

Research Article

# HALAL CERTIFICATE OF GELATIN: THE SURVEY RESEARCH ON APPLICABLE STRATEGIES

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## Abstract

This paper investigated awareness of halal on gelatin, their sensitivity to it, and their trust regarding the use of gelatin in ready-to-eat foods. Along with an online survey, the research included a literature review on halal food certification and gelatin production. Through the survey, Cronbach's alpha was 0.480, and 692 responses were collected. Although the respondents reported that their lifestyle is in accordance with halal, their knowledge was limited: 79.1% reported that they could not determine whether a product contains gelatin.

There was greater concern about gelatin in packaged than in unpackaged foods: 60.0% of respondents reported checking labels on packaged products for the presence of gelatin, whereas only 25.0% said they would inquire about the gelatin content of unpackaged desserts at cafés and patisseries. There was minimal trust in the halal status of gelatin: 79.7% of respondents reported not believing the gelatin sold in Türkiye was halal. Regarding purchase intention, 54.3% said they would buy a product containing gelatin if it were halal-certified, whereas 45.7% said they would still avoid gelatin even if it were certified due to health concerns. 96.4% of people agreed that packaging should clearly indicate if gelatin is used. Overall, the research shows that consumers' halal concerns are far from their actual ability to identify, trace, and regulate gelatin to ensure halal compliance.

**Keywords:** Certificate, Consumer Attitudes, Gelatin, Halal Food

## Introduction

Globalization has increased the range of foods available to consumers and boosted trade in both finished products and food additives. For Muslim consumers, this change has raised worries about whether ingredients and processing aids from non-Muslim countries follow Islamic dietary rules, especially when the source of additives is unclear or not properly disclosed [1]. Because religion strongly influences daily habits, including food choices, halal consumption is not simply a preference; it is integral to one's identity and lifestyle. However, adherence to religious rules varies with personal beliefs and cultural backgrounds [2]. In parallel, halal has also become an essential commercial aspect. The growth of the halal market has increased consumer demands for transparency, safety, and trustworthiness [3,4].

As demand for halal products has increased, certification has become an important means of assuring consumers that foods are free of prohibited or questionable ingredients. It also shows that production processes meet specific standards. Yet, the global halal certification system is very fragmented. Many certifying agencies work in different regions and apply standards that may vary due to institutional practices [5]. Such variation can create uncertainty for consumers and cause challenges for producers. It may also weaken trust in certification claims. Packaging and labeling methods play a key role in informing consumers about the content of food. However, consumers may have limited information, particularly for unpackaged foods. Verifying ingredients is more difficult in these cases. Informal trust in the seller may substitute for certifications [5,6].

In the larger discussion about halal food consumption, gelatin is one of the most sensitive and debated ingredients. Gelatin is a protein derived from collagen, which is commonly derived from the skin, bones,

and connective tissues of vertebrate animals [7,8]. It is widely used in the food industry due to its wide range of uses. The functions of gelatin include thickening, stabilizing, foaming, emulsifying, water-binding, and film formation [9]. These features make gelatin especially useful in confectionery, desserts, dairy products, drinks, and baked goods. [10].

In ready-to-eat and pastry products, gelatin is used directly, for example, in jellies and creams. It can also be present indirectly, serving as a stabilizer, texturizer, or as a clarifying agent [11]. This makes it hard for consumers to detect and evaluate. From a halal perspective, gelatin is permissible only when derived from halal species. It must be obtained through Islamic slaughter when appropriate and produced in ways that keep it free from haram materials [12].

Dietary sensitivity related to gelatin goes beyond Muslim consumers. Kosher laws prohibit pork-derived gelatin, while Hindu consumers may avoid beef-derived gelatin. Additionally, vegetarian and vegan options increase demand for alternative ingredients [9, 13]. Interest has increased in non-porcine sources, such as buffalo, fish-based gelatin derived from seafood by-products, and plant-based hydrocolloids, including pectin, carrageenan, xanthan gum, and agar. These alternatives can mimic some of gelatin's functional properties [11, 14, 15]. Fish gelatin has some sensory benefits, but its share of global production is still small. This is because its rheological characteristics and stability differ from those of mammalian gelatin [14, 15].

In Türkiye, gelatin is often seen as an ingredient with a "hidden" non-halal risk. This view comes from a history of dependence on imports, concerns about the trustworthiness of producers and certification bodies, and the belief that packaging and labeling methods are inadequate [1, 12]. Previous studies in

Türkiye indicate that consumers are receptive to halal products [16], yet information gaps remain. In these situations, consumer trust may depend more on familiarity with brands and sellers than on halal certification alone [17]. This study looks at gelatin in ready-to-eat foods. It examines consumers' knowledge of gelatin, their sensitivity to halal concerns, and their trust in these products. The focus is on how consumers assess risks associated with gelatin in both packaged and unpackaged foods. It also considers consumers' expectations regarding labeling and the information provided.

## Materials And Methods

### *Participant Profile and Data Collection*

Quantitative data is collected via an online questionnaire administered via Google Forms. This survey measured participants' demographics, knowledge, attitudes, sensitivities, and trust regarding halal food and gelatin. The survey's internal consistency yielded a Cronbach's alpha of 0.48, through 692 participants. The research tests several hypotheses to examine whether consumer attitudes, awareness, and approaches toward halal gelatin vary by gender, age, education, income, occupation, marital status, having children, and household size. The results show that the sample primarily comprises women [86.2%], individuals aged 18-28 [46.0%], and university graduates [59.2%]. About half of the respondents are married, most do not have children, and the majority are working or studying.

### *Food Safety Beliefs and Halal Food Attitudes of Consumers*

This section analyzes how participants perceive food safety and their attitudes and behaviors toward halal food, with respect to education, income, age, and gender. The findings in Table 1 indicate that, with respect to food safety knowledge, participants report the highest awareness of organic food [88.8%] and halal food

[80.1%]. In contrast, international food safety standards such as ISO 22000 and HACCP are the least recognized, with knowledge declining with age. Halal food is primarily defined as "certified and labeled halal products," and higher education and income

### *Consumer Attitudes Toward Halal Certification and Food Preferences*

This section analyzes how consumers perceive halal certification, their purchasing behavior, and the factors that influence their food preferences. The results in Table 2 show that the main reasons for not choosing halal-certified products are difficulty in finding them [42.1%], lack of trust [34.3%], limited knowledge [33.0%], and perceptions of high prices [19.5%]. These issues vary with income and education levels. In spite of these difficulties, nearly half of the participants report that they generally try to purchase halal-certified products. About one-third purchase them when they encounter them.

Regarding food preferences, quality is the most important factor [81.8%], followed by brand [56.6%] and taste [53.9%]. Advertising has little effect [8.7%]. Younger consumers are more swayed by packaging. However, across all ages, quality, taste, and brand remain the leading influencers. This is especially true for higher-income individuals, married individuals, and those with higher levels of education. Lastly, most consumers [85.5%] say they read information on food packages. Reading habits increase with age and show slight differences between genders. This suggests that

### *Consumers' Trust Perceptions and Approaches Toward Gelatin-Containing Products*

Consumer attitudes toward gelatin reveal a predominantly cautious environment, defined by low domestic usage and a pronounced trust gap in the marketplace. The data shown in Table 3 indicate that

84.4% of consumers actively avoid using gelatin in home cooking, a trend especially evident among households with children and individuals with higher educational attainment. Although 69.4% of consumers check Halal certification when purchasing gelatinous products, with sensitivity increasing with income and education, certification alone does not ensure purchasing behavior. Notably, 45.7% of respondents reported they would reject gelatin products even if certified Halal, citing health concerns. This outcome demonstrates that a major share of the population perceives gelatin as unhealthy or risky, regardless of religious compliance. Additionally, generalized trust persists low, as 79.7% of participants expressed skepticism about the Halal status of domestically available gelatin, a sentiment found across all demographic groups.

The study further draws attention to the behavioral contradiction between retail and service environments. Consumers exhibit high sensitivity regarding packaged goods, with 60% checking labels, a practice driven largely by women and high-income earners, yet this sensitivity collapses in out-of-home dining contexts, where 75% fail to inquire about gelatin in unpackaged pastry or cafe products. This variation is concerning, given that 79.1% of consumers admit they cannot detect gelatin by taste or sight, leaving them entirely dependent on external information. Consequently, there is a near-universal demand [96.4%] for mandatory, explicit labeling on packaging. In this uncertain landscape, consumers overwhelmingly rely on brand reputation [66.9%] and personal label inspection [60.7%] rather than official government verification [17.9%], underscoring that brand equity and transparency are the primary currencies of trust in the gelatin market.

## Results And Discussion

One of the main factors influencing people's lives is their religious beliefs. For

those who structure their lives around these beliefs, religion strongly affects their food preferences and shopping habits. With developments in technology, individuals can now find information with ease and gain a wealth of knowledge about food. As a result, consumers frequently choose halal products, in accordance with their buying and eating habits, based on their beliefs. However, some consumers who do not base their food choices primarily on religious considerations may still opt for halal products because they perceive them as healthier, cleaner, and higher quality.

In the introduction part of the research, a review of the existing literature was conducted to examine consumers' views on halal food and halal-certified products. It also covered information on halal-certified gelatin used in food products, both in Türkiye and worldwide. The study also focused on gelatin as a food additive. It analyzed its general properties, structure, and production processes, as well as alternatives to animal-based gelatin. It also reviewed prior studies and surveyed participants to evaluate their knowledge, opinions, awareness, and perceptions regarding the topic.

The results gathered through the survey show a need for greater focus on understanding the content, origin, and production sources of gelatin used in halal-compliant food products in Türkiye. Consumers with concerns about halal should receive adequate information and education. Through greater awareness, information sharing, and guidance, consumers can more easily exercise their right to access halal food and to consume it in accordance with their beliefs. This would help reduce uncertainty and anxiety, enabling greater freedom in travel, nutrition, and daily activities worldwide. Therefore, consumers must have easy, affordable, practical, and reliable access to halal-certified and/or halal-labeled food produced in accordance with Islamic guidelines.

This research aimed to pinpoint where gelatin is used in processed foods and analyze consumers' attitudes toward halal-certified gelatin. The data show that consumers generally display strong sensitivity toward halal food and are cautious, yet commonly lack adequate knowledge. Although consumers usually fear gelatin, even halal-certified gelatin is not fully trusted. It was also observed that consumers depend more on retailers and brands they trust than on certification alone. The lack of clear information on packaged food labels has resulted in a fall in consumer confidence, even though many consumers read and research package details. In contrast, the same level of caution is not applied to unpackaged foods, which are often regarded as more reliable.

Although demand for halal food has risen in Türkiye and globally, leading to a considerable expansion of the halal food sector, poor product labeling and failure to meet consumer needs and expectations have negatively affected demand and hindered further industry growth. Therefore, accessibility and fair audit systems are

essential for the sustainability of halal food products.

The research shows that while consumers, especially those with high halal sensitivity, tend to trust label information when choosing packaged foods, they often fail to investigate the contents of unpackaged foods such as pastries, desserts, yogurt, and chocolate from food service establishments. Despite high trust in producers and perceptions that packaged foods are riskier, the research shows that unpackaged foods may also present considerable dangers with respect to halal compliance and food safety. This stresses the requirement to increase awareness and monitoring in this area.

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**Table 1.** Food Safety Awareness Across Education, Age, and Gender Groups

| Standard / Certification | Total % | Education [within-group %] min–max | Age [within-group %] min–max | Gender [within-group %] Women / Men |
|--------------------------|---------|------------------------------------|------------------------------|-------------------------------------|
| Organic food             | 88.8    | 80.0 – 95.2                        | 84.9 – 100.0                 | 89.2 / 85.5                         |
| Halal food               | 80.1    | 77.6 – 87.5                        | 61.1 – 83.0                  | 79.3 / 85.5                         |
| ISO 9001                 | 31.7    | 16.7 – 54.1                        | 24.7 – 40.8                  | 30.1 / 42.2                         |
| ISO 22000                | 17.9    | 4.2 – 36.1                         | 13.9 – 22.5                  | 16.8 / 25.3                         |
| HACCP                    | 18.8    | 0.3 – 42.6                         | 16.7 – 20.8                  | 17.0 / 32.5                         |

**Table 2.** Consumer attitudes toward halal certification, purchasing behavior, and food preferences

| Domain   | Indicator  | %    | Key sociodemographic pattern                         |
|--|--|------|--|
| <b>Reasons for not choosing halal-certified products</b>   | Difficulty in finding halal products               | 42.1 | More frequently reported across all education levels |
|  | Lack of trust in halal certification               | 34.3 | Present at all education levels                      |
|  | Limited knowledge about halal certification        | 33.0 | More common among lower education groups             |
|  | Perceived high prices                              | 19.5 | More pronounced at lower income/education levels     |
| <b>Purchasing behavior toward halal-certified products</b> | Generally try to purchase halal-certified products | 49.2 | More common among women and higher education groups  |
|  | Purchase when encountered                          | 33.0 | Common across genders                                |
|  | Purchase all food as halal-certified               | 10.9 | Minority behavior                                    |
| <b>Food preference factors</b>                             | Quality  | 81.8 | Dominant factor across all ages and education levels |
|  | Brand  | 56.6 | Secondary importance                                 |
|  | Taste  | 53.9 | Consistently important across ages                   |
|  | Packaging  | 27.1 | More influential among younger consumers             |
|  | Advertising  | 8.7  | Least influential factor                             |
| <b>Attention to halal compliance</b>                       | Pay attention to halal status when purchasing food | 79.8 | Increases with education level                       |
|  | Generally try to purchase halal-certified products | 49.2 | More common among higher education groups            |
|  | Purchase all food as halal-certified               | 10.9 | Minority but highly committed group                  |
| <b>Label reading behavior</b>                              | Read information on food packages                  | 85.5 | Increases with age; slight gender differences        |

**Table 3.** Analysis of Consumer Attitudes Toward Gelatin: Usage, Risk Perception, and Information Seeking Behaviors

| Dimension of Consumer Behavior     | Survey Items   | Dominant Response (%) |
|------------------------------------|--|-----------------------|
| <b>Dietary Habits</b>              | Utilization of gelatin in home cooking                                 | No (84.4%)            |
|                                    | Willingness to consume Halal-certified gelatin products                | Yes (54.3%)           |
| <b>Sensitivity &amp; Awareness</b> | Checks for Halal certification during purchase                         | Yes (69.4%)           |
|                                    | Checks ingredient labels on packaged goods                             | Yes (60.0%)           |
|                                    | Inquires about ingredients in unpackaged goods in cafes and brasseries | No (75.0%)            |
| <b>Trust Perception</b>            | Trust in the Halal status of domestic gelatin market                   | No (79.7%)            |
|                                    | Ability to detect gelatin in food by taste or sight                    | No (79.1%)            |
| <b>Verification</b>                | Preferred method for verifying product compliance                      | Brand Trust (66.9%)   |
|                                    | Demand for explicit labeling on packaging                              | Yes (96.4%)           |