



The Power of Front-of-Pack Labels: How the Nutri-Score Influences Brand Perception and Purchase Intention among Generation Z

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Abstract

In response to rising obesity and diet-related diseases in Europe, policymakers have promoted front-of-pack (FOP) nutrition labels to encourage healthier choices. Among these, Nutri-Score has gained traction by translating complex nutritional information into a simple five-color scale. Beyond informing choices, it may also act as a credibility signal shaping brand evaluations. To be effective, labels must guide product decisions and build brand trust.

This study used a between-subjects experiment to test how Nutri-Score affects purchase intention and brand perception, focusing on generational differences. In an online survey, 203 participants evaluated a fictitious cereal product with either a favorable (A) or unfavorable (D) Nutri-Score. Results show that a favorable score significantly increases purchase intention. Brand perception fully mediates this effect: positive scores enhance trustworthiness, responsibility, and health orientation, which strengthen willingness to buy. Contrary to expectations, no generational moderation was found.

By linking public health goals with consumer behavior, this study fills a research and practice gap. It highlights Nutri-Score as a transparent tool supporting EU-wide adoption and shows that firms can leverage it to strengthen brand credibility and align strategy with health objectives. Finally, it contributes to labeling research by evidencing Nutri-Score's dual role as nudge and signal, with brand perception as the key mechanism connecting certification labels to consumer intentions.

Keywords: Nutri-Score, Front-of-Pack Label, Brand Perception, Purchase Intention, Signaling Theory, Nudge, Generation Z

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Sumário

Em resposta ao aumento da obesidade e das doenças relacionadas à alimentação na Europa, formuladores de políticas têm promovido rótulos nutricionais na frente da embalagem (FOP) para incentivar escolhas mais saudáveis. Entre eles, o Nutri-Score ganhou destaque ao traduzir informações complexas em uma escala simples de cinco cores. Além de informar, ele pode atuar como sinal de credibilidade que molda avaliações da marca. Para serem eficazes, os rótulos devem orientar decisões e construir confiança.

Este estudo utilizou um experimento entre grupos para testar como o Nutri-Score afeta a intenção de compra e a percepção da marca, considerando diferenças geracionais. Em uma pesquisa online, 203 participantes avaliaram um cereal fictício com Nutri-Score favorável (A) ou desfavorável (D). Os resultados mostram que uma pontuação favorável aumenta significativamente a intenção de compra. A percepção da marca medeia totalmente esse efeito: notas positivas aumentam confiabilidade, responsabilidade e orientação à saúde, o que fortalece a disposição de comprar. Contrariamente às expectativas, não foi encontrada moderação geracional.

Ao conectar objetivos de saúde pública com o comportamento do consumidor, este estudo preenche uma lacuna de pesquisa e prática. Ele destaca o Nutri-Score como ferramenta transparente que apoia a adoção na UE e mostra que empresas podem aproveitá-lo para fortalecer credibilidade e alinhar estratégia com metas de saúde. Finalmente, contribui para a pesquisa sobre rotulagem ao evidenciar o duplo papel do Nutri-Score como nudge e sinal, com a percepção da marca como principal mecanismo que liga rótulos de certificação às intenções do consumidor.

Palavras-chave: Nutri-Score, Rótulo Front-of-Pack, Percepção de Marca, Intenção de Compra, Teoria do Sinal, Nudge, Geração Z

Título: O Poder dos Rótulos Frontais: Como o Nutri-Score Influencia a Percepção da Marca e as Intenções de Compra da Geração Z

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List of Abbreviations

AC	Attention Check
BP	Brand Perception
CBBE	Consumer-Based Brand Equity
CBFLE	Consumer-Based Food Label Equity
CI	Confidence Interval
DV	Dependent Variable
EU	European Union
FOP	Front-of-pack (front-of-pack nutritional labeling)
FOPL	Front-of-pack label
GBD	Global Burden of Disease
IV	Independent Variable
NS	Nutri-Score
PI	Purchase Intention
WHO	World Health Organization

1. Introduction

In response to rising rates of obesity, cardiovascular disease, and other diet-related illnesses, policymakers across Europe have intensified efforts to encourage healthier eating habits through structural interventions. Unhealthy diets are now recognized as one of the leading global risk factors for morbidity and mortality, contributing significantly to cardiovascular disease, type 2 diabetes, and several forms of cancer (GBD Risk Factors Collaborators, 2020). In Europe alone, more than 59% of adults and nearly one in three children are classified as overweight or obese, making diet-related health issues one of the most pressing public health challenges in the region (WHO Europe, 2022).

One policy measure that has gained increasing momentum in recent years is the use of simplified front-of-pack (FOP) nutrition labeling systems, which aim to help consumers make healthier food choices in a highly saturated and often confusing market environment (Kaur et al., 2017). Developed by French researchers and officially introduced in France in 2017, Nutri-Score uses a five-level color and letter scale, from green (A) to red (E), based on a scientifically validated nutrient profiling algorithm (Julia & Hercberg, 2017). Its launch followed extensive political negotiations and public health consultations, reflecting broader efforts to harmonize evidence-based food labeling across EU member states (Storcksdieck genannt Bonsmann et al., 2020).

Since then, Nutri-Score has been adopted in several European countries, including Belgium, Germany, and Spain. However, its implementation has also sparked political controversy. Some member states, most notably Italy and the Czech Republic, have resisted mandatory adoption, arguing that the system oversimplifies complex nutritional profiles and may unfairly disadvantage traditional food products and regional specialties (European Commission, 2022a; Stiletto & Trestini, 2022).

A growing body of evidence demonstrates that the Nutri-Score enhances consumers' ability to identify healthier products and supports food choices that align more closely with dietary recommendations and public health objectives (Heeremans et al., 2024; Egnell et al., 2020). As a front-of-pack labeling scheme, it operates as a behavioral nudge, encouraging healthier diets and potentially contributing to a reduction in non-communicable disease risks (Ducrot et al., 2016; Julia et al., 2024). Nevertheless, the system remains contested. Critics highlight that it

may disadvantage traditional food products and impose reformulation costs on producers, thereby intensifying regulatory debates (Rayner et al., 2009; Sokołowski, 2024).

Beyond these policy discussions, changing consumer expectations add another layer of relevance. Younger generations, particularly Generation Z, increasingly prioritize authenticity, transparency, and ethical values when assessing products and brands (Meyerding & Ahrens, 2024). For this cohort, certification labels are not merely information tools but also act as credibility signals that influence perceptions of brand responsibility and trustworthiness (Kabaja et al., 2023). Considering that Generation Z already represents a significant and influential consumer group, their preferences are likely to shape the future dynamics of food markets (Dimock, 2019).

Building on the public health and consumer relevance of the Nutri-Score, this study investigates how the Nutri-Score label shapes consumer responses. Specifically, it examines its impact on purchase intentions and brand perception, with a particular emphasis on Generation Z. While prior research has established that Nutri-Score improves nutritional understanding and can influence purchase behavior (De Temmerman et al., 2021; Calderón-Monge et al., 2024), little is known about how these effects translate into brand evaluations, particularly among Generation Z, for whom labels such as the Nutri-Score may function as important credibility signals of authenticity, transparency, and responsibility. The central question therefore is:

What is the impact of Nutri-Score on consumer purchase intentions and brand perception, and to what extent are these effects moderated by generational differences, particularly Generation Z?

By addressing this question, the study contributes to ongoing debates on the effectiveness of certification labels in guiding consumer behavior, while clarifying whether generational dynamics amplify or attenuate their impact.

Following this introduction, the dissertation provides the theoretical foundation, reviewing the development of certification labels, the institutionalization of the Nutri-Score, and the role of generational cohorts in shaping consumer behavior. It then outlines the experimental methodology, followed by a statistical analysis of the collected data. The findings are discussed with regard to their theoretical and practical implications, while limitations are addressed and

avenues for future research are suggested. The thesis concludes with a summary of the key insights.

2. Theoretical Background

This chapter establishes the foundation for analyzing how the Nutri-Score affects purchase intentions and brand perception, with a focus on Generation Z. It reviews the role of certification labels in food choices, traces the development of Nutri-Score in Europe, and explains how such labels function as nudges and market signals. Building on these perspectives, it examines how front-of-pack labels influence consumer decisions both directly and through brand perception, and why Generation Z represents a particularly relevant cohort for studying these effects.

2.1 Certification Labels in the Food Industry

2.1.1 The Importance of Certification Labels in Food Choices

The worldwide increase in obesity and nutrition-related illnesses represents a pressing public health issue. Data from the World Health Organization indicate that around 2.5 billion adults are overweight, of whom 890 million fall into the category of obesity. These figures correspond to 43% and 16% of the global adult population, respectively. Especially alarming is the development that the prevalence of obesity has more than doubled since 1990, while among adolescents it has even quadrupled over the same timeframe (WHO, 2024).

Obesity is strongly linked to serious health conditions, including cardiovascular disease, type 2 diabetes, and several forms of cancer, all of which significantly contribute to higher rates of morbidity and mortality (Bray, 2004; WHO, 2024). In addition, metabolic dysfunctions, respiratory problems, and reduced life expectancy are frequent comorbidities. These outcomes not only diminish individual health prospects but also exert growing pressure on public health systems. The rising prevalence of childhood and adolescent obesity is especially problematic, as it substantially increases the likelihood of chronic illness in adulthood and further reduces life expectancy (Strazzullo et al., 2021). A central factor underlying these developments is insufficient nutritional literacy, particularly among socioeconomically disadvantaged groups. Many individuals lack access to clear and reliable information regarding food quality and nutrient content, which fosters reliance on inexpensive, highly processed foods. Such products are often deliberately engineered to be hyper-palatable - rich in sugar, salt, and unhealthy fat -

thereby stimulating overconsumption and, in some cases, food addiction (Ganderats-Fuentes & Morgan, 2023; Ikonen et al., 2020). Importantly, these products are disproportionately marketed to children and low-income households, reinforcing unhealthy eating patterns from an early age that frequently persist into adulthood (Krieger & Freudenberg, 2022; Ikonen et al., 2020).

The public health implications of these consumption patterns extend far beyond individual well-being. The global dependency on processed foods and the lack of transparency in food marketing are key drivers of the obesity epidemic. As obesity-related diseases become more prevalent, healthcare systems face substantial financial strain. Governments are increasingly required to allocate considerable resources to treatment, thereby limiting the funding available for preventive and educational measures (Strazzullo et al., 2021; Volpe, 2021).

In light of these challenges, certification labels such as the Nutri-Score serve as corrective instruments. By providing a standardized and scientifically grounded front-of-pack (FOP) labeling system, Nutri-Score increases transparency and facilitates informed nutritional decisions. It condenses complex nutritional information into a clear, visual format that can be easily understood at the point of purchase. Empirical evidence shows that such simplified nutrition labels are particularly valuable for consumers with limited dietary knowledge, enabling them to identify healthier alternatives (Drewnowski & Darmon, 2005; Hagmann & Siegrist., 2020).

Consequently, FOP labels reduce cognitive and informational barriers to healthy eating and promote more equitable dietary behaviors across different socioeconomic groups. Nevertheless, their implementation remains contested. Certain food producers, particularly in regions where traditional products are high in fat or processed ingredients, argue that standardized labeling systems may unfairly disadvantage culturally significant foods. For this reason, the institutionalization of FOP systems such as the Nutri-Score continues to face political and economic resistance within the European Union (Storcksdieck genannt Bonsmann, 2020).

2.1.2 Development and Evolution of the Nutri-Score

The rise in obesity and diet-related illnesses highlights the urgent need for comprehensive public health measures (WHO, 2024). Front-of-pack (FOP) nutrition labeling systems such as the Nutri-Score are intended to support healthier consumer choices, yet their introduction within the European Union has been accompanied by regulatory and economic obstacles (Egnell et al.,

2022; European Commission, 2022b). The broader establishment of FOP nutrition labels reflects a shift in EU health policy, aiming to improve the clarity of nutritional information and promote healthier dietary behavior (Egnell et al., 2022; Rayner et al., 2009; Storcksdieck genannt Bonsmann, 2020). Nutri-Score originated in voluntary nutrition labeling initiatives, commonly referred to as “soft law” instruments, including the UK traffic light model and the Nordic Keyhole label. Over time, it developed into a harmonized and officially supported scheme (Egnell et al., 2022). As a standardized tool, Nutri-Score evaluates food products on the basis of their nutritional profile using a five-level color scale from A (healthiest) to E (least healthy). This format provides consumers with an accessible and effective method to assess nutritional quality (Julia & Hercberg, 2017).



Figure 1: The Nutri-Score front-of-pack label (Julia & Hercberg, 2017)

The effectiveness of Nutri-Score and similar instruments can be explained through the lens of nudging. Nudging, a core concept in behavioral science, refers to the subtle steering of decisions by altering the choice architecture without restricting individual freedom (Thaler & Sunstein, 2008). Rooted in behavioral economics and psychology, this approach builds on the principle of structuring decision environments in ways that facilitate desirable behaviors (Sunstein, 2014). By leveraging cognitive biases and heuristics, nudges simplify complex decision-making processes and enable individuals to rely on mental shortcuts (Dolan et al., 2012).

A central theoretical framework in this context is dual-process theory, which differentiates between the fast, intuitive System 1 and the slower, deliberative System 2 (Kahneman, 2011). Nudges, including defaults, social norms, and visual cues, primarily activate System 1, promoting beneficial behaviors with minimal cognitive effort. While nudging has been successfully applied in various domains such as finance, sustainability, and health, it is particularly relevant in food consumption, where accessible and intuitive nutritional cues can foster healthier eating habits (Van Kleef & Dagevos, 2015).

2.2 Theoretical Perspectives on Label Influence on Purchase Intentions

2.2.1 Nudge Theory and Choice Architecture

2.2.1.1 Underlying Theory

Nudge theory constitutes a central framework within behavioral economics, illustrating how minor alterations in the configuration of decision environments, commonly termed choice architecture, can systematically shape individual behavior while preserving freedom of choice and leaving financial incentives largely unaffected (Thaler & Sunstein, 2008). In contrast to assumptions of classical economic theory, which posit fully rational agents operating on the basis of complete information, empirical research in psychology and behavioral economics demonstrates that decision-making is frequently guided by heuristics and cognitive biases, particularly under conditions of complexity or limited cognitive resources (Kahneman, 2011).

The central aim of nudge theory is to design decision environments that accommodate these psychological tendencies, enabling individuals to make choices that serve their own best interests - without coercion or force (Thaler & Sunstein, 2008). Typical tools of choice architecture include default settings, the ordering of options, framing effects, and visual salience. Such elements can strongly shape behavior even when the available set of choices remains unchanged (Johnson et al., 2012).

Nudges are most effective when they engage System 1 processing - fast, intuitive, and effortless mental operations - rather than the more reflective and cognitively demanding System 2 (Kahneman, 2011). In real-world contexts such as supermarkets or online platforms, where quick decisions are often required, nudges can ease cognitive load and foster beneficial behaviors with minimal friction (Dolan et al., 2012).

To be ethically legitimate, nudges must remain transparent, easy to opt out of, and designed to promote the individual's welfare rather than to manipulate it (Hausman & Welch, 2010).

2.2.1.2 Certification Labels as Nudging Tools

Certification labels function as visual nudges that influence consumer purchase decisions by highlighting key product attributes, such as health benefits, environmental sustainability, and ethical standards (Teisl et al., 2002; Grunert et al., 2014). By tapping into heuristics, these labels allow consumers to evaluate product quality rapidly, thereby reducing the cognitive effort required at the point of purchase (Hartmann & Siegrist, 2017; Boer, 2003). This mechanism is consistent with findings from behavioral economics, where individuals often rely on cognitive

shortcuts, so-called heuristics, to navigate complex decision-making environments under conditions of bounded rationality (Kahneman & Tversky, 1979).

The effectiveness of certification labels lies in their ability to engage System 1 processing. Consumers are thus able to make intuitive, time-efficient choices without relying on the more effortful System 2 (Kahneman, 2011). This is particularly advantageous in fast-paced retail environments where decisions must be made quickly (Dolan et al., 2012). Moreover, the salience effect - whereby attention is drawn to visually prominent information - further strengthens the impact of certification labels (Sunstein, 2014). Through bold colors, recognizable symbols, and simplified formats, these labels enhance visibility and direct consumer attention toward healthier or more sustainable options (Hartmann & Siegrist, 2017). Nutri-Score exemplifies this mechanism.

Its five-color scheme relies on associative learning, whereby consumers intuitively connect green hues with positive health attributes and red hues with poor nutritional quality (Egnell et al., 2022; Hartmann & Siegrist, 2017). In contrast to traditional nutrition tables - which require analytical System 2 processing - Nutri-Score facilitates rapid evaluations even for individuals with limited nutritional literacy (Ducrot et al., 2016).

Beyond immediate choice facilitation, certification labels influence decision-making through repeated exposure. Over time, consumers internalize the meaning of labels, reinforcing habits and strengthening implicit associations between the label and desirable product characteristics (Ariely, 2008; Ducrot et al., 2016). This process aligns with reinforcement learning principles, whereby consistent exposure to positive signals increases the likelihood of repeated behavior (Bandura, 1977).

Unlike coercive regulatory interventions such as bans or taxes, certification labels represent a non-restrictive yet effective approach to shaping consumer behavior. By modifying the choice environment, they enhance decision-making efficiency while preserving autonomy, thereby offering a promising tool for encouraging healthier and more sustainable consumption (Pérez-Cuerto et al., 2013; Sayogo et al., 2016).

2.2.2 Signaling Theory

2.2.2.1 Underlying Theory

Signaling theory represents a foundational framework in information economics, elucidating how signals function to alleviate informational asymmetries between market participants (Spence, 1973). In situations where one actor (the sender) possesses superior knowledge regarding product quality compared to another (the receiver), uncertainty emerges, which can result in inefficiencies in market transactions and decision-making (Erdem & Swait, 1998). Signals address this problem by transmitting credible and observable cues about product characteristics, thereby enabling consumers to base their choices on more reliable information (Boulding & Kirmani, 1993).

For signals to be effective, two conditions are generally required: credibility and costliness. Credibility implies that the signal accurately reflects the underlying quality it seeks to represent, while costliness ensures that such a signal cannot be easily reproduced by lower-quality competitors, thus safeguarding its reliability as an indicator of true quality (Spence, 1973). Furthermore, signals must be sufficiently visible and interpretable for the receiver; otherwise, excessive subtlety or ambiguity may diminish their capacity to influence decision-making (Connelly et al., 2011).

2.2.2.2 Certification Labels as Signaling Tool

Front-of-pack labels (FOPLs) can thus be understood as market signals that reduce consumer uncertainty about nutritional quality (Ducrot et al., 2016). Their effectiveness lies not only in their design and visibility but also in the degree of consumer trust in regulatory institutions (Ikonen et al., 2020). The Nutri-Score, for example, functions as a third-party verified signal that increases credibility and fosters consumer confidence (Breton et al., 2019).

Comparable dynamics are observed in environmental certification labels such as organic, fair trade, or eco-labels. These rely on third-party verification and strict compliance standards, distinguishing environmentally responsible firms from competitors and mitigating information asymmetry (Gorton et al., 2021). The Nutri-Score operates in a similar way, relying on standardized regulatory criteria to objectively classify nutritional quality (Talati et al., 2017). As with eco-labels, its effectiveness is reinforced by clarity, simplicity, and strong regulatory enforcement (White et al., 2019; Sharma et al., 2022). Research further confirms that consumers perceive nutrition and environmental labels similarly, regarding both as trusted signals that

simplify decision-making and influence purchase behavior (Tobi et al., 2019; Pérez-Cueto et al., 2013).

Signaling theory also explains how labels shape consumer attention. By directing focus toward key attributes, labels facilitate comprehension and improve purchase outcomes (Jacoby, 2002; Lee et al., 2020). Evidence shows that clear, accurate, and consistently presented labels significantly enhance consumer understanding and exert positive effects on choices (Atkinson & Rosenthal, 2014; UNEP & ITC, 2017; White et al., 2019).

Nutri-Score, like eco-labels, functions as a heuristic that reduces decision-making effort while enabling more informed decisions (De Temmerman et al., 2021). Nevertheless, effectiveness is not uniform across product categories. Research indicates that consumable goods such as food elicit stronger signaling effects than non-consumable items like electronics (Borin et al., 2013). Moreover, insufficient consumer knowledge of certification standards may weaken label impact (Grunert et al., 2014).

2.3 Effect of Certification Labels on Purchase Intentions

The primary objective of front-of-pack nutrition labels such as the Nutri-Score is to shape purchase intentions, which can be defined as the consumer's psychological readiness or commitment to make a purchase. The extent to which this objective is achieved is contingent on contextual conditions, including the transparency of information, the degree of alignment with consumer expectations, and the characteristics of the product category (Yamim & Werle, 2025).

Although front-of-pack labels (FOPLs) consistently facilitate the identification of healthier alternatives, this cognitive benefit does not automatically result in modifications of actual purchase behavior (Ikonen et al., 2020). Evidence further indicates that Nutri-Score enhances comprehension of nutritional attributes, yet such understanding does not necessarily translate into healthier purchasing outcomes (Vandevijvere et al., 2020). Experimental studies point to the conditionality of these effects: Nutri-Score tends to strengthen purchase intentions for products rated A or B when the evaluation corresponds to consumer expectations, whereas ratings of C through E often diminish intentions and may even suppress demand (De Temmerman et al., 2021). Moreover, when label information conflicts with pre-existing health-related beliefs, it may elicit negative affective responses such as guilt and reduce willingness to

purchase, while unexpectedly positive evaluations can increase the likelihood of purchase, even for products with comparatively low nutritional value (Yamim & Werle, 2025).

Beyond individual items, Nutri-Score also shapes the overall nutritional profile of shopping baskets. Randomized controlled trials show that exposure to Nutri-Score leads participants, including those with cardiometabolic diseases, to select fewer processed products and more fresh foods such as fruits and meat (Egnell et al., 2022). These effects have been replicated across diverse groups, including students, low-income populations, and patients with chronic conditions, demonstrating the label's consistent influence on healthier purchasing intentions (Egnell et al., 2020).

Consumer perceptions of the label play a crucial role. When Nutri-Score is seen as useful and easy to interpret, it generates more positive product attitudes and, in turn, stronger purchase intentions (Calderón-Monge et al., 2024). Survey evidence supports this: in France, 42.9% of consumers reported actively changing their purchase behavior as a result of the Nutri-Score, with the strongest effects among younger and label-conscious consumers (Sarda et al., 2020).

Importantly, the label also proves effective in real-world environments. A randomized field study in a university cafeteria showed that providing Nutri-Score information led consumers to spend 21% more on healthier items, without reducing spending on less healthy alternatives (Mora-García et al., 2019). Finally, individual characteristics such as health consciousness, age, and trust in labels moderate these effects, underlining that Nutri-Score's impact varies across consumer segments (Medina-Molina et al., 2021).

2.4 Brand Perception in the Context of Food Labeling

2.4.1 Consumer-based brand equity and brand perception

Consumer-Based Brand Equity (CBBE) refers to the way in which consumers' knowledge and perceptions of a brand shape their reactions to marketing efforts. The concept underscores that the value of a brand does not arise solely from its functional performance but also from the creation of favorable associations and emotional bonds in consumers' minds (Keller, 1993).

Within established frameworks of CBBE, four primary dimensions are typically emphasized: brand awareness, perceived quality, brand associations, and brand loyalty. Together, these elements define the overall strength of a brand and influence consumer decision-making,

including preference formation, willingness to pay a price premium, and the level of trust placed in the brand (Aaker, 1996).

Among these components, brand perception plays a particularly central role. It represents the consumer's overall impression and interpretation of a brand, formed through experience, exposure, and expectation. Brand perception is not a single attribute but rather a synthesis of emotional, functional, and symbolic brand meanings as constructed in the consumer's mind. In recent years, researchers have proposed several extensions to the traditional CBBE framework, particularly in the context of food, health, and sustainability-oriented markets. For instance, "health perception," "label trust," and "ingredient transparency" have emerged as additional brand equity drivers that reflect modern consumer expectations and information processing behavior (Shaikh et al., 2024). Similarly, emotional and symbolic value, such as personal identity, ethical alignment, or perceived authenticity, has become increasingly relevant in shaping consumer brand judgments (Morhart et al., 2015).

Brand perception, as a central outcome of CBBE, captures how consumers subjectively evaluate and interpret a brand's meaning, identity, and value. It is not solely based on tangible attributes like price or functionality, but also on intangible elements such as emotional resonance, symbolic value, and social relevance (Pappu et al., 2005).

In the context of food branding, brand perception is shaped by a unique combination of sensory, emotional, and informational cues. Taste, packaging, perceived freshness, and brand heritage all play a role, but what distinguishes food brands is the deeply habitual and experiential nature of consumption. Consumers often rely on trust and emotional memory when selecting food brands, making consistency and familiarity particularly important. Additionally, because food is directly linked to health and well-being, perceptions of quality and safety weigh more heavily than in many other product categories. These aspects make food brand perception highly sensitive to external cues such as labeling, nutrition claims, and packaging design (Bruwer & Buller, 2012; Shaikh et al., 2024).

A growing body of research suggests that favorable brand perceptions are predictive of stronger consumer outcomes, including increased purchase intention, brand advocacy, and resistance to negative publicity. For instance, when consumers perceive a brand as trustworthy, innovative,

or socially responsible, they are more likely to remain loyal even in competitive or crisis situations (Morhart et al., 2015).

In highly saturated markets such as the food and beverage industry, brand perception often serves as a key differentiator. Since functional differences between competing products are often minimal, the way consumers perceive the brand—its personality, values, and perceived integrity—can become the main driver of brand choice (Bruwer & Buller, 2012).

One example is the Consumer-Based Food Label Equity (CBFLE) model, which conceptualizes food labels as brand-building instruments and evaluates dimensions such as consumer familiarity, informational utility, and perceived credibility of the label (Coderre et al., 2021).

2.4.2 Effect of brand perception on purchase intentions

Favorable brand perception significantly influences consumer purchase behavior by shaping how individuals evaluate and choose among competing offerings. Consumers are more likely to buy brands they perceive as trustworthy, high-quality, or emotionally resonant. Strong brand associations stored in memory can guide decision-making at the point of purchase, making familiar and positively evaluated brands more likely to be chosen over unfamiliar alternatives (Keller, 1993).

Visual cues such as brand symbols, colors, and logos enhance recognition and recall, reinforcing preferences that translate into purchase actions (MacInnis et al., 1999). Symbolic and experiential brand meanings - such as self-expression or lifestyle alignment - can also drive purchase motivation beyond mere functionality (Park et al., 1986). Under conditions of uncertainty, perceived brand strength acts as a signal of product quality, reducing perceived risk and increasing the likelihood of purchase (Erdem & Swait, 1998). Even in low-involvement settings, repeated exposure to brand elements can subconsciously foster familiarity and lead to higher purchase likelihood through mere exposure effects (Montoya et al., 2017). Furthermore, when consumers interpret marketing investments like advertising or packaging as credible signals of brand commitment, this perception enhances trust and strengthens purchase intent (Kirmani & Rao, 2000). Empirical evidence confirms that positive brand perception not only predicts higher purchase intention but also actual usage behavior and brand loyalty across both consumer and business contexts (Netemeyer et al., 2004; Homburg et al., 2010; Kervyn et al., 2012).

2.4.3 Effect of certification labels on brand perception

Certification labels function as critical extrinsic product cues that help consumers evaluate product quality, particularly when intrinsic attributes such as taste, origin, or nutritional value are not directly observable at the point of purchase. By signaling compliance with externally verified standards, these labels reduce uncertainty and enhance trust in both the product and the brand (Erdem & Swait, 1998).

Well-recognized and credible certification labels are closely linked to positive brand evaluations. Brands carrying such labels are often perceived as trustworthy, transparent, and socially responsible (Atkinson & Rosenthal, 2014; Gorton et al., 2021). This perception of trustworthiness can foster more favorable brand attitudes, strengthen brand equity, and increase purchase intention. Independent verification further reinforces brand credibility by signaling corporate integrity and quality assurance (Gosselt et al., 2019).

Empirical evidence supports these effects across multiple sectors. For example, third-party organic certifications elevate perceived authenticity and reduce consumer risk perceptions (Brach et al., 2015). Importantly, their influence depends on context: in low-involvement purchases, certification acts as a quick heuristic, whereas in high-involvement settings it triggers more elaborate brand processing, reinforcing favorable associations (Boulding & Kirmani, 1993).

The impact of certification may be weaker for highly familiar or trusted brands. Yet, even established market leaders can benefit, as certification reinforces trust and perceived responsibility (Hukker et al., 2024).

Although originally conceived as a nutritional information tool, the Nutri-Score also operates as a signaling mechanism at the brand level. A consistently favorable rating (A or B) across a company's product range can reinforce perceptions of corporate responsibility, transparency, and commitment to health, thereby strengthening the overall brand image (Courbet et al., 2024; Janssen & Bogaert, 2023). Empirical evidence demonstrates that higher Nutri-Scores are positively associated with more favorable brand attitudes, particularly in product categories where health attributes are central to consumer expectations. Brands receiving strong scores are more likely to be perceived as trustworthy, competent, and socially responsible (Julia & Hercberg, 2017; Courbet et al., 2024). Importantly, these associations remain significant even

after accounting for prior brand familiarity, indicating that Nutri-Score serves not only as a product-specific quality cue but also as an instrument of image formation (Ikonen et al., 2020).

In contrast, unfavorable ratings (D or E) may negatively affect consumer perceptions and weaken brand attractiveness, especially in domains where nutritional quality is a key purchase criterion. Research shows that products with low Nutri-Scores tend to experience reduced purchase intentions, suggesting that weak evaluations can diminish a brand's perceived health orientation and deter consumers with high health consciousness (Vandevijvere & Berger, 2021). In competitive markets with similar functional offerings, consumers increasingly rely on labels such as the Nutri-Score to infer corporate values. A favorable score not only signals product healthiness but also conveys moral integrity, thereby contributing to brand credibility and authenticity (Ikonen et al., 2020; Courbet et al., 2024).

2.5 Generation Z

2.5.1 Overall Demographics and Characteristics

Generation Z, encompassing those born between 1995 and 2010, is the first generation to have been raised fully within a digitally connected world (Eberhardt, 2017). Their constant exposure to smartphones and online technologies has significantly influenced how they communicate, process information, and engage in social relationships (Seemiller & Grace, 2017).

This generation is known for its ability to multitask across media and its preference for visual, interactive content such as videos and real-time communication platforms, rather than linear, text-based formats (Addae et al., 2020). While this digital immersion has nurtured advanced information-handling skills, it is also associated with shorter attention spans (Buzzetto-Hollywood & Alade, 2024).

Generation Z's perspectives have been deeply influenced by global disruptions such as economic uncertainty and the COVID-19 pandemic, experiences that have encouraged a pragmatic outlook and increased sensitivity to mental health concerns (Moore, 2020; World Economic Forum, 2025). Social justice topics - including climate change, inequality, and diversity - also represent defining aspects of their collective identity. Rather than relying heavily on institutional sources of authority, this generation often seeks validation from peers and favors participatory forms of engagement in both digital and physical contexts (Seemiller & Grace, 2017).

2.5.2 Purchase Behavior & Brand Perception

The digital upbringing and value orientation of Generation Z fundamentally distinguish its consumer behavior from earlier cohorts. Growing up in a fully networked environment, this cohort has developed distinct expectations, communication norms, and decision-making processes compared to analog or transitional generations (Dimock, 2019). Unlike Generation X or early Millennials, Gen Z places less emphasis on advertising, reputation, or tradition. Instead, authenticity, transparency, and value alignment are decisive factors. Peer validation via social platforms such as TikTok and Instagram serves both as a discovery channel and as a credibility filter, shifting brand perception away from top-down communication toward peer-driven evaluation (Garai-Fodor, 2019).

In this context, trust cues such as eco-labels, organic seals, and minimalist packaging play an important role, particularly in food and consumer goods. These labels serve as quick heuristics for assessing whether a brand meets ethical and environmental standards (Meyerding & Ahrens, 2024). However, their effectiveness depends on credibility: while eco-labels can significantly strengthen purchase intentions, skepticism about their validity often limits their impact (Kabaja et al., 2023).

Gen Z's purchase behavior is often more deliberate and structured than that of earlier cohorts, especially in domains such as food and health. Whereas previous generations frequently relied on habit or impulse, Gen Z increasingly incorporates long-term thinking and active information processing into its consumer choices (Savelli & Murmura, 2023; Grigoreva et al., 2021). Certification labels function as external validators that reduce uncertainty in markets characterized by greenwashing risks. Studies show that transparent supply chains combined with trustworthy certifications increase willingness to pay by strengthening consumer confidence (Damberg et al., 2024).

Nevertheless, contradictions remain. While Generation Z expresses strong awareness of sustainability and ethical responsibility, factors such as affordability, limited product availability, and skepticism toward brand claims often create a gap between intentions and actual purchases (Djafarova & Fouts, 2022; Seyfi et al., 2024). This paradox is especially pronounced in fast fashion: negative environmental information about brands such as SHEIN can quickly erode purchase intentions and trust (Zimand-Sheiner & Lissitsa, 2024).

Another defining characteristic of Gen Z's consumption is the central role of social media and influencers. Unlike previous generations shaped by traditional advertising, young consumers place significant trust in influencers, whose authenticity and ethical positioning strongly affect both immediate purchase decisions and long-term loyalty (Misron et al., 2024). However, loyalty in this cohort is more fluid and conditional. Whereas older generations often maintained long-term brand relationships out of habit, Gen Z critically evaluates brands and withdraws support if expectations regarding transparency, authenticity, or ethical responsibility are unmet (Nguyen et al., 2022; Suryaningrum et al., 2023).

Beyond functional performance, Gen Z increasingly expects companies to demonstrate a clear purpose and take visible stances on issues such as climate change, diversity, and mental health. Certification labels again play a vital role by substantiating such commitments through external validation. This strengthens long-term trust and supports the alignment between brand purpose and consumer values (McColl & Ritch, 2020; Sánchez-Chaparro et al., 2024; Nguyen et al., 2022).

2.6 Research Gaps and Hypothesis Development

Empirical studies demonstrate that front-of-pack nutrition labeling systems such as the Nutri-Score contribute substantially to simplifying nutritional information and guiding consumers toward healthier dietary selections (Egnell et al., 2020; Vandevijvere et al., 2020). From the perspective of the Theory of Planned Behavior, behavioral intentions constitute the most reliable indicators of subsequent conduct (Ajzen, 1991). Experimental research further suggests that products labeled with favorable Nutri-Scores (A or B) are evaluated more positively, whereas items displaying lower ratings are linked to diminished purchase intentions (De Temmerman et al., 2021; Calderón-Monge et al., 2024). These results indicate that Nutri-Score extends beyond a purely informational role by actively shaping consumer decision processes, which highlights the relevance of investigating its effect on purchase intention. At a broader level, certification schemes can be conceptualized as extrinsic signals of quality that reduce informational asymmetries and uncertainty in consumer decision-making (Spence, 1973; Erdem & Swait, 1998).

A positive Nutri-Score has the potential to enhance not only product evaluations but also consumer perceptions of the brand itself. Empirical evidence suggests that brands linked to favorable scores are more likely to be viewed as trustworthy and socially responsible (Ikonen

et al., 2020; Aguenau et al., 2021). Considering that brand perception is a cornerstone of consumer-based brand equity (Keller, 1993), and that research on the brand-level consequences of the Nutri-Score remains limited, this connection warrants closer empirical investigation (Janssen & Bogaert, 2023).

In addition, brand perception can act as a mediating mechanism in consumer choice processes. Stronger associations with brand authenticity and trust have been shown to correlate with greater willingness to purchase (Netemeyer et al., 2004; Morhart et al., 2015).

In the context of food labeling, this means that Nutri-Score may not only exert a direct effect on purchase intentions but also operate indirectly via its influence on brand perception. Testing this indirect relationship is therefore important to fully capture the impact of certification labels.

The most pronounced research gap concerns differences across generational cohorts. While prior studies on the Nutri-Score have primarily examined general consumer populations or focused on socio-demographic variables such as education or income (Egnell et al., 2020; Sarda et al., 2020), generational differences remain largely underexplored. This is surprising given that Generation Z - often described as digital natives - demonstrates distinct patterns of information processing, decision-making, and value orientation. Research suggests that Gen Z is especially responsive to simplified, visual, and transparent information formats, and places strong emphasis on credibility and external verification cues such as certifications (Kabaja et al., 2023; Meyerding & Ahrens, 2024). These traits make them a theoretically relevant group for studying front-of-pack nutrition labels like the Nutri-Score, which are designed to provide quick, trustworthy guidance at the point of purchase. Yet, it remains unclear whether the effects of such labels differ across generations. Addressing this lack of generational differentiation therefore represents the key contribution of this study.

Given these theoretical and empirical foundations, several hypotheses can be derived. The demonstrated influence of Nutri-Score on product evaluation and purchase behavior suggests a direct effect on purchase intentions (H1). Moreover, as certification labels serve as extrinsic cues, a favorable Nutri-Score may positively shape brand perception (H2a), which in turn may mediate its effect on purchase decisions (H2b). Considering that Generation Z processes information differently and is particularly receptive to simplified, transparent cues, it is

reasonable to assume that the effects of Nutri-Score are more pronounced in this cohort (H3 and H4).

This dissertation will examine the following hypotheses:

H1: A favorable Nutri-Score has a positive effect on purchase intentions.

H2a: A favorable Nutri-Score leads to a more positive brand perception.

H2b: A positive brand perception leads to a higher purchase intention.

H2: Brand perception mediates the relationship between Nutri-Score and purchase intention.

H3: The effect of the Nutri-Score on brand perception is stronger among members of Generation Z than among other generations.

H4: The effect of the Nutri-Score on purchase intention is stronger among members of Generation Z than among other generations.

3. Methodology

This chapter presents the methodological approach adopted to investigate the effect of the Nutri-Score on consumer purchase intention and brand perception, with a specific focus on generational differences. It outlines the deductive research design, the data collection and survey procedure, the applied measurement instruments, and the sampling strategy, in line with established practices in quantitative consumer research.

3.1 Research Approach

The research adopts a deductive design to examine the hypotheses derived from the theoretical framework, which integrates signaling theory, consumer brand perception, and the Theory of Planned Behavior. Specifically, the study investigates how communicating product healthiness via a front-of-pack Nutri-Score affects consumers' purchase intentions. In this model, brand perception is conceptualized as a mediating factor, while generational membership (Generation Z versus non-Generation Z) is introduced as a potential moderator.

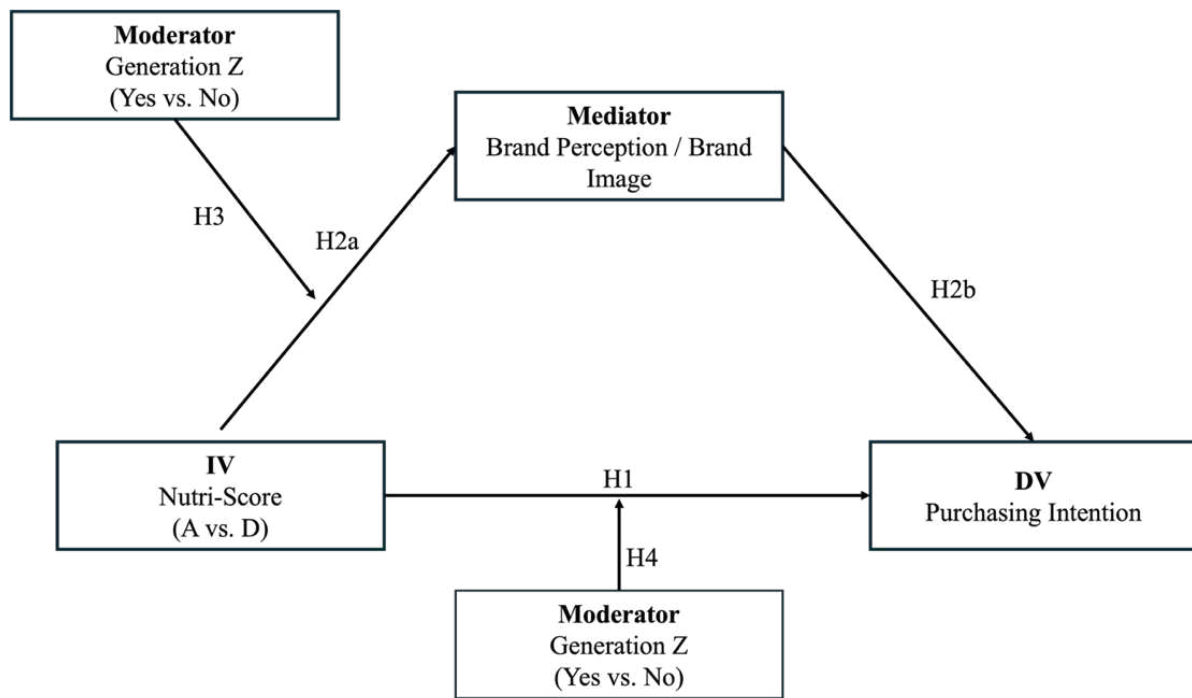


Figure 2: Conceptual model based on literature review (own development)

The conceptual framework (Figure 2) illustrates the hypothesized relationships between these constructs and provided the foundation for the data collection strategy. To empirically test the model, a survey-based experimental design was employed. Following established experimental procedures, the independent variable (Nutri-Score grade A vs. D) was manipulated, while its effects on the dependent variable (purchase intention) and the mediator (brand perception) were observed. Such a design is particularly suited to identifying causal relationships in controlled, yet realistic, decision-making contexts (Malhotra et al., 2017; Janssen & Bogaert, 2023).

The experimental setup is consistent with previous research on front-of-pack nutrition and sustainability labels (E. J. Lee et al., 2020; Sigurdsson et al., 2022). A fictitious cereal brand (“Cerealis”) was used to control for pre-existing attitudes, brand familiarity, or loyalty - an established approach in experimental labeling studies (De Alcantara et al., 2022). Breakfast cereals were selected as the stimulus category because they vary significantly in nutritional quality and are a product group where front-of-pack labels are particularly effective in guiding consumer choice (Julia et al., 2015). The treatment group viewed a package carrying a Nutri-Score A label, while the control group was shown the same package with a Nutri-Score D label. No other label elements or brand cues were altered.

Participants were randomly assigned to one of the two conditions, which ensured independence of observations and increased internal validity by reducing selection effects (Janssen & Bogaert, 2023; Fialon et al., 2022). To mirror real-world purchase contexts, participants were shown the visual product scenario before being asked to evaluate the brand and indicate their purchase intentions (De Temmerman et al., 2021; Courbet et al., 2024).

A quantitative approach was chosen to allow for structured hypothesis testing and replicability (Franses & Paap, 2001). The survey was implemented on Qualtrics and distributed online using a combination of convenience and snowball sampling. Prior to launch, a pilot test (N = 10) confirmed the clarity of wording, the technical functionality of the survey, and the estimated completion time. Participation was voluntary, anonymous, and in full compliance with ethical standards regarding informed consent and data protection (Babbie, 2013).

Overall, this methodological design aligns with prior consumer behavior studies that have successfully applied experimental surveys to investigate the influence of labeling systems on brand evaluations and behavioral intentions (Atkinson & Rosenthal, 2014).

3.2 Data Collection and Survey Design

To investigate the effects of Nutri-Score labeling, the study employed a simulated shopping scenario. As the visual stimulus, participants were shown a breakfast cereal from a fictitious brand (“Cerealis”). Two experimental conditions were created. In one, the package displayed a Nutri-Score A label, signaling high nutritional quality. In the other, it carried a Nutri-Score D label, indicating lower nutritional quality. All remaining packaging elements were held constant to ensure that any observed effects could be attributed solely to the label manipulation.

The use of a fictitious brand helped to minimize bias from prior brand familiarity or loyalty (Keller & Swaminathan, 2019). Furthermore, the scenario was deliberately designed to approximate a realistic shopping context and followed established recommendations from research on food label perception (Grunert et al., 2014). Participants were instructed to imagine purchasing breakfast cereal and to evaluate the product as though they were making an actual buying decision.

3.3 Measurement and Scales

The present study draws upon the previously outlined conceptual framework by examining the effect of Nutri-Score labeling on purchase intention, incorporating brand perception as a mediating variable and generational cohort as a moderating factor. All constructs were assessed using seven-point Likert-type scales (1 = strongly disagree, 7 = strongly agree), which represent a widely applied measurement approach for attitudinal variables, ensuring both adequate reliability and sufficient response variance (Malhotra et al., 2017).

3.3.1 Dependent Variable: Purchase Intention

Purchase intention was measured with three items capturing consideration, intention, and likelihood of purchasing the presented product. These items were adapted from Spears and Singh's validated purchase intention scale, widely applied in marketing research (Spears & Singh, 2004).

3.3.2 Mediating Variable: Brand Perception

Brand perception was assessed with four items covering trust, perceived product healthiness, and the overall impression of the brand. These were derived from prior studies linking front-of-pack labels to consumer brand evaluations (Zhao et al., 2010; Pieniak et al., 2009).

3.3.3 Control Variable: Familiarity with Nutrition Labels

To account for familiarity with front-of-pack labeling, one control item was included: "I am familiar with front-of-pack nutrition labels." This measure was adapted from Campos et al. (2011), who highlight familiarity as a relevant predictor for the use and interpretation of nutrition labels.

3.3.4 Other Measurements

Generational cohort was coded based on participants' year of birth. Following established definitions (Williams et al., 2010), respondents born in 1995 or later were categorized as Generation Z, while all others were classified as non-Gen Z. This variable was later used as a moderator in the statistical analysis to test for interaction effects between generation and Nutri-Score condition.

Construct	Coding	Item	Scale	Source
Nutri-Score Label	IV	A vs. D (experimental manipulation)	Binary stimulus	Own Development
Purchase Intention	PI1	I am considering this purchase.	7-point Likert Scale	Spears & Singh, 2004
	PI2	I intend to buy this product in the near future.	7-point Likert Scale	Spears & Singh, 2004
	PI3	I would choose this product over similar alternatives.	7-point Likert Scale	Spears & Singh, 2004
Brand Perception	BP1	This brand seems trustworthy.	7-point Likert Scale	Zhao et al., 2010; Pieniak et al., 2009
	BP2	This brand appears to offer healthy products.	7-point Likert Scale	Zhao et al., 2010; Pieniak et al., 2009
	BP3	I have a positive impression of this brand.	7-point Likert Scale	Zhao et al., 2010; Pieniak et al., 2009
	BP4	This brand offers high quality products.	7-point Likert Scale	Zhao et al., 2010; Pieniak et al., 2009
Attention Check	AC1	This is an attention check. Please select “agree“.	7-point Likert Scale	Berinsky et al., 2014

Table 1: Variables and Measurement Items (Based on Spears & Singh, 2004; Zhao et al., 2010; Pieniak et al., 2009; Berinsky et al., 2014)

3.4 Procedure and Questionnaire

Before launching the main data collection, the instrument was pre-tested with a sample of ten students to verify comprehensibility and technical performance. The feedback indicated that the phrasing of items, overall structure, and expected completion time were suitable. The final survey was organized into four consecutive sections. In the first section, participants were

presented with an informed consent statement outlining the study objectives, the voluntary nature of participation, and the assurance of anonymity. Progression to the subsequent parts of the questionnaire was restricted to individuals who provided explicit consent.

Second, a suitability check was included to filter out participants who reported purchasing packaged food products less often than once every six months. These individuals were screened out automatically.

Third, participants were randomly assigned to one of two experimental conditions. In the Nutri-Score A condition, the fictitious “Cerealis” cereal displayed a Nutri-Score A, whereas in the Nutri-Score D condition, the same product carried a Nutri-Score D. No other labels or design elements were altered. Random assignment ensured internal validity and comparability across groups (Janssen & Bogaert, 2023; Fialon et al., 2022).

After exposure to the stimulus, participants responded to questions capturing the main variables. An attention check item was included to safeguard data quality (Berinsky et al., 2014).

3.5 Sample Strategy and Data Cleaning

The research applied a convenience sampling design without randomization, which, despite its methodological shortcomings, is frequently used and practically feasible in online consumer studies (Dillman et al., 2014). Participants were recruited through digital platforms including Instagram, WhatsApp, and LinkedIn, complemented by outreach via the researcher’s personal and professional networks. To further expand the sample, respondents were invited to redistribute the questionnaire within their own contacts, thereby generating a snowball effect (Babbie, 2013). This approach enabled rapid and efficient data collection, making it particularly suitable for exploratory or early-stage investigations where the primary objective is to obtain broad initial insights rather than statistical generalizability.

At the same time, it is necessary to acknowledge the methodological constraints inherent in this procedure. The preferred standard in empirical sampling is a random and representative design, in which each individual in the target population has an equal probability of selection. Such a method enhances external validity, increases the reliability of population-level inferences, and reduces the risk of systematic selection bias (Bryman, 2016; Groves et al., 2009).

Unlike probability-based methods, techniques such as convenience or snowball sampling risk drawing on circles of people who resemble one another in age, lifestyle, or social background. The consequence is often a skewed picture, with some groups - like digitally active younger individuals - appearing more prominently, while others remain largely invisible. Such imbalances narrow the scope of generalization and caution against treating the results as population-level evidence (Etikan et al., 2016). The outcomes should therefore be read more as signals or tendencies than as definitive claims.

In total, 213 individuals began the survey. A systematic data cleaning procedure followed. First, incomplete responses ($n = 2$) were excluded. Second, a screening item verified that participants purchased packaged food products at least once in the past six months, and an attention check (“This is an attention check. Please select ‘agree’.”) was embedded to ensure attentiveness. Following established practices in online survey research (Berinsky et al., 2014), participants failing either of these checks were removed. After applying these steps, the final dataset consisted of 203 valid cases, meaning two incomplete responses and eight additional cases failing the suitability or attention check were excluded overall.

The final sample was nearly evenly divided between the two groups: Nutri-Score A ($n = 101$) and Nutri-Score D ($n = 102$).

The demographic profile of the sample reflects the convenience-based recruitment. Regarding gender, 60.6% identified as male ($n = 123$), 36.9% as female ($n = 75$), and 2.5% as non-binary ($n = 5$). Ages ranged from 18 to 69 years ($M \approx 29$), with a concentration among younger participants. Educational attainment was high: 36.9% held a bachelor’s degree ($n = 75$), 31.0% a master’s degree ($n = 63$), and 26.6% a high school diploma ($n = 54$), while 3.0% reported a doctoral degree ($n = 6$) and 1.0% less than high school ($n = 2$). Relative to European benchmarks, this indicates an overrepresentation of tertiary education, as only about 33% of 25–64-year-olds in the EU hold a tertiary degree, rising to 42% among those aged 25–34 (Eurostat, 2024). As a result, the sample likely has above-average nutritional knowledge, which may facilitate comprehension of the Nutri-Score and strengthen observed effects (Grunert et al., 2014).

This composition suggests that the findings primarily reflect the perceptions of younger men, a group that may differ in health orientation and label use from older or female consumers (Grunert et al., 2014).

In terms of employment, 59.6% were employed (n = 121), 19.2% students (n = 39), 11.3% freelancers (n = 23), and 7.4% unemployed (n = 15), with a small number retired (n = 3) or selecting “other” (n = 2). Household income was distributed across all categories: 31.0% reported less than €25,000 (n = 63), 32.5% between €25,000–49,999 (n = 66), 21.7% between €50,000–99,999 (n = 44), and 7.9% between €100,000–200,000 (n = 16). A small fraction earned more than €200,000 (0.5%, n = 1) or preferred not to disclose (6.4%, n = 13).

When split by experimental condition (Nutri-Score A vs. D), the groups were nearly identical in size (n = 101 vs. n = 102) and showed broadly similar distributions across gender, education, employment, and income. Minor imbalances, such as a slightly higher share of females and doctoral degree holders in the Nutri-Score D group, were based on small numbers and are unlikely to affect the results. This balance supports internal validity by ensuring that differences between Nutri-Score A and D can be attributed to the experimental manipulation rather than demographic biases.

Overall, the sample can be described as young, male-leaning, and highly educated, with lower incomes relatively overrepresented. These deviations from population benchmarks limit generalizability, but they also highlight that the findings are most applicable to younger, more educated, and price-sensitive consumer groups. Prior research has shown that individuals with higher education are more likely to understand and use nutrition labels, and younger consumers tend to be more responsive to such labeling cues (Campos et al., 2011; Grunert et al., 2014). Detailed sample characteristics can be found in Appendix 2.

4. Findings

This chapter is dedicated to the analysis of the quantitative data. The presentation commences with descriptive statistics, followed by an evaluation of internal consistency through Cronbach’s Alpha. After verifying that the assumptions for statistical inference were met, the hypothesized relationships were examined by means of an independent-samples t-test and a mediation analysis.

The constructs of Brand Perception (four items) and Purchase Intention (three items) were measured through multiple indicators; accordingly, composite mean scores were computed to yield single variables for each construct. These aggregated variables formed the analytical basis for all subsequent procedures. The methodological approach, including the choice of statistical

techniques, is consistent with established practices in prior investigations on nutrition and environmental labeling (e.g., Lee et al., 2020; Liu et al., 2015; Egnell et al., 2018; Talati et al., 2017). A conventional significance threshold of 5% ($p < .05$) was applied throughout.

4.1 Descriptive Statistics

The descriptive analyses showed that participants exposed to a favorable Nutri-Score (A) reported higher mean values for both Brand Perception ($M = 5.11$, $SD = 0.82$) and Purchase Intention ($M = 4.74$, $SD = 1.14$) than those presented with an unfavorable Nutri-Score (D: Brand Perception $M = 3.84$, $SD = 0.88$; Purchase Intention $M = 3.44$, $SD = 1.26$). These findings suggest that the presence of a favorable Nutri-Score is associated with more positive consumer evaluations. Comprehensive descriptive statistics are provided in Appendix 3.

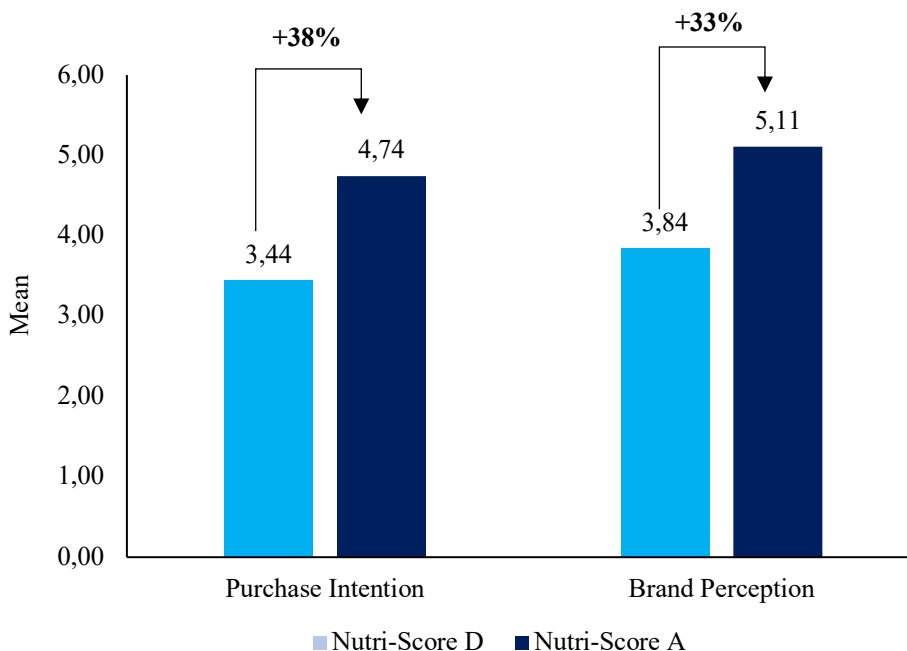


Figure 3: Mean of Purchase Intention and Brand Perception based on Nutri-Score (Own Development)

4.2 Reliability of the Constructs

As the present investigation adapted constructs from earlier research, it was essential to examine the reliability of the measures for brand perception and purchase intention within this empirical context. To this end, internal consistency was evaluated through Cronbach's Alpha, a standard criterion for assessing the coherence of multi-item scales. Conventionally, coefficients exceeding .70 are interpreted as evidence of satisfactory reliability (George & Mallery, 2019).

For the construct brand perception, operationalized through four indicators, the obtained Cronbach's Alpha was .852, which reflects a high degree of internal consistency. The construct purchase intention, measured by three indicators, yielded a coefficient of .911, thereby demonstrating excellent reliability. These findings substantiate the methodological decision to condense the respective items into composite mean scores for subsequent analyses (Blumberg et al., 2014). A detailed account of the reliability diagnostics is presented in Appendix 4.

4.3 Results from the Hypothesis Testing

4.3.1 The Effect of Nutri-Score Labels on Purchase Intentions

Given the experimental design and the specific properties of the dataset, the independent-samples t-test was determined to constitute the most appropriate statistical procedure for the analysis of intergroup variation in purchase intention (Field, 2017). The requirement of independent observations was fulfilled through the random assignment of participants to one of two experimental conditions (Nutri-Score A vs. Nutri-Score D). The outcome variable, purchase intention, was measured using a 7-point Likert-type scale. Although ordinal by construction, scales with five or more response categories are commonly treated as approximating interval-level measurement, which allows for the computation of means and standard deviations (Allen & Seaman, 2007; Blumberg et al., 2014). The independent variable, Nutri-Score, was categorical with two levels, thereby satisfying the structural prerequisites for this test.

The evaluation of statistical assumptions provided further justification for this analytic choice. Inspection of Q-Q plots indicated that the assumption of normality could be considered acceptable (Field, 2017). Levene's test for homogeneity of variances produced a non-significant result ($F = 3.980$, $p = .470$), indicating that the assumption of equal variances was met. We therefore report the equal-variances results (the unequal-variances results lead to the same inference).

The analysis indicated a statistically significant difference in purchase intention between the two experimental groups ($t(201) = 7.71$, $p < .001$). Higher mean purchase intentions were observed in the favorable Nutri-Score condition (A: $M = 4.74$, $SD = 1.14$) compared to the unfavorable condition (D: $M = 3.44$, $SD = 1.26$). The observed effect size was substantial (Cohen's $d = 1.20$), emphasizing the practical significance of the finding. Collectively, these results provide empirical support for the confirmation of Hypothesis 1.

4.3.2 Mediation Analysis

A mediation analysis was conducted in SPSS using Hayes' PROCESS macro (Model 4; Hayes, 2022) to assess whether brand perception mediates the effect of Nutri-Score on purchase intention. This approach, widely used in consumer research (Preacher & Hayes, 2004; Zhao et al., 2010), tests whether the impact of an independent variable (Nutri-Score condition) on a dependent variable (purchase intention) is transmitted through a mediator (brand perception). All assumptions for regression-based mediation were examined. Linearity between the variables was assumed (Field, 2017). The constructs, measured on 7-point Likert scales, were treated as interval data (Allen & Seaman, 2007). Standardized residuals indicated no serious violations of normality or homoscedasticity, and multicollinearity was not problematic ($VIF < 2$). Independence of observations was ensured by randomized group assignment. Indirect effects were estimated with 5,000 bootstrap resamples, a recommended method as it does not require the normality assumption (Preacher & Hayes, 2004).

The analysis revealed a significant total effect of Nutri-Score on purchase intention, with products carrying a favorable Nutri-Score A eliciting substantially higher purchase intentions than those with D ($B = -1.298$, $SE = .168$, $p < .001$). Nutri-Score also significantly influenced brand perception, with A improving brand evaluations compared to D ($B = -1.265$, $SE = .119$, $p < .001$; $R^2 = .359$). In turn, brand perception was positively associated with purchase intention ($B = .798$, $SE = .082$, $p < .001$). When brand perception was included, the direct effect of Nutri-Score on purchase intention was no longer significant ($B = -.289$, $SE = .174$, $p = .099$). The overall model accounted for 47% of the variance in purchase intention ($R^2 = .475$).

The indirect effect of Nutri-Score D on purchase intention through brand perception was significant (effect = -1.009 , $BootSE = .116$, 95% CI [-1.252 ; $-.791$]). Given that the indirect effect was significant while the direct effect became non-significant when controlling for brand perception, the results indicate full mediation. Thus, brand perception fully mediates the relationship between Nutri-Score and purchase intention, confirming H2.

4.3.3 Moderation Analysis

To examine whether the effect of the Nutri-Score varies across generational cohorts, a moderation analysis was conducted. The Nutri-Score (A vs. D) was included as the independent variable, Generation (Gen Z vs. non-Gen Z) as the moderator, and brand perception as well as

purchase intention as the dependent variables. To ensure robustness of the results, bootstrap procedures with 5,000 resamples were applied.

4.3.3.1 Moderation on Brand Perception

Regression results showed that the Nutri-Score significantly influenced brand perception ($B = -1.27$, $SE = .16$, $t = -7.85$, $p < .001$). Products carrying a Nutri-Score D were rated much lower compared to Nutri-Score A. However, the main effect of generation ($B = .01$, $p = .94$) and the interaction between Nutri-Score and generation ($B = .00$, $p = .99$) were both non-significant. Thus, H3 (that the effect of the Nutri-Score on brand perception is stronger among Gen Z) is rejected.

4.3.3.2 Moderation on Purchase Intention

A similar pattern emerged for purchase intention. The Nutri-Score again showed a strong and significant negative effect ($B = -1.20$, $SE = .23$, $t = -5.25$, $p < .001$), with lower purchase intentions for products labeled with Nutri-Score D. Yet, the effect of generation ($B = .06$, $p = .80$) and the interaction term ($B = -.23$, $p = .50$) were not significant. Therefore, H4 (that the effect of the Nutri-Score on purchase intention is stronger among Gen Z) is also rejected.

Hypotheses	Items	Results
H1	A favorable Nutri-Score has a positive effect on purchase intentions.	Accepted
H2a	A favorable Nutri-Score leads to a more positive brand perception.	Accepted
H2b	A positive brand perception leads to a higher purchase intention.	Accepted
H2	Brand perception mediates the relationship between Nutri-Score and purchase intention.	Accepted
H3	The effect of the Nutri-Score on brand perception is stronger among members of Generation Z than among other generations.	Rejected
H4	The effect of the Nutri-Score on purchase intention is stronger among members of Generation Z than among other generations.	Rejected

Table 2: Summary of Results (Own Development)

5. General Discussion

5.1 Interpretation of the Findings

The results confirm that products carrying a favorable Nutri-Score are associated with significantly higher purchase intentions compared to those with an unfavorable score (H1). This finding aligns with prior research showing that front-of-pack labels serve as effective heuristics, enabling consumers to identify healthier options quickly and enhancing willingness to purchase when the score reinforces positive expectations (De Temmerman et al., 2021; Calderón-Monge et al., 2024). From a theoretical perspective, these results support Ajzen's (1991) Theory of Planned Behavior, which highlights the predictive role of behavioral intentions for actual consumer behavior. Moreover, they underline the function of labels as nudges that trigger intuitive System 1 processes by providing salient, easily interpretable cues (Kahneman, 2011; Van Kleef & Dagevos, 2015).

Beyond their impact on product-level decisions, the findings demonstrate that Nutri-Score also exerts a strong influence on brand perception (H2a). Participants exposed to a favorable score evaluated the brand more positively in terms of responsibility, trustworthiness, and health orientation. This observation is consistent with prior research indicating that certification labels operate as signals of corporate integrity and responsibility, thereby transferring credibility from the product to the brand (Ikonen et al., 2020; Talati et al., 2017; Julia & Hercberg, 2017; Zhao et al., 2010).

The mediation analysis further reveals that brand perception significantly accounts for the effect of Nutri-Score on purchase intention (H2b), thereby supporting the overall mediation hypothesis (H2). This suggests that labels primarily influence purchase decisions through their impact on how consumers interpret and evaluate the underlying brand, rather than solely through direct product appraisal. This finding resonates with consumer-based brand equity theory, which emphasizes that positive brand associations and perceived authenticity enhance willingness to purchase and foster long-term brand loyalty (Netemeyer et al., 2004; Morhart et al., 2015).

Although previous research has frequently portrayed Generation Z as particularly responsive to transparency, visual communication, increased health awareness (Meyerding & Ahrens, 2024;

Kabaja et al., 2023), these generational characteristics did not result in a stronger behavioral response to front-of-pack nutrition labels in this study.

One possible explanation is that Generation Z has rarely been empirically investigated as a distinct consumer group in the context of front-of-pack nutrition labeling. Therefore, many expectations regarding their behavior may have originated from theoretical assumptions or broad generational narratives rather than consistent empirical findings.

Furthermore, the results are consistent with the widely documented phenomenon known as the attitude–behavior gap. Even when consumers express strong values related to health, sustainability, or ethical concerns, their actual purchase behavior often does not reflect those values. This discrepancy has been observed particularly among younger consumers, who may express pro-sustainability attitudes while still making conventional purchase decisions in everyday situations (Haverbeke et al., 2020). Emotional and contextual factors, as well as social norms and infrastructural limitations, further contribute to this gap (Wintschnig, 2021).

This phenomenon may be especially relevant for Generation Z. Although members of this cohort frequently express strong values related to sustainability, health, and ethical consumption, several studies suggest that their actual behavior often fails to align with these values. Research shows that Generation Z consumers, while highly aware of sustainability and interested in sustainable choices, often prioritize factors such as convenience, price, and availability when making purchase decisions. For example, in the context of sustainable fashion, affordability and fast-changing trends were found to outweigh ethical concerns, even among environmentally aware consumers (Escourido-Calvo et al., 2025; Talesara, 2025). In the food domain, strong pro-sustainability intentions are documented, but barriers such as budget constraints, lack of product knowledge, and convenience frequently limit their translation into actual purchase behavior (Jakubowska et al., 2024; Garai Fodor, 2019; Orea-Giner & Fusté-Forné, 2023).

It is also possible that the theoretically assumed generational differences were overridden by more immediate and situational factors in the decision-making process. Although Generation Z may have a stronger affinity for digital transparency and value-based consumption, the simplicity and clarity of the Nutri-Score may enable all consumers, regardless of age, to interpret the label efficiently. Similar effects have been observed in research on sustainable

food and consumption, where convenience, price, and situational constraints significantly shape Gen Z purchase patterns, often neutralizing generational distinctions (Garai Fodor, 2019; Orea-Giner & Fusté-Forné, 2023; Jakubowska et al., 2024).

5.2 Contributions to Theory

First, this work expands labeling research by demonstrating that front-of-pack labels affect not only product-specific choices but also brand-related judgments through a relational mechanism. In this experiment, the positive impact of a favorable Nutri-Score on purchase intention was fully explained by stronger perceptions of brand trust, responsibility, and health orientation. This indicates that labels exert their influence primarily through brand-based interpretations rather than relying solely on direct cognitive processing (De Temmerman et al., 2021; Vandevijvere et al., 2020; Keller, 1993; Erdem & Swait, 1998).

Second, the findings refine signaling theory by showing that labeling involves a multi-layered signaling process. Whereas signaling theory traditionally stresses the reduction of information asymmetries through credible and costly signals (Spence, 1973; Connelly et al., 2011), the present evidence reveals that Nutri-Score operates both as a health-related indicator at the product level and as a brand-level cue of trust, responsibility, and health orientation. This twofold signaling effect broadens theoretical perspectives by suggesting that certification labels transfer favorable associations from products to brands, thereby shaping brand evaluations beyond immediate product assessments (Ikonen et al., 2020; Julia & Hercberg, 2017; Talati et al., 2017).

Third, the study contributes to consumer-based brand equity theory by highlighting the mediating role of brand perception. The full mediation observed here indicates that favorable certification cues primarily influence consumer behavior by reinforcing brand associations, rather than directly shaping evaluations of individual products.

Fourth, the research critically addresses generational differences in consumer behavior. Despite assumptions that Generation Z would respond more strongly to certification and transparency cues, the results provide no evidence of heightened sensitivity in this cohort. This finding challenges essentialist positions in generational research (Williams et al., 2010) and leaves open the question of what actually drives consumer reactions. Previous studies suggest that contextual and situational factors, such as label clarity and salience, may play a more decisive

role, underscoring the need for further research into these mechanisms (Egnell et al., 2020; Meyerding & Ahrens, 2024; Kabaja et al., 2023).

Finally, the study enhances perspectives on nudging and choice architecture by showing that certification labels not only serve as short-term heuristics at the point of purchase but also shape brand-related evaluations. While existing frameworks often view front-of-pack labels as cues that trigger intuitive System 1 processes and guide immediate choice behavior (Kahneman, 2011; Thaler & Sunstein, 2008), the mediation through brand perception observed here shows that labels additionally shape consumer judgments of brands in terms of trust, responsibility, and health orientation. This suggests that nudging frameworks should be expanded to incorporate both rapid heuristic effects and broader interpretive influences on brand perception (Van Kleef & Dagevos, 2015).

5.3 Contributions to Practice

The findings of this study yield several practical implications for policymakers, industry stakeholders, and public health initiatives.

First, the finding that a favorable Nutri-Score significantly enhances purchase intentions underscores the value of front-of-pack labels as a cost-efficient public health instrument for fostering healthier eating behaviors on a large scale. By condensing complex nutritional data into a simple, easily interpretable cue, Nutri-Score lowers cognitive barriers at the moment of purchase and supports healthier decision-making even among consumers with limited nutritional knowledge (De Temmerman et al., 2021; Julia et al., 2024). Because this effect was not confined to any specific demographic group, the results highlight the broad applicability of Nutri-Score and provide further support for its adoption across the EU (Julia et al., 2024; Hafner & Pravst, 2024).

Second, the results show that Nutri-Score affects not only product-level choices but also brand perception. For companies, adopting Nutri-Score consistently across their portfolios can support positioning as transparent, trustworthy, and socially responsible. Positive brand associations derived from favorable scores may enhance consumer trust and brand equity, while unfavorable scores can pose reputational risks if left unaddressed (Ikonen et al., 2020). This dual effect provides a clear incentive for firms to reformulate products toward healthier

nutritional profiles, thereby aligning competitive advantage with public health objectives (Robertson et al., 2023).

Third, the mediation of purchase intentions through brand perception emphasizes that certification labels should be seen as part of broader brand strategy. For practice, this implies that investment in healthier product lines and transparent communication does not merely facilitate immediate purchase decisions but also strengthens consumer evaluations of the brand. In highly competitive food markets, such brand-related effects may provide a durable source of differentiation (Janssen & Bogaert, 2023; Calderón-Monge et al., 2024).

Fourth, the absence of generational differences in this study only rules out that Generation Z reacts more strongly to the Nutri-Score than other generational cohorts. Further research with larger samples is needed, as smaller effects might not have been detected in the present study (Freiman et al., 1978).

Finally, the implications extend beyond consumer behavior to supply-side dynamics. Labeling schemes like Nutri-Score create a reformulation incentive for manufacturers, encouraging them to improve nutritional quality to avoid negative scores. While reformulation may pose challenges for small and medium-sized enterprises due to associated costs, the reputational benefits of adopting credible certification labels can outweigh these investments by enhancing consumer trust and competitiveness. This dynamic demonstrates how public health goals and industry incentives can be mutually reinforcing when clear, credible, and harmonized labeling systems are implemented (Lombrail, 2019; Hafner & Pravst, 2024).

5.4 Limitations and Future Research

The reliance on convenience and snowball sampling limited representativeness and likely biased the sample toward younger, digitally literate, and more educated participants. Prior studies demonstrate that responses to front-of-pack labels differ across education, income, and nutritional literacy, which means that effects observed in this study may not generalize to more heterogeneous populations. Future research should therefore adopt probability-based or stratified sampling strategies to improve external validity (Ikonen et al., 2020; Egnell et al., 2020).

The experimental design used a fictitious brand and a single product category. This reduced potential bias from pre-existing brand attitudes but also limited ecological validity. Label effects are known to vary across categories depending on health salience and involvement, and they may interact with brand heritage and trust, factors that could not be captured with a fictitious stimulus (Grunert et al., 2014; Keller, 1993; Ikonen et al., 2020). Extending the design to multiple categories and established brands would allow for stronger conclusions about generalizability.

The manipulation contrasted only two Nutri-Score levels (A vs. D). While this provided a clear and informative comparison, it may not reflect the more nuanced or non-linear effects observed across the full A–E range. Evidence suggests that consumer reactions can differ substantially between adjacent scores, particularly in mid-range categories, and future studies should therefore incorporate the entire scale (De Temmerman et al., 2021; Talati et al., 2017).

The study measured self-reported purchase intentions, which may not accurately capture real-world behavior. Research on food consumption consistently highlights the intention–behavior gap, whereby stated preferences often fail to translate into actual purchases (Sheeran, 2002; Vandevijvere et al., 2020). Incorporating behavioral data from field experiments, transaction records, or longitudinal designs would help validate the robustness of these findings.

The cross-sectional design further restricted the ability to examine temporal dynamics. Labeling effects may evolve with repeated exposure, potentially leading to shifts in comprehension, skepticism, or declining effectiveness. Experimental evidence suggests that understanding and impact of labels can change over time, underscoring the importance of longitudinal or repeated-measures designs to assess whether the mediation through brand perception reflects a stable mechanism or a short-term effect (Packer et al., 2021).

Generational identity was operationalized in a binary form (Gen Z vs. non-Gen Z). Such an approach risks oversimplifying cohort differences and has been criticized for neglecting intra-cohort heterogeneity. Since psychographic factors such as health consciousness, digital fluency, or value orientation may be more relevant predictors than age alone, future studies should adopt more nuanced measures that integrate both demographic and attitudinal moderators (Williams et al., 2010; Parry & Urwin, 2011; Campbell et al., 2015).

Finally, the study was conducted exclusively in a European context. Since acceptance of Nutri-Score varies across countries and is shaped by cultural identity, institutional trust, and regulatory environments, results cannot be directly generalized beyond Europe. Comparative studies across different cultural contexts would provide a broader understanding of how these factors condition consumer responses to certification labels (Stiletto & Trestini, 2022; European Commission, 2022a).

6. Conclusion

This study investigated how the Nutri-Score, as a front-of-pack certification label, influences consumer purchase intentions and brand perception, with particular attention to Generation Z. Drawing on nudging, signaling, and consumer-based brand equity frameworks, a survey experiment contrasted a favorable (A) versus an unfavorable (D) Nutri-Score on a fictitious cereal brand.

Three core insights emerged. First, a favorable Nutri-Score significantly increased purchase intentions compared to an unfavorable score, confirming its effectiveness as a heuristic that simplifies nutrition information and supports healthier choices. Second, the Nutri-Score strongly shaped brand perception: positive scores elevated perceived trustworthiness, responsibility, and health orientation. Mediation analysis showed that the impact of Nutri-Score on purchase intention was fully transmitted through brand perception, underscoring that labels operate primarily through brand-related interpretations rather than direct product appraisal. Third, contrary to expectations, no generational moderation was found—Generation Z did not respond more strongly than non-Generation Z cohorts.

Theoretically, these findings extend labeling research beyond product-level outcomes by demonstrating brand-level effects, refine signaling theory by evidencing a dual signaling mechanism (product and brand), and enrich consumer-based brand equity theory by highlighting brand perception as the key pathway from certification cues to behavioral intentions.

Practically, the results support the EU-wide implementation of Nutri-Score as a cost-effective public health tool and highlight its strategic relevance for firms. Consistent adoption of Nutri-Score and product reformulation can enhance consumer trust, strengthen brand credibility, and align corporate incentives with public health goals.

These contributions must be considered in light of methodological limitations, including convenience sampling, use of a fictitious brand in a single product category, the restricted A–

D comparison, reliance on self-reported intentions, and a cross-sectional design. Future research should employ more representative sampling, test multiple categories and established brands, examine the full Nutri-Score scale, and incorporate behavioral and longitudinal data. Cross-cultural studies and the inclusion of additional mediators and moderators could further clarify the mechanisms underlying label effects.

Overall, the evidence confirms Nutri-Score's dual role as both nudge and credibility signal. By shaping not only immediate product evaluations but also brand perceptions that drive purchase intentions, Nutri-Score aligns public health objectives with corporate incentives and offers a widely usable tool to promote healthier consumption.

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Appendix 1: Survey Questionnaire

Start of Block: Introduction

Thank you for taking part in this study.

My name is Nico Eller, and I am conducting this research as part of my Master's Thesis at Católica Lisbon School of Business and Economics, under the supervision of Dr. Filipa Lancastre.

The study consists of a brief scenario followed by a set of related questions. Completing the survey should take approximately 4 minutes. Please answer all questions as honestly as possible—there are no right or wrong answers. Your responses will remain completely confidential and anonymous, and the data will be used solely for academic research purposes. We kindly ask that you complete the survey without interruptions. Participation is entirely voluntary, and you may withdraw at any point while completing the study.

If you have any questions, please feel free to contact me at s-neller@ucp.pt.

End of Block: Introduction

Start of Block:

Suitability Check How often do you buy packaged food products like cereal, chocolate, cookies etc.?

- At least once every 6 months. (1)
- Less often than once in 6 months. (2)

End of Block:

Start of Block: Group A: Nutri Score A

Imagine you're shopping for breakfast cereal and come across a product from a brand called Cerealis. On the front of the package, you notice a Nutri-Score A prominently displayed.



To what extent do you agree with the following statements regarding the scenario presented?

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
I am considering purchase this product. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I intend to buy this product in the near future. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would choose this product over similar alternatives. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Attention check: Please select "agree" for this item." (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This brand seems trustworthy. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This brand appears to offer healthy products. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have a positive impression of this brand. (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This brand offers high-quality products. (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: Group A: Nutri Score A

Start of Block: Group B: Nutri Score D

Imagine you're shopping for breakfast cereal and come across a product from a brand called Cerealis. On the front of the package, you notice a Nutri-Score D prominently displayed.



Q22 To what extent do you agree with the following statements regarding the scenario presented?

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
I am considering purchase this product. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I intend to buy this product in the near future. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would choose this product over similar alternatives. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Attention check: Please select "agree" for this item." (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This brand seems trustworthy. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This brand appears to offer healthy products. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have a positive impression of this brand. (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This brand offers high-quality products. (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: Group B: Nutri Score

Start of Block: Demographics

Q14 What is your gender?

- Male (1)
 - Female (2)
 - Non-binary / third gender (3)
 - Prefer not to say (4)
-

Q15 In which year were you born?

▼ 2008 (1) ... 1940 (69)

Q17 In which country do you currently reside?

▼ Afghanistan (1) ... Zimbabwe (1357)

Q18 What is your highest level of education?

- Less than high school (1)
- High school degree (2)
- Bachelor's degree (3)
- Master's degree (4)
- Doctoral degree (5)
- Other: (6) _____

Q19 What is your current employment status?

- Employed (1)
 - Freelancer (2)
 - Unemployed (3)
 - Student (4)
 - Retired (5)
 - Other: (6) _____
-

Q20 What is your annual household income?

- Less than 25,000 € (1)
- 25,000–49,999 € (2)
- 50,000–99,999 € (3)
- 100,000–200,000 € (4)
- More than 200,000 € (5)
- Prefer not to say (6)

End of Block: Demographics

Appendix 2: Sample Characterization

Demographics	Nutri-Score Group				Total	
	Nutri-Score A		Nutri-Score D			
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Total	101	50%	102	50%	203	100%
Gender						
Male	68	55,3%	55	44,7%	123	61%
Female	31	41,3%	44	58,7%	75	37%
Other	2	49,8%	3	50,2%	5	2%
Birth Year						
1956	1	50%	1	50%	2	1%
1957	0	0%	0	0%	0	0%
1958	0	0%	1	100%	1	0%
1959	0	0%	0	0%	0	0%
1960	0	0%	1	100%	1	0%
1961	1	100%	0	0%	1	0%
1962	0	0%	0	0%	0	0%
1963	0	0%	0	0%	0	0%
1964	0	0%	0	0%	0	0%
1965	0	0%	1	100%	1	0%
1966	2	67%	1	33%	3	1%
1967	0	0%	0	0%	0	0%
1968	1	100%	0	0%	1	0%
1969	0	0%	1	100%	1	0%
1970	0	0%	0	0%	0	0%
1971	0	0%	0	0%	0	0%
1972	2	100%	0	0%	2	1%
1973	0	0%	1	100%	1	0%
1974	2	100%	0	0%	2	1%
1975	0	0%	2	100%	2	1%
1976	1	25%	3	75%	4	2%
1977	0	0%	1	100%	1	0%
1978	0	0%	1	100%	1	0%

1979	3	75%	1	25%	4	2%
1980	1	100%	0	0%	1	0%
1981	3	75%	1	25%	4	2%
1982	3	60%	2	40%	5	2%
1983	2	33%	4	67%	6	3%
1984	3	60%	2	40%	5	2%
1985	3	75%	1	25%	4	2%
1986	0	0%	4	100%	4	2%
1987	2	67%	1	33%	3	1%
1988	2	50%	2	50%	4	2%
1989	5	33%	10	67%	15	7%
1990	3	75%	1	25%	4	2%
1991	3	43%	4	57%	7	3%
1992	5	56%	4	44%	9	4%
1993	3	50%	3	50%	6	3%
1994	4	57%	3	43%	7	3%
1995	3	50%	3	50%	6	3%
1996	3	50%	3	50%	6	3%
1997	6	55%	5	45%	11	5%
1998	10	63%	6	38%	16	8%
1999	6	40%	9	60%	15	7%
2000	7	54%	6	46%	13	6%
2001	3	38%	5	63%	8	4%
2002	1	14%	6	86%	7	3%
2003	3	75%	1	25%	4	2%
2004	1	100%	0	0%	1	0%
2005	3	75%	1	25%	4	2%
Country of Residence						
Germany	28	43%	37	57%	65	32%
France	11	48%	12	52%	23	11%
Netherlands	14	44%	18	56%	32	16%
Austria	4	67%	2	33%	6	3%
Switzerland	1	33%	2	67%	3	1%

Portugal	42	57%	32	43%	74	36%
Level of Education						
Less than high school	2	100%	0	0%	2	1%
High school degree	33	61%	21	39%	54	27%
Bachelor's degree	34	45%	41	55%	75	37%
Master's degree	29	46%	34	54%	63	31%
Doctoral degree	2	33%	4	67%	6	3%
Other	1	33%	2	67%	3	1%
Profession						
Employed	59	49%	62	51%	121	60%
Freelancer	15	65%	8	35%	23	11%
Unemployed	10	67%	5	33%	15	7%
Student	16	41%	23	59%	39	19%
Retired	0	0%	3	100%	3	1%
Other	1	50%	1	50%	2	1%
Annual Household Income						
Less than 25,000 €	31	49%	32	51%	63	31%
25,000–49,999 €	40	61%	26	39%	66	33%
50,000–99,999 €	16	36%	28	64%	44	22%
100,000–200,000 €	7	44%	9	56%	16	8%
More than 200,000 €	0	0%	1	100%	1	0%
Prefer not to say	7	54%	6	46%	13	6%

Appendix 3: Descriptive Statistics

Descriptive Statistics of Brand Perception and Purchase Intention based on Nutri-Score

		Nutri-Score Group	
		Nutri-Score A (n = 101)	Nutri-Score D (n = 102)
Brand Perception	Mean	5.1056	3.8407
	Standard Deviation	.8220	.8758
Purchase Intention	Mean	4.7426	3.4444
	Standard Deviation	1.1391	1.2572

Appendix 4: Reliability Statistics - Cronbach's Alpha

Reliability Statistics

	Cronbach's Alpha based on		
	Cronbach's Alpha	Standardized Items	N of Items
Brand Perception	.852	.865	4
Purchase Intention	.911	.911	3

Appendix 5: Independent Samples Test (H1)

Group Statistics

	Nutri-Score Group	N	Mean	Std. Deviation	Std. Error Mean
Purchase Intention	Nutri-Score A	101	4.7426	1.1391	.1133
	Nutri-Score D	102	3.4444	1.2572	.1245

Independent Samples Test

	Levene's Test for Equality of Variances		T-Test for Equality of Mean							
	f	Sig.	T-Test for Equality of Mean	df	Two-Sided P	Mean Difference	St. Error Difference	95% Confidence Interval of the Difference		
								Lower	Upper	
Purchase Intention	Equal Variances Assumed	3.98	.4700	7.7070	201.00	<0.01	1.2982	.168	.9660	1.630
	Equal Variances Not Assumed			7.7111	199.44	<0.01	1.2982	.168	.9662	1.630

Independent Samples Effect Sizes

	Standardizer	Point Estimate	95% Confidence Interval	
			Lower	Upper
Purchase Intention	Cohen's d	1.999	1.0820	1.3750
	Hedges' correction	1.2044	1.0780	1.3700
	Glass's Delta	1.2572	1.0330	1.3400

Appendix 6: Mediation Analysis with Hayes Process Model 4 (H2a, b & H2)

Mediation Analysis: Effect of Nutri Score on Brand Perception

	Path	B	SE	t	p	LLCI	ULI
Nutri Score	NS ->	-1.2650	.119	-10.61	<.001	-1.5	-1.03
	BP						
Model Summary: $R^2 = .359$, $F(1,201) = 112.53$, $p < .001$							

Mediation Analysis: Effect of Nutri-Score and Brand Perception on Purchase Intention

	Path	B	SE	t	p	LLCI	ULI
Nutri Score	NS -> PI	-.2890	.174	-1.66	.099	-.632	.054
Brand Perception	BP -> PI	.7980	.082	9.68	<.001	.636	.961
Model Summary: $R^2 = .475$, $F(2,200) = 90.29$, $p < .001$							

Mediation Analysis: Effect of Nutri-Score on Purchase Intention

	Path	B	SE	t	p	LLCI	ULI
Nutri Score	NS -> PI	-1.298	.168	-7.71	<.001	-1.630	-.966
	total						
Model Summary: $R^2 = .228$, $F(1,201) = 59.40$, $p < .001$							

Mediation Analysis: Total, Direct and Indirect Effects of Nutri-Score

	Path	B	SE	t	p	LLCI	ULI
Total Effect	NS → PI	-1.298	.168	-7.71	<.001	-1.630	-.966
Direct Effect	NS → PI	-.2890	.174	-1.66	.099	-.632	.054
Indiret Effect via Brand Perception	NS → BP →PI	-1.009	.116*		<.001	-1.252	-.791

*Bootstrapped SE and 95% CI based on 5,000 samples.

Appendix 7: Moderation Analysis of Generation Z (H3, H4)

Moderation Analysis: Effect of Nutri-Score, Generation, and their Interaction on Brand Perception (H3) with Bootstrapped SEs (N = 203)

Variable	B	Boot SE	p	95% CI (LL, UL)
Constant	5,1000	.1210	<.001	4.873; 5.327
Nutri-Score (A=0, D=1)	-1,2670	.1610	<.001	-1.585; -.948
Generation Z (0=Other, 1=Generation Z)	.0120	.171	.942	-.324; .349
Interaction (NSxGeneration Z)	.0040	.241	.986	-.471;.480
Model Summary: $R^2 = .359$, $F(3,199) = 37.144$, $p < .001$				

Moderation Analysis: Effect of Nutri-Score, Generation, and their Interaction on Purchase Intention (H4) with Bootstrapped SEs (N = 203)

Variable	B	Boot SE	p	95% CI (LL, UL)
Constant	4.7150	.162	<.001	4.395; 5.035
Nutri-Score (A=0, D=1)	-1.1950	.228	<.001	-1.643; -.746
Generation Z (0=Other, 1=Generation Z)	.0600	.241	.803	-.414; .535
Interaction (NSxGeneration Z)	-.233	.340	.495	-.903; .438
Model Summary: $R^2 = .230$, $F(3,199) = 19.852$, $p < .001$				