How working mothers choose between processed meat and vegetable products: A mixed-methods approach

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I. INTRODUCTION

The rising prevalence of adolescent obesity globally has been attributed to various factors, prompting efforts to combat this issue through strategies like providing nutritional information on food packaging [1]. Policies influencing food choices are crucial in addressing obesity, particularly among young individuals. Mothers who often make significant food decisions for their families can be influenced by front-of-package labels [2]. They encounter challenges in finding affordable and healthy options, such as processed meats, which are convenient but deemed unhealthy. This study aims to explore the link between working mothers and their subjective well-being in making choices regarding processed food products.

II. MATERIALS AND METHODS

620 women with children aged 10 to 18 were sampled using non-probabilistic online methods from June 2021 to December 2021. Various measurement tools were employed in the survey, including the Food Neophobia Scale, General Health Interest, Life Satisfaction Scale, Food-Related Life Satisfaction Scale, and Work-Family Balance Scale. A discrete choice model design was used to determine the factors influencing food choices, like ingredient count (Clean Label), portion size (Size), price (Price), nutritional warnings (Sodium NW and Fat NW), and protein source (Type). Cluster analysis and multinomial logit were conducted to categorize participants based on their responses to attributes of hamburgers like price, nutritional warnings, protein source, and package weight.

Descriptive statistics and factor analysis were conducted using JASP software, while Latent Gold software was employed for Latent Profile modeling. Profiles were established based on front-of-package attributes and sociodemographic data, with statistical criteria guiding selecting the most suitable model. The 4-class model was identified as the final choice, and a pairwise Wald test was executed to examine variables and covariates. Restrictions were imposed to enhance the model fit.

III. RESULTS AND DISCUSSION

Cluster 1, named Family-Oriented Plant-Based Mothers, represents the largest group with 48.72% of the total sample. This cluster shows a strong inclination towards plant-based food choices, minimal influence from nutritional warnings, and a preference for clean food labels, while mothers within this group adjust their selections based on their life satisfaction levels. Cluster 2, identified as Plant-Based Health-Conscious Mothers, displays a strong preference for plant-based options and a tendency to avoid nutritional warnings, particularly sodium and fat. Unlike the first cluster, this group is more inclined to make dietary choices based on their level of subjective well-being. Cluster 3, known as Meat Eaters Traditional Mothers, displays a preference for opting out rather than choosing the meat option. They show a stronger aversion to High Fat warnings compared to High Sodium warnings, and they highly value the Clean Claim attribute. This group, predominantly over 43 years old, consumes meat frequently but has lower Family Diet Followers and Life Satisfaction. Despite lower General Health Interest levels, they exhibit high food neophobia in both positive and negative aspects.

Cluster 4 comprises young immigrant mothers who are regular consumers of both meat and processed meat. This group shows a slight preference for higher prices (Price = 0.0051) and shows a positive attitude towards nutritional warnings, particularly favoring the "High Fat" warning (Fat NW = 0.3194) over the "High Sodium" warning (Sodium NW = -0.1577). This group exhibit the highest preference for larger package sizes (Size = 1.258) and are influenced by lower life satisfaction levels when making choices (SWL = -0.0876).

Table 1 – Summary of the choice model for the 4 class model.

	Wald	p-value	Class 1	Class 2	Class 3	Class 4
Class Size			0.4872	0.1921	0.2202	0.1005
Attributes						
Opt Out	52.3754	3.8e-19	-1.3831[a]	0.6735[b]	3.1245[a,b]	-1.3570[b]
Price	19.7314	0.0014	-0.0002	0.0000	-0.0013	0.0051[a]
Type	122.5504	2.4e-27	0.2206[a]	0.2206[a]	-1.5310[b]	-1.5310[b]
Sodium NW	20.9684	0.00032	0.0271[a]	-0.4797[b]	-0.1356[a,c]	-0.1577[a]
Fat NW	37.0339	1.8e-7	-0.0145[a]	-0.5822[b]	-0.2527[c]	0.3194[a]
Size	14.4483	0.006	-0.0300	0.1059	-0.0065	1.2580[a]
Clean Label	39.1868	6.4e-8	0.0691[a]	0.1981[a,b]	0.4656[b]	-0.9818[c]

Wald = Wald statistic; p-value = p-value for the Wald statistic; Different letters indicate significant differences between classes ($p<0,05$)

In between the Plant based (1 and 2) and the Meat based (3 and 4) clusters, there was a greater Health interest and self-reported diet interest, which concur with previous research [3]. Across the clusters, there was a dynamic between the NW, in these respect, the importance between each NW varies from cluster to cluster, which can be explained by the incapacity of the consumer to understand the difference between a product with one label, with two or without labels in respect of which is healthier [4].

IV. CONCLUSION

This study identified four distinct clusters of mothers based on their preferences and the influences of subjective well-being. Plant Based clusters were more influenced by subjective well-being. NW, claims and price had a greater impact in the Meat Based clusters. These findings support previous research suggesting a connection between health interest and dietary choices. Furthermore, the study highlights the varied influence of nutritional warnings across clusters, suggesting a need for targeted communication strategies based on consumer profiles.

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