

Food Product Quality: Literature Study on the Dimensions of Food Product Quality

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ABSTRACT: This study aims to analyze the main dimensions that shape the quality of food products from a consumer perspective through a literature review. Food product quality is a multidimensional concept that is a major determinant of consumer purchasing decisions and loyalty. The literature review reveals that food product quality can generally be broken down into five main dimensions: sensory attributes (taste, aroma, appearance, texture), health and nutritional attributes (nutritional value, functional content), safety attributes (freedom from contamination, freshness), convenience attributes (ease of preparation and storage), and process/trust attributes (origin, production methods such as organic or ethical). Sensory attributes are the main drivers of initial acceptance, while safety attributes are an absolute prerequisite. On the other hand, health, convenience, and process attributes are increasingly becoming significant differentiating factors as consumer awareness and lifestyle changes increase. The findings of this study provide practical implications for food manufacturers to plan and market products that are not only sensorially superior, but also meet consumer expectations regarding health, safety, and ethical values, so as to increase consumer satisfaction and loyalty in a competitive market.

KEYWORDS: food quality, sensory attributes, food safety, nutritional value, consumer preferences

I. INTRODUCTION

The food industry is one of the most vital and dynamic economic sectors globally. In a highly competitive market environment, product quality is a key factor that differentiates one brand from another and directly influences consumer satisfaction and loyalty. Food product quality is not a single concept, but rather a multidimensional construct that is viewed differently by various stakeholders, especially consumers (Grunert, 2005). Understanding the dimensions that shape consumer perceptions of quality is critical to the success of product and marketing strategies.

According to Steenkamp (1990), consumer perception of food quality is formed by a series of cues (cues) that can be classified into intrinsic (such as taste, color, texture) and extrinsic (such as brand, price, packaging). Over time, consumer awareness has evolved. Modern consumers are not only looking for delicious products, but also demand products that are safe, healthy, easy to prepare, and produced responsibly (Verbeke, 2005). Issues such as food safety, nutritional value, organic labels, and animal welfare have become important considerations in the decision-making process. This change in consumer behavior requires producers to no longer focus only on sensory aspects. They must adopt a holistic view of quality, integrating various dimensions from raw materials to the final product on the consumer's table. Failure to understand and meet these multidimensional expectations can lead to loss of trust and market share.

Therefore, this study aims to conduct a systematic literature review to identify and analyze the key dimensions of food product quality. By synthesizing the findings of previous studies, this study will present a comprehensive framework on what is meant by "quality" in the context of today's food products, as well as provide insights for industry practitioners in developing relevant and effective quality improvement strategies. Food product quality is the consumer's perception of the superiority of a product formed by various attributes. Based on the literature, these dimensions can include sensory attributes, health and nutritional attributes, safety attributes, convenience attributes, process attributes.

Sensory attributes are product characteristics that can be detected by the five human senses: taste, aroma, appearance (visual), and texture. These dimensions are often the most important factors in the initial acceptance of a food product (Delwiche, 2004). Delicious taste, appetizing aroma, attractive appearance, and texture that fits in the mouth are the main determinants of pleasure and satisfaction when consuming food (Meilgaard et al., 2006). Health and nutritional attributes relate to the benefits of the product for body health. This includes nutritional content (protein, vitamins, minerals), low negative components (saturated fat, sugar, salt), and the presence of functional components (antioxidants, probiotics) (Lähteenmäki, 2013). As awareness of a

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healthy lifestyle increases, consumers increasingly make health and nutritional attributes important criteria in choosing food products (Verbeke, 2005).

Food safety attributes are assurances that food will not cause harm to consumers when prepared and/or consumed according to its intended use. This dimension includes the absence of microbiological (pathogenic bacteria), chemical (pesticide residues), and physical (foreign matter) hazards (Henson & Traill, 1993). Food safety is considered a basic or prerequisite attribute; its absence would render all other positive attributes irrelevant. Convenience attributes refer to the time and effort savings a product offers to consumers. These include ease of purchase, storage, preparation (e.g., ready-to-eat meals), and consumption (Brunner et al., 2010). In modern societies with busy lifestyles, products that offer high convenience have significant added value. Process attributes are attributes that cannot be directly assessed by consumers even after consumption, so consumers must trust the information provided by the manufacturer (Caswell & Mojdzuska, 1996). Examples include production methods (organic, non-GMO), geographic origin (local produce), ethical standards (fair trade), and environmental impact (sustainable production) (Hughner et al., 2007). These attributes are increasingly important to consumer segments concerned with social and environmental issues.

II. RESEARCH METHOD

This study uses a qualitative descriptive approach with a literature review method. The main objective is to identify, analyze, and synthesize findings from previous studies on the dimensions of food product quality.

The data sources in this study come from scientific articles that have been published in accredited national journals and reputable international journals indexed in Scopus, Web of Science, and Google Scholar. The search process was carried out using keywords such as "food product quality", "food quality dimensions", "consumer perceptions of food", "sensory attributes", "food safety perceptions", and "nutritional value". Inclusion criteria are articles that explicitly discuss the dimensions of food quality and their impact on consumer perceptions or behavior.

The data collected were analyzed using thematic content analysis techniques. Each article was reviewed to identify key findings related to each quality dimension (sensory, health, safety, convenience, and process). The findings were then collected, summarized, and synthesized to build a coherent and comprehensive understanding. The validity of the synthesis was maintained through source triangulation, namely by comparing findings from different geographic contexts, product categories, and research methodologies.

III. RESULT AND DISCUSSION

Table 1. Literature Review of Sensory Attribute Dimensions in Food Quality

No.	Findings	Findings from Literature	Supporting Studies
1	Taste and aroma as the main drivers	Taste and aroma are the main predictors of liking and repurchase intention of food products	Meilgaard et al. (2006); Lawless & Heymann (2010)
2	Visual appearance shapes expectations	The color, shape, and visual presentation of a product create a first impression and influence consumer expectations regarding taste	Imram (1999); Spence et al. (2010)
3	Texture influences the eating experience	Texture in the mouth (e.g., crunchy, soft, chewy) significantly contributes to overall enjoyment and quality perception	Szczesniak (2002)

Table 1 shows that sensory attributes are the primary gateway to consumer acceptance. Taste, aroma, appearance, and texture collectively create a pleasurable eating experience. The literature consistently emphasizes that if a product fails at the sensory level, other superior attributes such as nutritional value or attractive packaging are often not enough to drive repeat purchases. Therefore, research and development focused on sensory optimization remains a key foundation in the food industry.

Table 2. Literature Review of Health and Nutrition Attribute Dimensions

No.	Findings	Findings from Literature	Supporting Studies
1	Health claims influence choices	Nutrition and health claims on packaging (e.g., "low fat," "high fiber") positively influence consumer choices	Verbeke (2005); Lahteenmaki (2013)
2	Nutrition awareness drives demand	Growing awareness of the link between diet and chronic disease is driving demand for healthier, more natural food products	Drichoutis et al. (2006)
3	Functional foods become added value	Products enriched with functional ingredients (probiotics, omega-3) are perceived as having higher quality by the health-conscious consumer segment	Urala & Lahteenmaki (2004)

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Table 2 highlights the shift in consumer preferences towards healthier products. The health and nutrition dimension is no longer a niche market, but has become mainstream. Consumers actively seek out nutritional information and use it as a basis for decision making. The practical implication is that manufacturers need to signal transparency regarding nutritional content and innovate in formulating products that support a healthy lifestyle, as this has become an essential pillar of quality.

Table 3. Literature Review of Food Safety Attribute Dimensions

No. Findings	Findings from Literature	Supporting Studies
1 Security is an absolute requirement	Perceived risk to food safety (bacterial, chemical contamination) is a major barrier to purchasing. Safety is a non-negotiable quality	Henson & Traill (1993); Verbeke & Viaene (1999)
2 Freshness as an indicator of safety	Product freshness (best-by date, physical appearance) is used by consumers as a primary cue for assessing safety and quality	Tsiros & Heilman (2005)
3 Certification increases trust	Certification from authority bodies (e.g., BPOM, Halal) and traceability information increase consumer confidence in product safety	Grunert (2005)

Table 3 states that food safety is the foundation of quality. It is the “limiting” attribute (the hygiene factor); its absence will immediately disqualify a product in the eyes of consumers, regardless of how tasty or nutritious it is. Trust is key in this dimension. Therefore, investment in a rigorous food safety management system, quality control, and transparent communication of safety assurances are crucial to building and maintaining consumer trust.

Table 4. Literature Review of Process Attribute Dimensions (Credence)

No. Findings	Findings from Literature	Supporting Studies
1 Preference for organic products is increasing	Consumers are willing to pay premium prices for organic products because of the perception that they are healthier and more environmentally friendly	Hughner et al. (2007)
2 The origin of the product becomes important	Information regarding the country or region of origin can serve as a guarantee of quality and authenticity, influencing consumer preferences	Verlegh & Steenkamp (1999)
3 Ethical values influence brand image	Ethical production practices, such as fair trade and animal welfare, enhance brand image and loyalty among concerned consumer segments	De Pelsmacker et al. (2005)

Table 4 shows the emergence of a more abstract dimension of quality, namely the process or trust attribute. Consumers are not just buying a product, but also the “story” and “values” behind it. They want to know how their food is produced. Attributes such as “organic”, “local”, and “fair trade” become powerful differentiation tools, allowing producers to connect with consumers on an emotional and ethical level. For producers, this means that transparency in the supply chain and communication of brand values become as important as the quality of the product itself.

CONCLUSIONS

This literature study confirms that food product quality is a complex and multidimensional concept, which significantly influences consumer perception, satisfaction, and loyalty. Based on the synthesis of various studies, it can be concluded that there are five main dimensions that collectively shape the perception of food quality: (1) Sensory attributes remain the most fundamental dimensions that determine the initial acceptance and enjoyment of a product. Taste, aroma, appearance, and texture are the main gateways to winning the hearts of consumers; (2) Health and nutritional attributes have evolved from mere added value to primary criteria for the growing consumer segment, driven by health consciousness; (3) Safety attributes serve as an absolute prerequisite, without the guarantee of safety, all other attributes lose their disadvantages. Trust is a central element in this dimension; (4) Convenience attributes answer the needs of modern lifestyles and provide significant added value in terms of saving time and effort for consumers; (5) Process attributes (Credence) represent a deeper dimension of quality, related to values such as ethics, desirability, and authenticity, which enable strong brand differentiation.

The practical implication of these findings is that food industry players should adopt a holistic approach to quality management. A successful product development strategy can no longer focus on just one or two dimensions, but must balance all

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five dimensions according to the target market. Manufacturers should invest not only in R&D for taste, but also in safety assurance, healthier formulations, packaging innovation for convenience, and supply chain transparency to build trust. Future research can further explore how the weight of importance of each dimension varies across cultures, generations, and product categories.

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