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Consumer Acceptance on Different Types of Chocolate Wafers

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ABSTRACT

This study investigates consumer acceptance of four distinct types of chocolate wafers through sensory evaluation. The objective was to assess and compare consumer preferences based on key sensory attributes including taste, texture, aroma, appearance, and overall acceptability. A structured sensory test was conducted with a panel of participants who evaluated each sample under controlled conditions. Statistical analysis of the collected data revealed notable differences in consumer preferences among the four samples, highlighting the impact of formulation and sensory characteristics on acceptance levels. The findings provide valuable insights for product development and optimization in the confectionery industry, emphasizing the critical role of sensory attributes in influencing consumer choice.

Keywords: Nutrition, Chocolate Wafers, Acceptability, Consumers

Introduction

Usually encased or partially coated in chocolate, chocolate wafers are a popular dessert made out of thin, crisp wafer layers interspersed with a creamy filling. Because they combine the richness of chocolate with the delicate crispiness of baked wafer sheets, they are prized for their light, crunchy texture and well-balanced flavor profile. Because chocolate wafers are so popular with people of all ages and cultural backgrounds, they make up a sizeable portion of the worldwide confectionery business, which was expected to a valuation of $200 billion in 2024.

Manufacturers can accommodate a wide range of consumer preferences by offering variations in chocolate type (milk, dark, and white), filling composition (hazelnut, vanilla, or chocolate cream), and wafer texture.

Chocolate wafers are made in a multistep procedure that includes batter preparation, baking thin wafer sheets, pouring flavored cream between layers, cutting into bars or bite sized pieces, and enrobing in chocolate.

Flour, sugar, vegetable oils, cocoa solids, and emulsifiers (such as lecithin) are essential ingredients, with changes based on the desired flavor and texture.

Chocolate wafers' sensory experience is influenced by a combination of visual appeal (e.g., Shiny chocolate covering), fragrance (e.g., cocoa intensity), taste (e.g., sweetness, bitterness), Texture (e.g., crispiness, creaminess), making them a good topic for consumer acceptability research.

Objective of the study:

1. This study evaluated the consumer acceptability of four distinct chocolate wafer i.e., Perk, Britannia, Munch and Kit Kat, differing in sensory attributes and nutritional values.
2. The sensory evaluation focused on assessing consumer preferences for appearance, aroma, taste, texture, and overall acceptability to inform product development and marketing strategies.

Literature Review:

Chocolate wafers, typically referring to thin, crisp biscuit layers coated or filled with chocolate, represent a popular segment within the confectionery market. These products, often available in flavors such as chocolate, vanilla, or combinations with fillings like cream or hazelnut, appeal to consumers seeking indulgent yet convenient snacks.

Studies on chocolate consumption provide useful insights for understanding wafer consumer preferences due to similarities in sensory and marketing drivers. **Del Prete and Samoggia (2020)** reviewed 64 studies and identified four main determinants of chocolate choice: personal preferences (taste, health), product attributes (packaging, brand, and certifications), socio-demographic factors (age, gender, income), and economic attributes (price,

promotions). Taste consistently emerged as the strongest driver, often outweighing ethical or sustainability considerations. For wafers, this suggests that flavor and texture particularly crispness and creaminess-are key to repeat purchases.

According to the research done by "**Balaji"** on wafers it was stated that the researchers as well as companies, can identify the effectiveness of advertisements, location, brand, price, promotion, product variety etc., on the target consumers. This helps to understand the current consumer perception about Balaji wafers and the corresponding satisfaction levels.

According to the Study on Development and Quality Evaluation of **Chocolate Coated Millet Wafers** (2021), it was identified that in all formulations, there was significant variation with the addition of millet flour to the wafers. It was found that the texture and hardness of the wafers were also affected but no significant difference between the optimized formulation and control wafer formulation.

Sensory evaluation research by **An and Lee (2024)** using the Check-All-That-Apply (CATA) method found that frequent chocolate consumers showed greater consistency in recognizing key attributes like sweetness, cocoa flavor, texture, and aftertaste . Light consumers were more variable in preferences and more influenced by packaging and promotions. This suggests wafer marketing should target heavy users with sensory consistency, while engaging light users through visual and promotional strategies.

Research Methodology

Research methodology is a systematic approach to conducting research, outlining the specific methods and procedures used to collect, analyze, and interpret data. It's the "how" of research, providing a framework for how a researcher will investigate a research question and arrive at valid and reliable conclusions.

1. Research Design

This study adopts a descriptive research design, which is best suited for understanding consumer preference and market trends. The focus is on describing the characteristic and behavior of chocolate wafer consumers without manipulating any variables.

2. Type of Research

The research is quantitative in nature, relying on numerical data collected through a structured questionnaire to identify patterns and trends in consumer

3. Data Source:

Primary Data: Primary data was collected through a structured questionnaire administered directly to respondents. This allowed for first- hand insights into consumer preferences, satisfaction levels, and perceptions of advertising effectiveness Perk, Britannia, Kit Kat and Munch

Secondary Data: Secondary data was sourced from reliable publications, industry reports, brand websites, and previous research studies related to the Indian confectionery industry and consumer behavior in the FMCG sector.

4. Sample Size

The research was conducted with a sample size of 100 respondents. This sample was deemed adequate to provide preliminary insights and identify general trends within the target market.Each sample contained a standard serving size (about 20 g) with consistent dimensions to guarantee consistency in sensory rating and to maintain quality and prevent melting or texture degradation, samples were maintained at temperatures between 18 and 20 degrees Celsius.

5. Target Population

Panels of 100 untrained consumers (aged between 18-25years) were selected in the university campus. Participants had to be habitual chocolate confectionery eaters and not allergic to chocolate, dairy, or gluten. Participants gave informed consent, and the study asked them to review the samples based on Sensory attributes which includes appearance, aroma, texture, flavor and colour.

Participants rated each sample on a 5-point hedonic scale (1 = Poor, 5 = Excellent) for the following sensory attributes:

Appearance: Visual appeal, including chocolate coating uniformity, color, and glossiness.

Aroma: Intensity and pleasantness of chocolate and filling aromas.

Flavor: Balance of sweetness, bitterness, and flavor intensity of the chocolate and filling.

Texture: Crispiness of the wafer, creaminess of the filling, and overall mouthfeel.

Color: Bright chocolaty colour which appeals the eyes.

6. Research Methods:

Primary tool for data collection was questionnaire comprising close-ended questions. These were divided into various sections:

- Purchasing Behavior

- Sensory Attributes
- Brand Perception
- Marketing and Advertising Influence

7. Limitations of the Research Study:

- Limited respondents: the research was only conducted among 100 respondents which is comparatively a less data for evaluation.
- Respondent's data might have been influenced by personal taste and biasness.
- It is a limited study, not encompassing wide range of targets.

Nutritional Composition of the Chocolate Wafers used:

Nutritional composition of different chocolate wafers was compiled using the information supplied on the wrapper of the wafer.

Nutritional Information (per 100 g)	**Perk**	**Britannia**	**Munch**	**Kit Kat**
Energy (kcal)	513	517	435 – 469	444
Protein (g)	4.7	6.6	6.3	6.6
Carbohydrates (g)	67.6	66.3	50	47.5
Fat (g)	25.2	25.1	23.4	25.3
Trans Fats (g)	0.2	0	< 0.06	0.04
Total Sugars (g)	45.1	36.2	38.9	35
Fiber (g)	0.1	0 – 2	2.8	2.6
Sodium (mg)	103	147	89.3	78.8

DATA ANALYSIS:

A list of questioner was made to analyze the consumer's consumption behavior in regard to various chocolate wafers.

1. The type of wafer mostly preferred:

Type of Wafer	**No. of respondent**	**Total %**
Unflavored	3	3%
Vanilla	21	21%
Chocolate	47	47%
Strawberry	29	29%

Exposition: Chocolate flavored wafer was widely chosen by the respondents due to their personal liking.

2. Consumption behavior of consumers:

Particular	**No. of respondent**	**Total %**
Never	6	6%
Rarely	21	21%
Occasionally	43	43%
Frequently	30	30%

Exposition: The consumption behavior of the wafer is occasional meaning it was not very prioritized opinion of many.

3. Most important thing while choosing a wafer:

Attributes	**No. of respondent**	**Total %**

Appearance	41	41%
Texture	20	20%
Packaging	7	7%
Brand	32	32%

Exposition: Appearance matters the most in chocolate wafer and the brand name also plays a very significant role.

4. Importance of uniformity of shape and size:

Particular	**No. of respondent**	**Total %**
Not Important	10	10%
Slightly	42	42%
Moderate	23	23%
Extremely	25	25%

Exposition: The consumers do not prefer wafers with non uniform size and shape but refined and presentable form.

5. Visual defects that discourage the most:

Defects	**No. of respondent**	**Total %**
Cracks	31	31%
Uneven Layers	39	39%
Discolored	15	15%
Uneven Coating	15	15%

Exposition: Uneven layers of the wafer were significantly the most discouraging factor in wafer which makes the wafer non appealing.

6. Crispiness of a high quality wafer:

Crisp level	**No. of respondent**	**Total %**
Soft	7	7%
Slightly	10	10%
Moderately	20	20%
Very Crisp	63	63%

Exposition: A high quality wafer is associated with high level of crispiness which make the wafer more consumer acceptable.

7. Importance of pleasant aroma in order to try a wafer:

Importance	**No. of respondent**	**Total %**
Not Important	10	10%
Slightly	10	10%
Moderate	55	55%
Extremely	25	25%

Exposition: While aroma might not be the core factor for choosing the wafer but it does play a role in the acceptability according to more than 50% of respondents.

8. Name of brand usually bought:

Brand name	**No. of respondent**	**Total %**
Munch	21	21%
KitKat	58	58%

Britannia	12	12%
Perk	9	9%

Exposition: Kit Kat brand has a huge impact in acceptability ratio of consumers. The name itself gives the consumer a sense of good quality wafer.

9. Reason of choosing that brand :
    - Taste and Brand name
10. Any substitute that can make wafers a rich source of vitamins :
    - Whole Wheats and Oats
11. Most common preference that was brought up by most of the consumers :
    - Sweetness Level.
    - Crisp Level.
    - Rich Quantity of Chocolate.

Sensory Evaluation Methodology:

The Sensory Evaluation was conducted among 100 Non- Trained Panelists at College of Community Science, Chaudhary Sarwan Kumar Himachal Pradesh Krishi Vishvavidyalya under the Department of Food Science, Nutrition and Technology.

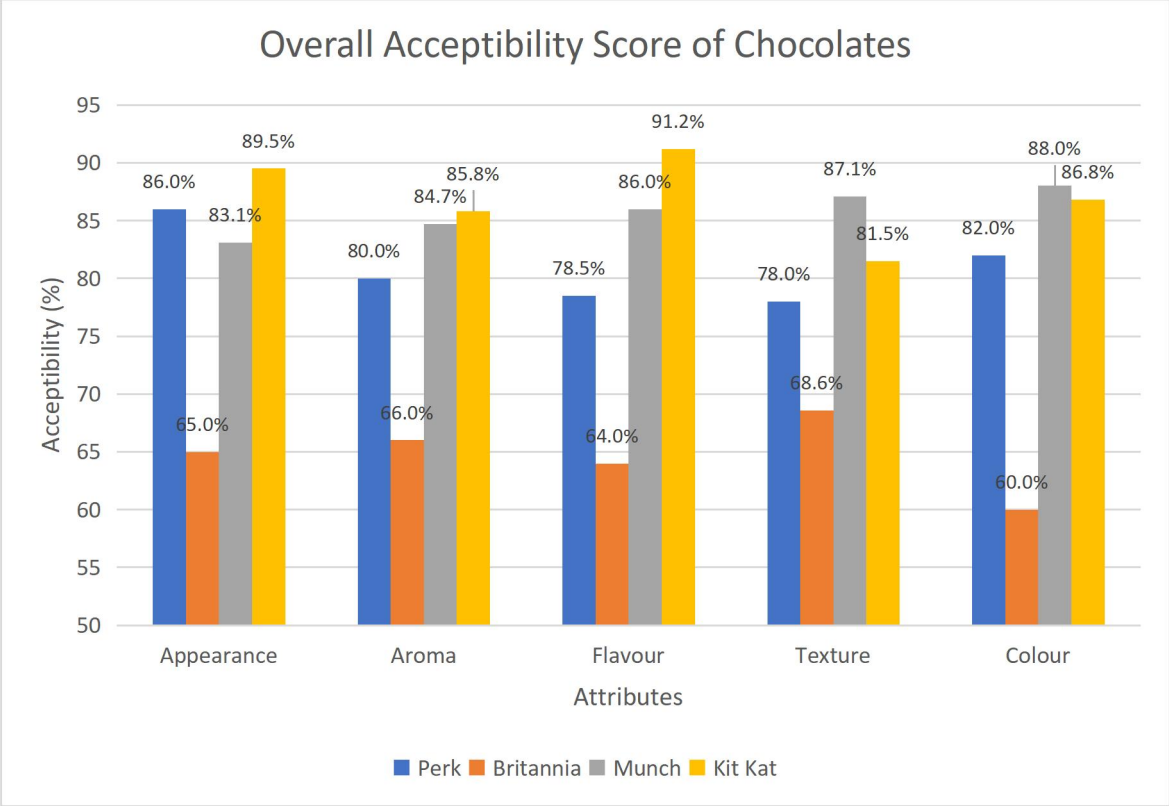
Each participant evaluated the four wafer samples in a randomized order to minimize order effects, with samples presented in identical containers labeled with random 3-digit codes for blind testing. Participants were provided with hot water to cleanse their palates between samples, with a 2-minute interval enforced to prevent sensory fatigue.

The participant rated each sample on a 5 point Scale:

- 1 representing Poor: Unpleasant, would not purchase
- 2 representing Below average: unlikely to purchase
- 3 representing Average: acceptable nut not remarkable
- 4 representing Good: enjoyable and would consider purchasing
- 5 representing Excellent: highly enjoyable and would definitely purchase

Sensory evaluation scores of different samples:

Attributes	**Perk**	**Britannia**	**Munch**	**Kit Kat**
Appearance	4.30	3.26	4.16	4.48
Aroma	4.00	3.30	4.24	4.30
Flavor	3.93	3.20	4.30	4.56
Texture	3.90	3.44	4.36	4.08
Colour	4.10	3.00	4.40	4.34



Conclusion:

The sensory evaluation of four chocolate wafer brands—Perk, Britannia, Munch, and Kit Kat—revealed distinct differences in consumer preferences across all assessed attributes.

- Kit Kat emerged as the most preferred brand overall, consistently achieving high scores for appearance, aroma, flavor, and color, with particularly strong performance in flavor (91.2%) and appearance (89.5%).
- Munch closely followed, excelling in texture (87.1%) and maintaining strong acceptability across all other attributes, indicating its appeal as a balanced option.
- Perk demonstrated moderate acceptability, performing best in appearance (86%) but trailing in flavor and texture compared to the top two brands.
- Britannia received the lowest overall scores, suggesting limited consumer preference, particularly in color (60%) and flavor (64%).

Across all samples, appearance and crisp texture were highlighted as key determinants of consumer acceptance, aligning with the questionnaire findings that visual appeal and brand name heavily influence purchase decisions. The results underscore the importance of optimizing sensory attributes—especially flavor, texture, and appearance—to drive consumer satisfaction and market success. These insights can guide manufacturers in product improvement, targeted marketing strategies, and aligning formulations with consumer expectations.

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