A Consumer Behaviour Perspective on Nutritious Biscuits

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Abstract

Biscuits Industry in India is the largest among all the food industries. India is known to be the second largest manufacturer of biscuits after USA. Biscuit is a hygienically packaged nutritious snack food available at very competitive prices, volumes and different tastes. Rising incidence of health conditions, growing media coverage on health, increasing concerns over physical appearance, changing lifestyle and soaring costs of healthcare have led the biscuits and cookies market to move towards a healthier path.Considering the demand and potential for nutritious biscuits, the present study checks upon the consumption and buying pattern of biscuits among the users in Gandhinagar city. The research discovered that the respondents are willing to change over to healthier variant of biscuits. They appreciate the benefits attached with consumption of biscuits made from other than white refined flour. The findings of the study could be considered by the existing players and the new entrepreneurs to launch such nutritious biscuits in future.

Key Words: Nutritious, Biscuits, Processed Food, Consumption Pattern, Snack Item

JEL Classification: C91

Introduction

Biscuit is a processed convenience food ever produced. It is one of the few universal staples, which is complete in it and requires no additional preparation. Thus, for many, biscuit becomes an important source of high molecular carbohydrates, vegetable proteins and some vitamins and minerals (Ahmad and Ahmed, 2014).According to the National Council for Applied Economic Research (NCAER) Study, biscuit is predominantly consumed by people from the lower strata of society, particularly children in both rural and urban areas (Federation of Biscuit Manufacturers' of India, n.d.).

According to ValueNotes(Research and Consultancy Firm), the biscuits and cookies industry in India, valued at INR 145bn (USD 2.41bn) in FY 2014, has been growing at a CAGR of 10% over the last three years. Further, the industry will be worth nearly INR 279bn (USD 4.65mn) by FY 2019, growing at a CAGR of 14%. Increase in disposable income, changing lifestyles, growth in organized retail and increasing consumption of processed and packaged food are the main

drivers of the industry.

According to Dr. Beatrice Golomb, of the University of California, San Diego School of Medicine, Trans fats were most strongly linked to worse memory, in young and middle-aged men, during their working and career building years (Hope, 2014).Such artificial Trans fats are ubiquitous in processed food items such as biscuits and cookies. Changing lifestyles and consumption habits of middle-income and upper middle-income groups have led to a greater demand for healthy options. Cookies and biscuits as a snack can quite easily be made more nutritious and biscuit manufacturers have begun taking this into consideration. Though the health segment is currently a very niche segment, several national and international brands have launched healthy variants containing no added sugar, no trans-fat, higher fiber content, etc. Cookies containing muesli, oats, whole-wheat, multi-grain and ragi are found in supermarkets in cities across the country (Saluja, 2013).

Considering the importance of this snack item, the study checks upon the consumption pattern of biscuits among the residents of Gandhinagar city. The research also highlights the preferences of the consumers towards nutritious biscuits which are made from other than refined wheat flour.

Literature Review

The word biscuit is derived from the Latin words biscotus, meaning twice baked. The real biscuits were developed in the middle ages and then several new biscuits were invented in the 19th century including the Garibaldi (1861) and the Cream cracker (1885). The Digestive was invented in 1892 by Alexander Grant. Custard creams were invented in 1908 and Bourbons were invented in 1910. HobNobs followed in 1986 (Lambert, 2015). Several studies have been conducted from time to time covering areas such as market share of biscuit manufacturers, nutritional aspects, manufacturing practices, ingredients used in making of biscuits etc. Since the present study evaluates the perception of the respondents for nutritional and healthy biscuits, the following section presents few studies describing the nutritious biscuits.

A world-wide study conducted by Nielsen N.V. (2014) found that environmentally conscious consumers believe it is very important that snacks include ingredients that are sourced sustainably (35%), are organic (34%) and use local herbs (25%). Further, respondents around the world care about the absence of ingredients than the addition of them. A study by Boobier et al (2006) confirmed that traditional high-fat and high-sugar biscuits can be modified to produce a healthy alternative that can be manufactured under strict commercial conditions. The modified biscuit (Addition of Vitamin B6, B12, Folic Acid, Vitamin C, Prebiotic Fiber, reducing salt and sugar) was acceptable to consumers in terms of eating quality, flavor and colour.

Many researchers have conducted experiments on the use of alternative flours in different proportions and tested the functional, sensory and nutritional qualities of such modified biscuits. Some of them are reported as under.

Rathi and Mogra (2013) conducted a study to find the acceptability of biscuit made with different proportions of flaxseed and wheat flours. As per the findings, adding flaxseed flour in bakery products is a useful strategy to increase the consumption of fiber and omega-3 in the human diet and use of up to 30 percent of flaxseed flour in the preparation of biscuit was found to be acceptable among the panel members.Ojinnakaet al (2013) studied the use of African breadfruit starch and wheat flour at various levels of substitution. They found that substitution of wheat flour at 10% level was highly recommended for cookie production using breadfruit starch and wheat flour. Onabanjo and Ighere Dickson (2014) carried out research to find out the nutritional, functional and sensory qualities of wheat-potato composite biscuits. The experiments produced biscuits of acceptable qualities from all ratios of wheat-potato flour that was used.

Sharma et al (2013) studied the acceptability and glycemic response of bottle gourd pulp powder (BGPP) enriched biscuits against standard wheat biscuits. They reported that BGPP was able to reduce the glycemic response to a similar extent in both healthy participants and individuals with impaired glucose tolerance. A study by Munazaet al (2012) showed that why protein enriched biscuits may be a suitable source of proteins and high in sensory characteristics with nutritional quality and storage stability. Gayaset al (2012) formulated biscuit samples of high nutrition from different combination of wheat flour, defatted soy flour and carrot pomace powder. As per the findings, composition and nutritive value of these biscuit samples represented balanced quantity of carbohydrate, protein, fat, crude fiber and beta carotene and they were acceptable in sensory evaluation. El-Sharnoubyet al (2012) found that the fiber in biscuits can be enriched by supplementing the wheat flour with wheat bran and date palm fruits.

Looking at the above mentioned studies in relation to nutritious biscuits, it may be seen that majority of these studies are based upon experimental design. These studies follow a systematic approach focusing upon materials and methods i.e. preparation of biscuits, nutritional composition, sensory characteristics, treatment combinations and evaluation. The empirical studies based upon the consumers' perspective on nutritious biscuits are far and few between. Therefore, the present study is an attempt to fill this gap by exploring the acceptance of such healthy variants of biscuits among the consumers of Gandhinagar city.

Research Problem and Operational Definition of Research

At large ready to eat food items like biscuits, which are available in the market, are made from refined wheat flour ('madia'). Nutritionist do not support the consumption of items made from refined wheat flour, as it is excessively starchy, high in gluten, fiber-less and nutritionally imbalanced (Food Matters, 2011).The research attempts to explore the research questions such as; what are the preferences of consumers for nutritious biscuits? What is the awareness for benefits out of consumption of such biscuits? What is the market potential for biscuits made from other than refined wheat flour? Which ingredient would be preferred the most for baking nutritious biscuits?

Premise of the research underlines the aspect that nutritious biscuits are the made from other than refined wheat flour and are treated to be quite health friendly. Nutritious biscuits could be baked from soya, ragi, oats, corn, rice etc. In fact such ingredients act as a substitute for 'madia'. The richness in terms of nutritious fibers, protein content, lower fat, wholesome source of energy etc are eligible benefits available from nutritious biscuits. Major emphasis of this research is testing on the preferences of biscuits made from such items.

Research Objective

1. To identify the perception of consumers towards breakfast and snack items in Gandhi nagar city.

2. To study preference of consumers for different type of biscuits.

3. To identify the preferences of these consumers towards biscuits made from non refined wheat flour.

Research Hypothesis

Table 1: Construct of Hypothesis for the Study

Attributes Used for Hypothesis	Premise	Scale	Null Hypothesis Statement	Test Administered
Varieties of breakfast items	Any breakfast items are put in the family's menu card based on taste, affordability, variety, nutrition, availability and health.	Highest (5) to Lowest (1)	There is no significant difference in parameters of breakfast.	Perceptual Mapping
Umpteen brands of biscuits.	Choosing a particular brand of biscuits indicates preference for the brand.	Very Much Preferred (5) to Not at all Preferred (1)	All the brands of biscuits are identical	Preference Mapping

(Source: Authors' Compilation)

Research Methodology

The study is based upon the descriptive research design to examine the preferences of the consumers towards nutritious biscuits in Gandhi nagar city. The sampling area consisted of Sector 26, Sector 14, Sector 28 and Sector 30 in Gandhi nagar city. Here, non-probability convenience technique- was adopted for the research. A sample size of 384 was chosen (96 households from each sector). In 68 questionnaires the details were incomplete so it was removed from the study. Finally the sample size zeroed in was 316 (79 households from each sector).

The household in the sectors were referred as sampling unit and the respondent above 20 years was chosen as sampling element i.e. respondent of the research. Student of Shri Jairambhai Patel Institute of Business Management and Computer Applications, Gandhi nagar helped the researcher in the field work. The student was explicated the objectives of research and was educated for data collection. Secondary data were collected from various newspapers, internet, magazines, books and journals. The primary data was collected through questionnaire by personally meeting the member of the household. Considering the diverse literacy level of respondents, before data collection the questions were explained in local dialect and to ensure precision, the responses were duly filled by the researcher in the questionnaire (Self-administered questionnaire). The questionnaire consisted of various dichotomous, multiple choice, open ended and close ended questions. The entire survey was conducted from 10thNovember, 2014 to 10thJanuary, 2015.

The questionnaire was divided into four section viz., Section-I comprised of Demographic Information, Section-II highlighted the Breakfast Preference, Section-III described the nitty-gritty of Consumption of Biscuits and Section-IV underlined the Potential for Nutritious Biscuits.

Different statistical packages were applied for data analysis like Excel sheets and SPSS 19.0. Data analysis was done through frequency distribution and descriptive statistics like mean, median, mode, standard deviation, minimum, maximum; frequency tabulation, percentage and rank analysis. Perceptual Mapping and Preferential Mapping technique were was adopted as a part of inferential statistics to draw out meaningful conclusion with respect to perception of breakfast items and preference for various brands of biscuits.

Findings and Discussion

The findings are divided into four sections. Section-I comprised of Demographic Information, Section-II highlighted the Breakfast Preference, Section-III described the nitty-gritty of Consumption of Biscuits and Section-IV underlined the Potential for Nutritious Biscuits.

Section-I Personal Demographic Information

Table 2: Details of Demographic Information

Parameters	Observed Statistics in the Research	Implication
Age	The average (X) age of the respondent was 32 years. The minimum (Mini.) age of respondent was of 20 years and the maximum (Maxi.) age is 65 years. The Standard deviation (SD) was 10 years (approximately), median (M) age was 30 years and modal (Z) age value was 21 years.	Respondent of different age group were selected to know their eating habits and perception towards healthy and nutritious biscuits, because biscuits are consumed across all age groups.
Occupation	Working (38%), Non-Working (22%), Students (40%).	Biscuits are anytime munching breakfast or snacks item. It is a quick hunger satisfying food. Working class face shortage of time, so biscuits become handy snacks for them. Biscuits are considered as best option for students, given their pocket money constraints.
Number of Family Members	Adult: X, M, Z (4), Mini. (2) and Maxi. (12). Children: X (1), M and Z (2), Mini. (0), Maxi. (6).	Family members have different preferences for different kinds of food. In qualitative discussion it was revealed that children were fond of cream biscuits and elders preferred either glucose or non-creamy biscuits. Thus a family may stock both types of creamy and non-creamy biscuits.

(Source: Primary Output)

Section-II Breakfast Preference

Items consumed in breakfast

A multiple choice dichotomous question was asked to the respondents to know which items they consumed in the breakfast. It was noticed that partha (22%), bread and butter (21%), kurmure and khakhra (17%), fried snacks (16%), idli-dosa (13%), oats and corn flakes (11%) were consumed by the respondents.

Perception of Breakfast Items

Taste, affordability, variety, nutrition, availability and health are normal and basic parameters on which the breakfast items are chosen. All the breakfast items were rated on these six parameters. H01: There is no significant difference in parameters of breakfast. H11: There is a significant difference in parameters of breakfast.

Table 3 : Tests of Equality of Group Means

	Wilks' Lambda	F	Sig.		Wilks' Lambda	F	Sig.
Taste	0.94	4.19	0.00	Nutrition	0.89	8.01	0.00
Affordability	0.99	0.68	0.64	Availability	0.96	2.56	0.03
Variety	0.96	2.81	0.02	Health	0.88	8.55	0.00

(Source: SPSS Output)

It can be observed that taste, variety, nutrition, availability and health significantly discriminate the items of breakfast, as its p-value is less than 0.05. Affordability do not significantly discriminate the breakfast items, as its p-value > 0.05. Six breakfast items and six attributes imply that the maximum number of discriminating functions can be five. The closer the value of Wilks Lambda towards zero, the better is the fit of the model. The function 1 through 5 was taken for the perceptual map plotting as it has the lowest value of Wilks Lambda (0.70).

Table 4 : Test Statistics

| Details	1	2	3	4	5
Standardized Canonical(Coefficients)					
Taste	-0.33	1.06	0.26	-0.20	0.08
Affordability	-0.01	-0.16	-0.66	0.37	0.68
Variety	-0.34	-0.35	0.74	0.58	0.23
Nutrition	0.60	0.01	-0.05	-0.30	0.61
Availability	0.10	-0.44	0.46	-0.92	-0.08
Health	0.60	0.19	0.18	0.60	-0.73
Unstandardized Canonical (Group Means)					
Paratha	-0.10	0.05	0.37	-0.02	0.04
Idli and Dosa	0.11	0.68	-0.13	-0.01	-0.03
Bread and Butter	0.16	-0.20	-0.23	-0.18	0.01
Oats and Corn Flakes	0.77	-0.16	-0.15	0.19	0.03
Khakra and Kurmure	0.03	-0.23	0.18	0.02	-0.08
Fried Snacks	-0.93	-0.10	-0.26	0.10	0.01

(Source: SPSS Output)
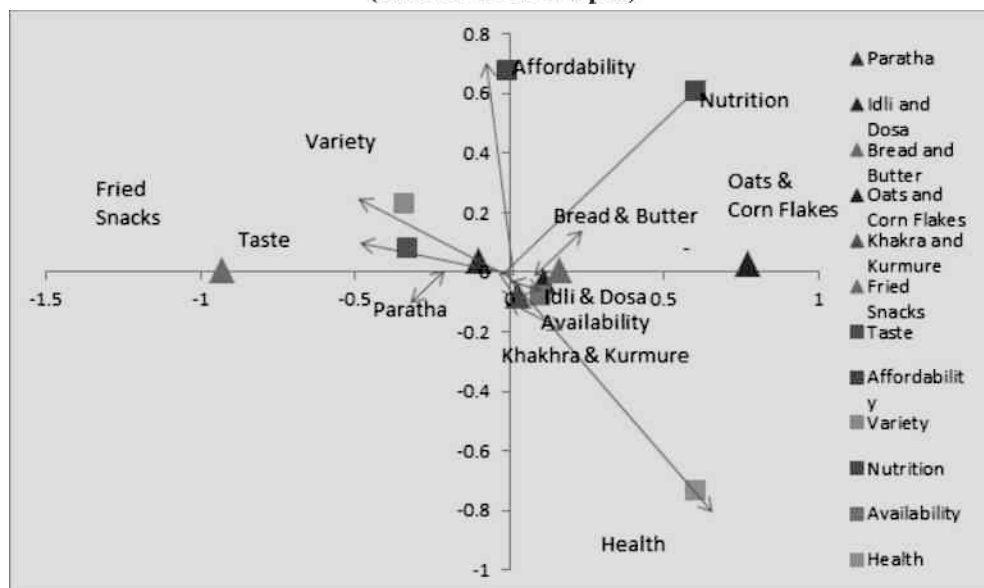
Figure 1: Perceptual Map
(Source: Excel Output)

The standardized canonical-discriminate function coefficients of attributes and un-standardized canonical-discriminate functions, evaluated at group means are taken to plot the perceptual map. Using two function one perceptual map is framed. Each discriminant function represents a dimension. The attribute vectors which are closer to dimension represents that dimension. From the graph constituents of Dimension 1 Vividness (Taste and Variety) and Dimension 2 Indispensible (Affordability, Nutrition, Availability and Health) could be identified. The length of the vector pointing towards a particular breakfast item indicate association of that attribute with a particular breakfast item and the vectors pointing towards opposite direction from a given breakfast item represents lower association with a particular breakfast item. Idli-Dosa and Bread-Butter were positioned close to each other; indicating that the respondents found the above items closer to each other on the said parameters. People perceive Idli-Dosa and Bread-Butter high on the availability factor. Both act as close substitute of each other. Partha was perceived close to variety and taste factor. Khakhra and Kurmure were perceived close to availability factor. None of the breakfast items were perceived close to nutrition and health attributes vectors. Fried snacks were not close to any of the attribute vector. Infact it represented lower association with nutrition attribute. This is true from conventional thinking aspect as fried food is not good for health. This awareness is present amongst the surveyed respondent. At the same time, it was also depicted that respondents failed to associate any breakfast item on nutritious aspect. None of the attribute was strongly associated with Oats and Corn Flakes. Health attribute vector pointed in the opposite direction from Oats and Corn Flakes item representing lower association of item on that attribute. During the research work it was noticed that only handful of respondents consumed oats and corn flakes directly as the breakfast item, while others were ignorant about its direct usage as breakfast item.

Section-III Nitty-Gritty of Consumption of Biscuits

Consumption of Biscuits

It was noticed that all 100% respondents consumed biscuits. Biscuits are ready to eat item so they are stocked in every family. 51 % consumed biscuits whenever they were hungry or at any time. 32 % consumed biscuits at tea time. It was learnt that there was considerable gap of 4-5 hours between evening tea time and dinner. Hence to satisfy hunger with a light item, biscuits were consumed at tea time. Moreover, it was also noticed that hot breakfast are not preferred during evening tea time and people always use poly-pack ready to eat items, as it is easily available. Anytime preference for biscuits, indicates that people are quite fond of having it. In breakfast, Indian families prefer hot and substantial food. Meager 17% families ate it as breakfast item, as it was

qualitatively revealed in the discussion that they preferred light breakfast and were weight conscious.

Frequency, Packets, Weight and Price of Biscuits

41 % bought biscuits once a week whereas 32 % bought biscuits once every four days. 19 % preferred to buy biscuits monthly and 8 % bought biscuits fortnightly. Biscuits were bought more either once a week or every four days. Once a week respondent indicated that those weekly shoppers stocked more while every four days shoppers indicated that either their consumption was more or they stocked less because they were frequent shopping goers. Replenishment of biscuits was done very often.

On an average household bought 3 biscuits packets. Minimum purchase was for 1 packet. Maximum families bought 2 packets of biscuits. Maximum number of packets bought in the family was 8, which indicated that there was higher consumption of biscuits either due to fondness or larger family size.

The modal 100 gm weight of biscuits indicated customary pack size. Average weight was 182 gm which reflected either extra or combo pack. Minimum 40 gm weight pack, an odd value of small size, was found mostly for cream biscuits which were packed to keep the psychological price of Rs. 5 or Rs.10 as the case may be, to lure the consumers. Maximum 1Kg pack referred to jumbo pack.

Respondents were asked the price per packet of biscuits. Minimum price paid to buy single pack of biscuit was Rs. 4 and maximum price paid to buy single pack of biscuit was Rs.120. Minimum price was in the case of glucose biscuits. Modal price of Rs.20 was for value added products.

Type, Flavour, Expectations, Brand Preference, Place of Purchase

Multiple responses were received for the type of biscuits bought by the households. More preference was given to cream and cookies i.e. 16 %, followed by glucose type of biscuits which was 14 %. Milky, fruit flavoured, sweet-salty and health-friendly biscuits were preferred 10% each respectively. Salty were preferred 8% and coconut was 7%. Cream, cookies and glucose are sweet type of biscuits that can be targeted to masses. Other types of biscuits were preferred less and it was also known in qualitative discussion that such biscuits were exclusively available during special occasion i.e. festivals so it could be targeted during those time only.

Flavours preferred were Chocolate (15%); Choco-fillings (9%); Butter, Almond, Nuts and Raisins (8% each); Orange, Butter-Scotch (7% each); Cashew and Vanilla (6% each); Mango and Strawberry (5% each); Pineapple, Eliachi, Jeera, Apple (4% each). Chocolate, choco fillings, nuts and raisins, orange flavours can be used for preparations of nutritious

biscuits. Chocolate is favourite flavour liked and loved across all age group.

Respondent expected less Fat (15%), Calcium Rich (14%), Sugar Free, Iron Rich (13% each), more Fiber (12%), Vitamin A (11%), Vitamin D (10%), Honey instead of sugar (7%) and Folic Acid (5%) from the biscuits. High preference is given to less fat, calcium rich and sugar free but they are least available in refined white wheat flour. It indicates that people are aware about what they expect from biscuits but they are ignorant of the fact that such nutrients are not available from refined wheat flour biscuits.

Preferences for the brands Parle, Britannia, Sunfeast, McVities, Cadbury and Patanjali were asked to be rated on the five point likert scale from Very Much Preferred (5) to Not at all Preferred (1). Kaiser-Meyer-Olkin Measure of Sampling Adequacy was 0.56>0.5, which represents factor analysis is appropriate. As per Bartlett's Test of Sphericity the chi square is found high as 170.75 and the significance value is 0.00 which is less than 0.05.

Table 5: Component Score Coefficient Matrix

Factor	Parle	Britannia	Sunfeast	McVities	Cadbury	Patanjali
1	-0.14	0.00	0.17	0.50	0.45	0.36
2	0.51	0.52	0.30	0.04	-0.15	0.05

(Source: SPSS Output)

52.537 % of cumulative variance is explained by two factors. The two identified factors can explain six different brands on consumer preference by forming distinct groups.
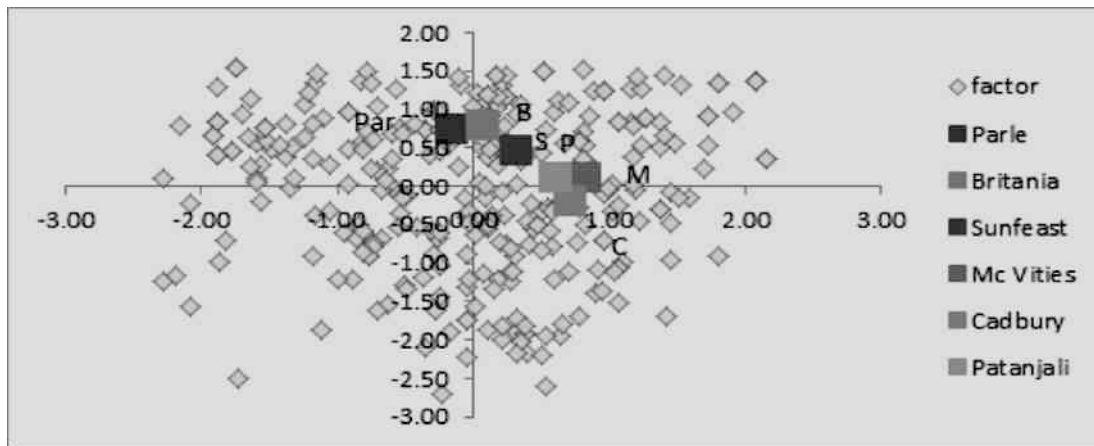

Figure 2: Preference Map
(Source: Excel Output)

Each respondent and each biscuit brand has a unique point on the map. The spatial proximity between the respondent and the biscuit brand indicates the respondent's higher preference for that brand. The closeness among the biscuit brands suggests the similar consumer preference for the close brands. The relative distance of the brand's position from the origin, along with a dimension, indicates the strength of association of the brand with the dimension. Factor Analysis result indicated that McVities and Cadbury brands are strongly associated with F1 and it can be grouped as one factor based on consumer preference. Patanjali brand can be associated with F1 factor as its component score coefficient is nearer to the score of McVities and Cadbury; hence it suggests that consumers have strong preference for it. Parle and Britania are strongly associated with F2 and it can be grouped as second factor. It can be observed that Sunfeast is not associated with F1 and F2. The higher density of respondents' points around a brand indicates the higher preference for that brand. Large number of respondents lay around Mcvities and Cadbury (Factor 1), which indicates that they strongly prefer these brands. Large number of respondents clutter around Parle and Britannia (Factor 2), indicating the strong preference for these brands. Respondents are scattered around the brand Sunfeast indicating that they have low preference for the brand.

Consumers preferred buying biscuits from Mall (45%), Provisional stores (27%) Kirana (Mom and Pop stores-26%). Panwalla's shops (2%)are least preferred place to buy biscuits. Mall is one stop shop under one roof where everything is available.

Section IV Potential for Nutritious Biscuits

Awareness of Benefits, Willingness to Purchase and Ingredient Preference

A 5 point likert scale (Strongly Agree=5 to Strongly Disagree=1) question was asked to the respondents to test their awareness on the benefits derived from the consumption of biscuits made from other than refined wheat flour.

Table 6: Awareness on Benefits

Statement	Mean	S.D	Statement	Mean	S.D
Soya keeps heart healthy.	3.97	1.00	Oats reduces bad cholesterol.	3.64	1.04
Soya keeps bones strong.	3.61	1.02	Corn promotes heart health.	3.53	1.03
Soya is rich in proteins.	3.94	0.98	Rice is low in fat.	2.86	1.23
Soya lowers risk of cancer.	3.29	1.13	Wholesome wheat provides whole some energy.	3.48	1.07
Ragi is good source of calcium and fiber.	3.44	0.99			

(Source: SPSS Output)

Respondent are aware about benefits from Soya, Ragi, Oats, Corn, Rice and Wheat. Mean values above 3 indicates respondent agree and validates positive claim on consumption of wholesome wheat, soya, ragi etc. If standard deviation is more than 1, it indicates responses are not consensus.

80 % respondent are ready to buy nutritious biscuits as they are health conscious and change acceptors while rest 20 % are adamant to buy these type of biscuits as they are not aware about harmful effects of consuming refined white wheat flour nor they are willing to try new health friendly biscuits.

Respondents were asked to rank their preference for ingredients. Rank analysis was performed; the frequency of the same are indicated in the parenthesis. Rankings based on highest preference are Soya (676), Wheat (936), Oats (1,090), Ragi (1,135), Corn (1,370) and Rice (1,416).

Preference for Taste- Shape, Packaging and Type of Packet for Nutritious Biscuits

With respect to taste, consumers preferred cream (28%), sweet (22%), sweet and salty (21%), fillings (15%) and salty (14%) biscuits. In the qualitative discussion it was known that conventional round shape was preferred for sweet, cream and fillings biscuits. Square shape was liked for sweet and salty and salty biscuits.

Preferences for packaging were Cardboard Box (36%), Plastic paper (28%), Plastic box (22%) and Metal tin (14%). Cardboard box are eco-friendly, while plastic are non-biodegradable so respondent are opting for cardboard box and indirectly fulfilling societal responsibility.

Combo pack (57%) and Single pack (43%) were preferred by consumers. Combo pack is targeted for bulk purchaser who wishes to have same type of biscuits and small packets are targeted for users who try out different variety of biscuits.

Conclusion and Recommendation

Biscuit have been man's food since a long time as it is consumed across all age groups because of its ready to eat type of snack item. There is huge scope to start an entrepreneurial venture in nutritious biscuits. Biscuits can be positioned well on the dimension of vividness and indispensability. Chocolate flavour is preferred across all age group. Parle and Britannia are the most preferred brand, but none of them are offering nutritious biscuits made from non-refined wheat flour. Pantajali is the only player which offers nutritious biscuits, but due to lack of awareness it is out of consumer's preferred list. Pushing biscuits in malls' would be the robust distribution strategy. People are aware on the benefits of consuming nutritious biscuits and highest preference was indicated for biscuits made from soyabean. Thus, biscuits made from soyabean with addition of cream in conventional round shape, packaged in cardboard box can be put in the market. Combo pack can be targeted for bulk buyers buying same type of biscuits and small packs for variety of biscuits.

Limitations

The present research is restricted to Gandhi nagar city only. A comprehensive study of market potential in other busy metro cities would provide more insights in the research. Such study would help in proper product manufacturing and brand positioning across all cities.

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