



## Determining the Factors Affecting Tractor Owners' Purchasing Decisions: The Case of Biga District

Traktör Sahiplerinin Satın Alma Sürecinde Etkili Faktörlerin Belirlenmesi: Biga İlçesi Örneği

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### MAKALE BİLGİSİ

#### Araştırma Makalesi

Geliş Tarihi: 03.12.2025

Kabul Tarihi: 18.12.2025

#### Anahtar Kelimeler:

Traktör Tercihleri,  
Tarımsal Mekanizasyon,  
Satın Alma Davranışı,  
Çiftçi Kararları

### ÖZ

Bu çalışma, Biga ilçesindeki traktör satın alma tercihlerini ve traktör sahiplerinin sosyo-ekonomik özelliklerini incelemiştir. Orantısal örnekleme yöntemi kullanılarak yüz yüze görüşmeler gerçekleştirilmiş ve satın alma kararlarını etkileyen faktörleri sıralamak amacıyla Likert tipi bir anket uygulanmıştır. Demografik olarak, traktör sahiplerinin çoğunluğunu 40–49 yaş aralığındaki bireyler (%31) oluşturmakta olup, katılımcıların %32'si ortaöğretim mezunudur; ortalama arazi büyüklüğünün 123 dekar olması ise işletmelerin genel olarak orta ölçekli bir yapıya sahip olduğunu göstermektedir. Ayrıca üreticilerin %41'i aktif olarak hayvancılıkla uğraşmakta ve %68'i bir kooperatife kayıtlıdır; bu durum çalışma grubunun sosyo-ekonomik açıdan heterojen ve çeşitli bir profile sahip olduğunu ortaya koymaktadır.

Araştırma bulguları, traktör satın alma kararlarında en belirleyici unsurun fiyat olduğunu göstermiştir. Fiyatı sırasıyla yakıt tüketimi, satış sonrası hizmet, yedek parça temini ve traktör gücü izlemiştir; bu unsurlar da çiftçilerin tercihlerini şekillendirmede önemli rol oynamıştır. Buna karşın marka, şanzıman sistemi, kredi ve faiz oranı, bölgedeki marka yaygınlığı, bayi-satıcı önerisi ve tanıdık tavsiyesi gibi faktörlerin karar süreci üzerindeki etkileri görece sınırlı bulunmuştur. Analiz sonuçları ayrıca, sosyo-ekonomik değişkenler arasında yalnızca arazi büyüklüğünün fiyatın önem derecesiyle istatistiksel olarak anlamlı bir ilişki gösterdiğini ortaya koymuştur. Arazi büyüklüğü arttıkça, üreticilerin traktör satın alırken fiyatı önemli bir kriter olarak değerlendirme olasılığı belirgin biçimde azalmaktadır.

### ARTICLE INFO

#### Research Article

Received 03.12.2025

Accepted: 18.12.2025

#### Keywords:

Tractor Preferences,  
Agricultural  
Mechanization,  
Purchasing Behavior,  
Farmer Decision-Making

### ABSTRACT

This study examined tractor purchase preferences and the socio-economic characteristics of tractor owners in the Biga district. Using proportional sampling, face-to-face interviews were conducted, and a Likert-type questionnaire was administered to rank factors influencing purchasing decisions. Demographically, the majority of tractor owners were aged 40–49 years (31%), with 32% having completed secondary education, and the average landholding was 123 decares, indicating moderate farm sizes. Furthermore, 41% of the producers were actively engaged in livestock farming, and 68% were formally registered cooperative members, reflecting a heterogeneous and economically diverse socio-agricultural profile. The findings revealed that price was the most decisive factor in tractor purchasing decisions. Price was followed by fuel consumption, after-sales service, spare parts service, and tractor power, all of which played an important role in shaping farmers' preferences. In contrast, factors such as brand, transmission system, credit and interest rate, regional prevalence of the brand's use, dealer–salesperson recommendation, and acquaintances' recommendation were found to have relatively limited influence on decision-making.

The analysis also showed that land size was the only socio-economic variable that exhibited a statistically significant relationship with the importance attributed to price. As land size increased, farmers were notably more likely to regard price as a less important factor in their tractor purchasing decisions.

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## INTRODUCTION

Mechanization represents the most significant cost component among input investments in agricultural operations. Agricultural enterprises increasingly adopt mechanization to improve time efficiency and enhance economic efficiency, while countries tend to substitute labor with machinery as a strategy to minimize production costs. This situation increasingly underscores the importance of mechanization. At the same time, the use of machinery in agriculture facilitates the tasks performed in rural areas and contributes to increased efficiency and profitability (Koçtürk and Avcıoğlu, 2007). The level of agricultural mechanization plays a crucial role in determining the productivity and sustainability of agricultural operations, thereby serving as an essential indicator of regional and national agricultural development. Agricultural mechanization is one of the key indicators of development in agriculture, as it enables farming operations to be carried out more rapidly, efficiently, and with lower labor requirements. In this regard, tractors are considered the most important equipment when evaluating the mechanization levels of regions and countries (Moens and Wanders, 1984; Işık, 1998; Liljedahl et al., 1989). Consequently, for agricultural enterprises to achieve cost-effective and profitable production, it is essential to select tractors that best meet their operational requirements. The selection of tractor brand and type is a multifaceted process influenced by various factors following the decision to invest in a tractor. Key factors influencing tractor selection encompass enterprise size, land morphology, soil properties, climatic conditions, production systems, and the socio-economic characteristics of the operator (Işık, 1988; Altıntaş and Özçelik, 2014). Farmers who intend to purchase a tractor take all these characteristics into account when making their final decision. Moreover, tractor attributes, manufacturer-related factors, and issues related to consumer behavior can all influence farmers' preferences. These factors can be categorized as tractor-related attributes, including power output, operational capacity, fuel efficiency, ease of operation, and price, as well as manufacturer-related considerations, such as ease of maintenance, spare parts availability, the breadth of the service network. In addition, recommendations and advice from peers (other farmers) and experts may also play a role in the decision-making process. Walley et al. (2007) stated that the most important factor in enterprises' tractor purchasing decisions was the brand. They also found that price, proximity of the dealer, after-sales service, and customer recommendations were significant factors. A decade later, Walley et al. (2017) conducted a study in the same region and reported that these factors continued to influence tractor purchase decisions, with the dealer's tractor delivery speed gaining additional importance as a factor. Similar studies by Aytuğ and Karadibak (1996) identified the ease of obtaining spare parts, dealer reliability, and the tractor's suitability for work and land as the primary factors considered by enterprises when purchasing tractors. Cankurt et al. (2009) identified durability, brand value, fuel consumption, and tractor price, respectively, as the primary factors influencing producers' tractor preferences. Sağlam and Çetin (2017), in their study conducted in the Kayseri region, reported that price was the most influential factor in farmers' tractor preferences, followed respectively by power, brand, and fuel efficiency. Identifying and analyzing the factors influencing enterprises' preferences contributes to the development of policies and strategies regarding tractor purchasing decisions at both regional and national levels. At the same time, it is also important for tractor manufacturers in terms of better understanding market demands and effectively guiding product development and marketing strategies. Biga district is one of the leading areas in both the region and the province of Çanakkale in terms of agriculture and livestock production. Moreover, the use of agricultural machinery in the district is at a relatively high level (Özpinar and Ürkmez, 2017). Biga ranks first in Çanakkale in terms of agricultural production area and is among the top three districts in terms of machinery assets and the level of agricultural mechanization. Considering the district's extensive machinery inventory and high tractor ownership rate, Biga constitutes a suitable sample for research on tractor preferences. Moreover, the findings obtained from such a study may also serve as a guide for other regions with similar characteristics. This study was conducted to identify the factors influencing farmers' tractor brand preferences in the Biga district of Çanakkale province and to provide guiding insights for manufacturers and policymakers accordingly.

## MATERIAL AND METHODS

The population of the study consists of farmers in the Biga district of Çanakkale province. In order to identify the general characteristics of farmers using tractors in Biga and to examine whether there are relationships between these characteristics, the sample was selected from tractor-using farmers in the district. In the study, a survey was conducted with 100 tractor owners in the Biga district through face-to-face interviews to determine the factors influencing their brand preferences. The sample size was determined using the proportional sampling method, based on a 95% confidence level and a 5% margin of error. The necessary calculations were carried out using the formula provided below (Newbold, 1995).

$$n = \frac{N * p * (1 - p)}{N - 1 * \sigma^2px + p * (1 - p)} \quad (1)$$

Where;

n: size of sampling

N: number of tractor-owning enterprises in Biga

p: Proportion of farmers who prefer the same brand when replacing their tractor

$\sigma^2px$ : Variance.

In the study, Likert-type questions were directed to enterprises in order to identify the factors influencing tractor purchasing decisions. Additionally, necessary descriptive statistics and score calculations were performed during data analysis. For the score calculation, responses obtained from a 5-point Likert scale were multiplied by weighted values to determine the order of importance (Aydoğan and Yulafçı, 2014). In the statistical analyses of the study, the logistic regression method was used. Logistic regression is a probability model employed in cases where the dependent variable has two categories, aiming to determine the extent to which independent variables explain this outcome. The method evaluates the effect of each independent variable on the dependent variable and reveals whether the relationship is statistically significant (Everest 2021).

## RESULTS AND DISCUSSIONS

### Socioeconomic Characteristics of Farmers

The average age of the farmers surveyed was determined to be 49 years. The age distribution of the farmers was as follows: 4% were aged 20-29, 15% aged 30-39, 31% aged 40-49, 28% aged 50-59, and 20% aged 60-69. The proportion of farmers aged 70 and above was 2%. When examining the educational attainment of agricultural enterprise owners, 33% were high school graduates, 29% elementary school graduates, 26% middle school graduates, and 12% university graduates (Table 1).

### Agricultural structure of Farmers

The agricultural enterprises examined in this study are engaged in both crop production (fruits, vegetables, and field crops) and livestock farming (large and small ruminants). Crop production activities are carried out under both irrigated and non-irrigated conditions. An analysis of the production structure reveals that field crops constitute the most dominant production area, accounting for 82% of total land use. While 58% of the producers are involved solely in agricultural production, 41% also engage in livestock farming. Among those involved in livestock, 47.6% raise large ruminants, 40.5% raise small ruminants, and 11.9% are engaged in the production of both types (Table 1). In addition, the average landholding size among producers is 123

decares. The average number of animals per enterprise is 45 for those engaged in large ruminant farming and 62 for those involved in small ruminant farming

Table 1. Tractor owners' demographic and agricultural profile overview

Variables	Number	(%)
<b>Age (year)</b>		
20-29	4	4
30-39	15	15
40-49	31	31
50-59	28	28
≥60	22	22
Min: 22, Max: 73, Mean: 49, SD: 10,58		
<b>Educational level</b>		
Elementary school	29	29
Middle school	26	26
High school	33	33
Universty	12	12
<b>Land size (da)</b>		
<50	30	30
51-100	25	25
>100	45	45
<b>Livestock production</b>		
Yes	41	41
No	59	59
<b>Type of livestock farming*</b>		
Large ruminants	20	47.6
Small ruminants	17	40.5
Both	5	11.9

\*Percentages indicate the proportion of each category within livestock-related data.

Within the scope of the survey, farmers were asked questions regarding cooperative membership, participation in non-agricultural employment, and keeping records of income and expenses, aimed at sustaining their agricultural and personal economies. It was determined that 68% of the producers are members of cooperatives in the present study. This rate is considerably higher than the findings of similar studies conducted in other regions. For instance, the cooperative membership rate was reported as 54.02% in Erzurum (Birinci and Akın, 2008) and 60.2% in the Thrace region (Koç and Uzmay, 2018). Therefore, the cooperative participation level observed in the current study indicates a relatively higher tendency of producers to engage in collective organizations compared to these regions. Therefore, the cooperative participation level observed in the current study indicates a relatively higher tendency of producers to engage in collective organizations compared to these regions. Farmers reported that they joined cooperatives due to advantages such as cooperative facilities, fair pricing of products, and shared machinery use. Additionally, a significant proportion of producers, approximately 85%, stated that they keep records of income and expenses. The percentage of producers engaged in non-agricultural employment was found to be 45% (Table 2).

Table.2 Social and financial status of farmers

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Cooperative membership

Yes	68	68
No	32	32
Off-farm income		
Yes	45	45
No	55	55
Financial record keeping		
Yes	85	85
No	15	15

### Status of tractors and machinery owned by the farmers

The study revealed that the mechanization levels of the enterprises related to tractor use were high in the Biga district. Since the survey was conducted with enterprises that own tractors, each enterprise has at least one tractor. The highest number of tractors recorded in a single enterprise was 6, while the average number of tractors per enterprise was determined to be 1.53. The majority of the tractors identified in the enterprises belong to the high-power tractor category (average 83 kW). Additionally, most of these tractors are relatively new and have not yet reached the end of their economic lifespan (average 9.4 years) (Table 3).

Table 3. Tractor mechanization characteristics of enterprises in Biga district

Feature	Value
Minimum number of tractors per enterprise	1
Maximum number of tractors per enterprise	6
Average number of tractors per enterprise	1,53
Average power (kW)	83
Average age (years)	9,4

### Factors Influencing Farmers' Tractor Selection

In this study, various questions related to brand, tractor features, and dealership were directed to identify the factors influencing farmers' decisions in the process of tractor acquisition. The Likert scale used to evaluate the influence of technical and equipment-related features of the tractors to be purchased is presented in Table 4. As shown in the table, criteria such as fuel consumption, tractor power, brand preference, and the quality of the transmission system are examined. Among the technical and equipment-related features considered in tractor selection, farmers prioritized fuel consumption as the most important factor. This was followed by tractor power and brand. Although the quality of the transmission system was also regarded as important, it was found to be the least prioritized criterion among the examined features. In Table 5, services related to brand and dealership, as well as social factors, were examined. Specifically, economic factors such as price, interest rates on credit, and the availability of after-sales services including spare parts and maintenance were evaluated. In addition, social factors were considered, including peer recommendations, suggestions from dealers and sales representatives, and the regional prevalence of the tractor brand. Among all the economic and social factors assessed, price emerged as the most influential factor affecting farmers' preferences when selecting a tractor. The availability of maintenance services was identified as the second most important factor, according to the data presented in the table. These were followed by the availability of spare parts, interest rates on credit, the prevalence of the brand in the region, and recommendations from dealers or sales representatives. In contrast, peer recommendations appeared to be the least influential factor in farmers' decision-making processes. The findings of the present study show notable similarities with those reported by

Kaustub et al. (2020). In their study, fuel/oil efficiency was identified as the most influential factor, followed by subsidy, low maintenance cost, and tractor power. While the specific ranking and included criteria differ slightly, both studies emphasize the critical role of technical and economic factors in farmers' tractor purchasing decisions. This comparison particularly demonstrates that criteria related to fuel efficiency and maintenance remain consistently important in determining farmers' preferences across different contexts.

Table 4. Technical and equipment-related factors affecting producers' brand preferences in tractor purchasing.

Factors	1	2	3	4	5	Score	Importance Ranking
Fuel consumption	8	6	2	12	72	434	1
Tractor power	10	5	6	11	68	413	2
Brand	13	11	1	13	62	400	3
Transmission system	4	23	7	16	50	385	4

\*1: Not Important at All 2: Not Important 3: Neutral 4: Important 5: Very Important

Table 5. Commercial and social factors affecting producers' preferences in tractor purchasing.

Factors	1	2	3	4	5	Score	Importance Ranking*
Price	8	4	9	21	58	437	1
After-sales service	12	4	0	14	70	426	2
Spare parts service	11	5	1	15	68	424	3
Credit and interest rate	14	5	21	16	44	371	4
Regional prevalence of the brand's use	11	21	14	20	34	345	5
Dealer-salesperson recommendation	14	24	14	25	23	321	6
Recommendation	18	27	14	22	19	297	7

\*1: Not Important at All 2: Not Important 3: Neutral 4: Important 5: Very Important

All criteria were evaluated together and ranked based on a scoring system, as shown in Table 6. In this study, price emerged as the most influential factor affecting farmers' tractor purchasing decisions, followed by fuel consumption and service availability. A similar study in the Thrace region examined factors such as fuel economy, the presence of a cabin, tractor price, after-sales services, availability of spare parts, and tractor power. Among these, price, fuel consumption, and after-sales service were identified as the most important criteria, consistent with the findings of the present study, as they also ranked among the top three priorities. However, the presence of a cabin was ranked second in the Thrace study, while it was not included in the survey of the present research (Unakıtan and Abdikoğlu, 2022). In the present study, dealer-salesperson recommendations and general suggestions had the least influence on farmers' decisions. Similarly, Unakıtan and Abdikoğlu (2022) found neighbor and friend recommendations to be the least important variables. In our study, the main factors driving farmers' tractor choices, namely price, fuel consumption, after-sales service, and spare parts service, closely align with those reported by Aksoy et al. (2019). In our survey, price was identified as the most influential factor, whereas in Aksoy et al. (2019), fuel consumption was ranked first and

price second. Similarly, Baybas and Aksoy (2021) found that farmers prioritized tractor price, durability, model series, and power, while promotion, color, dealer and salesperson recommendations, appearance, and after-sales visits were considered least important, which is consistent with the low importance given to dealer and salesperson recommendations in our study. Furthermore, a study in Nepal by Rauniyar and Tamang (2024) reported that farmers ranked fuel consumption and price as the top criteria, followed by horsepower, tractor origin, spare parts availability, and repair and maintenance, reflecting the similarity with our study in terms of the high importance given to both fuel efficiency and price. These findings suggest that farmers consistently prioritize similar criteria in tractor selection across different contexts, highlighting the robustness of these factors. Farmers focus on tractors that are cost-effective upfront and economical to operate. They also consider the quality of after-sales services crucial for uninterrupted agricultural operations. In agricultural production, a substantial portion of investment is allocated to mechanization costs, with tractors representing the most expensive equipment used at nearly all stages. High costs encourage farmers to prefer credit options and instalment payments when purchasing tractors (Altıntaş and Özçelik, 2014). Consistently, the present study found that 60% of the farmers considered credit availability and interest rates important, suggesting that financial considerations exert a moderate level of influence on tractor selection.

Table 6. Factors influencing farmers' brand preferences in tractor purchasing

Influencing factor	1	2	3	4	5	Score	Importance Ranking*
Price	8	4	9	21	58	437	1
Fuel consumption	8	6	2	12	72	434	2
After-sales service	12	4	0	14	70	426	3
Spare parts service	11	5	1	15	68	424	4
Tractor power	10	5	6	11	68	413	5
Brand	13	11	1	13	62	400	6
Transmission system	4	23	7	16	50	385	7
Credit and interest rate	14	5	21	16	44	371	8
Regional prevalence of the brand's use	11	21	14	20	34	345	9
Dealer-salesperson recommendation	14	24	14	25	23	321	10
Recommendation	18	27	14	22	19	297	11

1: Not Important at All 2: Not Important 3: Neutral 4: Important 5: Very Important

Within the scope of the study, the most influential factor in farmers' brand preferences when purchasing a tractor was identified as the tractor's price (Table 7). Accordingly, a binary logistic regression analysis was conducted. In this analysis, price was defined as the dependent variable (0: farmers who do not consider price important, 1: farmers who consider price important). The independent variables used to explain the dependent variable were as follows: Age (years), Educational level (1: Elementary school, 2: Middle school, 3: High school, 4: University), Land size (da), Livestock production (0: No, 1: Yes), Cooperative membership (0: No, 1: Yes), Off-farm income (0: No, 1: Yes), and Financial record keeping (0: No, 1: Yes). The relationship between the importance attributed to price and the selected explanatory variables was examined using a single comprehensive model.. According to the classification table, the model correctly predicted farmers' responses

at a rate of 85%, indicating a strong overall fit. Furthermore, the Omnibus Test of Model Coefficients demonstrated that the model constructed with the explanatory variables is statistically significant. Among all explanatory variables included in the analysis, land size emerged as the only factor that exhibits a statistically significant relationship with the likelihood of farmers considering price as important. The results indicate that even a 1-decare increase in land size increases the probability of farmers viewing price as unimportant by approximately 99% (Table 7). This indicates that as land size increases, farmers tend to place less emphasis on price when making tractor purchasing decisions. This indicates that as the scale of agricultural enterprises increases, their decision-making mechanisms undergo qualitative changes.

Table 7. Logistic regression analysis on determinants of price importance in tractor purchasing

Variables						95% C.I.for EXP(B)	
						Lower	Upper
Education level	-.235	.284	.688	.407	.790	.453	1.378
Cooperative membership	-.368	.742	.247	.619	.692	.162	2.960
Off-farm income	-.057	.610	.009	.926	.945	.286	3.123
Financial record keeping	.537	.858	.392	.531	1.711	.318	9.199
Land size	-.005	.002	9.710	.002	.995	.991	.998
Livestock production	-.179	.589	.092	.762	.836	.264	2.653
Age	-.043	.029	2.246	.134	.957	.905	1.013
Constant	5.233	2.002	6.832	.009	187.347		

## Conclusion

This study offers an in-depth evaluation of the factors influencing tractor purchasing decisions among farmers and the socio-economic characteristics of tractor owners in the region. The findings clearly demonstrate that economic and technical considerations dominate the decision-making process. Among all factors, price emerged as the most influential criterion guiding tractor selection. Additionally, fuel consumption, accessibility of after-sales services, and the availability of spare parts were identified as other key determinants shaping farmers' preferences. Factors such as brand, transmission system, and credit opportunities were found to hold a moderate level of importance, indicating that while these elements play a role, they do not override the primary economic and technical priorities of farmers. Social influences—

including dealer or peer recommendations and the regional prevalence of specific tractor brands—were generally assigned low importance, suggesting that farmers tend to rely more on functional and financial considerations than on social cues when making purchasing decisions. Furthermore, a statistically significant relationship was observed between land size and the importance attributed to price. This relationship indicates that as land size increases, farmers tend to place less emphasis on price, likely reflecting greater financial flexibility or differing operational needs among larger-scale agricultural enterprises. Overall, the study underscores that tractor purchasing behavior is shaped predominantly by rational economic and technical evaluations, while social factors play only a limited role. These insights may assist policymakers, dealers, and manufacturers in better understanding farmers' priorities and in designing support mechanisms or marketing strategies aligned with producers' actual decision-making patterns.

#### **Author's Contribution**

Authors declare the contribution of the author is equal

#### **Conflict of interests**

The authors declare that there is no conflict of interest.

### **EXTENDED SUMMARY**

#### **Introduction**

This study investigates the factors that influence tractor purchasing decisions among farmers in the Biga district, where agricultural mechanization is highly developed. Tractor investment represents one of the largest capital components in agricultural production, making understanding farmers' preferences essential for both manufacturers and policymakers. The literature suggests that technical, economic, and social factors jointly shape tractor purchase behavior, but the relative importance of these factors differs across regions. Biga, having one of the highest mechanization levels in Çanakkale, provides a representative setting to analyze these dynamics. The study also emphasizes the socio-economic diversity of tractor owners, which may lead to variations in purchasing priorities. Previous research highlights the significance of price, fuel efficiency, and after-sales services, but suggests that social recommendations are often secondary. These earlier findings motivated the need to re-examine purchasing criteria in a region with high tractor usage. The study's objective is to determine which factors farmers prioritize most and how their socio-economic characteristics relate to these preferences. The research further aims to evaluate whether land size, education, income patterns, or cooperative membership affect farmers' purchase decisions. Overall, the introduction establishes the rationale for analyzing tractor purchasing behavior in a district where agricultural machinery plays a central role in production.

## **Method**

The study was conducted using a proportional sampling method involving 100 tractor-owning farmers in the Biga district. Data were collected through face-to-face surveys, enabling detailed responses regarding socio-economic characteristics and purchasing preferences. A structured questionnaire employing a 5-point Likert scale was used to rank the importance of various technical, economic, and social factors. Descriptive statistics were applied to summarize the demographic and agricultural structure of the participants. Weighted scoring techniques were used to calculate importance rankings for each factor in tractor selection. Additionally, logistic regression analysis was employed to identify which socio-economic variables significantly influence the importance placed on price. The dependent variable in the model represented whether farmers considered price important or not, while independent variables included age, education, land size, livestock activity, cooperative membership, off-farm income, and record-keeping behavior. The method ensured that both behavioral tendencies and structural characteristics were systematically evaluated. Reliability and validity were strengthened by using a well-established sampling formula and previously tested survey items from the literature. The overall methodological approach allowed the study to capture both general patterns and statistically significant relationships.

## **Findings and Results**

The findings revealed that price was the most influential factor affecting tractor purchasing decisions among farmers. Fuel consumption ranked second, followed by after-sales service availability and spare parts supply, indicating that economic and technical considerations dominated decision-making. Technical features such as tractor power and brand also played notable roles but remained secondary compared to cost-related factors. Transmission system quality, dealer recommendations, and peer suggestions showed comparatively weaker influence, demonstrating that social factors have limited impact in the purchasing process. The demographic analysis showed that most farmers were middle-aged and had relatively moderate landholdings averaging 123 decares. Cooperative membership was high, yet it did not significantly alter purchasing priorities. Logistic regression analysis revealed that only land size had a statistically significant effect on the importance attributed to price. As land size increased, the likelihood of considering price a critical factor decreased substantially. This suggests that larger enterprises have different investment strategies and potentially greater financial flexibility. Overall, the results strongly emphasize the dominance of rational, economic criteria over social influences in tractor purchasing behavior.

## **Discussion and Conclusions**

The study's findings confirm that economic and technical considerations are the main determinants of tractor purchasing decisions among farmers in the Biga district. The dominance of price and fuel consumption highlights producers' need to balance initial investment with long-term operating costs. The limited influence of social recommendations suggests that farmers rely on their personal experience and objective evaluations rather than external opinions. The comparison with similar national and international studies shows a consistent trend: functional performance and financial criteria are universally prioritized. The significant effect of land size on price sensitivity provides valuable insight into how enterprise scale shapes purchasing strategies. Larger farms may prioritize operational efficiency and power over initial cost, reflecting different production needs. These results imply that policymakers and manufacturers should tailor credit programs, after-sales services, and technical support to farmers' operational scales. The study also highlights the importance of improving service networks to meet farmers' expectations regarding maintenance and spare parts. Overall, the research contributes to a deeper understanding of tractor purchasing behavior by integrating both behavioral and structural factors. The conclusions underline the need for market strategies and agricultural policies that align with farmers' real decision-making patterns.



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