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Neuropsychological reactions to vertical and horizontal video content in consumer behavior: a theoretical and economic analysis

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Abstract. The article examines the neuropsychological mechanisms of perception of vertical and horizontal video content in the context of consumer behavior. It is substantiated that the spatial-visual orientation of the video determines the nature of emotional involvement, the level of cognitive load and subsequent behavioral reactions of consumers. The **purpose of the study** is to theoretically substantiate the influence of the visual orientation of video content on the emotional-cognitive processes of the consumer and to develop an author's model that explains the relationship between neuropsychological reactions and the economic effectiveness of marketing communication. The **methodological basis** is the methods of systemic, structural-functional and cognitive analysis, which made it possible to generalize scientific approaches to the study of neuromarketing, the economics of attention and the theory of cognitive load. Based on analytical modeling, the author's concept «Model of Three Focuses» is proposed, within which three interrelated levels of perception are distinguished: visual, emotional and cognitive-behavioral. **Results.** It has been established that vertical videos activate the limbic system, causing rapid emotionally colored reactions, effective for

impulsive decisions and short-term communications; on the other hand, horizontal formats stimulate the prefrontal areas of the brain, enhancing analytical perception, trust and loyalty of consumers. **Conclusions.** The developed model proves that neuropsychological reactions directly affect the economic efficiency of video marketing, establishing a connection between psychological processes of attention and financial results of the business. The practical significance of the study lies in the possibility of using the model to predict behavioral reactions, assess the effectiveness of communication strategies and form long-term brand trust capital. The results of the study expand the theoretical basis of the neuroeconomic approach to video marketing and open up prospects for further empirical measurements in the field of digital communications and behavioral analytics.

Keywords: cognitive response, emotional engagement, neuromarketing, attention economy, behavioral mechanisms, video advertising effectiveness.

Нейропсихологічні реакції на вертикальний і горизонтальний відеоконтент у споживчій поведінці: теоретико-економічний аналіз

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Анотація. У статті розглянуто нейропсихологічні механізми сприйняття вертикального та горизонтального відеоконтенту в контексті споживчої поведінки. Обґрунтовано, що просторово-візуальна орієнтація відео визначає характер емоційного залучення, рівень когнітивного навантаження та подальші поведінкові реакції споживачів. **Метою дослідження** є теоретичне обґрунтування впливу візуальної орієнтації відеоконтенту на емоційно-когнітивні процеси споживачів та розроблення авторської моделі, яка пояснює

взаємозв'язок між нейропсихологічними реакціями і економічною результативністю маркетингової комунікації. **Методологічну основу** становлять методи системного, структурно-функціонального та когнітивного аналізу, що дали змогу узагальнити наукові підходи до вивчення нейромаркетингу, економіки уваги та теорії когнітивного навантаження. На основі аналітичного моделювання запропоновано авторську концепцію «Модель трьох фокусів», у межах якої виокремлено три взаємопов'язані рівні сприйняття: візуальний, емоційний та когнітивно-поведінковий. **Результати.** Встановлено, що вертикальні відео активують лімбічну систему, викликаючи швидкі емоційно забарвлені реакції, ефективні для імпульсивних рішень і короткострокових комунікацій; натомість горизонтальні формати стимулюють префронтальні зони мозку, підсилюючи аналітичне сприйняття, довіру та лояльність споживачів. **Висновки.** Розроблена модель доводить, що нейропсихологічні реакції безпосередньо впливають на економічну ефективність відеомаркетингу, встановлюючи зв'язок між психологічними процесами уваги та фінансовими результатами бізнесу. Практична значущість дослідження полягає у можливості застосування моделі для прогнозування поведінкових реакцій, оцінювання ефективності комунікаційних стратегій і формування довгострокового капіталу довіри до бренду. Результати дослідження розширюють теоретичну базу нейроекономічного підходу до відеомаркетингу та відкривають перспективи для подальших емпіричних вимірів у сфері цифрових комунікацій і поведінкової аналітики.

Ключові слова: когнітивна реакція, емоційна залученість, нейромаркетинг, економіка уваги, поведінкові механізми, ефективність відеореклами.

Problem statement. In the modern digital environment, video content has become the primary communication tool between brands and consumers. The dynamics of social networks, the reduction of information perception time, and the

increased competition for user attention have necessitated a deeper understanding of the psychological mechanisms of the influence of visual formats [1, p. 77]. In particular, vertical and horizontal videos not only differ in technical parameters but also form fundamentally different models of emotional engagement and cognitive processing of information.

The neuropsychological approach allows integrating the economic and behavioral dimensions of this process, explaining how spatial perception of a frame activates different areas of the brain (limbic system, prefrontal cortex, visual cortex), which directly affects decision-making and the formation of consumer loyalty [2]. The relevance of the topic is enhanced by the fact that most modern marketing research focuses on quantitative metrics of video effectiveness (CTR, ROI, watch time), leaving out of consideration the neuropsychological patterns of user perception and reactions. At the same time, it is these reactions – emotional, cognitive and behavioral – that determine the success of digital communication, because the final economic behavior depends on the emotional impulse and cognitive processing: click, purchase, repeated interaction or brand memorization [3, p. 86].

Thus, studying the neuropsychological mechanisms of video content perception is key to developing effective marketing strategies aimed at optimizing communications, increasing trust, and strengthening business competitiveness in the face of information overload and a shortened average attention span of consumers.

Analysis of recent research and publications. Modern approaches to the study of consumer behavior are increasingly based on neuropsychological, cognitive and behavioral concepts, which reflects the global trend of integration of economic and psychological sciences. In a systematic review, a team of authors led by R. Gupta presented a comprehensive vision of neuromarketing as a research paradigm that covers all stages of the consumer journey – from the formation of intention to post-purchase behavior, and integrates affective and cognitive responses within the PRISMA approach [4]. Their findings support the results of the study by

S. Bansal and colleagues, who showed that the application of the Stimulus–Organism–Response model allows revealing the influence of neurophysiological processes on elements of the marketing mix, especially in the areas of product, price, promotion and distribution [5]. The study by S. Bhardwaj and co-authors details the development of neuromarketing tools, such as fMRI, eye-tracking and neural networks, emphasizing their role in a deeper understanding of decision-making processes [6]. Similarly, A. Alsharif and co-authors have shown that combining neuromarketing with artificial intelligence technologies opens up new possibilities for analyzing consumers' emotions, memory, and attention. At the same time, it raises ethical challenges in the use of neurodata [7]. The development of neurotechnologies in the field of audiovisual content was studied by M. Núñez-Cansado and colleagues, who recorded the phenomenon of «emotional tailing» - the residual effect of emotions that affects consumer decision-making and distorts cognitive attribution [8]. In turn, S. Singh emphasizes the importance of measuring the effectiveness of online advertising through tools for tracking gaze, mouse movements, and emotion analysis, which increases the accuracy of assessing users' behavioral reactions [9, p. 34].

Ukrainian research presented by A. Strungar complements this scientific context by analyzing the impact of visual and textual elements on the perception of online content, proving that the combination of emotional visuals and relevant text increases brand trust and motivation to purchase [10, p. 48]. Similar conclusions were drawn by C. Cenizo, who identified the potential of neuromarketing technologies in improving the design of web interfaces and increasing the quality of user experience [11]. C. Paladino's research showed that neuromarketing allows deciphering the connection between sensory stimuli, emotions and behavioral intentions, laying the foundation for the formation of effective marketing strategies [12, p. 6]. These ideas are consistent with the conclusions of K. Haidinger and M. Koller, who proved that consumer neuroscience can explain not only emotional reactions, but also the reasons for the effectiveness or ineffectiveness of marketing

decisions [13].

It is worth noting the works of O. Vartanova and T. Tsalko, who rethought the concept of consumer behavior as a combination of rational and presumably irrational elements, with an emphasis on the «black box» of consumer consciousness [14]. D. Rayko's study revealed the mechanisms of brand adaptation to changes in the behavior of Ukrainian consumers during periods of crisis, which are caused by emotional tension and new value orientations [15]. A significant contribution was made by I. Zakryzhevska and co-authors, who demonstrated that the digitalization of the economy contributes to the transformation of consumer expectations - from the requirements for convenience and transparency to the need for personalization and emotional authenticity of brands [16]. At the micro level, A. Nikolska explains these processes, demonstrating that consumers, as defined by D. Kolb's learning model, react differently to advertising stimuli. It should be considered when developing communications [17, p. 53]. The critical role of psychological factors is emphasized in the work of M. Bagorka and K. Pererva, where the influence of cognitive distortions on purchasing decisions is described [18]. This array of research is completed by R. Nayda and colleagues, which emphasizes that taking into account emotional, social and cultural factors is a necessary condition for the formation of effective marketing strategies in a dynamic market environment [19].

Thus, the generalization of the analyzed studies shows that modern consumer behavior is formed under the influence of the complex interaction of cognitive, emotional and neurophysiological factors, and the integration of neuromarketing, psychological and digital approaches opens up new opportunities for a deeper understanding of consumer motivation and the development of effective brand strategies in a dynamic market environment.

Highlighting previously unresolved parts of the general problem. Despite the significant number of scientific works devoted to the analysis of cognitive, emotional and behavioral aspects of consumer activity, several issues remain unresolved. In particular, the mechanism of consumers' neuropsychological reaction

to different formats of digital content requires further study, since vertical and horizontal videos activate the visual, emotional and cognitive systems of the brain differently. Our research aims to deepen the understanding of these processes and develop an author's model of the neuropsychological impact of video content. This model has practical value for improving marketing strategies, increasing the effectiveness of communications, and forming more accurate tools for assessing consumer reaction.

Formulation of the objectives of the article (statement of the task). The purpose of the study is to theoretically substantiate the relationship between the spatial orientation of video content and the neuropsychological reactions of consumers, as well as to determine the marketing patterns of using these formats to increase the effectiveness of visual communications and attract attention in the digital environment.

Presentation of the main material of the study. The neuropsychological approach to consumer behavior combines tools from economics, psychology, and neuroscience to examine how emotional and cognitive stimuli influence decision-making. Neuromarketing studies the relationship between the perception of visual images and behavioral responses, enabling it to explain why people react to specific colors, rhythms, or forms of content, even unconsciously [2]. In the conditions of the «attention economy», the user's ability to concentrate becomes the primary resource, and therefore, video formats become tools for managing attention. Vertical videos elicit an immediate emotional response, while horizontal ones foster analytical comprehension and more extended engagement [20, p. 5]. Cognitive mechanisms, such as the orientation effect, mirror neurons, and the framing effect, explain how the way information is presented shapes perception. The vertical image format, through close-ups of faces, enhances empathy and emotional engagement.

In contrast, the horizontal one enhances analyticality and trust; accordingly, the first form involves impulsive actions, whereas the second involves conscious decisions. Neuropsychological reactions of consumers cover three interconnected

levels: cognitive (attention, image recognition), emotional (sympathy, excitement) and behavioral (clicks, views, purchase intentions). Their combination determines the economic efficiency of content, which is measured by engagement rate, CTR and conversion rate [19; 21]. The spatial orientation of the frame directly affects the strength of these reactions. Vertical creates the effect of personal presence (face-to-face), focusing attention on facial expressions, while horizontal forms a scenic perspective, stimulating logical comprehension. A summary of the neuropsychological features of perception is presented in Table 1.

Table 1

Neuropsychological features of the perception of vertical and horizontal video content

Video format	Dominant effect	Predominant response	Cognitive characteristics	Behavioral consequences
Vertical	Proximity effect, face-to-face	Emotional identification, rapid involvement	Low cognitive load, focus on the face	Impulsive clicks, short-term attention
Horizontal	Scene effect, detached observation	Cognitive comprehension, trust	High cognitive load, analytical perception	Longer interaction, considered a decision

Source: author's development based on [1; 2; 3; 19; 21]

The data presented confirm that the video format is not only a technical characteristic, but also a psychophysiological factor that determines the dynamics of attention and the level of trust in the brand. Understanding these mechanisms allows companies to create content that optimally combines emotional impulse and rational argumentation.

Analysis of consumer neuropsychological reactions creates a basis for assessing the effectiveness of video formats in modern digital marketing. Thus, TikTok builds algorithms on the effect of proximity (face-to-face), activating the limbic system and creating the illusion of personal interaction. In contrast, YouTube and Meta rely on horizontal compositions that stimulate the prefrontal cortex,

enhancing trust, analytical thinking and the ability to evaluate content rationally.

On this basis, the concept of emotional-cognitive targeting is formed, which involves choosing a format depending on the dominant neuromechanisms: limbic system – emotional activation, rapid involvement, impulsive decisions; prefrontal cortex – cognitive assessment, logical thinking, building trust.

International studies [22–27] confirm that the spatial format of video directly affects the economic return of advertising campaigns. According to generalized indicators (fig. 1), vertical videos have a higher CTR – 2.1% versus 1.4% – due to their ability to fill the smartphone screen and focus attention on a single object. At the same time, the Completion Rate reaches 89% for vertical videos and 72% for horizontal ones, which is explained by the different levels of cognitive load: short formats convey information faster and more emotionally, while long ones – logically and meaningfully. The ROI of vertical videos (+27%) exceeds that of horizontal videos (+12%), especially in the FMCG, fashion, beauty, and entertainment segments, where decisions are made impulsively. In technological, educational, and financial projects, horizontal videos have an advantage, as they foster a stable perception and trust in the brand. Brand Recall is also higher in vertical formats (90% vs. 69%), driven by direct eye contact and the activation of empathy through close-ups of faces. However, Average Watch Time (8s vs. 14s) indicates different types of engagement: vertical videos evoke an immediate emotional response, while horizontal ones evoke deeper analytical reflection.

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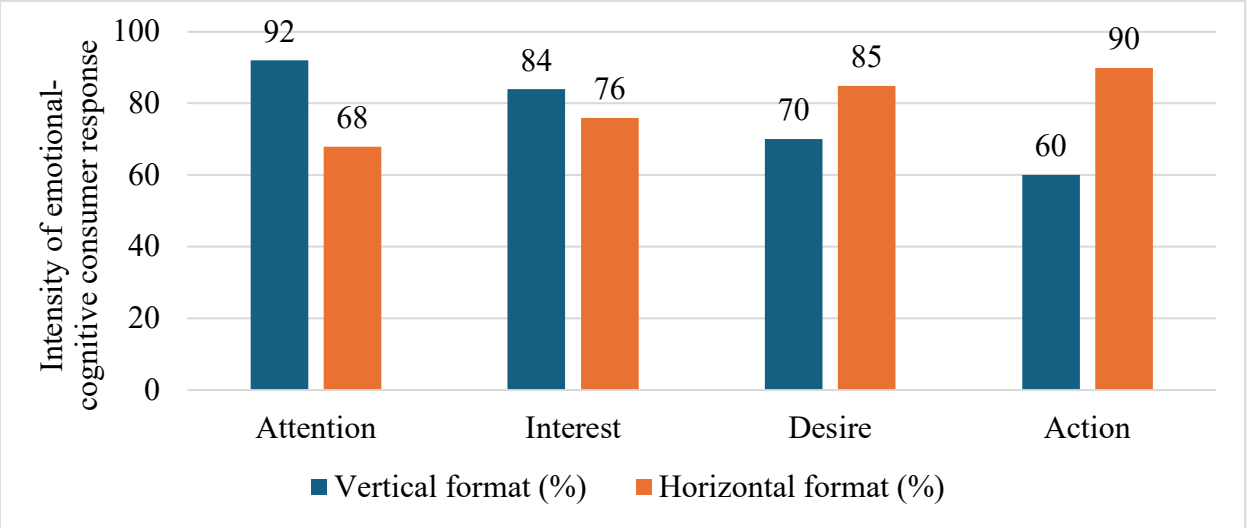

Fig. 1. The effectiveness of video formats in the marketing funnel (AIDA)

Source: systematized by the author based on [22; 23; 24]

Empirical results confirm that the spatial orientation of the video is a key factor in the neuropsychological impact that determines the balance between emotional impulse and rational choice. The practices of TikTok, Meta, YouTube, Google, and Microsoft demonstrate that adapting the format to user perceptions increases interaction, brand recognition, and ROI. The summarized corporate analytics data are presented in the Table. 2.

Table 2

Performance of marketing campaigns by video format

Company / Platform	Video format	Main content and message type	Marketing result	Key neuropsychological effect
TikTok Ads (FMCG brands, 2023)	Vertical	Short emotional videos, faces, movement, music	CTR +42%, 8s attention span	Face-to-face effect, emotional arousal
YouTube Bumper Ads	Horizontal	Laconic plot, analytical structure, logical sequence	Brand trust +18%, ROI +12%	Scene effect, cognitive stability and trust
Netflix «Now Watching» (2023)	Vertical	Trailers in Stories format, fast emotional transitions	High interaction rate, CTR +37%	Effect of emotional identification, visual impulse
Apple «Shot on iPhone»	Horizontal	Artistic presentation, realistic scenes, slow dynamics	Growth in brand trust +22%, average Watch Time +15s	Spatial thinking, cognitive immersion

Source: systematized by the author based on [25; 26; 27; 28]

Thus, the neuropsychological orientation of video content directly correlates with marketing results, determining the depth of engagement and the type of consumer response. The obtained patterns served as the basis for the Three Focus Model (table 3), which reflects the relationship between the spatial structure of the video and the neuropsychological processes that shape the consumer's emotional and cognitive responses.

Table 3

Model of the neuropsychological impact of video content on the consumer (Three Focus Model)

Level of focus	Psychological content	Dominant brain area	Character of reaction	Expected type of behavior
Visual focus	Spatial field of perception (vertical/horizontal), direction of attention	Occipital areas (visual cortex)	Perceptual response, image recognition	Visual involvement, concentration on the stimulus
Emotional focus	Empathy, arousal, emotional valence	Limbic system (amygdala, hippocampus)	Emotional arousal, sympathy, trust	Instant response, interaction with content
Cognitive-behavioral focus	Transition from perception to action, value assessment	Prefrontal cortex	Analytical reasoning, impulse control	Decision-making, intention purchases

Source: author's development

Within the model, visual focus determines the direction and concentration of attention: vertical orientation concentrates visual activity in the center of the frame, creating the effect of proximity and reducing cognitive load, while horizontal orientation activates peripheral perception, expands the context, and contributes to analytical understanding of the content. Emotional focus is associated with the level of activation of the limbic system: vertical videos stimulate empathy and emotional engagement, and horizontal ones form a sense of stability and trust. The final element is the cognitive-behavioral focus, which reflects the transition from perception to action: in vertical formats, it manifests as impulsive reactions; in horizontal formats, as rational analysis and conscious choice.

The Three Focus Model demonstrates that the effectiveness of video marketing depends on the consistency of emotional impact and cognitive understanding of the content. It explains the dynamics of the transition from emotional impulse to rational action, providing a basis for assessing the effectiveness of visual communication in the digital environment. Its practical value lies in its applicability when creating a strategic design for video advertising. The video format serves as a tool for managing psycho-emotional attention resources: vertical orientation activates instant reactions and emotional involvement, while horizontal orientation stimulates analytical perception, trust, and long-term retention of interest. The Three Focus Model combines neuropsychological, cognitive, and marketing approaches, considering video content as a dynamic system of interaction among three focuses—visual, emotional, and cognitive. In the communication process, these focuses are sequentially activated across four stages of the marketing funnel (AIDA), each characterized by the dominance of a specific neuropsychological activity. Cognitive focus plays a key role in shaping rational analysis and decision-making, while the final behavioral stage results from a combination of the three focuses, in which emotional perception, visual concentration, and cognitive evaluation are synthesized into a conscious consumer action. A generalized structural integration is presented in Table 4, demonstrating how the model's focuses align with the stages of attention, interest, desire, and action in the consumer decision-making process.

Table 4

Integrating the Three Focus Model into the marketing funnel (AIDA)

AIDA funnel stage	Dominant focus of the Model	Neuropsychological activity	Marketing format	Expected result
Attention	Emotional focus	Activation of the limbic system, proximity effect	Vertical short videos (TikTok, Reels)	Instant engagement, high CTR
Interest	Visual focus	Orientation of attention, image processing	Mixed formats with close-up montage	Maintaining attention, rewatching

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AIDA funnel stage	Dominant focus of the Model	Neuropsychological activity	Marketing format	Expected result
Desire	Cognitive focus	Activation of the prefrontal cortex, analytical evaluation	Horizontal videos with context and story	Building trust, increasing ROI
Action	Behavioral (integrative) focus – the result of the interaction of the three previous	Synchronization of emotional, visual, and cognitive processes	Horizontal explainer videos, product reviews	Decision making, conversion, loyalty

Source: author's development

The integration of the Three Focus Model into the AIDA framework reflects the full cycle of the consumer's emotional-cognitive interaction with video content. At the Attention – Interest stages, emotional-visual processes dominate, ensuring attention and creating initial contact with the message. At the Desire – Action stages, cognitive-behavioral mechanisms are activated, which contribute to awareness of the product's value, the formation of trust, and the transition to the target action.

Using this model enables optimizing the structure of video campaigns, taking consumer psychology into account, ensuring consistency of content formats across the behavioral cycle stages, and achieving a balance between emotional engagement and rational argumentation.

Thus, the Three Focus Model is a theoretically sound and practically oriented concept that integrates a neuropsychological approach, the economics of attention and digital marketing tools into a single system for explaining consumer behavior. Its applied value lies in its ability to identify patterns of interaction among emotional, cognitive, and behavioral reactions during the perception of video content in various formats.

To verify the theoretical foundations of the model, an online survey (n = 64) was conducted in August–September 2025. Recruitment was conducted via email and social networks. Participation criteria: age 18–45 years, daily consumption of short videos (at least 30 minutes) and use of at least two platforms. The central part

of the questionnaire was aimed at assessing visual, emotional and cognitive-behavioral focuses, which correspond to the structure of the Three Focus Model. An example of questions is given in Table 5.

Table 5

Online survey questionnaire «The impact of video format on content perception»

№	Question	Answer type
1	Which short video platforms do you use most often? (TikTok, Instagram Reels, YouTube Shorts, etc.)	Multiple choice
2	How much time per day do you watch short videos (up to 1 minute)?	Single-choice question (4-time gradations)
3	Which video format do you find more convenient to perceive?	Dichotomous (vertical/horizontal)
4	On a scale of 1 to 5, rate how much each format holds your attention	Likert scale (2 lines × 5 points)
5	Which format evokes a stronger emotional response in you (empathy, trust, interest)?	Dichotomous + neutral option
6	After watching an advertisement, in which format is you more likely to interact (like, comment, move)?	Dichotomous
7	How likely are you to trust the brand after watching the video in each format?	Three-level scale («don't trust», «somewhat trust», «completely trust»)

Source: author's development

The data obtained as a result of the survey made it possible to identify trends in the perception of video content formats by a young audience and compare the empirical results with the theoretical conclusions of the Three Focus Model (fig. 2). For a sample of n = 64, the maximum possible error for the proportions ($p \approx 0.5$) is ±12 pp. at a confidence level of 95%. The results are pilot in nature, but demonstrate fundamental differences in neuropsychological reactions to vertical and horizontal video content formats.

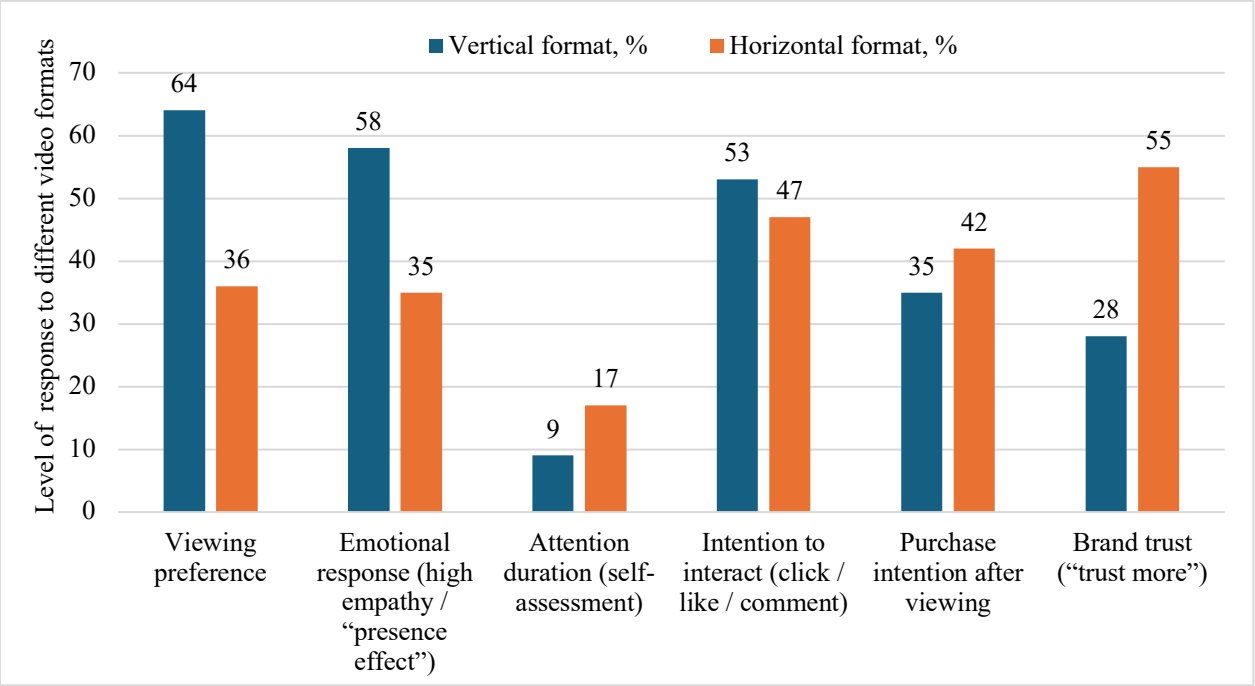

Fig. 2. Comparative survey results on the impact of video format on consumers' emotional, cognitive and behavioral responses (n = 64)

Source: constructed by the author

The survey results confirmed distinct differences between the two video formats. Vertical videos are perceived as more «personal» and elicit stronger emotional activation (58% of respondents reported greater empathy and a «presence effect»). At the same time, this format is associated with instant reactions – likes, comments, and short views. Horizontal formats stimulate cognitive processing: respondents noted that they hold attention on average 40–70% longer (14–20 s vs. 8–10 s) and demonstrate a higher level of trust in the brand (55% vs. 28%). Regarding behavioral consequences, vertical videos work better at the engagement stage (Attention, Interest). In contrast, horizontal videos work better at the Desire and Action stages of the marketing funnel, supporting informed purchasing decisions.

Thus, the obtained data empirically confirmed the theoretical hypothesis of the Three Focus Model: the vertical format activates the emotional and visual focus, and the horizontal format activates the cognitive-behavioral focus, thereby determining different economic efficiencies of use depending on the type of content

and marketing goal.

Conclusions. The study allowed us to comprehensively examine the neuropsychological and marketing patterns underlying the influence of video content's spatial orientation on consumer behavior. Theoretical analysis has proven that the choice of video format (vertical or horizontal) directly determines the type of emotional-cognitive reaction, the structure of attention and the nature of decision-making. The spatial arrangement of the frame affects the activation of different brain areas – the limbic system or the prefrontal cortex – which, in turn, form distinctive models of consumer economic behavior. Vertical videos are focused on quick emotional perception, the effect of proximity (face-to-face), instant attention, and impulsive interaction – views, clicks, comments. They elicit short-term reactions, increase CTR and audience engagement, making them effective for campaigns at the Attention and Interest stages of the AIDA funnel. Horizontal formats provide deeper immersion, cognitive assessment, brand trust, and longer user interaction, which is optimal for the Desire and Action stages – forming loyalty, explaining the value of the product, and demonstrating its benefits.

The obtained empirical data and results of marketing reports (Zebracat, Vidico, Meta Insights, Google Creative Lab, 2023–2024) confirm that vertical formats provide higher CTR (+42%), Brand Recall (up to 90%) and ROI (+27%), while horizontal formats contribute to longer viewing, increasing trust and brand reputation capital.

These statistical patterns are consistent with the neuropsychological logic of perception, proving the relationship between emotional activation and the economic efficiency of content.

The Three Focus Model is proposed, combining the cognitive, emotional, and behavioral levels of perception into a single system. The model describes how the video format affects visual focus (perception), emotional focus (empathy and arousal), and cognitive-behavioral focus (evaluation and action), creating a mechanism for the transition from emotional impulse to conscious purchase. The

integration of the model into the AIDA structure enabled combining neuropsychological analytics with marketing practice, thereby forming the concept of emotional-cognitive targeting, which balances emotional impact and cognitive control. The practical significance of the study lies in developing approaches to optimize video marketing strategies. Thus, the study not only demonstrated the neuropsychological determinants of consumer behavior but also substantiated the economic feasibility of applying the neuromarketing approach to the development of video strategies.

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