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How the "high in sodium" warning and information about emerging technologies on burger labels influence consumer purchase decisions

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ABSTRACT

This study evaluated the influence of the front-of-pack "high in sodium" warning and information about various sodium-reduction technologies on purchase intention for beef burgers. A total of 412 regular burger consumers participated in an online survey. Conjoint analysis was conducted within a 2 × 4 factorial design, combining the front-of-pack "high in sodium" warning (present vs absent) with four technological sodium-reduction claims (no claim, sodium reduction, sodium reduction via ultrasound and finer salt, and sodium reduction via ultrasound and finer salt while preserving salty taste), resulting in eight burger labels. Cluster analysis identified three distinct consumer profiles that differed in sociodemographic characteristics and label perceptions. The presence of the "high in sodium" warning significantly reduced purchase intention ($P < 0.001$), while technological claims increased product appeal, especially when associated with the preservation of salty taste. Conjoint results indicated that technological innovations accounted for 61.1% of the variance in purchase intention, surpassing the negative effect of the warning (38.9%). These findings suggest that transparent communication of technological and sensory benefits can offset the impact of front-of-pack warnings and support the development of healthier meat products.

1. Introduction

Excessive sodium intake is a major global public health concern. Noncommunicable diseases, such as cardiovascular diseases and strokes, are strongly associated with high sodium consumption, particularly from processed and ultra-processed foods, and are estimated to cause approximately three million deaths annually (Riis et al., 2022). In Western countries, bakery products, dairy products, snacks, sauces, and meat products account for about 70% of total sodium intake (Dunteman et al., 2021). Among these, burgers are notable for their popularity and high intake across various regions (de Araújo et al., 2025).

Moreover, Buettner and Shah (2024) report that burgers frequently contain substantial amounts of salt, often exceeding recommended limits, with a median sodium content of 1130 mg per serving. In Brazil, the Brazilian Health Regulatory Agency (ANVISA) indicated the average sodium amount of commercial beef burgers is 701 mg/100 g of product (ANVISA, 2012), which is already considered a high value, considering that regulatory guidelines recommend that sodium levels in order to align with national public health targets (ANVISA, 2020).

Prompted by public policies aimed at reducing sodium intake, researchers have developed and evaluated multiple strategies to lower sodium levels in processed foods, with a special emphasis on meat products. Examples include modifying the particle size of sodium chloride (Rios-Mera et al., 2021; Santana et al., 2026), using alternative non-sodium salts (Barretto et al., 2020), incorporating taste enhancers (Zhang et al., 2024), applying sodium chloride microcapsules as a way to

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optimize salt release and maintain sensory perception (Carlos Solomando et al., 2025), and, more recently, applying emerging technologies such as ultrasound (Sena Vaz Leães et al., 2020). These approaches aim to mitigate the negative effects of sodium reduction in meat products, as table salt (NaCl) is the primary source of sodium and provides essential technological, chemical, and sensory functions in these formulations.

Although the potential health benefits and technical aspects of sodium reduction are widely studied, consumer awareness and acceptance of such interventions remain limited, especially for approaches involving emerging technologies like ultrasound (Siegrist & Hartmann, 2020). This unfamiliarity can lead to distrust or skepticism, particularly when terminology seems artificial or overly technical. Health-conscious consumers may also perceive industrial processing as a threat to nutritional quality (Monteiro et al., 2022). Additionally, new regulations, such as front-of-pack labeling, further affect consumer acceptance of reformulated meat products.

This challenge is heightened in Brazil by the recent implementation of front-of-pack labeling, as mandated by ANVISA Resolution RDC No. 429/2020 (Brazil, 2020), which requires visual warning symbols on the packaging of products high in sodium, added sugars, or saturated fats. While intended to promote informed food choices, such measures may inadvertently reinforce rejection of industrially processed meat products. Therefore, it is critical to assess how reformulation strategies and labeling practices affect consumer attitudes toward these products.

Despite extensive research on healthier meat product development (de Araújo et al., 2024; da Rosa et al., 2023; de Araújo et al., 2025; Pinton et al., 2022; Rios-Mera et al., 2019, 2020, 2021; Saavedra et al., 2022), there are currently no commercial beef burgers with reduced sodium that combine ultrasound technology and micronized salt. Notably, with the adoption of front-of-pack nutrition labeling in Brazil, foods containing more than 600 mg of sodium per 100 g must display a "high in sodium" warning, which may decrease purchase intentions, especially among health-conscious consumers. Understanding how such labeling influences consumption choices is crucial for the food industry, offering valuable insights for creating burgers with lower sodium levels. Evaluating consumer perception helps identify key factors and supports strategic market positioning, enhancing product acceptance and success (Polizer Rocha et al., 2018).

This study aimed to evaluate the impact of the "high in sodium" front-of-pack warning and additional label information on consumer purchase intention for burgers using conjoint analysis, with particular focus on the use of emerging sodium-reduction technologies. It also explored the relationship between purchase intention and sociodemographic variables, consumption habits, and knowledge of the warning, and identified consumer profiles through cluster analysis.

2. Materials and methods

2.1. Participants

Participants were recruited via email invitations and social network links. Inclusion criteria were: (i) age 18 or older; (ii) regular burger consumption at least once a month; and (iii) acceptance of the informed consent form, agreeing to participate anonymously. A total of 412 eligible participants completed the survey, providing a robust sample for the analyses. Study procedures were approved by the Research Ethics Committee for Human Subjects at ESALQ/USP under protocol No. 6.087.327.

2.2. Stimuli

Eight visual stimuli were developed to simulate burger packaging, using a 2 × 4 factorial arrangement. Two factors were varied: (a) presence or absence of the front-of-pack "high in sodium" warning; and (b) information regarding sodium-reduction technologies: no claim, sodium reduction, sodium reduction via ultrasound plus micronized salt, and sodium reduction via ultrasound plus micronized salt with preserved salty taste. These combinations generated eight distinct burger label stimuli (Fig. 1), following procedures similar to those used in previous studies on consumer perception and expected liking of meat product labels (Saldaña et al., 2020; Selani et al., 2022).

2.3. Procedure

Data collection was conducted online using the Google Forms platform. The questionnaire included sociodemographic questions, frequency of burger consumption, and knowledge of the "high in sodium" warning. To assess this knowledge, the following questions were included: "When choosing burgers at the supermarket, do you check whether the label displays the 'High in sodium' warning?" (five-point scale, from 1 = never to 5 = always); "What is your opinion about the implementation of the 'High in sodium' warning?" (five-point scale, from 1 = very negative to 5 = very positive); and "Does the 'High in sodium' warning influence your purchase decision?" (five-point scale, from 1 = strongly disagree to 5 = strongly agree).

Subsequently, purchase intention was evaluated for each burger label (visual stimuli). In addition, participants' awareness and perceptions regarding sodium-reduction technologies, specifically ultrasound and finer salt particles, were assessed. The following questions were presented: "Would you buy a burger with reduced sodium content?"; "Would you buy a reduced-sodium burger if the package mentioned the use of ultrasound during processing?"; and "Would you buy a reduced-sodium burger if the package mentioned the use of finer salt particles?". All questions used a five-point purchase intention scale, ranging from 1 = "I would definitely not buy it" to 5 = "I would definitely buy it". The questionnaire items were adapted from Roininen et al. (1999), a scale widely used in studies assessing consumer attitudes toward health and diet-related issues.

2.4. Conjoint analysis

Participants were instructed to evaluate the products as if shopping in a supermarket, making a real purchase. They assessed eight randomly ordered burger labels featuring different stimuli (Fig. 1) using conjoint analysis (Saldaña et al., 2020). Each label was rated for purchase intention on a 5-point scale ranging from "I would definitely not buy it" to "I would definitely buy it" (Fiszman et al., 2015).

2.5. Data analysis

2.5.1. Cluster analysis

Mean scores were first calculated for items assessing perception of the "high in sodium" warning, opinions about the warning, and willingness to consume burgers with different sodium-reduction strategies. Then, a hierarchical cluster analysis was performed using demographic variables, Euclidean distance, and Ward's method (Selani et al., 2022). A chi-square (χ^2) test identified significant differences in demographic characteristics across clusters at 5% significance.

2.5.2. Questionnaire on the "High in Sodium" warning and information about sodium-reduction technologies

An analysis of variance (ANOVA) was conducted for responses to each questionnaire item, with clusters treated as the factor. When significant effects were detected. Tukey's test was applied at a 5% significance level ($P < 0.05$) to identify pairwise differences among groups.

2.5.3. Conjoint analysis

Purchase intention was analyzed using a mixed-effects ANOVA (Naes et al., 2010), with the two factors from the factorial design, the front-of-pack "high in sodium" warning and the sodium-reduction technologies, as fixed effects and participant as a random effect.



Fig. 1. Visual stimuli of burger labels. BTG = no claims; BGA = with front-of-pack "high in sodium" warning; BGR = with sodium reduction; BSR = with front-of-pack "high in sodium" warning and sodium reduction; BUS = with sodium reduction via ultrasound and finer salt; BUA = with front-of-pack "high in sodium" warning and sodium reduction via ultrasound and finer salt; BSG = with sodium reduction via ultrasound and finer salt while preserving salty taste; BSA = with front-of-pack "high in sodium" warning and sodium reduction via ultrasound and finer salt while preserving salty taste.

Multiple comparisons were performed with Tukey's HSD ($P < 0.05$).

The relative importance of each factor and the part-worth utilities for each level were estimated following Lima Filho et al. (2015). An individual additive model with dummy variables was fitted, such that the contributions of each factor sum to the total utility U associated with purchase intention given the labels. The factors and levels were: (i) the "high in sodium" warning (present vs absent); and (ii) information on sodium-reduction technologies (no claim; sodium reduction; sodium reduction via ultrasound and finer salt; sodium reduction via ultrasound and finer salt while preserving salty taste), as shown in Eq. (1).

$$U = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + \varepsilon \quad (1)$$

where U denotes the theoretical total utility, $b_i$are the part-worth utilities associated with the levels of each factor, $X_i$are dummy variables indicating the presence or absence of each level in the stimuli, and $\varepsilon$is the random error term. After obtaining the level utilities, the relative importance (I_n) of each factor was calculated as in Raz et al. (2008):

$$I_n = \left[\frac{(U_{max} - U_{min})}{\Sigma(U_{max} - U_{min})}\right] \times 100 \quad (2)$$

where $(U_{max} - U_{min})$corresponds to the range of utilities for each factor, and the sum of all importance values equals 100%.

2.5.4. Software

All statistical analyses were performed using R software (version 4.2.3).

3. Results

3.1. Cluster analysis and demographics

Applying cluster analysis to the mean questionnaire scores identified

three distinct consumer profiles (Clusters 1, 2, and 3). Cluster 1 comprised the majority of respondents (50.25%), followed by Clusters 3 (25.00%) and 2 (24.75%), as illustrated by the dendrogram in Fig. 2.

Table 1 presents participants' demographic characteristics, gender, age group, educational level, household income, and burger consumption. Frequency segmented into three clusters: Cluster 1 (50.25% of consumers), Cluster 3 (25.00%), and Cluster 2 (24.75%). Each group reflects different levels of familiarity with the product evaluated in the survey.

Analysis of sociodemographic characteristics (Table 1) revealed significant differences ($P < 0.05$) for gender and age group. Clusters 1 and 3 were predominantly female (63.3% and 55.95%, respectively), whereas Cluster 2 showed a male majority (54.9%). Younger participants (18–24 years) were more frequent in Clusters 2 and 3 (34.3% and 35.9%, respectively) than in Cluster 1 (21.7%). Regarding education, only completing elementary school differed significantly, with more people in Cluster 2 doing so. No significant differences were observed among clusters for household income or burger consumption frequency, indicating similar profiles for these variables.

3.2. Consumer perceptions of the "high in sodium" warning and sodium-reduction technologies

Table 2 presents responses related to the front-of-pack "high in sodium" warning, purchase intention for reduced-sodium burgers and acceptance of technologies such as ultrasound and the use of finer salt.

Cluster 1 stood out for greater attention to labels: it was the group most likely to check for the "high in sodium" warning, strongly support its implementation and report that the warning significantly influences purchase decisions. By contrast, Clusters 2 and 3 rarely noticed the warning; Cluster 3 showed the lowest approval and the weakest influence of the warning on purchase intention. Regarding willingness to buy reduced-sodium burgers. Clusters 1 and 3 exhibited higher purchase intention, whereas Cluster 2 was the least inclined to purchase. When sodium reduction involved technologies such as ultrasound application and the use of finer (reduced-granulometry) salt. Clusters 1 and 3 again showed greater acceptance, whereas Cluster 2 was less open to these innovations.

Cluster 1, composed mainly of women aged 25–34 years with higher educational attainment and medium-to-high income, showed greater interest in reduced-sodium products and higher acceptance of reformulation technologies. Cluster 3 was slightly female-predominant among younger participants (18–34 years), with education ranging from incomplete higher education to postgraduate (*lato* sensu) and intermediate income. Despite rarely noticing the "high in sodium" warning, this group did not consider it influential in their purchase decisions.

Finally, Cluster 2 consisted predominantly of men (18–24 years), with the highest proportion of participants having completed elementary education and reporting intermediate income. This group demonstrated low attention to the "high in sodium" warning and a lower willingness to purchase reduced-sodium burgers using technologies such as ultrasound and finer salt, suggesting reduced interest in healthier

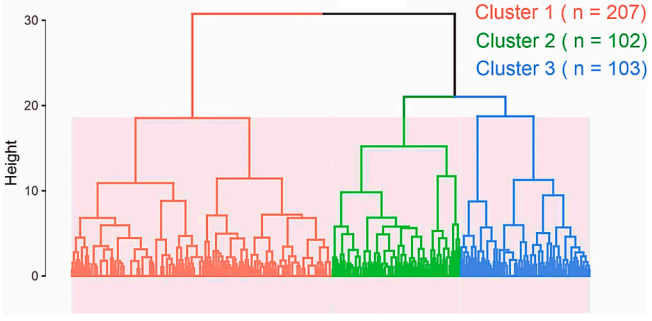


Fig. 2. Dendrogram resulting from the hierarchical cluster analysis based on demographic characteristics and questionnaire responses of beef burger consumers.

Table 1
Sociodemographic characteristics of participants ($n = 412$).

Characteristics	Cluster 1	Cluster 2	Cluster 3	*P*-value	Total
Cluster size (%)	50.25	24.75	25.00	–	100
Gender					
Female	63.3[a]	44.1[c]	55.95[b]	< 0.01	44.1
Male	36.7[c]	54.9[a]	44.04[b]	< 0.01	54.9
Others	0.0	1.0	0.00	0.21	1.0
Age					
18–24	21.7[b]	34.3[a]	35.9[a]	< 0.01	28.4
25–34	40.1	32.4	35.9	0.39	37.1
35–44	17.9	11.8	13.9	0.32	15.3
45–54	8.2	7.8	6.8	0.90	7.8
55–64	7.7	6.9	4.9	0.63	6.8
≥ 65	4.3	6.9	2.9	0.38	4.6
Education					
Incomplete primary school	0.0	1.0	0.0	0.21	0.0
Complete primary school	0.0[b]	2.0[a]	0.0[b]	< 0.01	0.5
Incomplete high school	0.5	2.0	1.0	0.46	1.0
Complete high school	4.3	6.9	6.8	0.54	5.6
Incomplete high school	22.7	21.6	33.0	0.09	25.0
Complete high school	24.7	23.5	16.5	0.87	22.3
Complete postgraduate (specialization)	15.5	12.7	10.7	0.54	13.6
Complete postgraduate studies	32.4	30.4	32.0	0.76	31.8
Monthly household income*					
≤ 1	4.8	5.9	6.8	0.34	5.63
1–3	25.6	22.5	34.0	0.32	26.6
3–5	20.8	21.6	14.6	0.23	19.4
5–10	25.6	21.6	16.5	0.34	22.3
>10	17.9	18.6	24.3	0.76	19.7
Burger consumption frequency					
Daily	0.5	0.0	0.0	0.36	0.45
3–4 times a week	1.0	0.0	1.0	0.78	0.73
1–2 times a week	15.5	16.7	21.4	0.89	17.21
2–3 times a week	45.8	47.1	45.6	0.56	46.12
Once a month	35.3	33.3	31.1	0.32	33.7

* Minimum wage = R$ 1412 reais (April 2025).

Table 2
Questionnaire responses on the front-of-pack "high in sodium" warning and the use of sodium-reduction technologies on burger labels.*

Questionnaire	Cluster 1	Cluster 2	Cluster 3	*SEM
Checks for the "high in sodium" warning when market	3.62[a]	2.09[b]	1.85[b]	0.06
Opinion about the implementation of the "high in sodium" warning	4.64[a]	3.95[b]	3.01[c]	0.07
The "high in sodium" warning influences the purchase decision	4.03[a]	2.96[b]	2.59[c]	0.12
Willing to buy reduced-sodium burgers	4.43[a]	3.63[c]	4.06[b]	0.17
Willing to buy a burger with "Ultrasound application"	3.74[a]	2.74[b]	3.91[a]	0.02
Willing to buy a burger "With finer salt"	3.91[a]	3.03[b]	4.10[a]	0.21

* SEM = standard error of the mean. Different letters within the same row indicate significant differences among treatments ($P < 0.05$).

product options.

3.3. Conjoint analysis

The ANOVA results, shown in Table 3, indicated a significant interaction effect ($P < 0.05$) between the "high in sodium" warning and the "sodium-reduction technologies" factors on purchase intention for burger labels.

Fig. 3 presents purchase-intention results for the eight labels with different stimuli, considering the interaction between factors, obtained via conjoint analysis. The presence of the front-of-pack "high in sodium" warning significantly reduced purchase intention across all labels in which it appeared, reinforcing the deterrent effect of this type of nutrition labeling. Conversely, the label carrying the claim "with sodium reduction" (BGR) showed the highest mean purchase intention, suggesting that when sodium reduction is clearly communicated, consumers may perceive it as a healthy and desirable attribute.

Labels containing claims about sodium-reduction technologies, such as "ultrasound application" and "finer salt" (BUS and BSG), did not significantly reduce purchase intention. This indicates that consumers accept these technologies and do not perceive them as detrimental to product quality or taste.

Based on Table 4, the most influential factor in consumers' purchase intention was the set of sodium-reduction technology stimuli (61.1% relative importance), followed by the front-of-pack "high in sodium" warning (38.9%). Regarding mean utilities, the presence of the "high in sodium" warning negatively affected purchase intention (−0.245), whereas its absence positively affected purchase intention (0.245). For the technology factor, a negative utility (−0.436) was observed for labels without any technology claim.

Among the sodium-reduction technologies, the USFSS label showed the highest positive utility (0.333), followed by USF (0.091), while the generic "with sodium reduction" claim was essentially neutral (0.012). These results indicate that consumers value the absence of the "high in sodium" warning and prefer labels that disclose the technologies used to reduce sodium, especially when benefits such as preserving salty taste are highlighted, as in the USFSS label.

4. Discussion

Segmenting consumers into three clusters revealed distinct profiles of attention and receptivity to labels featuring front-of-pack warnings and sodium-reduction technologies. Cluster 1, composed mainly of adult women with higher education and medium-to-high income, showed greater sensitivity to the "high in sodium" warning, consistent with evidence that adult women are generally more health-conscious and more likely to consider nutrition information when making purchase decisions (de Assumpção et al., 2017). The high acceptance of sodium-reduction technologies, such as ultrasound and finer salt, suggests that this group views such innovations positively, associating them with maintaining sensory quality without compromising health.

There is a clear gender difference in food choices and eating behaviors. In general, women are frequently reported to exhibit more health-promoting behaviors than men and to adopt healthier lifestyle patterns (Feng & Motoki, 2024; Lassen et al., 2016). Dumanovsky et al. (2011) also observed that women were significantly more likely to use calorie information in fast-food restaurants following the implementation of a regulation requiring menu boards to display the energy content of all menu items.

In contrast, Cluster 2, predominantly younger men with lower educational attainment, showed less attention to the warning and lower willingness to purchase reduced-sodium burgers. This pattern suggests that the mere availability of nutrition information may be insufficient to change behavior among less health-conscious or less motivated groups, underscoring the need for complementary communication and nutrition education strategies (Hercberg et al., 2022). As noted by Marieta et al. (2021), male consumers tend to report lower concern with healthy diets and pay less attention to food label information.

Cluster 3, slightly predominated by younger women, showed a low perception of the front-of-pack warning but a relatively favorable view of sodium-reduction technologies. This behavior suggests that even when consumers do not notice or value warnings, communicating the sensory and technological benefits of reformulated products can increase receptivity to them. This aligns with studies highlighting the importance of positive framing in perceptions of healthier foods (Vyth et al., 2010). Overall, considering audience characteristics through statistical methodologies such as cluster analysis enables firms to identify distinct consumer segments, facilitating more targeted and effective marketing strategies (Eriksson & Stenius, 2024; Li & Roe, 2024; Selani et al., 2022; Suh, 2025).

Its relevance becomes particularly evident in the context of food-choice behavior, where demographic, cultural, and socioeconomic

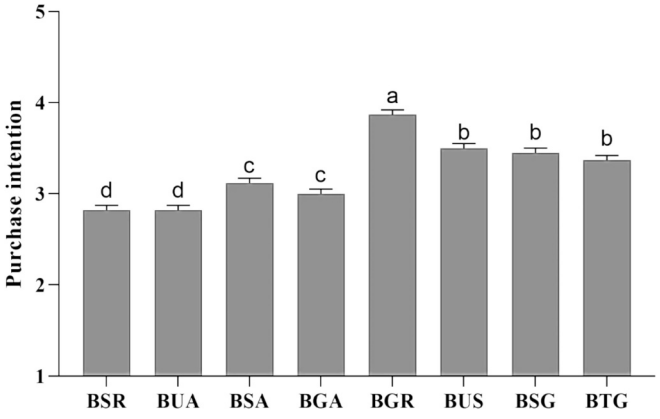


Fig. 3. Purchase intention based on burger labels. BTG = no claims; BGA = with front-of-pack "high in sodium" warning; BGR = with sodium reduction; BSR = with front-of-pack "high in sodium" warning and sodium reduction; BUS = with sodium reduction via ultrasound and finer salt; BUA = with front-of-pack "high in sodium" warning and sodium reduction via ultrasound and finer salt; BSG = with sodium reduction via ultrasound and finer salt while preserving salty taste; BSA = with front-of-pack "high in sodium" warning and sodium reduction via ultrasound and finer salt while preserving salty taste.

Table 4
Mean part-worth utilities by level and relative importance of factors.

Factors	Levels	Utility	Relative importance
Front-of-pack "high in sodium" warning	Present	−0.245	38.9%
	Absent	0.245	
Sodium-reduction technologies	No technology claim	−0.436	61.1%
	With sodium reduction	0.012	
	USF	0.091	
	USFSS	0.333	

USF = sodium reduction via ultrasound and finer salt; USFSS = sodium reduction via ultrasound and finer salt while preserving salty taste.

Table 3
Fixed effects from the mixed-effects ANOVA for expected purchase intention for burger labels featuring different stimuli.

Factors	SS	df	F-value	*P*-value
"High in sodium" warning	350.83	1	422.8	<0.001**
Sodium-reduction technology claims	17.82	3	8.21	<0.001**
"High in sodium" × claims* (interaction)	68.78	3	31.69	<0.001**

* claims: Sodium-reduction technology.

factors shape consumption patterns in complex and heterogeneous ways. By grouping consumers according to shared characteristics and behavioral tendencies, clustering reveals well-defined profiles. Although gender differences in meat intake are well documented, (Hopwood et al., 2024) demonstrated in a large cross-cultural study (20,802 individuals across 23 countries) that men consistently consume meat more frequently than women, however, this difference increased significantly in countries with greater human development and gender equalit. The authors concluded that in more developed societies, increased opportunities to express personal preferences amplify behavioral differences between men and women. These insights are consistent with the results of the present study, which show that responses differ substantially when consumers are segmented by gender and education level.

Conjoint results reinforce the effectiveness of the "high in sodium" warning, which significantly reduced purchase intention when displayed, whereas sodium-reduction claims enhanced the attractiveness of burgers. This pattern confirms that front-of-pack warnings act as salient risk cues that can discourage purchase by triggering health-related concern (Khandpur et al., 2019; Machín et al., 2019). Conversely, claims emphasizing reformulation or technological innovation tend to generate positive associations with product modernization and health improvement (Adasme-Berríos et al., 2020).

The highest utility observed for the USFSS level, combining sodium-reduction technologies with preservation of salty taste, highlights that consumer value products reconciling health and sensory pleasure, corroborating findings by Monteiro et al. (2024) and corroborated in other contexts by de Almeida et al. (2016), who reported that taste remains a decisive attribute even in "healthier" meat products.

Moreover, the predominance of sodium-reduction technologies as the most influential factor for purchase intention (61.1%) suggests that consumers perceive technological innovation aimed at nutritional improvement as desirable, potentially offsetting the negative effect of warning labels when sensory quality is preserved (Lähteenmäki, 2013; Trumbo et al., 2023). These findings emphasize the relevance of reformulation strategies that combine sodium reduction with sensory-preserving techniques, thereby meeting regulatory requirements while aligning with consumer expectations of taste and satisfaction.

In summary, this study demonstrates that front-of-pack warnings and reformulation technologies do not operate in isolation. Purchase intention is shaped by sociodemographic characteristics, health-risk perception, and the value placed on sensory attributes, dimensions previously highlighted in consumer segmentation studies on healthy product acceptance. These insights are crucial for the meat industry, suggesting that reformulated products should clearly communicate health benefits while assuring sensory quality to foster broader consumer acceptance.

5. Conclusion

The results demonstrate that the presence of the "high in sodium" warning significantly reduces purchase intention for beef burgers, confirming the decisive effect of this public policy. Conversely, claims about the use of sodium-reduction technologies, especially when emphasizing the preservation of salty taste and increased product attractiveness, evidence the potential of positive communication strategies to mitigate the warning's impact. Cluster analysis revealed that sociodemographic factors, such as gender, age, and education, modulate attention to labels and acceptance of the technologies used. These findings highlight the importance of integrating technological innovation, sensory communication, and labeling policies to develop healthier meat products. Therefore, the industry should prioritize transparency and clarity in label information, emphasizing technological and sensory benefits to promote more informed and sustainable food choices.

CRediT authorship contribution statement

Chimenes Leal de Araújo: Conceptualization, Investigation, Formal analysis, Writing – original draft. **Ana Sofia Martelli Chaib Saliba:** Conceptualization, Investigation, Formal analysis. **Monique Marcondes Krauskopf:** Conceptualization, Investigation. **Sarah Mafeis de Jesus:** Conceptualization, Investigation. **Carolina Naves Aroeira:** Formal analysis, Writing – review & editing. **Eduardo Eugênio Spers:** Conceptualization, Formal analysis, Writing – review & editing. **Miriam Mabel Selani:** Conceptualization, Formal analysis, Writing – review & editing. **Erick Saldaña:** Conceptualization, Formal analysis, Supervision, Writing – review & editing. **Carmen Josefina Contreras Castillo:** Conceptualization, Formal analysis, Funding acquisition, Investigation, Project administration, Resources, Supervision, Writing – review & editing.

Consent form

We, the authors of the manuscript titled "How the 'high in sodium' warning and information about emerging technologies on burger labels influence consumer purchase decisions" confirm that all authors have given their consent for its submission to Meat Science.

Declaration of competing interest

The authors declare that they have no competing interests.

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Data availability

Data will be made available on request.

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