Exploring the factors influencing consumer preference toward dairy products: an empirical research

Consumer

15

Received 14 March 2022 Revised 26 April 2022 19 May 2022 12 July 2022 Accepted 10 August 2022

Pankaj Kumar Bahety and Souren Sarkar Faculty of Management Studies, Shri Shankaracharya Technical Campus, Bhilai, India

Tanmoy De

Faculty of Management, SIBM-Hyderabad Symbiosis International (Deemed University), Hyderabad, India

Vimal Kumar

Department of Information Management, Chaoyang University of Technology, Taichung, Taiwan, and

Ankesh Mittal

Department of Mechanical Engineering, Asra College of Engineering and Technology, Sangrur, India

Abstract

Purpose — This study aims to identify the major factors influencing the consumers to prefer milk products and also to analyze the awareness level of the Indian consumers.

Design/methodology/approach – In this study, the data is obtained through a structured questionnaire from Indian consumers considering convenience sampling under the nonprobability sampling technique. The consumer preference is explained using a multiple-regression model followed by analysis of variance (ANOVA), which shed insight on the significant differences between the variables that influence consumer preference for dairy products.

Findings – Investigation is done to analyze the factors influencing the consumers' buying behavior toward milk and its products. The results showed that quality, health consciousness, price and availability are the most influencing factors to buy milk products. Quantity of milk showed a significant relationship between age, monthly income and family size.

Research limitations/implications – This study helps marketing managers to frame the marketing strategies based on consumer preference, quality, health consciousness, price and availability. The research outcome will not only be advantageous for the entrepreneurial perspective but also takes care of consumer likeliness. Though the research reveals the opinion of Indian consumers, it limits the likeliness of the western world. Because of the scarcity of resources, several dairy products are unexplored, which could pave the future scope of research.



© Pankaj Kumar Bahety, Souren Sarkar, Tanmoy De, Vimal Kumar and Ankesh Mittal. Published in *Vilakshan – XIMB Journal of Management*. Published by Emerald Publishing Limited. This article is published under the Creative Commons Attribution (CC BY 4.0) licence. Anyone may reproduce, distribute, translate and create derivative works of this article (for both commercial and noncommercial purposes), subject to full attribution to the original publication and authors. The full terms of this licence maybe seen at http://creativecommons.org/licences/by/4.0/legalcode

Vilakshan - XIMB Journal of Management Vol. 21 No. 1, 2024 pp. 15-32 Emerald Publishing Limited e-ISSN: 2633-9439 p-ISSN: 0973-1954 DOI 10.1108/XJM-03-2022-0062 **Originality/value** – The novelty of this study is to identify the quality, health consciousness, price and availability are the most influencing factors to buy milk products considering ANOVA and the multiple regression model.

Keywords Consumer preference, Demography, Multiple regression, ANOVA, Dairy products **Paper type** Research paper

1. Introduction

The dairy industry is one of India's most important industries. India is the largest producer of milk in the world, accounting for more than 18.50% of global milk production. In India, the unorganized sector, which includes local milk vendors, wholesalers, retailers and even the manufacturers themselves, accounts for 80% of milk sales. Despite the fact that cooperatives pay producers a fair price, the unorganized sector plays a significant role in milk marketing. Consumer motivations and thinking styles shape their judgments and decisions, which are fundamentally influenced by culture (Shavitt and Barnes, 2020). Dairy products have numerous advantages (Birla, 2022). These items provide health benefits, especially when it comes to creating and keeping strong bones. They assist you in maintaining a healthy weight. Dairy foods give nutrients that are essential for your body's health and maintenance. If the marketer fulfills the demanded factors by the consumers. then the goal of consumer satisfaction can be achieved (Kumar et al., 2021). Customer preferences and desires determine the success of consumer behavior (Jha et al., 2022). Analysis of consumer buying behavior is an entrance to success in the market (Nalluri et al., 2020). The consumer demand for the product now and then establishes the success of any product in the market (Kumar et al., 2017). Information on a customer's perception, taste, likes and dislikes is necessary for a marketer to understand how customers react when they are exposed to specific advertising strategies and messages (Amudha et al., 2016; Huang et al., 2019; Singh et al., 2022). Because of cultural differences in the demographic factors, consumer behavior issue has become more assorted. As a result of this occurrence, understanding the factors that drive it is becoming increasingly important (Auf et al., 2018).

This study is an effort to determine the factors influencing consumer preference toward dairy products. This will help in developing marketing strategies to promote wider acceptance of dairy products among consumers. In line with the purpose of this study, the following are the research objectives:

- to determine the urban consumer preference toward dairy products;
- to examine the factors influencing purchase decisions toward dairy products; and
- to develop a marketing framework for wider acceptance of dairy products across the urban consumer.

2. Literature review and theoretical framework

India is recognized as the principal milk producer, which includes 18.50% and more of the world's total milk production. Parasuraman *et al.* (2021) revealed that the quality and nutrient content of dairy products are the most important factors influencing customer behavior. Consumer preferences for dairy-based goods were determined by sociodemographic differences such as education and income level (Laassal and Kallas, 2019). Kumar and Babu (2014) explored the factors that influence consumer choice for dairy products in the study area, as well as the impact of identified socioeconomic factors on customer brand preference for dairy products. Availability, product quality, packaging,

cost, ingredients, product popularity, product flavor and so on are the most important and fundamental factors that impact a brand's selection (Kumar and Babu, 2014). Consumer preferences for functional dairy product features and willingness-to-pay estimations in Germany were investigated using a discrete choice experiment (Bechtold and Abdulai, 2014) and revealed that class-specific preference variability depends on consumers' attitudes toward functional meals.

In the food defense program, employee satisfaction and the identification of end goods and raw materials are also regarded as important (Lopes *et al.*, 2020). When it comes to dairy products, the categories sustainable, natural, healthful, ethical and trustworthy have some cognitive overlap, but consumers use them differently (Schiano *et al.*, 2020). Cazacu *et al.*'s (2014) results support the theory of planned behavior model's contention that product knowledge, nutritional advantages, attitudes and social contacts have a favorable impact on the people of Thessaloniki and surrounding areas' intentions to purchase water buffalo milk products (WBMPs). According to the study, the same elements that are proven to favorably influence the intention to buy WBMPs also have an impact on the intention to buy dairy milk.

Solano *et al.*'s (2006) results show a strong correlation between managerial capacity and management strategies, as well as a strong correlation between management strategies and farm performance. On performance and efficiency, managerial variables have a limited impact, according to the research. Results are reviewed in relation to their potential impact on technology transfer initiatives and the future development of decision-support systems.

Cornelsen *et al.* (2016) revealed that the typical home purchased 48 grams of fresh milk each week per household member. Price was the most frequently reported impediment to consumption, whereas taste was the primary motivator for consumption. It is been observed that perceived quality affects the perceived price (Solakis *et al.*, 2022). The cocreation can result in reduced earnings, particularly if enterprises have a greater ability to convert an investment into lower customer participation costs, which is surprising given competition (Kumar and Sharma, 2017a; Yang *et al.*, 2021; Jha *et al.*, 2022).

Kapaj *et al.*'s (2013) conjoint choice experiment survey was constructed to finalize the customer preferences related to the milk industry in a specific market. The finding of this study could benefit the milk industry and its marketers by allowing them to strategically advertise their milk to diverse groups.

The roles and resources of customers in value cocreation are investigated by Agrawal and Rahman (2015). They concluded that customers have been accepted as both resource and resource integrators in the firm's value creation plans and processes as a result of customer empowerment and the rise of interactive technologies. Structural, cognitive and relational connection based on social media, particularly structural linkage, is an important cocreation method for improving organizational performance (Zhang et al., 2020). As reliance on technology grows, so does the significance of connecting digital solutions with customers' motivations (Nöjd et al., 2020). To strengthen the attractiveness of physical retail spaces, the author emphasized using digitalization to leverage customer experiences.

Sillence *et al.* (2016) identified a tiered approach to online trust in which users first conduct a quick, heuristic review of a website before conducting a more thorough analysis of the material offered. Results are presented in connection to the creation of reliable online resources for food safety.

Aswini et al. (2021) used Garrett's rank analysis to analyze the factors influencing the consumers' buying behavior toward milk and its products and concluded that Ghee was the

major product preferred by the consumers. Packaging has been demonstrated to play a substantial effect in influencing customer purchasing behavior (Sultan, 2016). Quality, health consciousness, pricing, packaging, availability and door delivery are all important factors in affecting decision behavior toward aroma milk.

Hambardzumyan and Gevorgyan (2022) concluded that milk production and sale prices in Armenia have not changed significantly during the limitation era. Maitiniyazi and Canavari (2020) concluded that consumers' confidence in food safety is lowered as a result of a high prevalence of food safety incidents. Kiambi et al. (2020) determined the impact of numerous problems and governance issues on food safety was underlined. Aroma milk is preferred by customers because of its high quality. Furthermore, it is undeniable that consumers are health conscious about the products they buy on a daily basis (Dhanya and Palanichamy, 2019). Quality, price and taste were the most influential criteria in purchasing milk products, whereas flavor, color and packaging were the least influential (Koduru and Sree Krishna, 2021). Higher income, older persons and a smaller population all increase the likelihood of drinking skim milk (Siqueira et al., 2020). The stronger the brand, the greater the price (Ngo et al., 2019). Nonpurchase of goat milk and dairy products is because of a lack of eating habits, as well as the odor and flavor of the product (Paskaš et al., 2020). Packaging has been shown to have a significant impact on customer purchasing behavior when it comes to high-priced and fast-moving consumer goods (Sultan, 2016). There is a huge age disparity among the respondents, and there is no discernible link between monthly income and satisfaction with various dairy products (Iris et al., 2018). The importance of quality and taste in dairy products, as well as the limited influence of packaging in product selection, were emphasized by young respondents (Gaworski et al., 2021).

2.1 Research gap

The review of available literature and published work reveals that major of the work related to consumer preference is conducted in western and developed countries, while the developing countries are yet untapped. Particularly, research on consumer preference toward dairy products has gained very less attention in India, irrespective of the fact that India is the largest producer of milk in the world, accounting for more than 18.50% of global milk production. Along with this, the available literature is more concerned about the entrepreneurial perspective, whereas the consumer perception is ignored. This research is an effort to bridge the gap between existing literature and the concurrent demand of the industry.

Based on the above discussions, the following hypotheses are listed below and the theoretical framework is shown in Figure 1:

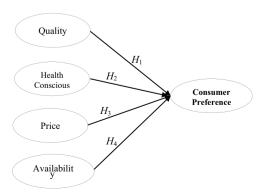


Figure 1. Theoretical framework

- H1. Quality has a significant impact on consumer preference toward dairy products in the urban areas of Chhattisgarh.
- H2. Health consciousness has a significant impact on consumer preference toward dairy products in the urban areas of Chhattisgarh.
- *H3.* Price has a significant impact on consumer preference toward rural dairy products in the urban areas of Chhattisgarh.
- H4. Availability has a significant impact on consumer preference toward dairy products in the urban areas of Chhattisgarh.

3. Research methodology

A quantitative survey-based research methodology was used in this study. This section presents the sampling, data collection, questionnaire design and mathematical framework. Figure 2 proposed the research framework used in this study.

3.1 Sampling and data collection

After extensive desk research, an exploratory survey was done using the qualitative research method of focus group discussion (FGD) to understand general perceptions about the urban consumer preference toward dairy products and the issues involved and to seek implementable suggestions. It is an excellent tool for creating hypotheses, examining undiscovered areas of consumer experience and clarifying ambiguous ones when dealing

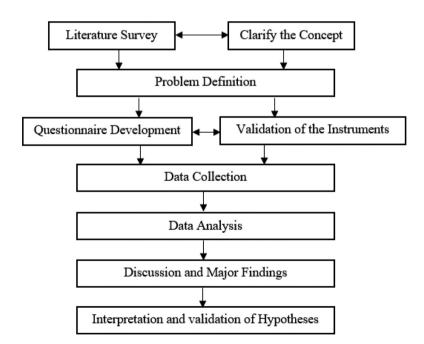


Figure 2.
Proposed research framework used in this study

with a complex issue. The participants in the FGD included the general public consisting of a heterogeneous mix of consumers, government representatives for nonagricultural products, local people of destinations dealers, distributors, retailers, agents, customers and service providers.

3.2 Survey instrument

A close-ended structured questionnaire was designed and used to collect data on views and perceptions from the stakeholders of various destinations that were tested for understanding and comprehensiveness. Table 1 explains the summary of the research design.

3.3 Mathematical framework

Based on the literature review, the following variables have been identified, namely, independent variables include quality, health consciousness, price and availability, whereas demographics include age, monthly income and family size, occupation; dependent variables include only consumer preference. Consumer preference as an endogenous variable against quality, health consciousness, price and availability is taken to be the exogenous variables. Besides, the demographics like age, monthly income and family size are considered controlling variables.

Mathematical framework:

$$Y = \beta 0 + \beta 1X01 + \beta 2X02 + \beta 3X03 + \beta 4X04$$

$$\hat{Y} = \beta_0 + \sum_{i=1}^7 \beta_i X_{it}$$

3.4 Data analysis

An effort has been made to collect information without any biases, as the male–female ratio was approximately 50%. Because the result could vary based on the age differences of the respondents. Table 4 presents the demographic details (income-wise distribution of all males and females) (Tables 2–4).

Income-wise distribution of data analysis reveals that 29.4% of the population belongs to ₹20,001–40,000. This age group is the true reflection of Indian behavior, as they have experienced both richness and poverty. Simultaneously, an effort has been made to collect facts from every aspect of life, including the respondent belonging to below ₹20,000 to the income greater than ₹60,000 group. To derive the true picture of consumer behavior toward

Research design	Descriptive study
Data source Instrument used Sample unit rch Population Sampling design Data analysis	Primary data Questionnaire Chhattisgarh Consumers of Chhattisgarh Nonprobability sampling–convenience sampling Regression and ANOVA

Table 1.
Summary of research design and descriptive study

dairy products, Pearson χ^2 reflects the value of 81.2. The high positivity degree among the different income-wise populations brings the result worth full (Table 5).

Multiple regression model:

$$Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + et$$

To estimate the associations between the dependent variable "consumer preference" and independent variables as explored quality, health consciousness, price and availability. The multiple regression analysis approach is used to measure these variables (Kumar and Sharma, 2018). The analysis of multiple regression is shown in Table 4 (Table 6).

The model was constituted for dependent variables into predictor variables such as quality, health consciousness, price and availability, measured by analysis of variance (ANOVA) (Kumar and Sharma, 2017b; Kumar *et al.*, 2018) and shown in Table. These four constructs explain 54.2% variance of the model. There is no sign of autocorrelation as Durbin–Watson statistics is 2.063 as the value is between a range of 0 and 4 (Durbin and Watson, 1950) (Table 7).

Because the *p*-value is less than or equal to the significance level, the connection is statistically significant at the 95% confidence level. It is inferred that the independent variable and the dependent variable have a statistically significant relationship (i.e. quality, health consciousness, price and availability) with and dependent variable. The regression coefficients are shown in Table 8.

From the coefficients of the above table, out of four explanatory variables, namely, quality, health consciousness, price and availability, all the independent variables have a positive coefficient. Therefore, the hypothesis is accepted as a significant value well below 0.05 at a 95% confidence interval. The colinearity index shows that there are no chances of colinearity as the maximum variance inflation factor value of independent variables in the model fit is 1.154.

3.4.1 ANOVA between sociodemographic variables and consumer preference. The ANOVA test is conducted to determine whether there exists any significant variance

		1st method	
k/k-1	1.011235955	Sum_Variance	53.52173913
Variance_Total	885.1748792	Cronbach's alpha = $(k/k - 1)$ (1 – sum variance/ variance total)	0.950091984
2nd method (ANOVA	TABLE)		
Cronbach's $alpha = 1$	- (mean square error/n	nean square rows)	0.952168534
Interpretation: excelle	nt data consistency		

Table 2. Reliability testing

Age	Mal	e (A)	Fem	nale (B)	A	+B			
Range	N	(%)	N	(%)	N	(%)	χ^2	Probability value	
36–50 51–65 65+	276 107 70 11 464	59.50 23.10 15.10 2.40 100	297 79 60 12 448	66.30 17.60 13.40 2.70 100	573 186 130 23 912	62.80 20.40 14.30 2.50 100	Pearson χ^2 : 122.01	0	Table 3. Demographic profile (age-wise distribution)

	Male	(A)		Female (B)		Ą	(+B					
Income per month	N	(%)	N		(%)	N	%)		χ_{5}		Probability valu	lity value
<₹20,000	112	24	150		33	262	28	7.	Pearson χ^2	: 81.2		0
₹20,001-40,000	154	33	114		25	268	29	4.				
₹40,001-60,000	92	16	120		36	196	21.	5.				
>₹60,000	122	26	64		14	186	20.4	4.				
Total	464	100	448		100	912	100					
Mean		Quality	lity			Health cons	. —			Pri	ce	
	9	4.7	4.74	4.98	5.87	4.72		4.66	4.82	5.01	4.81	4.63
Standard error	0.03	80.0	0.09	0.09	0.00	0.08	0.00	0.09	0.09	60.0	0.08	0.00
Median	9	4	4	2	7	4		4	2	2	4	4
Mode	9	က	က	7	6	က		က	2	7	က	က
Standard deviation	0.8	2.51	2.59	2.62	2.74	2.5		2.64	2.57	2.69	2.44	2.58
Sample variance	0.65	6.31	6.72	6.89	7.52	6.24		96.9	6.62	7.24	5.94	6.64
Kurtosis	-1.5	-1	-1.1	-1.2	-1.3	-1		-1.2	-1.1	-1.4	7	-1.1
Skewness	0.01	0.36	0.3	0.11	-0.4	0.38		0.35	0.27	0.12	0.41	0.34
Range	2	∞	8	∞	8	∞		∞	8	∞	8	∞
Minimum	2	1	-	П	-	-		_	Π	1	1	П
Maximum	7	6	6	6	6	6		6	6	6	6	6
Sum	5468	4287	4322	4538	5356	4303		4247	4398	4571	4383	4226
Count	912	912	912	912	912	912		912	912	912	912	912
Confidence level (95.0%)	0.05	0.16	0.17	0.17	0.18	0.16		0.17	0.17	0.17	0.16	0.17

Table 4.
Demographic profile (income-wise distribution)

Consumer preference

Mean		Availa	bility			Consumer	Sonsumer preference	
	4.7	4.77	2.9	2.86	2.67	2.94	2.83	2.9
Standard error	0.09	0.09	0.07	0.07	0.07	90.0	0.07	0.07
Median	4	4	က	က	2	က	2	2
Mode	7	က	П	П	П	П	П	П
SD	2.8	2.72	2.09	1.98	2.1	1.89	2.11	2.11
Sample variance	7.86	7.38	4.38	3.91	4.4	3.58	4.44	4.43
Kurtosis	-1.4	-1.3	1.11	1.18	1.63	1.12	1.08	0.7
Skewness	0.25	0.28	1.19	1.15	1.43	1.02	1.22	1.06
Range	8	∞	8	∞	∞	8	8	8
Minimum	П	1	П	П	1	П	П	П
Maximum	6	6	6	6	6	6	6	6
Sum	4,284	4,352	2,645	2,612	2,435	2,678	2,585	2,648
Count	912	912	912	912	912	912	912	912
Confidence level (95.0%)	0.18	0.18	0.14	0.13	0.14	0.12	0.14	0.14

Table 5. Descriptive statistics

			Model summary ^b	mary ^b						
Model	Model R (multiple regression coeff.)	ession coeff.) R² (coeff. of determination) Adjusted R² SE of estimate R² change F-change df1 df2 Sig. Durbin-Watson	Adjusted R^2	SE of estimate	R^2 change	F-change	df1	df2	Sig.	Durbin-Watson
1	0.736^{a}	0.542	0.395	0.98643	0.542	0.542 268.088 4 907 0.000	4	002	000.0	2.063
Notes:	Notes: ``Predictors'' (constant), quality, health consciousness, price, availability; ''dependent variable: consumer preference and the predictors'' of th	, health consciousness, price, a	ıvailability; ^b de	pendent variable	: consumer p	reference				

Table 6. Regression model

between sociodemographic variables and consumer preference toward dairy products. Consumer occupation has been taken as a sociodemographic variable to establish an ANOVA test with consumer preference. From the said ANOVA table, we find that differences concerning sociodemographic variables are insignificant at the 5% level as the calculated *F*-ratio of 1.14216 is less than the table value of 3.07, but the variety of differences concerning factors related to consumer preference are significant as the calculated *F*-ratio of 3.07 is more than its table value of 2.48 (Table 9).

Consumer preference

25

Table 10 analyzes the independent variables (quality, health consciousness, price and availability) with dependent variables (consumer preference). The statistical test result

		ANOV	VA ^a		
Model	Sum of squares	df	Mean square	F	Sig.
Regression	1,043.448	4	260.862	268.088	0.000 ^b
Residual	882.552	907	0.973		
Total	1,926.000	911			

Notes: ^aDependent variable: consumer preference; ^bPredictors: (constant), quality, health consciousness, price, availability

Table 7. ANOVA

		Coefficie	ents ^a				
S. no.	Dependent variable	Independent variable	β	T	Sig.	Colinearity s	tatistics
1	Consumer preference	(Constant) Quality Health consciousness Price Availability	0.730 0.137 0.096 0.020	3.696 31.491 6.044 3.982 0.873	0.000 0.000 0.000 0.000 0.043	Tolerance 0.937 0.986 0.867 0.925	VIF 1.067 1.014 1.154 1.081

Table 8. Regression coefficients

Note: aDependent variable: consumer preference

Summary	Count	Sum	Average	Variance			
Managerial	4	187	46.75	278.9167			
Professional	4	245	61.25	1,972.25			
Clerical	4	84	21	164.6667			
Student	4	123	30.75	90.91667			
Retired	4	28	7	8.666667			
Unemployed	4	36	9	68.66667			
Home maker	4	96	24	304.6667			Table 9.
Business	4	113	28.25	632.25			ANOVA between
ANOVA							sociodemographic variables
Source of variation	SS	df	MS	F	<i>p</i> -value	F crit	
Rows	9,319	7	1,331.286	3.078541	0.021427	2.487578	(occupation) and
Columns	1,481.75	3	493.9167	1.142161	0.355057	3.072467	consumer preference
Error	9,081.25	21	432.4405				(factors influencing
Total	19,882	31					consumer preference)

XJM 21,1		Sum of squares	ANOVA df	Mean square	F	Sig.
26	Quality Between groups Within groups Total	1,816.116 4,215.253 6,031.368	24 887 911	75.671 4.752	15.923	0.000
	Health consciousness Between groups Within groups Total	109.494 1,076.817 1,186.311	24 887 911	4.562 1.214	3.758	0.000
Table 10. ANOVA between research variables (quality, health	Price Between groups Within groups Total	1,839.901 3,992.573 5,832.474	24 887 911	76.663 4.501	17.032	0.000
consciousness, price and availability) and consumer preference (dependent variable)	Availability Between groups Within groups Total	1,902.289 4,407.027 6,309.316	24 887 911	79.262 4.968	15.953	0.000

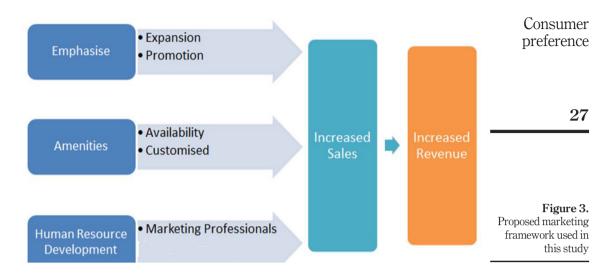
reveals that there is no significant difference between the variables identified and the final consumer preference.

4. Results and discussion

Urban consumer preferences toward dairy products are identified through various literature. The present study has identified certain factors, which can be considered as drivers of pushing dairy products toward consumer preference. It is evident from the responses collected from the consumers that they are well versed with dairy products. The factors influencing purchase decisions toward dairy products are collected through various literature reviews from previous work and expert opinions through a pilot survey, four independent variables have been identified.

The consumer preference is explained using a multiple regression model with a positive intercept of 0.853 and a standard error of 0.986. Quality has a positive impact on consumer preference with a regression coefficient of 0.802, which includes the attributes like taste, uniqueness and services. Health consciousness has a positive impact on consumer preference with a regression coefficient of 0.168. Similarly, price has a positive impact on consumer preference with a regression coefficient of 0.138, which includes the attributes of affordability of consumers and mode of payment. Availability has a positive impact on consumer preference with a regression coefficient of 0.026, which includes the attributes of convenience, outlet design & layout, exhibition & fairs and online facilities. The two-way ANOVA test result reveals that there is a significant difference between the identified variables of consumer perception toward dairy products, while contrary to this, the difference is nothing to do with their occupation, i.e. sociodemographic variable. Thus, the marketer need not to concern more about consumer preferences concerning their respective occupation (Figure 3).

To develop a marketing framework for wider acceptance of dairy products across the urban consumer, the following strategies can be taken keeping in view the wider acceptance of dairy products across the urban consumer at its core and economic growth, employment



generation, raising the standard of living and also financial stability as its intentionstraining of manpower to create a pool of skilled manpower for marketing of dairy products. It is evident from the present scenario that because of a lack of skilled employees the organizations fail to attain the desired objective. To boost sales, the marketing department should focus on the areas where sales are low. They should be able to obtain current market trends and demand fluctuations through appropriate inquiry in a certain sector to supply stock to fulfill demand. The focus should be on expanding the number of dairy parlors in areas with higher market potential and providing convenience to consumers. The milk producers' plant should create and maintain high-quality, fairly priced products. To boost or improve the maximum sales performance, the marketing department should introduce the door delivery system to widen the product's reach. Advertisement too plays a predominant role in augmenting the reach of the product. In this context, an effective advertising campaign in different types of media, i.e. print media and electronic media, would be the best method for increasing sales. Installation of signboards and banners in community areas helps in generating awareness among the people. The introduction of small size pouches of 250 ml of milk will result in a rise in the sales of the milk because lowincome group consumers stimulate to procure the product. Marketing efforts should be directed toward fascinating novice consumers. Last but not least the marketing department should sponsor some social-welfare activities under corporate social responsibility, which will ultimately lead to a surge in the sales of the product.

The following strategies can be adopted, keeping in view the wider acceptance of dairy products across the urban consumer at its core and economic growth, employment generation, raising the standard of living and also financial stability as its intentions:

- focus on expansion plans with explored as well as unfamiliar, implicit products;
- to raise the amenities of consumer places to international levels in terms of quality, promotion, advertisement and a conducive platform; and
- training of manpower to create a pool of skilled manpower of marketing professionals.

As far as a business perspective is concerned, the research will help to develop a marketing framework for the wider acceptance of dairy products across urban consumers. The present research will provide a pathway to attract new customers along with retaining the existing customers because it exerts over the factors influencing consumer preference over dairy products.

4.1 Theoretical implications and managerial contributions

This study helps marketing managers to frame the marketing strategies based on consumer preference, quality, health consciousness, price and availability. Once the feature is determined with which the consumers magnetize the most, it will be supportive for the managers to take decisions accordingly. Also, the consumer will obtain the preferred product as per their expectations. The production manager too will focus on those variables expected by the consumers while manufacturing the dairy products. Thus, the research outcome will not only be advantageous for the entrepreneurial perspective but also takes care of consumer likeliness.

5. Conclusions, research limitations and future scope

Consumer's age, income, family size, education level and life cost all had a major impact on their choice and preferences, according to the examination of factors affecting their preferences. This effect could be related to living costs and health problems. The choice of low-fat yogurt and milk was influenced by the level of education. In fact, having a greater degree of knowledge has been linked to a preference for low-fat foods. One of the most important effective influences on willingness to consume some dairy products was the brand name of the product. Marketing managers can use these findings to improve their products based on consumer preference.

The population for the response comprises the preference of Indian consumers that too particularly from the state of Chhattisgarh, which itself is a heterogeneous characteristic. Though the research reveals the opinion of Indian consumers, it limits the likeliness of the western world. Because of scarcity of resources several dairy products are unexplored. From the available numerous statistical techniques, the research data is analyzed through ANOVA, while there is a scope of analysis through various other statistical tools.

From the above list of limitations, we can conclude that the research has several future scopes which are listed as follows:

The research respondents can be from different demographic profiles where their tastes and preferences differ. Along with the change in population profile similar research could be attempted with other untapped dairy products. The available data could be analyzed through other available statistical software with different tools. Thus, it is evident from the above statement that, there lies the enormous scope for future research with related changes in product, place and consumer behavior and analysis tools.

References

- Agrawal, A.K. and Rahman, Z. (2015), "Roles and resource contributions of customers in value cocreation", *International Strategic Management Review*, Vol. 3, Nos 1/2, pp. 144-160.
- Amudha, A., Sumathi, S., Cetină, I., Munthiu, M.C.,... and Wang, H.Y. (2016), "Factors affecting consumer behavior", *Computers in Human Behavior*, Vol. 30, No. 6, pp. 1-10.
- Auf, M.A.A., Meddour, H., Saoula, O. and Majid, A.H.A. (2018), "Consumer buying behaviour: The roles of price, motivation, perceived culture importance, and religious orientation", *Journal of Business* and Retail Management Research, Vol. 12 No. 4, pp. 177-186.

Consumer

preference

- Aswini, N., Ashok, K.R., Hemalatha, S. and Balasubramaniyam, P. (2021), "Consumer preference towards milk products in Tamil Nadu", Asian Journal of Agricultural Extension, Economics & Sociology, Vol. 38, No. 11, pp. 215-223.
- Bechtold, K.B. and Abdulai, A. (2014), "Combining attitudinal statements with choice experiments to analyze preference heterogeneity for functional dairy products", Food Policy, Vol. 47, pp. 97-106.
- Birla, S. (2022), "Benefits of dairy products, Sujata Birla hospital, available at: www.birlahospital.com/benefits-of-dairy-products (accessed 21 April 2022).
- Cazacu, S., Rotsios, K. and Moshonas, G. (2014), "Consumers' purchase intentions towards Water Buffalo Milk Products (WBMPs) in the Greater Area of Thessaloniki, Greece", *Procedia Economics and Finance*, Vol. 9, pp. 407-416.
- Cornelsen, L., Alarcon, P., Häsler, B., Amendah, D.D., Ferguson, E., Fèvre, E.M., Grace, D., Dominguez-Salas, P. and Rushton, J. (2016), "Cross-sectional study of drivers of animal-source food consumption in low-income urban areas of Nairobi, Kenya", *BMC Nutrition*, Vol. 2 No. 1, pp. 1-13.
- Dhanya, K. and Palanichamy, N.V. (2019), "Factors influencing consumer's buying decision towards aroma milk in coimbatore district of Tamil Nadu", *Journal of Agriculture and Ecology*, Vol. 7 No. 1, pp. 64-72.
- Durbin, J. and Watson, G.S. (1950), "Testing for serial correlation in least squares regression: I.", Biometrika, Vol. 37 Nos 3/4, pp. 409-428.
- Gaworski, M., Borowski, P.F. and Zajkowska, M. (2021), "Attitudes of a group of young polish consumers towards selected features of dairy products", Agronomy Research, Vol. 19, No. S2, pp. 1023-1038.
- Hambardzumyan, G. and Gevorgyan, S. (2022), "The impact of COVID-19 on the small and medium dairy farms and comparative analysis of customers' behavior in Armenia", Future Foods, Vol. 5, pp. 1-7.
- Huang, F.Y., Do, H.M. and Kumar, V. (2019), "Consumers' perception on corporate social responsibility: evidence from Vietnam", Corporate Social Responsibility and Environmental Management, Vol. 26 No. 6, pp. 1272-1284.
- Iris, G., Abraham, H. and Doron, K. (2018), "Examination of the relationship between dietary choice and consumer preferences for sustainable near-food products in Israel", *Journal of Cleaner Production*, Vol. 197, pp. 1148-1158.
- Jha, A., Sharma, R.R.K., Kumar, V. and Verma, P. (2022), "Designing supply chain performance system: a strategic study on indian manufacturing sector", Supply Chain Management: An International Journal, Vol. 27 No. 1, pp. 66-88.
- Kapaj, A., Deci, E., Kapaj, I. and Mece, M. (2013), "Consumers behavior towards milk products in urban Albania", *Journal of Food, Agriculture and Environment*, Vol. 11 No. 2, pp. 76-80.
- Kiambi, S., Onono, J.O., Kang'ethe, E., Aboge, G.O., Murungi, M.K., Muinde, P., Akoko, J., Momanyi, K., Rushton, J., Fèvre, E.M. and Alarcon, P. (2020), "Investigation of the governance structure of the Nairobi dairy value chain and its influence on food safety", *Preventive Veterinary Medicine*, Vol. 179, pp. 1-15.
- Koduru, K. and Sree Krishna, T. (2021), "Perception of consumers towards dairy products in Guntur district", Natural Volatiles and Essential Oils, Vol. 8 No. 4, pp. 321-329.
- Kumar, A.A. and Babu, D.S. (2014), "Factors influencing consumer buying behavior with special reference to dairy products in Pondicherry state", *Abhinav-International Monthly Refereed Journal of Research in Management & Technology*, Vol. 3 No. 1, pp. 65-73.
- Kumar, V. and Sharma, R.R.K. (2017a), "An empirical investigation of critical success factors influencing the successful TQM implementation for firms with different strategic orientation", *International Journal of Quality and Reliability Management*, Vol. 34 No. 9, pp. 1530-1550.
- Kumar, V. and Sharma, R.R. (2017b), "Relating management problem solving styles of leaders to TQM focus: an empirical study", The TQM Journal, Vol. 29 No. 2, pp. 218-239.

- Kumar, V., Verma, P., Jha, A., Lai, K.K. and Do, H.M. (2021), "Dynamics of a medium value consumer apparel supply chain key parameters", *International Journal of Productivity and Performance Management*, Vol. 71 No. 2, pp. 445-476.
- Kumar, V. and Sharma, R.R.K. (2018), "Leadership styles and their relationship with TQM focus for Indian Firms: an empirical investigation", *International Journal of Productivity and Performance Management*, Vol. 67 No. 6, pp. 1063-1088.
- Kumar, V., Sharma, R.R.K., Verma, P., Lai, K.K. and Chang, Y.H. (2018), "Mapping the TQM Implementation: an empirical investigation of the cultural dimensions with different strategic orientation in Indian firms", *Benchmarking: An International Journal*, Vol. 25 No. 8, pp. 3081-3116.
- Kumar, V., Verma, P., Sharma, R.R.K. and Khan, A.F. (2017), "Conquering in emerging markets: critical success factors to enhance supply chain performance", *Benchmarking: An International Journal*, Vol. 24 No. 3, pp. 570-593.
- Laassal, M. and Kallas, Z. (2019), "Consumers preferences for dairy-alternative beverage using home-scan data in Catalonia", Beverages, Vol. 5 No. 3, p. 55.
- Lopes, L.O., Silva, R., Guimarães, J.T., Coutinho, N.M., Castro, B.G., Pimentel, T.C., Duarte, M.C., Freitas, M.Q., Esmerino, E.A., Sant'Ana, A.S., Silva, M.C. and Cruz, A.G. (2020), "Food defense: perceptions and attitudes of Brazilian dairy companies", *Journal of Dairy Science*, Vol. 103 No. 9, pp. 8675-8682.
- Maitiniyazi, S. and Canavari, M. (2020), "Exploring Chinese consumers' attitudes toward traceable dairy products: a focus group study", *Journal of Dairy Science*, Vol. 103 No. 12, pp. 11257-11267.
- Nalluri, V., Reddy, M.S. and Kumar, V. (2020), "Consumers' intention for green purchase: an empirical analysis on foreign products", *Journal of Critical Reviews*, Vol. 7 No. 8, pp. 961-965.
- Ngo, H.Q., Nguyen, T.Q., Long, N.T., Tran, T.V. and Hoang, T.M. (2019), "Factors affecting brand and student decision buying fresh milk: a case study in Ho Chi Minh City, Vietnam", *The Journal of Asian Finance, Economics and Business*, Vol. 6 No. 3, pp. 247-258.
- Nöjd, S., Trischler, J., Otterbring, T., Andersson, P.K. and Wästlund, E. (2020), "Bridging the valuescape with digital technology: a mixed methods study on customers' value creation process in the physical retail space", *Journal of Retailing and Consumer Services*, Vol. 56, pp. 1-10.
- Parasuraman, B., Singh, P., Nachimuthu, S., Arumugam, V. and Kumar, A. (2021), "Consumers' choice and preferences of dairy based products", *The Indian Journal of Animal Sciences*, Vol. 91 No. 11, pp. 1-10.
- Paskaš, S., Miočinović, J., Lopicić-Vasić, T., Mugosa, I., Pajić, M. and Becskei, Z. (2020), "Consumer attitudes towards goat milk and goat milk products in Vojvodina", Mljekarstvo, Vol. 70 No. 3, pp. 171-183.
- Schiano, A.N., Harwood, W.S., Gerard, P.D. and Drake, M.A. (2020), "Consumer perception of the sustainability of dairy products and plant-based dairy alternatives", *Journal of Dairy Science*, Vol. 103 No. 12, pp. 11228-11243.
- Shavitt, S. and Barnes, A.J. (2020), "Culture and the consumer journey", Journal of Retailing, Vol. 96 No. 1, pp. 40-54.
- Siqueira, K.B., de Pinho, M.C., Borges, C.A.V. and da Gama, M.A.S. (2020), "Determinants of consumer behaviour when choosing between whole and skimmed UHT milk", Serbian Journal of Management, Vol. 15 No. 1, pp. 175-180.
- Sillence, E., Hardy, C., Medeiros, L.C. and LeJeune, J.T. (2016), "Examining trust factors in online food risk information: The case of unpasteurized or 'raw' milk", Appetite, Vol. 99, pp. 200-210.
- Singh, S., Chamola, P., Kumar, V., Verma, P. and Makkar, N. (2022), "Explaining the revival strategies of indian msmes to mitigate the effects of COVID-19 outbreak", *Benchmarking: an International Journal*, Vol. Ahead-of-Print, No. Ahead-of-Print, doi: 10.1108/BIJ-08-2021-0497.
- Solakis, K., Peña-Vinces, J. and Lopez-Bonilla, J.M. (2022), "Value co-creation and perceived value: a customer perspective in the hospitality context", European Research on Management and Business Economics, Vol. 28 No. 1, pp. 2-10.

Consumer

preference

- Solano, C., León, H., Pérez, E., Tole, L., Fawcett, R.H. and Herrero, M. (2006), "Using farmer decision-making profiles and managerial capacity as predictors of farm management and performance in Costa Rican dairy farms", Agricultural Systems, Vol. 88 No. 2, pp. 395-428.
- Sultan, M.F. (2016), "Effect of packaging elements on consumer buying behavior: comparative study of Cadbury Dairy Milk and Cadbury Perk", *International Journal of Scientific and Research Publications*, Vol. 6 No. 4, pp. 243-250.
- Yang, R., Tang, W., Dou, M. and Zhang, J. (2021), "Pricing and investing in co-creation with customers for a duopoly", *International Journal of Production Economics*, Vol. 237, pp. 1-14.
- Zhang, H., Gupta, H., Sun, W. and Zou, Y. (20120), "How social-media-enabled co-creation between customers and the firm drives business value? The perspective of organizational learning and social capital", *Information and Management*, Vol. 57 No. 3, pp. 1-17.

Further reading

Kumar, A.A. and Babu, D.S. (2019), "Factors influencing consumer buying behavior with special reference to dairy products in Pondicherry state", *Abhinav-International Monthly Refereed Journal of Research in Management & Technology*, Vol. 3 No. 1, pp. 65-73.

About the authors

Pankaj Kumar Bahety is Research Scholar at Faculty of Management Studies, Shri Shankaracharya Technical Campus, Bhilai, Chhattisgarh.

Souren Sarkar is currently working as Professor and Head Faculty of Management Studies, Shri Shankaracharya Technical Campus, Bhilai, Chhattisgarh, since 2003. He has more than 21 years of experience. He has successfully guided two PhD scholars. He has published 35+ research papers in various national and international journals.

Tanmoy De is currently working as Assistant Professor at SIBM-Hyderabad Symbiosis International (Deemed University), Hyderabad. He has more than 22 years of experience and has published more than 30 research papers in various national and international journals.

Vimal Kumar is Assistant Professor at the Department of Information Management Chaoyang University of Technology, Taichung, Taiwan (ROC), He completed his Postdoctoral Research at Chaoyang University of Technology, Taichung, Taiwan (ROC) in the Department of Business Administration in the domain of Technological Innovation and Patent Analysis. He has served as an Assistant Professor under TEQIP III, an initiative of MHRD, Government of India at AEC Guwahati in the Department of Industrial and Production Engineering. Prior to joining AEC, he served as Assistant Professor at MANIT, Bhopal in the Department of Management Studies and also served as Visiting Faculty at IMT Nagpur. He obtained his PhD in the domain of TQM and Manufacturing Strategy in the year 2017 and Masters in Supply Chain Management from the Department of Industrial and Management Engineering, IIT Kanpur in the year 2012. He graduated (BTech) in Manufacturing Technology from Jagadguru Sri Shivarathreeshwara Academy of Technical Education Noida, in the year 2010. He has published 50 articles in reputable international journals and presented 24 papers at international conferences. His research paper entitled "Time table scheduling for educational sector on an e-governance platform: a solution from an analytics company" has been selected for best paper award at the International Conference on Industrial Engineering and Operations Management (IEOM) held in Bandung, Indonesia, March 6-8, 2018. He was also invited to serve as session chair of session on "energy-related awareness" held on September 19 2018, at iCAST 2018, IEEE International Conference on Awareness Science and Technology and "Lean Six Sigma" at the International Conference on Industrial Engineering and Operations Management (IEOM-2018) at Bandung, Indonesia and "quality control and management" at the International Conference on Industrial Engineering and Operations Management (IEOM-2016) at Kuala Lumpur, Malaysia. He has been appointed as an editorial board member in the IEEE-TEMS *Journal* from January 1, 2022, to December 31, 2024. He is a contributing author in international journals including Journal of Informetrics, Technology in Society, CLSCN, Supply Chain

XJM 21,1

32

Management: An International Journal, IJOA, JEEE, BSE, TFSC, JKM, CSREM, IJPPM, IJQRM, IJPMB, IJPQM, IJBIS, AJOR, The TQM Journal and Benchmarking: An International Journal, and also a guest reviewer of reputable journals like IEEE—TEMS, JOI, IJPPM, IJQRM, TQM & Business Excellence, The TQM Journal, Benchmarking: An International Journal, Journal of Asia Business Studies and JSIT. Vimal Kumar is the corresponding author and can be contacted at: vimaljss91@gmail.com

Ankesh Mittal is Assistant Professor in the Mechanical Engineering Department of Asra College of Engineering and Technology, Punjab, India. He received his BTech and MTech degrees from Chitkara University, Punjab, India, and Thapar University, Patiala, India in 2013 and 2015 respectively, and a PhD degree from Sant Longowal Institute of Engineering and Technology Longowal, Punjab, in 2021. His areas of research are total quality management and production engineering. He has published various national and international journals of repute and conference proceedings.