

A MIND MAP OF FACTORS INFLUENCING THE CHOICE OF ECO-FRIENDLY AND SUSTAINABLE PRODUCTS: INSIGHTS FROM NEUROMARKETING

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Abstract

Neuromarketing evaluates human expressions to understand people's behavior, and marketing can exploit the main factors associated with each behavior to help individuals make more conscious and environmentally friendly decisions. The decision-making process is complex, but through emotional responses to experiences (products or advertisements), communication can be more assertive if it considers consumer perception.

Attractive eco-friendly packaging and messaging, innovative design, and consumer-centred marketing strategies can influence the decision to purchase eco-friendly and sustainable products, especially when they take into account the level of awareness of perceived value among consumers and buyers. Despite considerations (rational, emotional, and associated risks), can people see the same product differently? To answer this question, the objective of this research was defined: to develop a comprehensive understanding of the factors that influence the consumer decision-making process. On November 27, 2025, this research develops a literature review in Web of Science Core Collection, searching article related to Neuromarketing, to understand the decision-making process of consumption, which can be applied to the eco-friendly and sustainable products campaign. The results structured the factors into five dimensions, and a map mind emerges from it.

Key words: *Consumer behaviour, Neuromarketing, Sustainability, Circular Economy, Social Marketing.*

Introduction

The human face offers a huge amount of information, especially through the expression of emotions (Landmann, 2023). There are multiple factors influencing decision-making process

(Cherubino et al., 2017). The emotional response to experiences (products or advertisements) (Hou et al., 2016) can help in assertive communication. It is an opportunity to improve the campaign based on the consumer's perception. Packages and ecological attractive messages (Ščepková & Zaušková, 2024) and visual design of the eco-product (Ščepková & Zaušková, 2024), could be associated with innovative design and marketing strategies can lead to consumer-centric approach (Sadikzade et al., 2024). Finally, this research defened that marketing strategies and related advertising favour a better perception of value (Al-Kwif, 2016).

Despite considerations (rational, emotional, and associated risks), can people see the same product differently? To answer this question, the objective of this research was defined: to develop a comprehensive understanding of the factors that influence the consumer decision-making process. Neuromarketing is an area of marketing that uses neuroscience (combining psychology and neuroscience) to understand how consumers' brains work. It aims to understand individuals' responses to advertisements and products. It uses tools such as fMRI, EEG, and eye tracking to measure consumers' subconscious behavior.

Assuming that Neuromarketing is the best option to help people to decide, the main objective of marketing is to use these insights to optimize communication strategies to influence the purchasing and consumption decision-making process. In this sense, this article developed a literature review to understand the decision-making process of consumption, which can be applied to the which can be applied to the eco-friendly and sustainable products campaign. On November 27, 2025, this research develops a literature review in Web of Science Core Collection, searching article related to Neuromarketing.

The results structured the factors into five dimensions: rational factors, emotional factors (which are widely used in marketing campaigns), factors associated with risk reduction, as well as raising awareness about individual perception of the decision-making process and its consequences, and the tools that marketing uses and that can also influence the decision. A mind map emerged from the literature review.

Insights from neuromarketing¹ to consumer behavior

Neuromarketing techniques use tools from neuroscience, such as EEG, fMRI, eye tracking, and facial coding, to measure consumers' unconscious responses to marketing stimuli, thereby providing deeper insights than conventional methods. The literature review drew on these studies to present a mental map of the factors that influence decision-making.

Conscious and unconscious mental processes (Cenizo, 2025) can be assessed by neuromarketing, namely through pupil dilation and constriction, including for AI training (McInnes & Sung, 2025).

Rational factors (Piazza et al., 2018; Ferruz-González et al., 2023; Barquero-Pérez et al., 2020; Kaklauskas et al., 2019) may be relevant to certain segments and markets. It plays a stronger role when the effort required is more significant (Kaklauskas et al., 2019). However, most consumer decisions are not determined solely by conscious and rational factors (Ferruz-González et al., 2023; Barquero-Pérez et al., 2020; Piazza et al., 2018).

Based on their feelings and emotional factors (Ferreira et al., 2024; Polo et al., 2024; Aricò et al., 2018), consumer makes more impulsive decisions. Emotions can come up (Kaklauskas et al., 2020) unconsciously (Landmann, 2023), and emotional appeals improve communications, as well as retain attention and increase trust (Russo et al., 2023). Furthermore, emotions, values and ethical preferences (Lytvyn et al., 2023) influence

¹ Neuromarketing (Topic) and rational factor (Topic) in Web of Science Core Collection | Session: November 27, 2025

decision-making process of consumption. More sustainable food choices, for example, can be better analyzed by neuromarketing if it considers sensorial perception experience (Sadikzade et al., 2024; Cherubino et al., 2017). In addition, improvements in labelling and packaging lead to a more favorable response from consumers (Agudelo et al., 2022). A unique experience of consumption, providing competitive advantage (Cuns te al., 2019). To increase effectiveness, affectivity, and emotional understanding would be better (Zavadskas et al., 2019).

Aiming to evaluate attention levels and improve engagement, Guerrero-Pérez et al. (2025) highlighted the design of emotional content should be prioritized in creative processes to increase the sensitivity of the audience. Emotion, perception, connection, affection are fundamental aspects to understand reactions to marketing stimuli (Pavličić, 2025). Social advertising that aims to improve the well-being of individuals and society, combined with disinterested communication, was found to be effective in eliciting emotional responses (Zito et al., 2021). Campaigns with humor and emotion can encourage consumer identification, especially when addressing current issues, fostering a sense of community (Micu et al., 2021). Social media increasingly emphasizes emotional reactions triggered by observing public comments (Ščepková & Zaušková, 2024), and interface layouts should be used to attract user attention (Wang et al., 2021). People consider listening to music relevant. (Leeuwis et al., 2021). According to the authors, music is a meaningful indicator of public judgment.

Additionally, Artificial Intelligence (AI) technologies can analyse data and extract information from it (Beyari et al., 2024), and its tools can be used to understand emotions (Grájeda et al., 2024), as well as its cognitive aspects (Pavličić, 2025) associated to the consumer experience. This review also highlights that the attractiveness of attention and the impact on emotions of stories presented on Instagram depend on gender (Fondevila et al., 2020).

Finally, any marketing campaign, including social marketing campaign, could elicit emotions (Ferruz-González et al., 2023; Piazza et al., 2018), raise awareness (Ferruz-González et al., 2023) and improve consumers perception (Ferruz-González et al., 2023). Negative comments generate doubt and frustration, while positive reviews may serve as social proof (Ščepková & Zaušková, 2024). memorization can be enhanced by appealing, interactive and immersive visualizations (Beyari et al., 2024). Combining image and sound stimulation led to better performance regarding consumer choices (Polo et al., 2024). Marketing should provide confidence to the customer by ensuring risk reduction.

Methodology and equation research

On November 27, 2025, this research develops a literature review in Web of Science Core Collection, searching for these equations: (i) Neuromarketing (Topic) and rational factor (Topic), which result in four articles; (ii) Neuromarketing (Topic) and emotional factors (Topic), which result in thirty articles. The objective of this research was defined: to develop a comprehensive understanding of the factors that influence the consumer decision-making process, to offer a way to be applied to each consumer's behavior.

Based on a review of the literature, five theoretical dimensions of factors influencing consumer decisions were identified, three of which are associated with neuromarketing: i) rational factors, which follow decision-making processes justified by concrete grounds; ii) emotional factors, which follow decision-making processes justified by grounds associated with emotion and affection; i) factors that aim to reduce or control risk, and follow decision-making processes justified by acceptable risks. Two other dimensions were also considered that can amplify the impact of these dimensions on the decision-making process, namely: iv)

awareness of the antecedents and consequences of the decision, which deepen the process; and v) tools, particularly those associated with the communication process, which influence the decision-making process. In this sense, table 1 summarizes these variables and respective indicators that can influence the decision-making process of consumption.

Table 1: Variables that can influence the decision-making process

Theoretical dimension	Concept	References
Rational factors	Rational factors may be relevant to certain segments and markets.	(Piazza et al., 2018; Ferruz-González et al., 2023; Barquero-Pérez et al., 2020; Kaklauskas et al., 2019)
	Rational factors play a stronger role when the effort required is more significant	(Kaklauskas et al., 2019)
	Artificial Intelligence (AI) technologies can be used to analyse data and extract information	(Beyari et al., 2024)
	Mental processes can be conscious or unconscious	(Cenizo, 2025)
Emotional factors	Decisions are based on feelings and emotional factors	(Ferreira et al., 2024; Polo et al., 2024; Aricò et al., 2018)
	Emotions can come up unconsciously	(Kaklauskas et al., 2020; Landmann, 2023)
	Emotional appeals in communication help to engage consumers and retain attention	(Russo et al., 2023)
	Emotional communication helps to increase trust	(Russo et al., 2023)
	Emotions, values, and ethical preferences	(Lytvyn et al., 2023)
	Sensorial perception experience	(Sadikzade et al., 2024; Cherubino et al., 2017)
	Stories on Instagram vary by gender.	(Fondevila et al., 2020)
	Stories get attention and impact on emotions	(Fondevila et al., 2020)
	Marketing stimuli (emotion, perception, connection, affection)	(Pavličić, 2025)
Avoiding risks	Negative comments generate doubt and frustration	(Ščepková & Zaušková, 2024)
	Positive ones can result in a favourable perception of the purchase and greater engagement	(Ščepková & Zaušková, 2024)
raise awareness	Positive reviews may serve as social proof	(Ščepková & Zaušková, 2024).
	Social advertising and disinterested communication improve the well-being	(Zito et al., 2021)
	Ecological attractive messages	(Ščepková & Zaušková, 2024)
Tools	Social media increasingly emphasizes emotional reactions	(Ščepková & Zaušková, 2024)
	Artificial Intelligence (AI) tools can be used to understand emotions	(Grájeda et al., 2024)
	AI training	(McInnes & Sung, 2025)
	Evaluate attention levels and improve emotional engagement	(Guerrero-Pérez et al., 2025)
	Interface layouts should be used to attract user attention	(Wang et al., 2021)
	Labelling and packaging	(Agudelo et al., 2022)
	High value of music (listen to music)	(Leeuwis et al., 2021)
	Appealing, interactive and immersive visualizations	(Beyari et al., 2024)
	Combining image and sound stimulation	(Polo et al., 2024)
	Humor and emotion (sense of community)	(Micu et al., 2021)
	Visual design of the eco-product	(Ščepková & Zaušková, 2024)
	Innovative design	(Sadikzade et al., 2024)

Source: own elaboration adapted from different authors

Based on these variables, this research presents a proposal to understand consumer behavior. Besides, these factors can be used by eco-friendly and sustainable products campaigns.

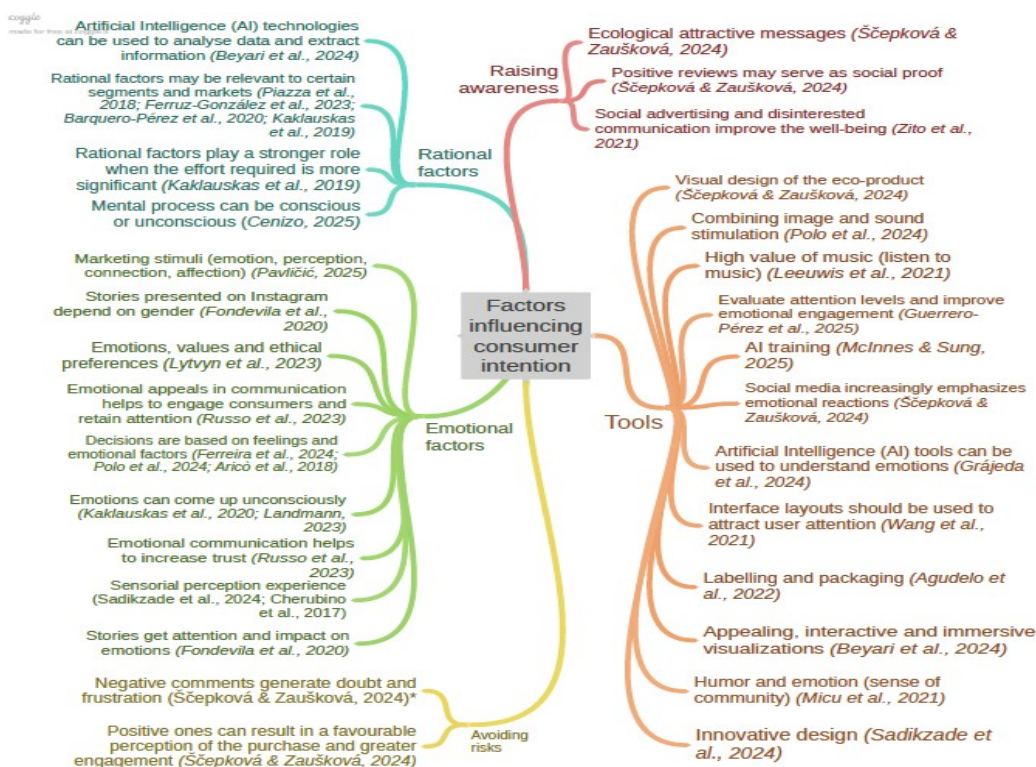
A proposed mind map for understanding sustainable consumer behavior

Countless factors influence the decision to consume (or not) a product. And there are myriad ways to understand this process. However, among all the alternatives, this study assumed that the neuromarketing perspective would be the most effective because it reduces respondents' interpretation bias.

Rational factors may be relevant in certain segments and markets, particularly when the effort is more significant. In addition, technologies such as AI can analyze large amounts of data simultaneously. In this sense, mental processes, whether conscious or unconscious, may be relevant. Most decisions are based on unconscious emotional factors. In this sense, marketing stimuli should use emotional appeals in communication. In addition, stories can impact emotions. It is also suggested that sensory perception, values, and ethical preferences be enhanced. Social media increasingly emphasizes emotional reactions, and communication tools (AI, interface layouts, labeling, and packaging, etc.) expand its reach. In addition, a combination of stimuli, including humor, design, music, and audio, can be used to attract the user's attention. Finally, it should be noted that Instagram stories vary by gender. and negative comments generate doubt and frustration, and positive reviews may serve as social proof.

Considering the different tools and different perceptions, it was also assumed that the depth of understanding could differ. In this sense, a proposed mind map for understanding consumer behavior, specifically applied to eco-friendly and sustainable products campaign, is presented below. Figure 1 shows a mind map of the main factors that can influence consumer behavior.

Figure 1. Mind map proposal: factors of influence sustainable consumer behaviour



Source: own elaboration using coggle.it/diagram/2 on December 2nd, 2025.

² <https://coggle.it/diagram/aS7Is-3oJ3LuUpY5/t/factors-influencing-consumer-intention-on-black-friday>

A strategy to change consumer behavior towards more sustainable choices should understand better the decision process, including rational, emotional and risks involved, as well as their awareness. In addition, the available tools to communicate.

Conclusions

Despite considerations (rational, emotional, and associated risks), can people see the same product differently? To answer this question, the objective of this research was defined: to develop a comprehensive understanding of the factors that influence the consumer decision-making process. On November 27, 2025, this research develops a literature review in Web of Science Core Collection, searching article related to Neuromarketing. The results demonstrated that, in addition to factors originating in neuromarketing, tools can also influence the decision-making process.

Structured the factors into five dimensions: rational factors, emotional factors (widely used in marketing campaigns), factors associated with risk reduction, awareness (in the sense of individual perception of the decision-making process), and the tools that marketing uses and that can also influence the decision. The map mind emerged from the literature review.

The mental process can be conscious or unconscious. And AI technologies can be used to analyze data and extract information. It becomes crucial to understand, for example, which rational factors play a relevant role, particularly when the effort required is more significant, namely for very specific segments and markets.

On the other hand, it is very common to make decisions based on feelings. Emotions can arise, even if unconsciously. When communication explores emotional factors, emotional appeals in communication help to increase consumer engagement and retain their attention. They can even increase trust in messages by identifying with those emotions, values, and affectivity, particularly when associated with ethical preferences. Therefore, experiences should consider sensory perception, and marketing stimuli (emotion, perception, connection, affection) can be reported in the form of stories, as stories attract attention and have an impact on emotions. Considering the relevance of Instagram for stories, it is suggested that the result depends on gender.

In addition, marketing campaigns should be concerned with the impact of the comments. Negative comments generate doubt and frustration, while positive ones can result in a favorable perception of the purchase and greater engagement. As positive reviews can serve as social proof, and publicity and disinterested communication improve well-being, it is suggested that messages be ecologically appealing.

The sympathy, commitment, consistency, and consensus (social proof) associated with the consumer decision-making process can be explained by the desire to belong to a group. However, the factors that influence the decision-making process (Cherubino et al., 2017) are complex. The emotional response to experiences (products or advertisements) (Hou et al., 2016), and facial expressions and expressions associated with emotions can provide a wealth of information (Landmann, 2023) that can aid in assertive communication. It is crucial to understand perception.

There are tools that marketing uses and that can also influence the decision. For example, to promote more environmentally friendly and sustainable purchasing behaviors, considering that social media increasingly emphasizes emotional reactions, AI tools can be used to understand emotions. AI training can help assess attention levels to improve emotional engagement. And interface layouts should be used to attract the user's attention. Other tools

that help increase the assertiveness of communication in the sense of sustainable consumption behaviors are the exploration of labels, packaging, and packages.

The combination of visual stimuli (with attractive, interactive, and immersive visual design of the eco-friendly product) and sound stimuli, with humor and emotion (sense of community) associated with eco-friendly and sustainable consumption, was perhaps the main contribution that emerged from this review. Furthermore, this study argued that the depth (greater or lesser) of awareness of the need for consumption (a process of division associated with greater or lesser need, desire, or expectation) can be a precursor to the decision. People with similar needs may decide on more environmentally friendly and sustainable products, depending on their awareness and consumption preferences. The main limitation is the complexity of the map, which should be applied to each product or message, and measured in future research.

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