

Factors Affecting Infant Milk Purchase Intention in Karachi

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Abstract

Infant milk acquisition decisions of consumers develop across several elements which embrace recognized brand quality together with price levels and cultural influences and nutrition education and promotional initiatives. The research analyzes essential product purchase factors for infant milk among Karachi residents by using a quantitative methodology. A structured research survey built the data foundation which underwent statistical regression and correlation testing to find important purchase prediction variables. The study reveals that brand recognition together with pricing factors dominate purchase behavior yet nutritional information proves equally important to customers. Parental brand preferences arise from cultural influences that modify their trust towards local brands as well as international ones because of social traditions and traditional values. Purchase intention reacts to measurable marketing and advertising effects due to their ability to enhance brand perceptions which subsequently influences consumer selections. This research confirms that consumers need product information transparency alongside customized marketing approaches to achieve trust in brands. The study suggests implementing regulatory policies to manage advertising statements and starting educational campaigns about infant diet while setting prices to make products more accessible. The study offers relevant marketplace understanding to all groups who work with promotional activities and regulated product distribution of infant milk formulas. Research investigation should focus on digital marketing effects alongside modern customer preferences within the infant nutrition market.

Keywords: Purchase Intention

Introduction

Overview and Background of the Study

Infant formula milk powder plays a crucial role in shaping the nutritional well-being of infants, impacting families, and contributing to the future of the nation. The fallout from the 2008 melamine incident in China triggered a significant crisis in the credibility of brands within the infant formula industry, leading to a shift towards imported products. However, the global repercussions of COVID-19 in 2019 have brought about substantial changes in the dynamics of Karachi's infant formula market, resulting in a decline in imports and a renewed trust in locally produced brands. Because of upset worldwide stock chains, the baby recipe industry in Karachi has encountered a remarkable flood in the piece of the pie of homegrown brands, combined with a resulting decrease in imports. Regulatory activities, for example, the execution of the "Newborn Child Recipe Item Equation Enrollment the Board Measures" by the Chinese government, play had a crucial impact in improving the quality and security norms of privately made equation items. The year 2020 denoted a huge defining moment, flaunting a 99.89% testing qualified rate and an expanded homegrown piece of the pie of 54%.

The research adopts several theoretical frameworks which include the Theory of Planned Behavior and Customer Value Hierarchy Model together with Social Exchange Theory and the Technology Acceptance Model to examine the infant milk buying factors in Karachi. These theories unravel how customers make decisions about brand reputation as well as value dimensions and cultural effects alongside marketing approaches within the infant milk market. Western-imported foods in Pakistan experience growing popularity due to globalization's ongoing impact on worldwide change. The market shows upward growth because of transformations in lifestyles combined with increasing financial freedom and media campaigns. The accessibility of Western dietary imports to Pakistani consumer groups offers practical advantages with cultural variety yet presents challenges regarding food production sustainability and regional farmers. (Faheem, 2018) Surging consumer preferences for brand choices within the market stands as the main focus of (Afzal & Faisal, 2018) which takes a closer look at the infant formula market developments across Karachi's regions. Complete knowledge about the elements shaping product preferences remains crucial for companies that want to understand Karachi's changing infant formula sector.

Problem Statement

The study investigates which factors influence infant milk purchase decisions across Karachi. Researchers analyze the variables that influence consumer decisions about infant milk purchases within the Karachi area according to customer behavior regarding milk consumption for infants. Through an investigation into variables such as brand reputation, price sensitivity, nutritional awareness, cultural factors, and marketing and advertising influences, the research aims to provide insights into consumer behavior and preferences regarding infant milk consumption.

(Afzal, Hannan; Faisal, Farida. "Determinants of Procurement Expectation for Bundled Milk." *Diary of Business and Financial matters; Islamabad Vol. 10, Iss. 2, (Jul-Dec 2018): 72-87*).

Objectives of the study

1. Identify the demographic characteristics of consumers purchasing infant milk in Karachi.
2. Explore the impact of pricing and affordability on consumer purchase of infant milk products.
3. Analyze the influence of cultural and societal norms on infant milk purchasing patterns in Karachi.
4. Evaluate consumer elements that push the consumer to purchase infant milk products.

Research Questions

1. What are the variables impacting brand inclination for infant formula buying in Karachi?
2. How do these factors interact and help shape consumer brand preferences in the baby food market?
3. What are the differences between the consumer and the consumer in prospective baby formula manufacturers in Karachi?

Significance of the Study

This study holds both hypothetical and functional importance. Hypothetically, it adds to the current collection of information by efficiently investigating the impacting elements of buyer brand inclinations and buy aim in the baby equation market. Essentially, the bits of knowledge got from this examination can direct partners, policymakers, and industry players in cultivating the solid improvement of Karachi's newborn child equation industry. Understanding the market

elements and customer inclinations is basic for successful independent direction and key preparation.

Scope of the Study

This study focuses specifically on the factors influencing infant milk purchase decisions in Karachi. The research is delimited to exploring consumer behaviors, brand preferences, and market dynamics within the geographic confines of Karachi. The study encompasses both qualitative and quantitative aspects, providing a comprehensive analysis of the factors shaping the infant formula market in this region.

Literature Review

This section inaugurated the last researches conducted in the respective area of interest subject and also discuss the findings which are done before. Fiona et al. (2012) made a study to investigate the exploring and upgrading maternal and newborn child nourishment in North West Pakistan. The positive effect of nutrition on infants and pregnant women was healthier and more proactive than much non-nutrition women and infants. The consequences indicate the positive improve maternal and infant nutrition practices. However, entrenched structural and cultural factors continued to pose notable obstacles despite participants' favorable views. Fikree et al. (2005) investigated infant care rehearses in Karachi's low financial settlements, underlining conventional convictions. The study indicates the factors of newborn care practices in Karachi significantly affect the socioeconomic settlements. The significant changes indicate that diverse infant care centers where packing milk and infant milk are both experimentally used. The development of the study influenced the caretakers to avoid packing milk and use infant powder milk which improves health and growth. Yaru et al. (2022) a study that investigated the purchasers' Image Inclinations for Newborn child Recipes: a grounded hypothesis approach. The study identified factors influencing brand preferences. Product characteristics and external environmental factors directly impact preferences, mediated by buyers and users. The study positively improves the child's health and immune system which indicates the significant influence of the consequences of the study. Ayunda et al. (2013) conducted a study investigating the Factors Influencing Baby Recipe Taking Care of in Newborn Children Matured 0-6 Months in Sukoharjo. The study depends on the Hypothesis of Arranged Conduct (TPB), in the study like customer conduct control, family size, family discernment, standards, and values to give brands and family pay. Fundamentally, in various locales, baby milk is bought as the need although the outcomes are getting different past the family assumptions. The study outcomes demonstrate the newborn child equation, child well-being and the significance of the brand straightforwardly push the guardians in Indonesia. Karunia et al. (2013) conducted a study investigating the factors affecting shoppers' buying choice of equation milk in Malang City. In the study in light of the Hypothesis of Arranged Conduct (TPB), the study consequences reveal according to still up in the air to build the speculation. The study was applied to comprehend factors affecting the buy choice of equation milk for moms under five-year-old kids' massive impacts at the same time on elements of buying choice. Prominently, social elements arose as the most predominant impact on the buying choice of equation milk in Malang City. Pham (2015) made a study to examine the variables impacting on buying recipe milk for infants. In the study shows that social, social, individual, and mental factors all similarly influence the buying choices of equation milk purchasers in Hanoi. It recommends that domestic formula milk producers focus on ensuring high quality, adding value to baby nurturing, setting appropriate prices, and providing ample information to effectively engage and retain customers. The insights emphasize the importance of a comprehensive approach for producers to thrive in the competitive formula milk market in Hanoi. Febrina at el. (2013) conducted a study to investigate the mothers' perceptions, attitudes, and purchases toward babies. The study was based on the Theory of Planning and Behavior (TPB) and the study addresses the competitive landscape of baby formula brands in Indonesia, emphasizing the need for effective communication strategies to secure market share.

The study findings highlight the significant influence of growth benefits on purchasing decisions. This research provides valuable insights for marketers, aiding in the understanding of consumer preferences and perspectives on baby formula purchases in the Indonesian market. Anchamo et al. (2023) made a study to investigate the in rural Ethiopia's Sidama region, milk consumption holds promise for improving child nutrition, yet poses risks due to potential aflatoxins contamination. In the study feed storage conditions were suboptimal, with limited awareness among farmers and retailers. Feed choices were influenced by cost and herd size, impacting milk safety. The study also helps to improve the influence inclination on the child's health and nutritionists recommend infant powder milk. The positive influence of the study reveals the factors that are affecting the study directly. Cathy (2023) made a study to investigate the connection between human milk oligosaccharide digestion and early-life stomach microbiota: bifidbacteria and then some. Human milk oligosaccharides (HMOs), unpredictable glycan in bosom milk, offer complex advantages to infants as they resist digestion and reach the intestine intact. As interest grows, individual biosynthetic HMOs are incorporated into infant formula. This review explores the assimilatory and catabolic strategies of infant-associated bifid bacteria, and also findings more precisely indicate the significant changes in Infant milk. Nigel et al. (2023) made a study to investigate the Showcasing of business milk equation: a framework to catch guardians, networks, science, and strategy. In the study cost and crowd size impacted feed decisions, influencing milk wellbeing. The positive influence of the study is that the infant powder milk inclines the child's growth and also consumer behavior drives smoothly in the regions. Closing knowledge gaps and enhancing storage conditions are imperative for promoting safe milk consumption. Margaret C. et al. (2022) conducted a study to research Parental variables that influence the biology of human mammary turn of events, milk emission, and milk piece — a report from "Bosom milk Environment: Beginning of Newborn Child Sustenance (Start)" Working Gathering 1. It investigated mammary organ improvement, hormonal guidelines, and the effect of different clinical circumstances. Factors like the season of the day, lactating guardian newborn child collaborations, and clinical issues like gestational diabetes were thought of. The study positively influences the parents to improve their child's growth and also immune system. Tedros et al. (2022) conducted a study to investigate "how the advertising of recipe milk means for our choices on baby taking care of". Shutting information holes and improving stockpiling conditions are basic for advancing safe milk utilization. Breastfeeding is embraced by the World Wellbeing Association, yet recipe promoting remains a huge gamble to newborn child wellbeing. Early inception and selective breastfeeding for the initial half-year are suggested. As interest grows, individual biosynthetic HMOs are incorporated into infant formula. This review explores the assimilatory and catabolic strategies of infant-associated bifid bacteria, and also findings more precisely indicate the significant changes in Infant milk. Sofia (2022) made a study to investigate the risk factors for self-revealed lacking milk during the initial a half year of life: an efficient survey. Defensive variables remembered ideal breastfeeding inception and staying away from recipe supplementation for clinics. On the other hand, maternal overweight/stoutness, cesarean area, and poor maternal well-being were connected to both DOL and SRIM. SRIM was connected with bashful equity and low maternal breastfeeding self-practicality. The study positively explores the assimilatory and catabolic strategies of infant-associated bifid bacteria, and also findings more precisely indicate the significant changes in Infant milk. Yvan et al. (2020) conducted a study to examine the components affecting early-life gastrointestinal microbiota improvement. The study takes a gander at early-life stomach-related microbiota progression and influencing factors prenatally, after entering the world, and post-pregnancy. Movement mode and dealing with strategy, particularly breastfeeding, basically shape the microbiome piece. As interest grows, individual health and immune are incorporated into infant formula. This review explores the assimilatory and catabolic strategies of infant-associated bifid bacteria, and also findings more precisely indicate the significant changes in Infant milk.

Salvini et al. (2011) made a study to research the A Particular Prebiotic Blend Added to Beginning Newborn Child Equation Has Dependable Bifidogenic Impacts. As interest grows, individual biosynthetic HMOs are incorporated into infant formula. This review explores the assimilatory and catabolic strategies of infant-associated bifid bacteria, and also findings more precisely indicate the significant changes in Infant milk. Early colonization of the digestive system influences microbiota post-weaning. A concentrate on babies of hepatitis C infection-tainted moms showed prebiotic supplementation expanded waste bifidobacteria and lactobacilli, with enduring impacts. No huge effect on anthropometric or immunological measures was noticed. Hallatu et al. (2008) led a review to explore the impact of baby recipe needs for 0-6 months on buyer buying intention parents of newborns face confusion in selecting infant formula due to risks and high costs. This study highlights the importance of reliable information in guiding parental decisions on infant nutrition, amid a plethora of available options. As interest grows, individual biosynthetic HMOs are incorporated into infant formula. This review explores the assimilatory and catabolic strategies of infant-associated bifid bacteria, and also findings more precisely indicate the significant changes in Infant milk. Mostly participants were precisely selected for the infant formula for the age of 0 to 6 months. Fekadu et al. (2018) conducted a study to investigate the factors influencing consumer infant formula purchasing decisions. The study based on qualitative and quantitative research approaches. This study analyzed seven factors influencing consumers' infant formula purchasing decisions, including price, quality, promotion, information sources, availability, brand popularity, and consumer perception. Data from 90 respondents were collected through organized surveys and meetings and broke down utilizing engaging and inferential insights. Statistical analysis using SPSS which check the data reliability and validity. Findings revealed all factors significantly impacting purchasing decisions, particularly price, quality, perception, information sources, availability, brand popularity, and promotion. Lower-income consumers prioritized affordability and brand choices, while proximity influenced availability preferences. Liran et al. (2021) made a study to investigate buyer discernments on the beginning of the newborn child equation: a review with metropolitan Chinese moms. Authentic foreign-branded formulas are popular in Tier 1 and 2 cities and among knowledgeable consumers, while domestically branded formulas using imported ingredients are favored in lower-tier cities. Directly imported formulas face lower favorability. The study suggests a shift in Chinese consumers' preferences towards domestically produced formulas. Formula companies' decisions regarding ingredient and manufacturing origin significantly impact product appeal and target consumer segments in China. Rongxi Hu (2019) made a study to investigate Newborn child recipes in China: evaluating purchaser influence from a nation of beginning viewpoint. The study reveals the positive and significant influence of Infant milk purchases with key findings such as quality perception, and understanding the mechanism indicated by the quality-based theory. This research contributes to understanding consumer trust mechanisms and offers practical insights for businesses and government policy. Cheng H. et al. (2019) conducted a study to investigate "Enhancing water movement for capacity of high lipid and high protein newborn child recipe milk powder utilizing multivariate investigation". However, the research explores the milk powder multivariate which affects the water storage. The study positively influences the effects of water storage and powdered milk which indicates how Chinese moms and nutritionists seek the effects on the newborn child. It inclinations the phenomenal measure of the development in the body of a newborn less the mother feeds but covers the different circumstances. Overall, the research papers are part of the study. Current research lacks a comprehensive examination of the factors influencing infant milk purchase decisions, such as brand reputation, price sensitivity, nutritional awareness, cultural factors, and marketing influences. There is a notable absence of studies addressing the intersection of these variables.

Methodology

This chapter frames the examination technique utilized to explore the elements affecting newborn child milk buying in Karachi. The approach includes the strategies for information assortment, instruments of information assortment, research model, measurable methods, speculation development, research plan, and meaning of reliant. Method of data collection based on the primary data which was associated by the questionnaire through pregnant women and parents are the key elements in Karachi. The sample size is determined through a power analysis, ensuring statistical significance. A representative sample of 180 participants is optimize from various hospitals in Karachi. A delineated non probability convenient sampling technique utilize to guarantee variety in segment portrayal. The sampling technique is examined by the questionnaire and interview. Surveys and questionnaires gather data directly from consumers in Karachi regarding brand preferences, price sensitivity, nutritional awareness, and responses to marketing efforts. Interviews with consumers, retailers, and industry experts offer qualitative insights into factors like brand reputation, cultural influences, and marketing impacts. A cross-sectional exploration configuration will utilize, considering the assessment of variables at a particular moment. This plan will work with the distinguishing proof of interviews and questionnaire. Data analysis employed descriptive statistics, regression analysis, and other relevant statistical techniques to identify patterns and relationships among variables. The research model is developed based on a comprehensive literature review and conceptual framework, incorporating variables such as marketing strategies, cultural influences, and nutritional awareness that impact infant milk purchase decisions.

Dependent Variable:

Infant milk purchase decisions.

Independent Variables:

Brand reputation

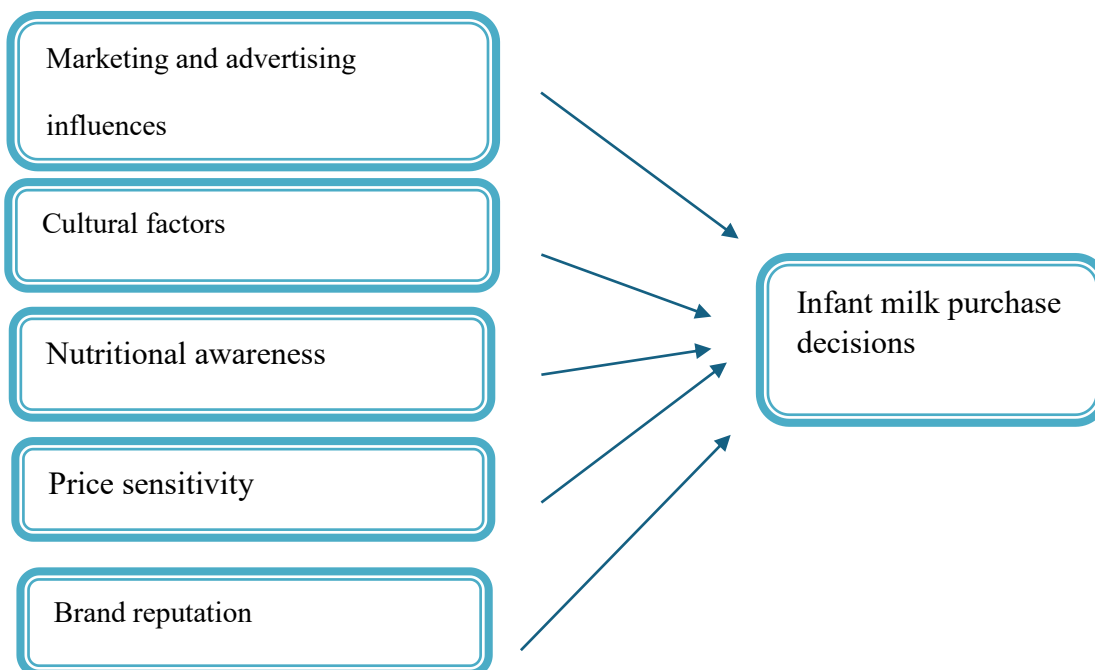
Price sensitivity

Nutritional awareness

Cultural factors

Marketing and advertising influences

Conceptual Framework



Hypothesis

H₁: Brand reputation significantly influences infant milk purchase decisions.

H₂: Price sensitivity is negatively correlated with infant milk purchase decisions.

H₃: Nutritional awareness positively affects the infant milk purchase decisions.

H₄: Cultural factors impact the selection of infant milk purchase decisions.

H₅: Marketing and advertising influences play a significant role in infant milk purchase decisions.

Data Analysis

Descriptive Analysis

The descriptive statistics reveal that the majority of respondents (58.4%) are male, while females constitute 41.6% of the sample. Most respondents belong to the 26 - 35 years age group (56.6%), followed by the 18 - 25 years category (19.7%), indicating a predominantly young and working-age population. Education levels are notably high, with 46.4% holding a Master's degree or above and 44.7% having a Bachelor's degree, while only a small proportion (8.8%) have completed Intermediate education. Income distribution shows that the largest group (32.2%) earns between 50,001 - 80,000 PKR, while 22.3% earn above 100,000 PKR, reflecting a mix of middle-to-upper income levels. Family size trends suggest that most respondents have one child (52.2%), while fewer have two (26.7%), three (10.4%), or four or more children (10.6%), indicating a preference for smaller families. Overall, the sample consists of well-educated, working-age individuals with diverse income levels and relatively small family sizes, providing valuable insights into their socioeconomic characteristics and potential financial behaviors.

Table 1: Descriptive Statistics

Variable	Categories	Frequency (n)	Percentage (%)
Gender	Male	225	58.4
	Female	160	41.6
Age Group	18 - 25 Years	76	19.7
	26 - 35 Years	218	56.6
	36 - 45 Years	70	18.2
	Above 45 Years	21	5.5
Education Level	Intermediate	34	8.8
	Bachelor	172	44.7
	Master and Above	177	46.4
	Others	2	0.01
Monthly Income	Below 30,000 PKR	54	14.0
	30,001 - 50,000 PKR	66	17.14

	50,001 - 80,000 PKR	124	32.2
	80,001 - 100,000 PKR	55	14.3
	Above 100,000 PKR	86	22.3
Number of Children (Below 5-Years Age)	1	201	52.2
	2	103	26.7
	3	40	10.4
	4 or more	41	10.6

Outer Loadings, Composite Reliability & Average Variance Extracted (AVE)

The table presents the outer loadings, composite reliability (CR), and average variance extracted (AVE) for six constructs: This study examines six constructs including Brand Reputation, Cultural Factor, Marketing & Advertising Influences, Nutritional Awareness, Purchase Intention, and Price Sensitivity. The outer loadings calculated from item-construct correlations exceed the baseline threshold of 0.7 demonstrating that most assessment elements accurately represent their intended constructs. Analyses of construct reliability show values above 0.7 which supports the acceptance of good internal consistency levels. The AVE metrics exceed 0.5 which supports the convergent validity because each construct explains more domain variance than measurement artifacts. The construct reliability and validity of Brand Reputation and Cultural Factor demonstrates high strength through their outer loadings in addition to their CR and AVE values. Both Marketing & Advertising Influences and Nutritional Awareness demonstrate solid reliability through CR values that exceed 0.85 while AVE values are higher than 0.57. At the minimum acceptable level both Purchase Intention and Price Sensitivity exhibit stability as constructs yet the more modest loading factor of Price Sensitivity signals room for construct refinement. The assessment table demonstrates that constructs obtain their measurement from suitable items which perform reliably and validly for the entire analysis.

Table 2: Outer Loadings, Composite Reliability & Average Variance Extracted (AVE)

Construct	Items	Outer Loadings	Composite Reliability	Average Variance Extracted (AVE)
Brand Reputation	BR1	0.737	0.818	0.589
	BR2	0.866		
	BR3	0.86		
	BR4	0.718		
	BR5	0.729		
Cultural Factor	CF1	0.871	0.915	0.687
	CF2	0.852		
	CF3	0.876		
	CF4	0.784		
	CF5	0.754		

Marketing & Advertising Influences	MA1	0.735	0.851	0.573
	MA2	0.737		
	MA3	0.845		
	MA4	0.821		
	MA5	0.804		
Nutritional Awareness	NA1	0.895	0.854	0.628
	NA2	0.822		
	NA3	0.844		
	NA4	0.887		
	NA5	0.708		
Purchase Intension	PI1	0.817	0.818	0.612
	PI2	0.726		
	PI3	0.793		
	PI4	0.791		
Price Sensitivity	PS1	0.774	0.761	0.529
	PS2	0.738		
	PS3	0.783		
	PS4	0.752		
	PS5	0.717		

Measurement Model

The table presents the Heterotrait-Monotrait Ratio (HTMT) of correlations for six constructs: Researchers assessed the relationship between Brand Reputation (BR), Cultural Factor (CF), Marketing & Advertising Influences (MA), Nutritional Awareness (NA), Price Sensitivity (PS), and Purchase Intention (PI). The evaluation of construct discriminant validity uses HTMT values to determine how separate each construct is. Measures under 0.85 classify as sufficient for differentiating the constructs. Most HTMT values in this assessment fall below 0.85 demonstrating that the different constructs show strong discriminant validity. The linkage between Price Sensitivity (PS) and Marketing & Advertising Influences (MA) produces an HTMT value of 0.792 which shows moderately significant similarity but does not infringe on construct independence. The HTMT value of 0.723 between Purchase Intention (PI) and Brand Reputation (BR) supports their strong link while preserving discriminant validity. The results demonstrate that relationships between Brand Reputation and Cultural Factor show moderate impact (0.621) with a similar degree between Cultural Factor and Marketing & Advertising Influences (0.566). The table demonstrates that each construct at least maintains satisfactory discriminant validity because all HTMT values stay within accepted thresholds.

Table 3: Heterotrait-Monotrait Ratio (HTMT)

	BR	CF	MA	NA	PS	PI
BR	0.309					
CF	0.621	0.656				
MA	0.684	0.566	0.616			
NA	0.588	0.384	0.729	0.477		
PS	0.759	0.643	0.792	0.705	0.706	
PI	0.723	0.612	0.713	0.687	0.654	0.713

Table demonstrates the Fornell-Larcker Criterion for validating the discriminant consistency of constructs in models. The discriminant validity testing method requires constructs to explain more variance within their measurement factors compared to other model design constructs. Discriminant validity evaluation results from comparing each construct's square root Average Variance Extracted values (diagonal ones) with the construct-to-construct correlation values (off-diagonal ones). In the table, the square root of AVE for each construct is shown on the diagonal: Every construct in this analysis exhibits strong correlations that can explain the relationships between them including Brand Reputation (BR) 0.767, Cultural Factor (CF) 0.829, Marketing & Advertising Influences (MA) 0.757, Nutritional Awareness (NA) 0.793, Price Sensitivity (PS) 0.655 and Purchase Intention (PI) 0.782. The values shown in the table should exceed the correlations computed for all constructs against one another. All constructs meet the Fornell-Larcker criterion since their squared root AVE scores clearly surpass off-diagonal elements located in the same rows and columns. The observed linkage score between BR and CF stands at 0.268 beneath the calculated square root of AVE values for BR (0.767) and CF (0.829). Tester data indicates that MA shares 0.579 correlation with PS whereas both constructs have square root AVE values at 0.757 for MA and 0.655 for PS. Each construct displays greater internal variance correlation with its individual items than with external construct items which supports discriminant validity.

Table 4: Fornell-Larcker Criterion

	BR	CF	MA	NA	PS	PI
BR	0.767					
CF	0.268	0.829				
MA	0.535	0.522	0.757			
NA	0.555	0.458	0.518	0.793		
PI	0.502	0.359	0.641	0.427	0.782	
PS	0.589	0.483	0.579	0.53	0.557	0.655

Table presents the Variance Inflation Factor (VIF) values for the indicators associated with each construct. The VIF measures the extent of multicollinearity between independent variables in a regression model. A VIF value exceeding 5 is generally considered to indicate high multicollinearity, while values below 5 suggest acceptable levels. In this table, all VIF values for the indicators of Brand Reputation (BR), Cultural Factor (CF), Marketing & Advertising Influences (MA), Nutritional Awareness (NA), Purchase Intention (PI), and Price Sensitivity (PS) are well below 5. For example, the VIF for BR2 is 2.64, and for CF3 it is 2.735, indicating low multicollinearity among the indicators of these constructs. The lowest VIF value is 1.163 for PS5, and the highest is 2.948 for NA1, both of which are within acceptable limits. These VIF values suggest that there is no significant multicollinearity among the indicators, implying that the model is well-constructed and each indicator provides unique information without redundancy. This ensures the reliability of the regression estimates and the stability of the model.

Table 5: VIF

	VIF
BR1	1.869
BR2	2.64
BR3	2.485
BR4	1.668
BR5	1.3

CF1	2.441
CF2	2.162
CF3	2.735
CF4	2.117
CF5	1.728
MA1	1.547
MA2	1.94
MA3	2.306
MA4	2.153
MA5	1.682
NA1	2.948
NA2	2.053
NA3	2.399
NA4	2.561
NA5	1.184
PI1	1.493
PI2	1.375
PI3	2.759
PI4	2.739
PS1	1.479
PS2	1.465
PS3	1.195
PS4	1.366
PS5	1.163

The "PI" model presented in Table 6 shows an R-square measurement of 0.474 allowing for the prediction of 47.4% of dependent variable variation through independent model predictors. The model demonstrates a middle-range predictive power which indicates a significant number of dependent variables remain unexplained by the model. Adjusting for the number of predictors reduces the R-square value to 0.467 while maintaining a similar explanatory power. Overfitting prevention is supported by this adjustment process which includes evaluation of both the sample size and the predictor number. The minimal value difference between R-square and adjusted R-square reveals acceptable models fit. The model functions well to explain moderate data variations despite its efficient management of complexity and explanatory features.

Table 6:

	R-square	R-square adjusted
PI	0.474	0.467

Structural Model

Table 6 shows the results from hypothesis testing relationships between different factors and the "PI" variable. Our analysis demonstrates a significant link between BR and PI through the hypothesis BR → PI since it reaches a T value of 1.969 with a corresponding p-value of 0.041 below the 0.05 significance threshold. Data from the hypothesis CF → PI demonstrates a T statistic of 0.504 and a p-value at 0.614 which rises above a cutoff of 0.05 thus revealing no supportive data for this hypothesis and no significant relation between CF and PI. A value of 7.078 for the MA → PI hypothesis T statistic shows complete significance in addition to a p-

value of 0.000 that confirms MA as a leading indicator for PI. The T statistic 0.266 with a p-value 0.790 of the hypothesis NA → PI surpasses the important significance level of 0.05 therefore this hypothesis fails to find approval and shows no substantial link exists between NA and PI. Results from the PS → PI hypothesis reveal a T statistic of 4.464 and p-value of 0.000 below 0.05 thus proving a strong relationship exists between PS and PI. The analysis demonstrates that BR MA and PS display statistical correlations to PI although CF and NA do not show such relationships.

Table 7: Hypothesis Testing

Hypothesis	T statistics	P values	Decision
BR → PI	1.969	0.041	Supported
CF → PI	0.504	0.614	Not Supported
MA → PI	7.078	0.000	Supported
NA → PI	0.266	0.790	Not Supported
PS → PI	4.464	0.000	Supported

Discussion, Conclusion & Implications

Discussion

This research examined how purchasing decisions for infant milk in Karachi are influenced by brand credentials and price importance and nutritional competence along with cultural elements and marketing promotions. This research uses existing literature and theoretical models including the Theory of Planned Behavior and the Customer Value Hierarchy Model to explain consumer behavior patterns within the market.

Brand Reputation and Consumer Trust

Purchase decisions heavily depend on how much customers trust a brand. Consumer research showed that public trust and brand reliability remained essential factors when choosing infant milk brands so consumers typically select familiar established brands. Tian et al. (2022) supports the existing research demonstrating how product credibility drives consumer loyalty because of their findings. Market preferences driven by quality concerns and product safety doubts remain strong because of previous events like the melamine crisis.

Price Sensitivity and Affordability

Significant findings demonstrate that consumers base buying choices substantially on price variables. Affordable items gain appeal more than premium brands when lower-income families in Karachi make their purchasing decisions. These results match the research conducted by Fekadu (2018) that discovered cost-sensitive groups value affordability over other aspects. Middle-to-upper-income consumers demonstrated their readiness to pay price premiums for brands with established reputations which shows that the market contains multiple segmented groups.

Nutritional Awareness

The knowledge of nutrition proves essential because educated parents heavily rely on it. Infants whose parents demonstrated advanced knowledge about infant nutrition preferred products that used balanced beneficial ingredient selections. Research by Sz wajc er et al. (2012) supports the present investigation which showed that dietary understanding influences consumer purchasing decisions. Educational campaigns must be implemented because the research revealed several segments display less awareness about this subject.

Cultural Influences

Consumer purchasing habits in Karachi become strongly influenced by cultural influences. Consumer choices toward infant nutrition are mainly influenced by societal preferences and traditional beliefs according to Fikree et al. (2005)'s research. Local consumers choose domestic brands because they believe in their cultural authenticity and trust and familiarity factors but other groups select imported products because they believe these brands provide higher quality standards. Market research indicates that cultural values create complex feedback loops with market systems.

Marketing and Advertising

Marketing together with advertising proved their capacity to shape how customers act. By using marketing strategies which establish emotional bonds and promote product advantages companies can improve brand memory among consumers along with gaining customer loyalty. Brand awareness measures published by Shakib (2018) show parallel findings regarding strategic advertising determination of consumer choice-making behaviors. Marketing attempts revealed the possibility of misleading claims therefore regulatory authorities needed to establish stronger monitoring procedures.

Integration of Findings

The five significant variables of brand reputation alongside pricing sensitivities along with nutritional awareness patterns alongside cultural traditions with marketing elements produce a multifaceted export process. Consumers who value cost more than brand quality would change their choices but individuals who pay attention to dietary values resist marketing efforts. The approach shows how multiple consumer priorities must receive equal attention when strategizing a marketing campaign.

Conclusion

Marketing and advertising emerged as powerful tools influencing consumer behavior. Effective campaigns that emphasize emotional connections and product benefits were found to enhance brand recall and loyalty. These results align with Shakib (2018), who noted the impact of strategic advertising on consumer decision-making. However, misleading claims in marketing efforts were identified as a potential concern, necessitating stricter regulatory oversight. The interplay among the identified factors—brand reputation, price sensitivity, nutritional awareness, cultural influences, and marketing—reveals a complex decision-making process. For instance, price-sensitive consumers may compromise on brand reputation, while those with high nutritional awareness are less likely to be swayed by marketing. This multidimensional approach highlights the importance of addressing diverse consumer priorities. The study provides a comprehensive understanding of the factors influencing infant milk purchase decisions in Karachi. Key conclusions include:

- Brand reputation is a cornerstone of consumer trust, particularly in a market affected by past quality concerns.
- Price sensitivity varies across socioeconomic groups, underscoring the need for diverse product offerings to cater to different income segments.
- Nutritional awareness is growing, though gaps persist, indicating opportunities for educational outreach.
- Cultural factors remain deeply embedded in purchasing behaviors, highlighting the importance of aligning products with local values.
- Marketing and advertising significantly impact consumer choices, though ethical practices must be ensured to maintain credibility.

Future Implications

The findings of this study open several avenues for future research and practical applications:

Research Implications

Longitudinal Studies: Future research should employ longitudinal methods to track consumer behavior evolution through time especially during economic and market stability changes and market dynamics shifts.

Broader Geographic Scope: Extending this research to additional cities throughout Pakistan will maximize universal applicability and enable better analysis of performance differences.

Advanced Analytical Techniques: The analysis of variable connections transforms through advanced statistical techniques such as structural equation modeling.

Exploration of Digital Marketing: The investigation of how digital platforms affect consumer purchasing decisions reveals current market behavior trends.

Practical Implications

Product Diversification: Companies need diverse products that match consumers' different needs including affordable and nutritious options.

Educational Campaigns: Enhanced nutritional education initiatives activate consumer capability to reach smart choosing decisions.

Cultural Alignment: Cultural alignment of products together with market strategies through localized value-cues enables both better acceptance rates and heightened consumer trust.

Regulatory Enhancements: The government should establish or enforce robust regulations which will guarantee honest marketing practices alongside safe product standards.

Through studying these implications researchers along with practitioners can work together to build an infant milk market that places consumers first while being ethical in Karachi.

References

- Anato, A., Headey, D., Hirvonen, K., et al. (2024). Feed handling practices, aflatoxin awareness and children's milk consumption in the Sidama region of southern Ethiopia. *One Health*, 100672. <https://doi.org/10.1016/j.onehlt.2023.100672>
- Cheng, H., Erichsen, H. R., Soerensen, J., Petersen, M. A., & Skibsted, L. H. (2019). Optimising water activity for storage of high lipid and high protein infant formula milk powder using multivariate analysis. *International Dairy Journal*. <https://doi.org/10.1016/j.idairyj.2019.02.008>
- Dykes, F., Lhussier, M., Bangash, S., Zaman, M., & Lowe, N. M. (2012). Exploring and optimising maternal and infant nutrition in North West Pakistan. *Midwifery*, 28(6), 831–835. <https://doi.org/10.1016/j.midw.2011.09.013>
- Fekadu, M. (2018). Factors influencing consumer infant formula purchasing decision. St. Mary's University Institutional Repository. <http://repository.smuc.edu.et/handle/123456789/4333>
- Fikree, F. F., Ali, T. S., Durocher, J., & Rahbar, M. H. (2005). Newborn care practices in low socioeconomic settlements of Karachi, Pakistan. *Social Science & Medicine*, 60(5), 911–921. <https://doi.org/10.1016/j.socscimed.2004.06.034>
- Hallatu, C. P. (2008). The effect of infant formula needs for 0–6 months on consumer purchasing intention. Gadjah Mada University Institutional Repository. <https://etd.repository.ugm.ac.id/penelitian/detail/136114>
- How the marketing of formula milk influences our decisions on infant feeding. (2022). World Health Organization. <https://iris.who.int/bitstream/handle/10665/352098/9789240044609-eng.pdf?sequence=1>
- Irfany, M. I., Khairunnisa, Y., & Tieman, M. (2023). Factors influencing Muslim Generation Z consumers' purchase intention of environmentally friendly halal cosmetic products. *Journal of Islamic Marketing*, 15(1), 221–243. <https://doi.org/10.1108/jima-07-2022-0202>

- Lordan, C., Roche, A. K., Delsing, D. J., et al. (2024). Linking human milk oligosaccharide metabolism and early life gut microbiota: Bifidobacteria and beyond. *Microbiology and Molecular Biology Reviews*. <https://doi.org/10.1128/membr.00094-23>
- Neville, M. C., Demerath, E. W., Hahn-Holbrook, J., et al. (2023). Parental factors that impact the ecology of human mammary development, milk secretion, and milk composition—a report from “Breastmilk Ecology: Genesis of Infant Nutrition (BEGIN)” Working Group 1. *The American Journal of Clinical Nutrition*, 117(S11–S27). <https://doi.org/10.1016/j.ajcnut.2022.11.026>
- Nuralita, A. Y. (2017). Factors affecting infant formula feeding in infants aged 0–6 months in Sukoharjo, Central Java. *The Journal of Maternal and Child Health*. <https://thejmch.com/index.php/thejmch/article/view/68>
- Pham, T. T. H. (2015). Factors influencing on purchasing formula milk for babies: An empirical research in Hanoi. *International Journal of Business Administration*, 6(5), 37–48. <https://doi.org/10.5430/ijba.v6n5p37>
- Purwanegara, M. S., & Indriani, M. T. D. (2013). Mothers’ perception, attitude, and willingness to purchase towards baby formula. *Journal of Economics and Behavioral Studies*, 5(8), 511–521. <https://doi.org/10.22610/jeb.v5i8.425>
- Rollins, N. (2023). Marketing of commercial milk formula: A system to capture parents, communities, science, and policy. *The Lancet*, 401(10375), 486–502. [https://doi.org/10.1016/S0140-6736\(22\)01931-6](https://doi.org/10.1016/S0140-6736(22)01931-6)
- Rongxi, H. (2019). Infant formula in China: Assessing consumer impact from a country of origin perspective (Doctoral dissertation). RMIT University.
- Salvini, F., Riva, E., Salvatici, E., Boehm, G., Jelínek, J., Banderali, G., & Giovannini, M. (2011). A specific prebiotic mixture added to starting infant formula has long-lasting bifidogenic effects. *The Journal of Nutrition*. <https://doi.org/10.3945/jn.110.136747>
- Segura-Pérez, S., Richter, L., Rhodes, E., et al. (2022). Risk factors for self-reported insufficient milk during the first 6 months of life: A systematic review. *Maternal and Child Nutrition*, 18(S3). <https://doi.org/10.1111/mcn.13353>
- Setyowati Suroto, K., & Fanani, Z. Z. (2013). Factors influencing consumers’ purchase decision of formula milk in Malang City. *IOSR Journal of Business and Management*, 9, 50–55. E-ISSN: 2278-487X, p-ISSN: 2319-7668.
- Shan, L. C., Li, C., Yu, Z., Regan, Á., Lu, T., & Wall, P. (2021). Consumer perceptions on the origin of infant formula: A survey with urban Chinese mothers. *Journal of Dairy Research*, 88(2), 226–237. <https://doi.org/10.1017/s0022029921000364>
- Tian, Y., Hua, P., Dong, X., Li, L., & Zhu, W. (2022). Consumers’ brand preferences for infant formula: A grounded theory approach. *Sustainability*, 14(13), 7600. <https://doi.org/10.3390/su14137600>
- Vandenplas, Y., Carnielli, V. P., Książyk, J., et al. (2020). Factors affecting early-life intestinal microbiota development. *Nutrition*, 78, 110812. <https://doi.org/10.1016/j.nut.2020.110812>