

THESIS ABSTRACTS FOR A DOCTORAL (PH.D.)  
THESIS

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MAGYAR AGRÁR- ÉS  
ÉLETTUDOMÁNYI EGYETEM

**THE PLACE OF GAME MEAT IN THE DOMESTIC  
GASTRONOMIC VALUE CHAIN – SUPPLY AND  
DEMAND FACTORS, AND THE ROLE OF  
EDUCATION IN SHAPING CONSUMPTION**

Theses from a PhD dissertation

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Declaration

I, the undersigned, Zoltán Nagy, author of the thesis titled The Place of Game Meat in the Domestic Gastronomic Value Chain – Supply and Demand Factors, and the Role of Education in Shaping Consumption, hereby declare that in the course of preparing this thesis, I acted in accordance with the current Code of Scientific Ethics of the Hungarian Academy of Sciences (MTA), and with full awareness of and in possession of the research standards and permits required in my field of study. Where the dissertation does not present my own thoughts and findings, I have clearly and identifiably indicated this within the dissertation.

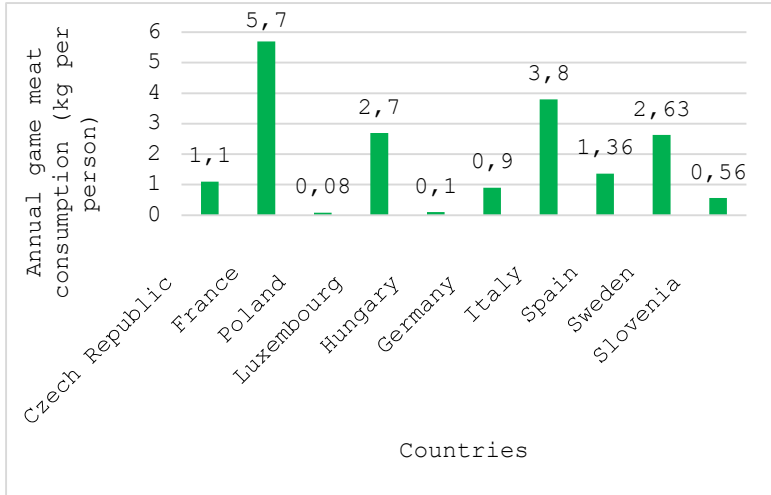
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## CONTENTS

<b>1. BACKGROUND AND OBJECTIVES OF THE PROJECT</b> ...	1
<b>2. MATERIALS AND METHODS</b> .....	4
<i>In-depth interviews (qualitative)</i> .....	4
<i>Statistical analysis (SPSS, Microsoft Excel)</i> .....	5
<b>Research limitations</b> .....	5
<b>3. RESULTS AND DISCUSSION</b> .....	7
<i>Regional Differences in Restaurant Game Dishes in Hungary: Results of a Menu Analysis</i> .....	8
<i>Overview of the restaurant's game menu</i> .....	8
<i>Results of the study on game meat consumption habits</i> .....	10
<b>Statistical correlations</b> .....	13
<b>The Culinary Use of Game Meat: The Qualitative Analysis of Chef Interviews</b> .....	13
<b>The Role of Game Meat in Culinary Education – A Qualitative Analysis</b> .....	14
<b>Hypothesis testing</b> .....	16
<b>4. CONCLUSIONS AND RECOMMENDATIONS</b> .....	18
<b>5. NEW SCIENTIFIC FINDINGS</b> .....	22
<b>6. THE AUTHOR'S PUBLICATIONS RELATED TO THE THEME OF THE THESIS</b> .....	25

## **1. BACKGROUND AND OBJECTIVES OF THE PROJECT**

Annual per capita game meat consumption in Hungary is low (Figure 1) and lags behind international averages, this situation attributable to several factors (Sidlovits et al., 2023). (Sidlovits et al., 2023). This phenomenon is driven by both supply and demand factors, particularly limitations on accessibility and the technical demands of processing. On the consumer side, a lack of knowledge and price sensitivity are key factors. Internationally, there is growing interest in sustainable protein sources (Gyurcsó, 2026). Game meat – due to its natural origin and favourable ecological characteristics – is increasingly aligning with modern food consumption trends. In Hungary, however, the low level of consumption suggests that the product’s social and market integration is limited. The aim of the research is to conduct a comprehensive examination of the role of game meat in the domestic gastronomic value chain, with particular regard to consumer habits, the hospitality sector and education. The study focuses on three main dimensions: consumer habits, the specific characteristics of the hospitality and market environment, and the role of education. A further aim of the research is to formulate practical recommendations for increasing game meat consumption.



**Figure 1: Annual per capita game meat consumption in European countries**

*Source: Compiled by the author based on Mesinger et al. (2023)*

The main objectives of the research:

- C1. To examine the traditional and cultural role of game meat.
- C2. To analyse the status of game meat in modern catering.
- C3. To explore opportunities for promoting game meat.
- C4. To examine market factors relating to game meat (consumer attitudes, price, availability).

Key research questions:

Q1. How has the consumption of game meat developed in Hungary?

Q2. What factors influence its current situation?

Q3. How can the awareness and availability of game meat be increased?

Q4. What influences consumer acceptance?

The following hypotheses were formulated during the research:

H1. The decline in game meat consumption is significantly linked to low levels of consumer knowledge.

H2. The limited availability of game meat has a negative impact on consumption levels.

H3. The low diversity of game dishes on restaurant menus reduces consumer demand.

H4. Emphasising sustainability considerations positively influences the acceptance of game meat.

## **2. MATERIALS AND METHODS**

### **The research's methodological approach**

The research was based on the combined use of quantitative and qualitative methods. The main elements of the study were menu analysis, a questionnaire survey, qualitative in-depth interviews and statistical analyses.

#### **Sample and data collection**

Menu analysis (quantitative and qualitative)

During the data collection process, a total of 1,360 online menus from restaurants in Hungary were analyzed. From a quantitative perspective, the analysis focused on the frequency of game dishes; from a qualitative perspective, it focused on dish names, descriptions, and pricing characteristics.

Questionnaire survey (quantitative)

The questionnaire survey took place between January and May 2025, with a total of 714 participants. The sampling was convenience-based and therefore cannot be considered representative; however, it is suitable for identifying the main trends.

#### ***In-depth interviews (qualitative)***

During the qualitative research, 20 interviews were conducted with two target groups: 10 chefs and 10 professionals teaching cookery.

The interviews were analysed using thematic analysis.

### ***Statistical analysis (SPSS, Microsoft Excel)***

Quantitative data were analysed using SPSS and Microsoft Excel.

- descriptive statistics to characterise the sample;
- cross-tabulation analysis to identify correlations;
- Kruskal–Wallis test to compare groups;
- Spearman’s rank correlation to examine the relationship between variables.

### **Research limitations**

Several limiting factors arose during the research that affected data collection and the interpretation of results. In order to accurately map the retail sales of game meat, data requests were made to several organisations, but a significant proportion of these were rejected. The Central Statistical Office (KSH) does not hold detailed data on the retail trade in game meat, whilst certain market players – such as meat processing and trading companies – did not provide information, citing commercial policy reasons. This lack of data limited the precise determination of game meat’s position in the domestic market, particularly with regard to the analysis of retail sales ratios, consumer accessibility and demand trends. Consequently, the ability to accurately assess the relationship between barriers experienced on the consumer side – such as price sensitivity or lack of availability – and market supply constraints was also limited.

To partially address the data gap, a retail company provided aggregated data on game meat sales; however, this did not include a detailed breakdown across individual sales channels, which further limited a deeper analysis of the market. Overall, the research findings are primarily suitable for identifying trends; however, a comprehensive understanding of market conditions requires the inclusion of further, more detailed data.

### 3. RESULTS AND DISCUSSION

#### Market Situation + Strategic Analysis

The strategic situation of the game meat market can be summarised using a SWOT analysis (Table 1).

**Table 1: SWOT Analysis of the Hungarian Game Meat Market**

Strengths	<ul style="list-style-type: none"><li>- Tradition and culinary value</li><li>- Healthier, low-fat content</li><li>- Adequate game population</li><li>- Sustainable meat source</li><li>- Premium category, fine dining option</li><li>- Growing international demand</li></ul>
Weaknesses	<ul style="list-style-type: none"><li>- High prices</li><li>- Low awareness, preconceptions</li><li>- Limited availability</li><li>- Lack of innovation in restaurants</li><li>- Lack of education</li><li>- Regulatory and seasonal challenges</li></ul>
Opportunities	<ul style="list-style-type: none"><li>- Sustainable food trends</li><li>- Food tourism and festivals</li><li>- International premium demand</li><li>- Marketing and education</li><li>- Innovative game dishes</li><li>- Retail expansion</li></ul>
Threats	<ul style="list-style-type: none"><li>- Lower prices for processed meats</li><li>- Perceptions of hunting</li><li>- Stricter regulations</li><li>- Changing culinary trends</li><li>- Uncertainty in the hospitality industry</li><li>- The younger generation turning away</li></ul>

*Source: Compiled by the author based on the reviewed literature, 2025*

## **Restaurant menu**

### ***Regional Differences in Restaurant Game Dishes in Hungary: Results of a Menu Analysis***

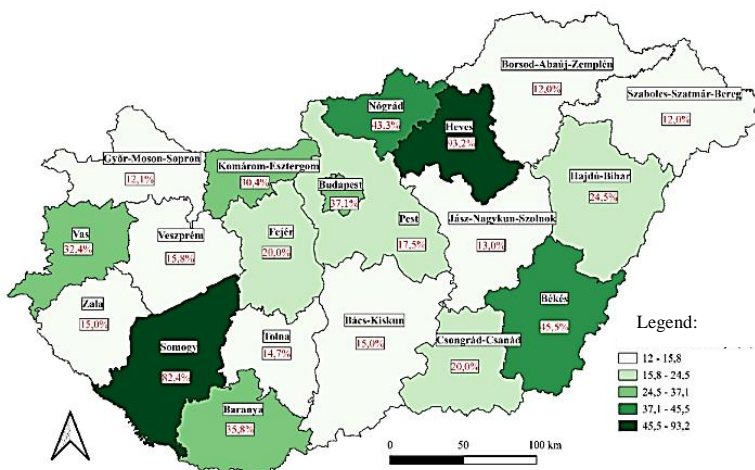
The results of the study revealed marked regional differences in the availability of game dishes in restaurants across Hungary. Favourable natural conditions and the potential for game management play a decisive role in explaining these significant variations. In forested, game-rich regions – particularly in Northern Hungary and parts of Transdanubia – game meat is more readily available, which facilitates its culinary use. Furthermore, the stronger presence of hunting traditions also contributes to the inclusion of game dishes on restaurant menus.

#### ***Overview of the restaurant's game menu***

The analysis is based on an examination of the online menus of 1,360 restaurants in Hungary. In light of this, it should be noted that the proportion of restaurants offering game dishes is 30.7% nationwide. Although this proportion falls short of the almost universal presence of mass-produced meats (pork, poultry), it indicates significant supply activity on the part of the hospitality sector when compared to the extremely low figures for game meat consumption among the general public (less than 0.1 kg per capita). The regional distribution of game dishes, compared to the national average of 30.7%, reveals the true structural differences. Figure 2 clearly shows that the supply of game dishes is spatially concentrated. In Heves and Somogy counties, the proportion of restaurants offering game dishes is exceptionally high (over 80%), which

can be explained by the regions' favourable game management conditions and strong gastronomic traditions. In contrast, in several counties in eastern and western Hungary – for example, Szabolcs-Szatmár-Bereg (11.6%), Borsod-Abaúj-Zemplén (12.0%) or Zala County (15.0%) – the proportion is significantly lower, suggesting that game cuisine is less deeply rooted there. Budapest presents a unique situation: although 36.8% of restaurants offer game dishes, these cannot be considered a defining feature due to the diversity of the capital's culinary offering. At the same time, game dishes differ from their rural counterparts in terms of quality, as innovative, premium-category dishes are more common.

**Figure 2: Percentage of restaurants offering game dishes, by county (%)**



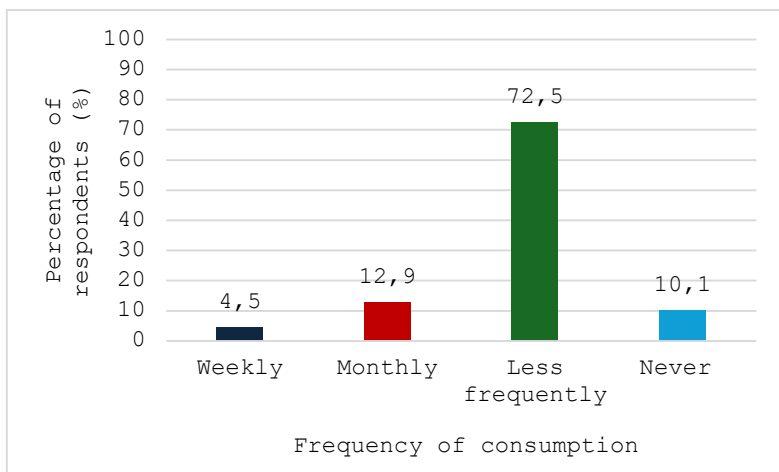
Source: Compiled by the author, based on an analysis of online menus, 2025

In Heves and Somogy counties, the proportion of restaurants offering game dishes is exceptionally high, whilst in several counties in eastern and western Hungary it is significantly lower. Overall, the presence of game dishes in restaurants in Hungary is strongly differentiated on a regional basis.

## **Consumer research**

### ***Results of the study on game meat consumption habits***

The questionnaire was completed by 714 people; the sample was dominated by the 31–50 and over-51 age groups. The proportion of respondents with higher educational qualifications (47.9%) is notably high, which, in line with data from the literature, may be linked to more health-conscious and informed food choices. Based on the frequency of game meat consumption (Question 5), it can be concluded that the product is not part of the everyday diet. This result suggests that the consumption of game meat in Hungary cannot currently be considered routine, but is rather linked to occasional, specific decision-making situations. 72.5% of respondents consume game meat less frequently than once a month, whilst 12.9% do so on a monthly basis. Weekly consumption is observed in only 4.5% of cases, whilst 10.1% of respondents have never consumed game meat at all (Figure 3).



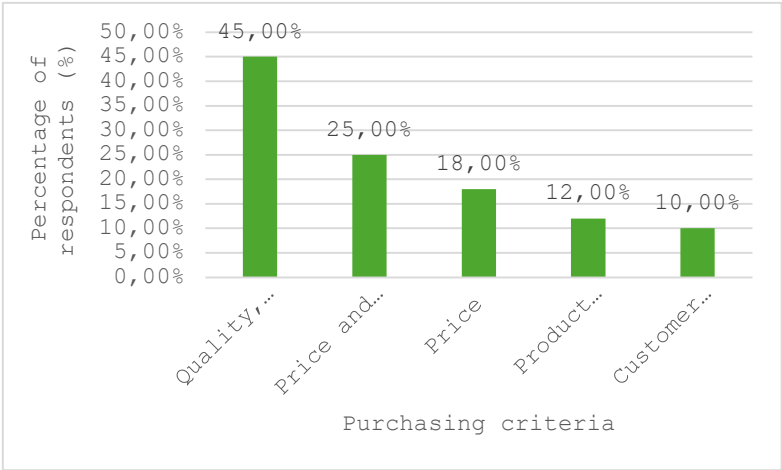
**Figure 3: Frequency of game meat consumption (%)**

*Source: Compiled by the author, based on an online survey, 2025 (n=714)*

The survey of sourcing channels (Question 7) revealed that the most important channel is purchasing directly from hunters (314 respondents). This is followed by supermarkets and hypermarkets (176 respondents) and consumption in restaurants (110 respondents). This occasional nature is closely linked to the structure of the sourcing channels.

Based on the results, the most common source of supply is purchasing directly from the hunter (314 respondents), which suggests that trust-based, informal sales channels continue to play a dominant role in the game meat trade. In contrast, the role of modern retail outlets (176 respondents) and specialist shops (30 respondents) is more limited. The price sensitivity

survey (Question 14) revealed that price influences the decision to purchase game meat to a large extent for 184 respondents (25.8%), whilst for 418 people (58.5%) it influences the decision to a moderate extent. Only 112 people (15.7%) stated that price does not influence their decision. Some respondents are willing to pay a higher price for game meat from sustainable sources, though a significant price-sensitive group can also be identified. In the ranking of purchasing criteria (Question 11) – where respondents could select multiple answers – quality and freshness proved to be the most decisive factors (45.0%). This was followed by the combined role of price and quality (25.0%), and the independent influence of price (18.0%). As the question (Figure 4) allowed for multiple responses, the total for each category exceeds 100%.



**Figure 4: Factors influencing the purchase of game meat (%), (multiple responses allowed)**

Source: Compiled by the author, based on an online survey conducted in 2025 (n=714)

Quality and freshness, as well as the combined consideration of price and quality, are decisive factors in purchasing decisions. 65.5% of respondents consider ingredients from sustainable sources to be important.

### **Statistical correlations**

Based on the statistical analyses, age showed no significant correlation with either consumption frequency ( $p=0.93$ ) or willingness to pay a premium price ( $p=0.061$ ). However, a moderate positive correlation can be observed between availability and frequency of consumption ( $\rho=0.43$ ;  $p<0.001$ ), which confirms the key role of availability.

### **The Culinary Use of Game Meat: The Qualitative Analysis of Chef Interviews**

The aim of the chef interviews was to explore the use of game meat in restaurants, its specific processing characteristics and professional evaluation. Based on the interviews, the processing of game meat requires specialised professional skills. The most significant challenges are the variability in the meat's quality and texture, its low fat content, seasonal availability and uncertainty regarding the supplier base. The chefs highlighted the role of sous-vide, marinating and slow cooking. Game meat is primarily offered as a seasonal speciality for premium clientele. The main findings are summarised in Table 2.

**Table 2: Key findings from the qualitative chef interviews**

Category	Key Findings
Preparation and Technology	Sous-vide, marinating, and slow cooking are the most common methods
Menu Presence	Main courses and soups dominate with seasonal focus
Key Ingredients	Venison and wild boar are the most common
Guest Experience	Wine pairing and personal recommendations are key factors
Sourcing	Local hunting clubs and smaller suppliers dominate
Sustainability	A focus on natural origins and a zero-waste approach is present
Professional Expertise	Knowledge is gained through experience, with limited formal training

*Source: compiled by the author, 2025*

### **The Role of Game Meat in Culinary Education – A Qualitative Analysis**

Based on interviews with teachers, game meat is under-represented in chef training. In most institutions it does not feature as a separate curriculum unit, and its practical preparation is ad hoc. The main obstacles are the irregular availability of the raw material, the high purchase price, differences in institutional infrastructure, and the transfer of knowledge depending on the individual experience of the instructors. The main findings are illustrated in Table 3.

**Table 3: Key themes and main findings**

<b>Topic</b>	<b>Key Findings</b>
Role in the curriculum	Education on game meat is marginal and not offered as a standalone subject. Its integration into the curriculum is inconsistent.
Practical instruction	The processing of game meat is ad hoc and irregular; schools have limited equipment and access to raw materials.
Procurement options	The procurement of game meat is irregular; establishing ties with local hunting clubs could help.
Instructors' motivation and knowledge	Teachers' personal interest and experience are crucial; further training is needed.
Student attitudes	Students are initially reluctant to try game meat, but with appropriate teaching tools and hands-on experience they become open to it.
Areas for improvement	Curriculum integration, teacher training, expansion of equipment, and regular procurement of ingredients are necessary.

*Source: compiled by the author, 2025*

## Hypothesis testing

The hypotheses formulated during the research were evaluated by comparing the quantitative and qualitative results (Table 4). Based on the results, hypotheses H1 and H2 were confirmed, whilst hypotheses H3 and H4 were partially confirmed.

**Table 4: Evaluation of research hypotheses and methods used**

<b>Hypothesis</b>	<b>Contents</b>	<b>Methodology</b>	<b>Result</b>
H1	Low consumption of game meat is linked to a lack of knowledge.	Survey research (descriptive), qualitative interviews	Confirmed
H2	Limited availability hinders consumption.	Spearman's correlation, qualitative interviews	Confirmed
H3	A lack of variety in the product range reduces demand.	Menu analysis, qualitative interviews	Partially confirmed
H4	Sustainability increases acceptance.	Survey research (Kruskal-Wallis)	Partially confirmed

*Source: compiled by the author, 2025*

The results of the hypothesis tests confirm that game meat consumption cannot be explained by a single factor. The constraints on consumption arise simultaneously on the demand side, i.e. in terms of lack of knowledge and attitudes, and on the supply side, i.e. in terms of availability and supply structure.

## **4. CONCLUSIONS AND RECOMMENDATIONS**

### **The culinary value and presentation of game meat in restaurants.**

Based on the results of the research, it can be concluded that game meat traditionally plays an important role in Hungarian gastronomy, but its presence is limited today. In the catering sector, game dishes are primarily offered on a seasonal basis and in a limited selection, which contributes to low consumption levels. Due to the premium nature of game meat, it is typically positioned in a higher price category on restaurant menus, which further limits its wider uptake.

### **Consumer habits and attitudes**

Studies have shown that game meat consumption in Hungary is infrequent and primarily occurs on an occasional basis. A significant proportion of consumers rarely or never consume game meat, which is linked to a lack of knowledge, price sensitivity and limited availability. Demographic studies indicate that consumption is primarily characteristic of middle-aged and older age groups, whilst it is less common among younger generations.

Consumer attitudes are ambivalent: naturalness, healthiness and uniqueness are seen as positive factors, whilst high prices, difficulty in sourcing ingredients and uncertainties regarding preparation act as negative factors.

## **Professional experience in the hospitality industry**

Based on the results of the qualitative studies, professionals working in the hospitality industry agreed that the processing of game meat requires specialised professional knowledge. A lack of appropriate technical knowledge, as well as uncertainty regarding the availability of the raw material, limits the wider use of game meat in practice. According to the chefs' experience, uncertainty on the part of guests and low demand also contribute to game meat appearing less frequently on restaurant menus.

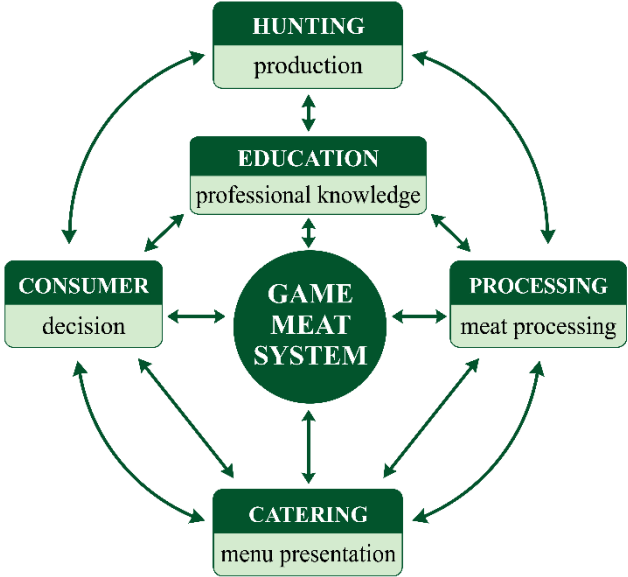
## **The current state of education**

The examination of the education system reveals that knowledge relating to game meat processing features only to a limited extent in chef training. The curriculum does not provide sufficient opportunities for acquire knowledge of the subject, which contributes to a lack of professional competence in the long term. The processing of game meat rarely features in practical training, which further exacerbates the lack of practical experience.

## **Suggestions for improvement**

Based on the research findings, complex, multi-faceted interventions are required to increase game meat consumption. On the supply side, it is advisable to expand restaurant menus and increase the proportion of processed products, whilst on the demand side, consumer education and

targeted communication play a key role. Marketing communications must emphasise the health and sustainability benefits of game meat, as well as its unique character. In the field of education, it is essential to integrate game meat processing more strongly into the curriculum and to develop practical training. Overall, increasing game meat consumption can only be achieved through an integrated, systemic approach. The interrelationships within the gastronomic value chain of game meat are illustrated in Figure 5.



**Figure 5: An integrated, interaction-based value chain model for game meat**

*Source: compiled by the author, 2025*

The game meat sector is not a linear process, but an interactive ecosystem. The unpredictability of hunting affects the functioning of the system at several points, from processing to catering. The market is currently constrained by limited supply, uncertainty regarding culinary technology and a weak vocational training background. Progress requires a systemic strategy that simultaneously targets accessibility, professional competence and consumer education.

## 5. NEW SCIENTIFIC FINDINGS

The findings of the research can be summarised in the following theses.

**1. A complex model has been developed** that interprets consumer attitudes, catering industry's supply and the education system within a single interactive framework. It has been empirically confirmed that the low level of game meat consumption is the combined result of a lack of knowledge, accessibility constraints and shortcomings in education.

### **2. Exploring the structural discrepancy between supply and education**

A discrepancy has been identified between the demands of the hospitality industry and the competencies acquired through vocational training. Practical shortcomings in the training system result in technological uncertainty, which limits the diversification of game meat supply.

**3. Exploring the relationship between consumer perception and premium price sensitivity.** Based on my empirical findings, it can be demonstrated that, for consumer groups who perceive game meat as 'healthy' and 'sustainable', the perceived value of the product moderates price sensitivity. I used the Kruskal – Wallis test to confirm that willingness to pay a premium is independent of age ( $p = 0.061$ ).

**4. Empirical measurement of the relationship between availability and frequency of consumption.** A Spearman's correlation test ( $\rho = 0.43$ ;  $p < 0.001$ ) confirmed

that there is a moderate, positive relationship between the limited availability of game meat supply channels and frequency of consumption. Based on the results, it can be concluded that improving market accessibility is a key factor in increasing consumption.

#### **5. Evidence of regional inequalities.**

The national menu analysis (n=1360) confirmed that the presence of game meat in Hungarian gastronomy varies significantly by region. Whilst it is present in rural tourist areas as part of a tradition-preserving culture, it is significantly under-represented in metropolitan catering.

#### **6. Methodological innovation – three-dimensional gastronomic analysis.**

The research employed an integrated methodological approach combining a quantitative consumer survey (n=714), the region-based menu analysis (n=1360) and multi-stakeholder qualitative in-depth interviews. This three-dimensional analytical framework enabled the simultaneous examination of the demand, supply and human resource development dimensions of the game meat market.

#### **7. Demonstrating the generational homogeneity of game meat consumption patterns.**

Based on the results of the Kruskal–Wallis test ( $p=0.93$ ), I found that there is no statistically significant difference in the frequency of game meat consumption between the different age groups. The pattern of ‘rare consumption’ is consistently present across all age groups.

Taken together, the scientific findings presented contribute to a complex, systemic understanding of game meat consumption. The results indicate that the low level of game meat consumption is not driven by a single dominant factor, but rather by the combined effect of several interrelated structural and attitudinal constraints. Both the developed models and the results of the empirical studies support the view that the development of the game meat market can only be achieved through an integrated approach.

Overall, it can be concluded that game meat is currently an underutilised ingredient in Hungarian gastronomy, yet one with significant potential for development. Increasing consumption can only be achieved through the coordinated development of demand, supply and educational factors.

This thesis contributes to ensuring that game meat is recognised in both domestic and international professional discourse not merely as a traditional gastronomic element, but as a key alternative in sustainable, health-conscious and innovation-oriented food consumption.

## 6. THE AUTHOR'S PUBLICATIONS RELATED TO THE THEME OF THE THESIS

Misik, T., & Nagy, Z. (2025): Sustainability and Innovation in Hospitality Management: Green Practices in Northeastern Hungary. *Sustainability*, 17(13), 6185. <https://doi.org/10.3390/su17136185>

Nagy, Z., Bujdosó, Z., Kovács, Gy. (2025): The Place of Game Meat in Hungarian Gastronomy and Education: An Interdisciplinary Analysis at the Intersection of Demand, Supply, and Knowledge Transfer. *Studies in Tourism and Rural Development*, 10(2), 46–59. doi:10.15170/TVT.2025.10.02.03

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Sidlovits D. – Pető K. – Luzsi J. – Gyenes A. – Nagy L. (2023): Market Opportunities for Hungarian Game Meat and Game Meat Consumption Habits in Hungary. Budapest: National Chamber of Agriculture. (Agricultural Handbook 9.) Download date: January 9, 2025. Source: [https://www.magyarvadasz.hu/images/cms/File/hirek/magyar\\_vadhus.pdf](https://www.magyarvadasz.hu/images/cms/File/hirek/magyar_vadhus.pdf)