasts with the development of effective long-term relationships with consumers based on strengthening their perceived uniqueness of brand offerings and increasing target audience loyalty.

The findings presented in this article corroborate the conclusions of D. Jukić (2023), which suggest that brand success is dependent on both the perceived value of products by consumers and the specific characteristics of well-known brand identification. Consumer loyalty to brands is significantly influenced by their emotional engagement during the process of selecting purchasing options, as well as the preservation and accurate communication of the identity of a well-known brand to target audiences. However, emotions cannot be reduced to mere knowledge or simple sensory perception of brand elements; they are linked to certain subjectively imagined and more complex images associated with them. It is advisable and recommended for companies to utilise the potential of neuromarketing research to identify and constructively address elements of these images in enhancing branding effectiveness. Supporting the efficacy of these recommendations and providing specificity to the methodological emphases of experimentation projects are the conclusions of Z. Xu *et al.* (2023). Their research aimed to explain the discrepancies between the results of physiological response measurements and surveys (regarding self-assessment of product selection processes) among experiment participants, as well as the phenomenon of consumers favouring brands whose individuality does not align with their personal characteristics. Their research highlighted the necessity for continued research based on the neuroscience concepts of "emotion/feeling" and testing the relevance of the "similarity-attraction" hypothesis when building brand concepts and defining target marketing audiences.

The conclusions of the study by C. Paladino *et al.* (2024) proved useful in shaping the design of the marketing experiments and tests presented in this article. Their study indicated that even valuable and promising neuromarketing research findings can have limited practical application in brand management due to methodological issues in conducting experiments and challenges in the accurate and universal interpretation of conclusions. A significant contributing factor is the frequent use of reverse inference by researchers, which distorts the interpretation of neuroimaging results and other data.

Design Concept 1 was more noticeable and stood out to consumers during their review of the shelf. The identification of eye movement trajectories and fixation points using the iMotions and GRAIL platforms supports the validity of this assertion. According to self-report data, 50% of experiment participants spontaneously recalled the brand with Design Concept 1 on the category shelf display, whereas only 25% of shoppers spontaneously noticed Design Concept 2. In total, 75% of participants unequivocally noticed the brand's products on the shelf, while only 51% of consumers noticed Design Concept 2, which significantly reduces its potential for impulse purchase (Fig. 2). On the one hand, the aforementioned results of this study collectively support the conclusions of A.S. Koyluoglu (2024) regarding the "eyes-mind" hypothesis, including concerning changes in consumer perception characteristics in the world that are difficult to assess and predict without the application of combined marketing research and analytical tools. On the other hand, and similarly, they necessitate acknowledging the problems concerning the relevance of conclusions about consumer thoughts and attention based on statistical and graphical analysis of visual patterns and eye movement sequences or other physiological characteristics of research participants.

The authors concur with the conclusions of V. Thakur & A. Shaikh (2024), who asserted that all key tools for finding and justifying solutions in modern marketing (such as neural networks, fuzzy logic, and genetic algorithms) are associated with processing large and complex datasets. These datasets integrate subtle consumer preferences in the continuous optimisation of marketing strategies within iterative cycles of systemic feedback. In this context, the conclusions of P. Mikalef *et al.* (2023) are entirely pertinent to this experimentation project and others, indicating that despite the growth in data from scientific and marketing research, specialists still possess limited awareness regarding the influence of various types and formats of information/signals on the buyer's decision-making process during product selection. The understanding of which information

signals are most crucial at different stages of consumer decision-making remains limited, hindering accurate and effective predictive generalisations and evaluations. Researchers often rely on specific aspects of choice and machine learning algorithms that can provide the necessary accuracy for experimental success (such as sensory perception and the structuring of product packaging elements, display layouts, etc.). It is acknowledged and taken into account, including in recommendations to companies, that the results of such studies, with limitations, can be used to optimise parameters of marketing interaction with consumers and gain a better understanding of their choices and experiences. In research projects, businesses and specialised agencies are advised to avoid simply testing declarative hypotheses that are not in doubt. R.N. Khushaba *et al.* (2013) did not consider expensive projects monitoring the physiological processes accompanying consumer product choice, using commercial EEG devices and eye-tracking systems, to be effective, as their results indicate the importance of cracker taste and filling compared to their shape.

Similarly, the results of the research presented in this article were not limited to merely reconfirming already known and proven patterns in the organisation of marketing stimulus perception and product choice decision-making. The projects and conclusions of neurobiological experiments with the noted limitations in effectiveness were critically evaluated. In virtual reality retail store shopping experiments, F. Saffari *et al.* (2023) found, through analysis of electroencephalogram data (frontal asymmetry), a difference between planned and unplanned purchase decisions, as well as distinctions between periods of purchase consideration and periods without decision-making. Predictably and quite naturally, but using near-infrared functional spectroscopy devices with a brain-computer interface, S. Bak *et al.* (2022) detected a higher level of impulse purchasing of goods in online duty-free stores during consumers' international trips compared to regular online stores.

Indicative of the limitations in effectiveness, which companies and specialised agencies are advised to avoid, are the studies by D. Mendoza Ocasal *et al.* (2025). These focused on examining the fragmented and comprehensive influence of branding elements on purchase decision-making. The researchers found an increase in the strength of influence on brain activity and consumer choice with the transition from presenting experiment participants with brand images to photographs of well-known brands featuring a broader representation of their brand concept elements, as well as promotional videos. It is well-known that images "work" better in the human consciousness than text, and video is more effective than images (Spytska, 2024). Researchers need to consider the individual experience of experiment participants (e.g., a pet dog, being bitten by a dog in childhood, a dog as an allergen – brain activity will differ significantly when shown the same image, including among others intended to evoke related associations), consumption situations, and the specifics and positioning of brands (both subjectively and typically). Synchronised interaction, rather than the fragmented operation of brain "areas", as well as the influential uniqueness of personal experience and the emotional colouring of the associations formed by experiment participants, requires particularly careful consideration by specialists. This is recommended to be normatively included in neuromarketing research projects.

A preliminary audit and refinement of the research project materials used for testing the proposed design concepts by the trading companies was not planned, but could have contributed to more effective results. The clear advantages of Concept 1 over the other could be distinctly predicted, considering well-established principles of perception. If the brand is not a determining factor in choice, as established above, then the characteristics of the specific product variant among the alternatives become significant. These characteristics in Concept 1 are highlighted within a particular colour field, which simplifies their identification. The block of colour separating the brand name and tea characteristics creates a certain rhythm for consumers' perception of the packaging information. Bright collages demonstrating the specific flavour profiles of the tea create a cohesive background image in the upper part of the packaging. In Concept 2, the brand name is poorly identified. This is not critically important when its perception is undifferentiated, but it conceals the advantageous pricing of the private label. Significant characteristics of the product variants are presented using fonts and inscription colours that are difficult to read, which disrupts their holistic perception.

Among the advantages of Design Concept 1, testing participants noted the large and expressive font, which highlights the name and characteristics of different product varieties, and the design was perceived as more modern. 37% of participants in the corresponding group spontaneously recalled and positively evaluated the presence of the "Leaf Tea" mark on the packaging of Concept 1. Consumers highlighted its presence as a favourably noticeable packaging element (compared to the "premium grade" mark on the packaging of the Design Concept 2). Conversely, its absence on some product packaging variants was noticed by consumers and noted as a drawback. For both tea packaging design concepts, experiment participants noted a lack of categorical differences for effective differentiation of the brand's product offerings (Fig. 3). This was evident in buyers' evaluations at the level of both product characteristics and the consumption situations for the tested brand of tea.

The integrated and critical drawback of Design Concept 2 identified by consumers was its unmodern/outdated, stereotypical design. The black tea packaging variant received particularly negative evaluations, being perceived as non-unique and inexpressive (Fig. 4). A necessary prerequisite for high brand value is the uniqueness of its offerings. This includes moving beyond stereotypical associations linked to the product category or dominant brands within it, such as "harmony with oneself and the world", "peace and tranquillity" for tea. Securing a brand's own positioning "territory" that does not conflict with the millennium-old history of tea drinking but progressively

develops it through marketing concepts and design solutions is a complex task requiring non-trivial creative approaches. Among other points, and in full agreement here, it is advisable for companies and specialised agencies to consider the results of neurobiological studies using methods such as those by A. Fici *et al.* (2024). Their article demonstrated differing levels of cognitive and emotional engagement in consumer behaviour across competing retail platforms, impacting customer experience outcomes and business effectiveness. Accordingly, investment in developing retail platforms of a specific format should be preceded by their careful design and optimisation based on research into users' cognitive and emotional responses and their customer experience.

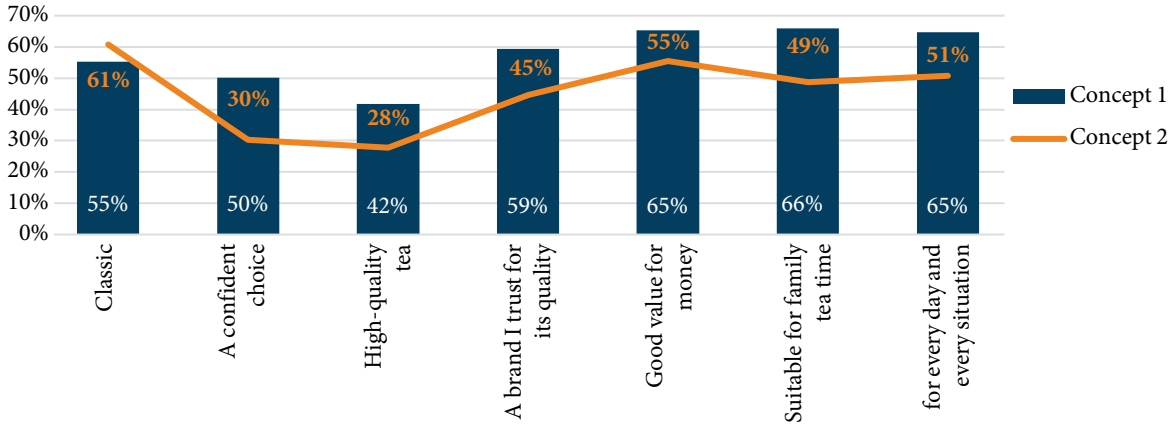

Figure 3. Brand image characteristics of tea packaging design concepts
Source: developed by the authors

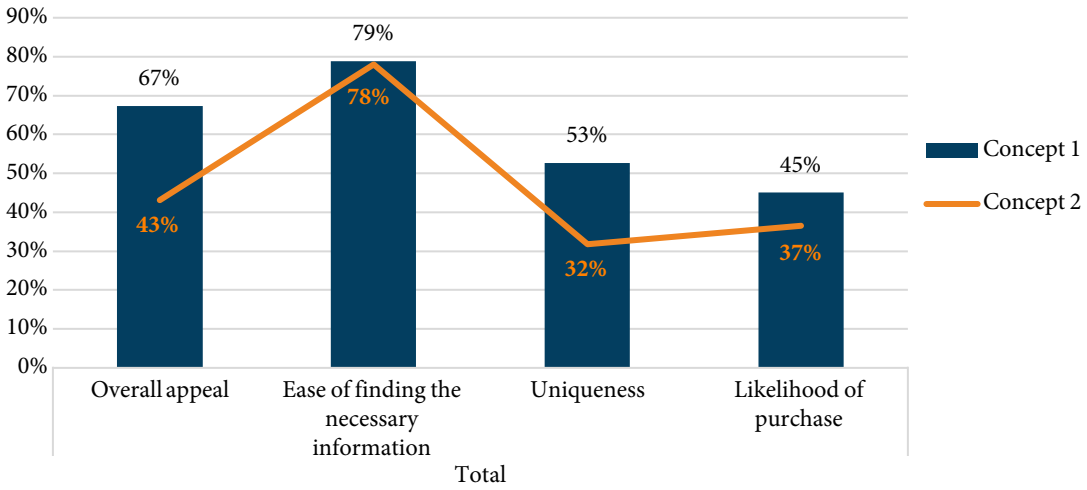

Figure 4. Evaluations of tea packaging during the purchase decision-making process
Source: developed by the authors

In applying the concept of neuromarketing, businesses and specialised research agencies unequivocally require specialists to possess a deep understanding of the patterns and characteristics of consumer perception of all positioning elements within a product category, as well as the development of its cultural codes, to achieve effective differentiation of marketing offerings. The latter allows for the innovative supplementation of stereotypical associations, for instance, by utilising the elements and harmonies of contradictions prevalent in popular Eastern philosophy and culture, including the calming or invigorating effects of tea consumption, as well as derivative traditions/rituals and local norms/images ("English breakfast" (British, aristocratic style), "warm atmosphere", "alpine freshness", healthy/ecological/organic products, etc.). In this context, the packaging's design message becomes the brand concept's calling card, forming the basis for developing characteristics crucial for the successful development and effective promotion of brands: uniqueness, positive image, recognition/awareness, and so forth. This study highlights important methodological issues and solutions that define the potential for increasing the effectiveness of neuromarketing research in brand development for companies. It also testifies to the potential for further investigation, accumulation, and systematisation of harmonised objective data regarding consumers' cognitive, emotional, and

behavioural responses. The horizons and possibilities of these studies are significantly expanded with the intensification of the development and influence of neural networks, the digital environment, and the use of new generations of biosensors in scientific and practical experiments.

Conclusions

The results of the study made it possible to achieve the stated aim of identifying ways to enhance the effectiveness and ethical standards of neuromarketing experiments in order to support the profitability and development of companies' marketing activities and brands. The generalisations and conclusions in the article demonstrate that utilising neurobiological methods and tools in marketing research enhances the understanding of consumers' cognitive and emotional responses during purchase decision-making processes. However, it was established that the results of neuromarketing experiments and the elements of specialised methodology require significant rethinking and systematisation. The reasons for product choice and the processes of purchase decision-making are often not fully consciously perceived by consumers, being determined by a complex spectrum of sensations, socio-psychological attitudes and stereotypes, emotions, etc., the influence of which is challenging to identify and assess solely through self-reports and interviews with experiment participants. Based on a critical evaluation of available scientific findings, including their practical application, it was revealed that the application of neuroscience methods and tools can provide a more objective measurement of a wide range of consumer reactions when observing their purchasing behaviour. Following the identification of reserves and the formulation of recommendations for businesses and specialised agencies, it is noted that neuromarketing methodology requires systemic improvements and correct implementation in research practice. Furthermore, traditional marketing knowledge can be effectively applied to account for the vectors of influence on buyer reactions stemming from situational and object-of-choice specificities, the impact of customer experience patterns and attitudes, and so forth.

Drawing upon the experience of processing the perception of branded product offerings in food and beverage displays in scientific and practical research, this publication proposes effective approaches and case studies for integrating traditional and neurophysiological research tools, refining specific stages of experimental work, and evaluating the correlation/significance of components, including the direct parameters of choice variant perception, consumption experience, and brand concept influence factors, as well as the possibilities and challenges of their harmonisation – all of which are useful for enhancing the marketing effectiveness of businesses. The results demonstrate that the level of consumer differentiation between various product varieties within brand lines, as well as the perception/understanding of their unique value as intended by companies, can and should be effectively identified through pre-tests on a minimal sample, with subsequent adjustments to research projects. This will significantly increase the cost-effectiveness of neuromarketing experiments. It is shown that using iMotions technological solutions in neuromarketing research allows for strengthening their evidence base, systematising integrated measurement results from different researchers, regardless of their experimental hardware, and optimising research projects to improve their economic efficiency. Continued experiments using a new generation of hardware that allows for the recording of emotional responses and their changes, in parallel with monitoring buyers' eye movements, as well as for studying consumer behaviour patterns in the digital environment, are of interest for future research in the field of food neuromarketing.

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Conflict of Interest

None.

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Резерви підвищення ефективності нейромаркетингових досліджень поведінки споживачів у розвитку брендів підприємствами

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Анотація. Підвищення ефективності інновацій у сфері маркетингових досліджень поведінки споживачів, наукове опрацювання нових феноменів впливу на вибір покупців маркетингових стимулів на основі об'єктивних даних нейробіологічних експериментів, а також у цифровому середовищі та з використанням технологій штучного інтелекту, набувають великої актуальності. Метою цієї статті був критичний аналіз методологічних передумов та перспектив застосування інструментів нейробіології у практичній маркетинговій діяльності підприємств харчової індустрії, а також формування на цій основі пропозицій щодо удосконалення дослідницьких проєктів нейромаркетингу, підвищення їхньої ефективності. У статті представлено результати інтегрованих маркетингових досліджень фізіологічних процесів і даних самооцінювання прийняття рішень споживачів, за виконання ними завдань вибору товарів, розроблених для оцінювання сприйняття і комерційних перспектив альтернативних варіантів дизайн-концепцій упаковки чаю конкретного бренду. Було використано систему відстежування руху зіниць очей, виявлені на основі об'єктивних даних патерни співставлялися з результатами опитування учасників тестування дизайн-концепцій упаковки. Узагальнення результатів досліджень показали, що категоріальні відмінності для ефективної диференціації цінності унікальних товарних пропонувань бренду, а за їх браку, ціни, були важливішими факторами впливу на закупівельні рішення, ніж чинники дизайну та інформативності упаковки. Встановлено можливості економії витрат та підвищення цінності результатів нейробіологічних експериментів шляхом передбачення традиційного претесту гіпотез і робочих матеріалів для удосконалення проєкту досліджень і маркетингових рішень для споживачів. Обґрунтовано і запропоновано перспективні для подальших досліджень напрямки удосконалення методології і проєктів нейробіологічних експериментів у маркетингу. Автори публікації сподіваються, що результати дослідження допоможуть науковцям і практикам у виявленні та реалізації резервів підвищення ефективності маркетингу, розвитку брендів і бізнесу

Ключові слова: маркетинг; покупці; купівля товарів; торгівельні марки; упаковка; експерименти