The influence of Nutri-Score and pricing on purchasing decisions

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Introduction:

The steadily increasing prevalence of overweight and obesity in Germany, as well as in other high-income countries, highlights the urgent need to better understand people's dietary behavior (Schienkiewitz, 2022). To address this issue, there are various labels that indicate the healthiness of a product. One of these is the Nutri-Score. The Nutri-Score is a color-coded front-of-pack nutrition label, designed to help consumers make healthier food decisions. It rates food products on a range from a green A (healthiest) to a red E (least healthy) which allows consumers to assess the overall nutrition quality of products. According to De Temmermann (2021), consumers tend to have stronger purchase intentions for products with a better Nutri-Score (A and B) compared to those with a worse rating (D and E).

In addition to the Nutri-Score, price plays a significant role in purchasing decisions. Jaya and Heryjanto (2023) found that price has a positive influence on purchasing decisions, with consumers more likely to make a purchase when the price is perceived favorably. They also concluded that product quality significantly affects purchasing decicions.

Thus, if the Nutri-Score is perceived as an indicator of product quality, it should significantly influence purchasing behavior. Keeping these two factors (price and Nutri-Score) in mind, with our pre-registered-experiment we aimed to determine which of them has a greater influence on consumer purchasing decisions (https://aspredicted.org/j364-9pyr.pdf). Additionally, we wanted to find out how many cents consumers are willing to pay for an upgrade to a higher Nutri-Score level.

Stimulus Material:
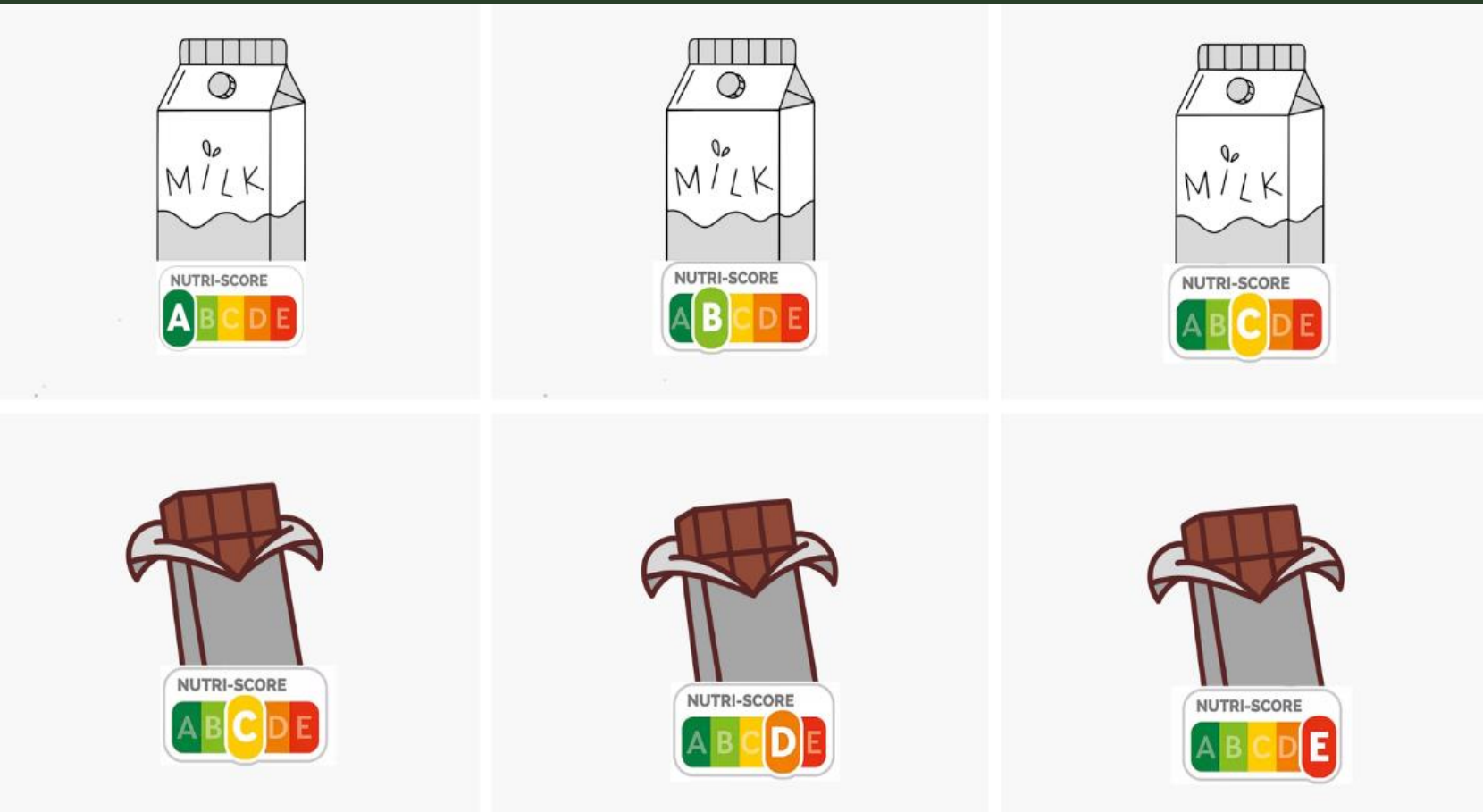
Limitations:

Despite obtaining significant results, several limitations must be acknowledged:
• Our sample consisted exclusively of German participants.
• The study focused solely on fictitious purchase decisions.
• We did not assess the participants' prior knowledge of the Nutri-Score.
• Only two product categories were analyzed.

Implications for Future Research:

These limitations suggest several directions for future research:
• Conduct cross-cultural studies to broaden the scope of findings.
• Compare the outcomes with real-world purchasing decisions.
• Include a study design that explains the Nutri-Score at the outset.
• Expand the range of product categories considered in the analysis.

Method:

The participants had to make multiple fictitious purchase decisions between two products (either two milk products or two chocolates) that vary in Nutri-Score and price. We varied between five Nutri-Scores (milk products: A,B,C; chocolate: C,D,E) and five prices (0,99€, 1,29€, 1,59€, 1,79€, 1,99€). Overall, each participant was assigned 40 decisions.

Hypotheses:
Main effects:
(H1) Cheaper products are preferred over more expensive products.
(H2) Products with a better Nutri-Score are preferred over products with a worse Nutri-Score.
(H3) On average, the price has a greater influence on the purchase decision than the Nutri-Score.

Interaction effects:
(H4) For people who perceive the healthiness of products as more important, the Nutri-Score has greater influence on the purchase decision.
(H5) For people who perceive the price of products as more important, the price has a greater influence on purchase decisions.

The study varied price and Nutri-Score within subjects. A total of 369 participants were included, drawn from a quota-representative sample of the German population (female: 53%, male: 47%; age: 18-73 years; mean: 46,59 years; SD: 15,50). Conjoint Analyses were utilized for the analysis and evaluation of the data.

Results:

As described in the method, we worked with both milk and chocolate bars. To simplify matters, only the results for the chocolate bar are discussed below, as the results for milk were similar.

Purchase decision chocolate bar			
Predictors	Odds Ratios	CI	p
PRICE	0.03	0.03 – 0.04	<0.001
NUTRISCORE [D]	0.40	0.37 – 0.44	<0.001
NUTRISCORE [E]	0.14	0.12 – 0.15	<0.001
Observations	14760		

	Chocolate bar, price is important			Chocolate bar, price is not important		
Predictors	Odds Ratios	CI	p	Odds Ratios	CI	p
PRICE	0.02	0.02 – 0.02	<0.001	0.20	0.14 – 0.29	<0.001
NUTRISCORE [D]	0.39	0.35 – 0.44	<0.001	0.36	0.28 – 0.46	<0.001
NUTRISCORE [E]	0.13	0.11 – 0.15	<0.001	0.10	0.07 – 0.14	<0.001
Observations	12600			2160		

	Chocolate bar, health is important			Chocolate bar, health is not important		
Predictors	Odds Ratios	CI	p	Odds Ratios	CI	p
PRICE	0.06	0.05 – 0.07	<0.001	0.01	0.01 – 0.01	<0.001
NUTRISCORE [D]	0.32	0.28 – 0.36	<0.001	0.50	0.43 – 0.58	<0.001
NUTRISCORE [E]	0.10	0.08 – 0.11	<0.001	0.17	0.14 – 0.21	<0.001
Observations	8440			6320		

Main effects:
All of the expected main effects are significant, as a result H1, H2 and H3 have been confirmed.

Interaction effects:
People for whom price is important are also more likely to base their purchasing decisions on this than people for whom price is not important (confirming H5).
People who care about their health pay less attention to price when making purchasing decisions (confirming H4).

Willingness to pay:
The model implies that on average people are willing to pay 27 cent in order to improve the Nutri-Score from D to C and are willing to pay 59 cent from E to C.

LITERATURE + SOURCES:
De Temmerman, J., Heeremans, E., Slabbinck, H., & Vermeir, I. (2021). The impact of the Nutri Score nutrition label on perceived healthiness and purchase intentions. *Appetite*.
Jaya, S.L., & Heryjanto, A. (2023). The Influence Of Price, Service Quality, And Product Quality On Purchase Decisions Mediated By Purchase Intention (Empirical Study: Kriss Store Consumers In Tangerang Regency). *Journal Research of Social Science, Economics, and Management*.
Schienkiewitz, A., Kuhnert, R., Blume. M., & Mensink, G. (2022). Übergewicht und Adipositas bei Erwachsenen in Deutschland – Ergebnisse der Studie GEDA 2019/2020-EHIS. *Journal of Health Monitoring*.