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Comparative Preferences for Plant-Based Meat Products among Generations X and Y in Davao City using Conjoint Analysis

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A B S T R A C T

This study examines and compares Generations X and Y preferences for plant-based meat products in Davao City using conjoint analysis with the PAPRIKA method. Grounded in Lancaster's Product Attribute Model and Fishburn's Utility Theory, it evaluates four key attributes: taste, ingredients, nutritional information, and persuasive information type. Data from 360 participants (180 from each generation) were analyzed using 1000minds software. Findings show Generation X prioritizes taste and nutritional information, valuing health and convenience. Generation Y prefers diverse ingredients and peer reviews, reflecting a focus on balanced diets and social influence. These insights inform product development and marketing strategies, offering a framework for aligning offerings with generational preferences in the plant-based food sector.

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INTRODUCTION

In recent years, plant-based meat (PBM) products have gained global traction, fueled by growing health awareness, ethical concerns, and environmental sustainability (Willett et al., 2019). These products, designed to mimic the taste and texture of animal-based meat, offer a promising alternative to conventional diets and are increasingly seen not as niche but as mainstream consumer options (Tso & Forde, 2021). In the Philippine context, this movement is no longer confined to Metro Manila or affluent urban centers. Davao City, a growing metropolitan hub in Mindanao, is witnessing increased shelf space for PBM products in supermarkets and greater menu inclusion in local food establishments (Good Food Institute, 2024). Brands like San Miguel's Veega are spearheading this transition by creating affordable, locally accessible plant-based options that appeal to Filipino taste preferences (Lucas, 2020). However, while national demand is rising, consumer preferences for PBM—especially across different age groups—remain underexplored, and understanding these preferences is crucial for designing effective food innovations and targeted marketing strategies.

Both Generation X (aged 44–59) and Generation Y (aged 28–43) represent significant consumer blocs with distinct behavioral patterns. Generation X, often described as practical and health-conscious, tends to favor products that offer nutritional transparency and convenience, while Generation Y, shaped by digital culture and social awareness, is more likely to prioritize sustainability, peer validation, and ingredient composition (Neff et al., 2021). Despite clear generational differences in values, limited empirical research has systematically examined how these preferences manifest in food-related decisions, particularly in the context of plant-based products in the Philippines. This gap presents both a theoretical opportunity and a practical necessity. Without granular, generational insights, businesses risk designing generic campaigns that fail to engage diverse consumer segments. More importantly, understanding these generational dynamics could support the country's ongoing transition toward more sustainable food systems.

To respond to this gap, this study employs conjoint analysis—a robust decision-modeling tool grounded in Lancaster's Product Attribute Model and Fishburn's Utility Theory—to assess how Davaoeño consumers from Generation X and Y evaluate four key PBM attributes: taste, ingredients, nutritional information, and the most persuasive information type. By leveraging the PAPRIKA method and involving 360 residents equally divided between the two generations, this research determines the utility-maximizing combinations of product features that influence generational choices. The use of conjoint analysis in Filipino consumer studies has shown its effectiveness across varied fields. For instance, Sumatra (2023) used it to explore Gen Z's financial product preferences in Davao City, revealing how strategic marketing through social media channels can shift product appeal. Similarly, in tourism, Sumatra (2025) found that Gen Z travelers valued experiential features like water activities and sustainability in resort selection, suggesting that younger Filipino consumers make decisions based on multi-attribute evaluations. Even in the political sphere, Sumatra (2024)

demonstrated that Gen Z voter preferences for senatorial candidates were significantly influenced by communication style and platform clarity. These studies underscore that Filipino consumers—particularly younger ones—are highly responsive to specific product attributes, not just general trends or branding.

Building on these insights, this study contributes a novel and contextually relevant perspective to both academic literature and business practice. Theoretically, it enhances our understanding of how generations differ in evaluating food innovations, offering a refined view of generational consumer theory in a Southeast Asian context. Practically, it provides actionable data for food producers, marketers, and advocacy groups seeking to promote plant-based diets in the Philippines. By identifying which attributes are most persuasive to Generation X and Y in Davao City, this study helps shape more inclusive, effective, and culturally resonant food strategies. Ultimately, it argues that a sustainable food future requires not only innovation but also precision—knowing exactly which values, formats, and messages resonate with whom.

LITERATURE REVIEW

To understand how consumers from Generations X and Y in Davao City make decisions about plant-based meat products, this study is grounded in two key economic and behavioral theories: Kelvin Lancaster's Product Attribute Model and Peter Fishburn's Utility Theory. These theories offer insight into how individuals assess product features and make choices based on preferences and perceived satisfaction. By anchoring the research in these models, the study is able to explore not only what product attributes are most valued but also how consumers prioritize these attributes in decision-making. The integration of these theories provides a comprehensive framework for designing the conjoint analysis and interpreting the resulting preference data.

Product Attribute Model by Kelvin Lancaster (1966, 1979)

Lancaster's Product Attribute Model proposes that consumers do not derive utility from products as singular items but rather from the attributes that make up those products. This theory views consumption as a process of evaluating bundles of characteristics, which collectively provide satisfaction (Lancaster, 1966). Applied to plant-based meat products, this means that consumers are not simply choosing "a patty" or "a nugget"—they are evaluating specific attributes such as taste, ingredients, nutritional information, and the most persuasive information type. This model is particularly relevant for innovations like PBM, where consumer adoption depends on the ability of the product to meet various expectations—health benefits, familiarity, ethical alignment, and palatability.

In this study, Lancaster's model directly informed the design of the conjoint analysis. Attributes and their corresponding levels were systematically identified, refined, and presented to respondents to simulate real-world trade-offs. By examining how respondents from Generations X and Y prioritize these features, the model helps identify which combinations generate the most perceived value and satisfaction. This analytical approach allowed for the

assessment of individual attribute importance and the generation of utility scores, which are central to identifying consumer-driven product design.

Utility Theory by Peter Fishburn (1968)

Fishburn's Utility Theory complements Lancaster's model by providing a structure for how individuals rank and compare alternatives. It is based on the assumption that consumers act rationally and can express consistent preferences among choices (Fishburn, 1968). Core principles such as completeness, transitivity, more-is-better, and mix-is-better explain how people systematically choose the alternative that provides the highest perceived utility. This is especially applicable in decision scenarios involving trade-offs between competing product attributes—like health versus taste or sustainability versus cost.

Within this study, Utility Theory supports the interpretation of the results obtained through conjoint analysis. It provides the theoretical justification for assuming that the preferences elicited from participants reflect real-world decision-making behavior. For example, when a Generation Y participant consistently chooses options with customer reviews over expert recommendations, Utility Theory explains this as a rational expression of preference. The theory also reinforces the notion that preferences are not random but are shaped by stable internal values, particularly as they relate to generational identity, lifestyle, and information processing.

Together, the Product Attribute Model and Utility Theory create a solid foundation for understanding and measuring consumer preferences for plant-based meat products. Lancaster's model allows the study to deconstruct a product into its constituent attributes, while Fishburn's theory explains how these attributes are evaluated and ranked based on perceived utility. Their integration justifies the methodological choice of conjoint analysis and enhances the explanatory power of the findings, especially when comparing generational differences. As shown in Figure 1, these theories converge to guide the construction of the study's conceptual framework, where each attribute and preference pattern is mapped to better understand the decision-making behavior of Generations X and Y.

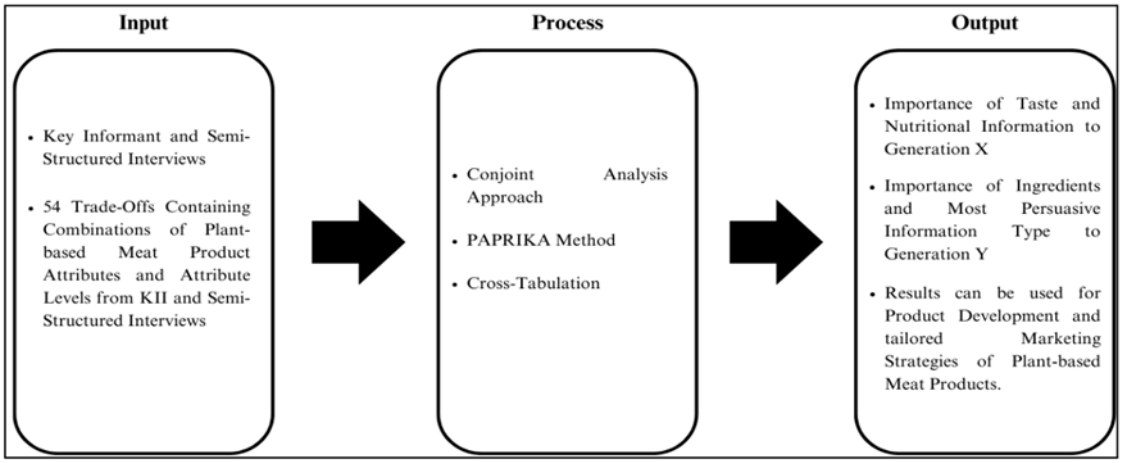

Figure 1. Conceptual Framework

METHODOLOGY

This study used a quantitative research design to determine and compare the preferences of Generation X and Generation Y in Davao City toward plant-based meat products. A conjoint analysis approach, implemented through the 1000minds software using the PAPRIKA method, was employed to assess respondents' preferences based on four key attributes: taste, ingredients, nutritional information, and most persuasive information type. The attribute list was refined through key informant (n = 10) and semi-structured interviews (n = 3) prior to the main data collection.

The target population comprised residents of Davao City who belong to Generation X (born 1965–1980) and Generation Y (born 1981–1996). A total sample size of 360 respondents was determined, with 180 participants from each generation, based on conjoint analysis recommendations and a 20% buffer to account for non-response or verification issues. Participants were recruited through multi-stage sampling, combining stratified, time-based systematic, and purposive sampling strategies. Data were gathered face-to-face at supermarkets and regional malls across three districts in Davao City over a six-week period, from September 30 to November 11, 2024.

Participants completed a web-based online survey questionnaire generated by 1000minds, which presented a series of pairwise trade-offs derived from the selected attributes. The questionnaire was validated through a pretest involving 30 respondents, with results showing strong agreement and correlation (Kendall's W = 0.756; Spearman's $\rho \approx 0.753$), confirming its reliability.

Data analysis was conducted using 1000minds, which automatically generated utility scores and rankings based on participant responses. Descriptive statistics were used to summarize demographic data, and cross-tabulation was employed to identify similarities and differences between the two generational cohorts. Ethical considerations were upheld throughout the research process, including informed consent, data privacy, and responsible data retention and disposal in accordance with 1000minds' data policy and academic research guidelines.

RESEARCH RESULT

Overview of Demographics

The final sample consisted of 360 verified respondents from Davao City, equally divided between Generation X (aged 44–59) and Generation Y (aged 28–43). An initial total of 368 participants was reduced to 360 after applying the 1000minds verification criteria. The gender distribution was even, with 50% male and 50% female respondents.

In terms of monthly income, 12.8% of respondents earned below Php 20,000, 25% earned between Php 21,000 and Php 25,000, 32.2% earned between Php 26,000 and Php 30,000, and 30% earned above Php 30,000. This income distribution, along with the fact that respondents were drawn from a mix of middle- to upper-income groups, suggests a solid potential purchasing power for plant-based meat products.

Geographically, the sample was evenly distributed, with 33.3% of respondents from District 1, 33.3% from District 2, and 33.3% from District 3. This

balanced representation across Davao City's administrative districts ensures that regional differences in product preferences can be reliably assessed.

The demographic distribution, as summarized in Figure 2, provides a comprehensive background of the sample and lays a robust foundation for analyzing the differences in product attribute preferences between Generations X and Y.

Figure 2. Demographic Profile of Respondents

Relative Importance of Attributes

Results from the conjoint analysis using the PAPRIKA method revealed that taste is the most important attribute influencing the preferences of Generations X and Y for plant-based meat products in Davao City. With a utility score of 37.3%, taste significantly outweighed other factors, reflecting a strong inclination toward flavor profiles such as mostly plant-like and somewhat meat-like. This highlights the critical role of flavor in determining consumer acceptance of plant-based alternatives.

Ingredients followed as the second most influential attribute, with a utility score of 26.8%, indicating that the composition of the product, whether it includes artificial, natural, or combined preservatives, also plays a substantial role in decision-making.

The most persuasive information type, such as customer reviews or ingredient highlights, accounted for 21.1% of importance, suggesting that credible and relatable information sources can impact purchasing behavior.

Lastly, nutritional information received a utility score of 14.7%, making it the least prioritized attribute among the four, although still a contributing factor in the decision-making process.

As shown in Figure 3, these results collectively suggest that Generations X and Y place the greatest emphasis on taste and ingredients, underscoring the need for product developers and marketers to focus on flavor authenticity and ingredient transparency in plant-based meat products.

Relative importance of attributes

Each number is the ratio of the relative importance, or weight, of the attribute on the left, relative to the attribute at the top

		Taste 37.3%	Ingredients 26.8%	Most Persuasive Information Type 21.1%	Nutritional Information 14.7%
Taste	37.3%		1.4	1.8	2.5
Ingredients	26.8%	0.7		1.3	1.8
Most Persuasive Information Type	21.1%	0.6	0.8		1.4
Nutritional Information	14.7%	0.4	0.5	0.7	

Figure 3. Relative Importance of Attributes

Most and Least Preferred Combination of Attribute Levels

Analyzing the most and least preferred combinations of attribute levels among Generations X and Y in Davao City offers meaningful insights into the factors influencing their plant-based meat product choices. As shown in Table 1, the most preferred combination—Product 81—received the highest utility score of 100%. This product featured a mostly plant-like taste, combined artificial and natural preservatives, a simple overview of nutritional information, and relied on customer reviews as the most persuasive information type. These attribute levels reflect a strong preference for products that are perceived as balanced, transparent, and relatable, consistent with the health-conscious and socially informed values of both generations.

In contrast, Product 1 ranked lowest with a utility score of 0%, making it the least preferred combination. This product included a very meat-like taste, artificial preservatives, detailed and technical nutritional information, and emphasized product features as its primary information type. The low ranking suggests that respondents were less receptive to overly technical or heavily

artificial product presentations, reinforcing the importance of simplicity, familiarity, and a perceived naturalness in plant-based product marketing.

These findings underline the generational shift toward food products that align with evolving values around health, sustainability, and consumer trust.

Table 1. Most and Least Preferred Combination of Attribute Levels

Product	Rank	Score	Taste	Ingredients	Nutritional Information	Most Persuasive Information Type
Product 81	1st	100%	Mostly Plant-Like (clear plant-based taste)	Combined Artificial and Natural Preservatives	Simple Overview (basic nutritional summary)	Customer Reviews (testimonials, endorsement)
Product 72	2nd	94%	Mostly Plant-Like (clear plant-based taste)	Natural Preservatives (for ample shelf life)	Simple Overview (basic nutritional summary)	Customer Reviews (testimonials, endorsement)
Product 78	3rd	92.80%	Mostly Plant-Like (clear plant-based taste)	Combined Artificial and Natural Preservatives	Focused Information (key details, not technical)	Customer Reviews (testimonials, endorsement)
Product 2	79th	9.50%	Very Meat-Like (almost exactly like real meat)	Artificial Preservatives	Detailed and Technical (very specific details)	Ingredient Highlights (basic ingredient info)
Product 4	80th	7.50%	Very Meat-Like (almost exactly like real meat)	Artificial Preservatives	Focused Information (key details, not technical)	Product Features (key details; benefits, uses)
Product 1	81st	0.00%	Very Meat-Like (almost exactly like real meat)	Artificial Preservatives	Detailed and Technical (very specific details)	Product Features (key details; benefits, uses)

Cross-Tabulation Results

Cross-tabulation compared the preferences of Generation X and Generation Y for plant-based meat product attributes. As shown in Figure 4, all 360 verified responses were evenly divided between the two generations.

Generation X ranked taste as the most important attribute (38.2%), followed by ingredients (26.6%), most persuasive information type (20.5%), and nutritional information (14.8%). Similarly, Generation Y prioritized taste (36.4%), then ingredients (27.1%), persuasive information (21.8%), and nutritional information (14.7%).

While both groups valued taste most, subtle differences emerged. Generation X preferred simple nutritional overviews, suggesting a focus on clarity, while Generation Y leaned more toward social proof, favoring customer reviews. These findings highlight the need for generation-specific marketing and product strategies to effectively target preferences and maximize appeal.

Mean utilities vs Generation

	Generation		
Mean utilities	X: 1965-1980 (n=180)	Y: 1981-1996 (n=180)	Row mean (n=360)
Taste	**38.2%**	**36.4%**	**37.3%**
Very Meat-Like (almost exactly like real meat)	0.0%	0.0%	0.0%
Somewhat Meat-Like (a bit like real meat)	19.0%	17.8%	18.4%
Mostly Plant-Like (clear plant-based taste)	38.2%	36.4%	37.3%
Ingredients	**26.6%**	**27.1%**	**26.8%**
Artificial Preservatives (for longer shelf life)	0.0%	0.0%	0.0%
Natural Preservatives (for ample shelf life)	20.3%	21.3%	20.8%
Combined Artificial and Natural Preservatives	26.6%	27.1%	26.8%
Most Persuasive Information Type	**20.5%**	**21.8%**	**21.1%**
Product Features (key details: benefits, uses)	0.0%	0.0%	0.0%
Ingredient Highlights (basic ingredient info)	9.5%	9.5%	9.5%
Customer Reviews (testimonials, endorsement)	20.5%	21.8%	21.1%
Nutritional Information	**14.8%**	**14.7%**	**14.7%**
Detailed and Technical (very specific details)	0.0%	0.0%	0.0%
Focused Information (key details, not technical)	7.5%	7.6%	7.5%
Simple Overview (basic nutritional summary)	14.8%	14.7%	14.7%

Figure 4. Cross-Tabulation Results

DISCUSSION

Key Findings

Gen X and Y respondents in Davao City prioritized Taste (37.3%) and Ingredients (26.8%) when choosing plant-based meat products, aligning with existing global and local studies. Most Persuasive Information Type (21.1%) and Nutritional Information (14.7%) were less influential. The findings also show that respondents with monthly incomes of ₱26,000–₱30,000 are more inclined toward these products, reflecting affordability and access.

Taste preference was highest for "mostly plant-like," contrasting van Vliet (2020), who suggested meat-like mimicry. Instead, local preferences lean toward authenticity in taste. Ingredients were also highly valued, especially balanced preservatives (Ghali, 2024), suggesting consumers seek both health and convenience. Although persuasive information and nutritional details were ranked lower, their role remains notable but context-specific.

The top product combinations reflected attributes such as plant-like taste and customer reviews. Meanwhile, the least preferred combinations included meat-like taste and artificial preservatives, emphasizing consumer rejection of overly processed profiles. Cross-tabulation revealed Gen X values nutrition and simplicity, while Gen Y values ingredient transparency and peer endorsements.

Implications to Theory

Lancaster's Product Attribute Model explains how consumers like Gen X and Y derive satisfaction from bundled features (e.g., taste, ingredients), while Fishburn's Utility Theory frames their choices as utility-maximizing acts. For Gen X, this meant practical, health-oriented choices. For Gen Y, it meant sustainability and transparency.

These theories help explain why Gen X leans toward simpler product communication and Gen Y responds better to peer-driven persuasion and branding strategies. Both theories underline the importance of aligning marketing with consumer-perceived value to foster loyalty and advocacy in the plant-based sector.

Implications to Research

This study confirms the critical roles of taste and ingredient transparency in plant-based product development. Differences in utility scores by generation suggest nuanced preferences that future studies can explore further. Systematic comparisons across regions or generations will help build a more comprehensive profile of consumers.

Using 1000minds' PAPRIKA method provided robust data modeling for both individual and aggregate preferences, allowing for future deeper explorations into market segmentation and behavior patterns.

Implications to Practice

For brands like Veega, understanding generational preferences is key to formulating successful products and campaigns. Gen X favors in-store samplings and nutritional simplicity. Gen Y responds well to social media marketing and persuasive content such as testimonials. These insights support differentiated product development and positioning strategies tailored to each group's values.

CONCLUSIONS AND RECOMMENDATIONS

This study revealed that both Generation X and Generation Y residents in Davao City tend to prefer plant-based meat products that feature a distinctly plant-like taste and a balanced blend of artificial and natural preservatives. While some generational differences emerged in attribute rankings, the shared values of health consciousness, simplicity, and peer-driven influence shaped much of their consumer behavior. These findings reflect a broader trend where consumers prioritize clarity, authenticity, and perceived well-being in their food choices.

Demographic analysis further indicated that middle- to upper-income earners are the most engaged segment in this market, suggesting that plant-based meat producers should position their products strategically in areas with similar socioeconomic profiles. The geographic distribution and purchasing power of these groups provide strong opportunities for targeted marketing and product development initiatives in Davao City.

Based on the findings, it is recommended that educational efforts be tailored to meet generational expectations. For Generation X, initiatives such as in-store tastings, simplified nutritional content, and product transparency will align with their desire for health-conscious yet practical food options. For

Generation Y, digital engagement through mobile-accessible content, customer reviews, and influencer-driven campaigns will more effectively capture their interest and buying behavior.

Supermarkets and malls should consider designating specific shelf spaces for plant-based products, using clear and accessible labeling for Generation X and integrating digital tools like QR codes for Generation Y. These enhancements not only improve visibility but also strengthen trust and credibility in the product.

For businesses, product development must align with these generational preferences. Products targeting Generation X should feature straightforward nutritional summaries and authentic plant-based flavors, while those for Generation Y should emphasize ingredient transparency, balanced preservatives, and persuasive social proof. Across the board, overly technical nutritional details and exclusively artificial ingredients should be avoided, as these are shown to deter preference.

ADVANCED RESEARCH

Despite its contributions, this study presents several limitations. The scope was confined to Generation X and Y residents in Davao City, which restricts the broader applicability of its findings. The use of mall-based intercept surveys may have introduced selection bias, as it may not fully capture the diversity of perspectives present in the general population. Additionally, the PAPRIKA method, while effective in simplifying decision-making, may not reflect the multidimensional nature of real-world consumer choices, especially those influenced by brand recognition, price sensitivity, or social context.

To address these limitations, future research should expand its geographic and generational scope, including other urban and rural locations as well as different age groups. A comparison of stated preferences with actual purchasing behavior will enhance understanding of consumer reliability. It is also recommended to include additional product attributes—such as pricing, branding, and sustainability certifications—to produce a more holistic view of decision-making. More complex conjoint analysis techniques like discrete choice experiments (DCE) may better simulate real-world trade-offs and consumer actions. Finally, future studies should explore how sustainability concerns, environmental values, and emerging dietary trends influence the evolving landscape of plant-based consumption, ensuring research remains responsive to the dynamic nature of food markets.

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