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Attitudes of Agricultural Enterprises toward Bank Financing in Bulgaria

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Abstract

Agricultural enterprises operate within production cycles that are influenced by high seasonality, climatic risks, and market price fluctuations. The continuity of production processes depends on consistent access to capital resources to maintain liquidity and solvency, as well as to support investment and competitiveness. The role of bank financing is increasing and is key for agricultural enterprises. This article examines the attitudes of agricultural holdings towards bank financing, their preferred sources of capital, and identifies key barriers and drivers for access to credit. The analysis is based on a survey conducted among managers of agricultural holdings operating in the sectors of grain production, vegetable production, horticulture, and livestock farming. Frequency analyses, cross-tabulations by sector, turnover, and managerial experience, as well as the Net Promoter Score (NPS) for perceived "cost" of bank financing, were employed. The analysis identified several key findings: equity remains the preferred source for working capital financing: the use of bank credit increases with the scale of the farm, accounting for 59% of financing in farms with turnover exceeding BGN 200 000, compared to 34% in farms with turnover below BGN 200 000. Trade financing is used by 34% of respondents, mainly by more experienced farmers. Bank credit remains the preferred source of funds for investment, with leasing of long-term assets ranking second. The results indicate that the perceived cost of bank financing is negative, with an NPS of – 61. The study provides valuable insights for adapting banking products to seasonality and risk, for formulating clearer pricing policies, and for simplifying procedures and the design of guarantee schemes, leasing solutions, and insurance instruments. The survey offers a solid foundation for potential future panel tracking of attitudes, evaluation of the effects of guarantees and subsidies on credit access, assessment of digitalization impact, and causal analysis between financing structure, productivity, and sustainability.

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Key words:

Agribusiness financing; bank financing; access to capital; credit attitudes; agricultural holdings.

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1. Introduction

Agribusiness occupies a strategic position in the Bulgarian economy, ensuring the country's economic and food security (Petrov, 2021), exerting a significant influence on regional development (Doitchinova & Stoyanova, 2024), and representing an important component of the country's food exports (Nestorov & Branzova, 2022). Several factors make the sector particularly vulnerable to external influences due to its dependence on natural and climatic conditions. It is strongly affected by production seasonality and has relatively limited options to halt production processes. In this context, according to Kirechev (2022), the financial performance and adequate provision of capital to support the production processes of agribusiness enterprises becomes critically important, as it enables the coverage of current expenses, investment in technologies, and the maintenance of competitiveness.

While enterprises in other economic sectors can postpone or suspend their activities under adverse conditions, or delay production or service delivery to the following month, agribusiness is generally compelled to operate within continuous production cycles throughout most of the year. Interruptions in these cycles result in significant costs and time losses, as the cycles range from three months in poultry production to over a year in horticulture. This places agricultural producers in a particularly dependent position regarding access to financial resources, both internal (equity) and external (bank loans, trade financing, subsidies). As Ahearn (2011) emphasizes, initial barriers to entry in agriculture, related to access to land and capital, remain substantial, hindering new entrants in the sector. In the Bulgarian context, Kirechev (2023) also notes that small and medium-sized farms continue to rely primarily on their own funds and subsidies, while bank financing remains underutilized due to administrative and financial barriers.

The aim of the present study is to examine the financial behavior of farmers, with a focus on their attitudes toward bank financing, emphasizing preferred sources of funding, including the use of bank loans. The study contributes to a better understanding of factors that can enhance agribusiness banking, support the development of effective financing strategies, and inform policy-making and financial circles about product design for the agricultural sector. The empirical survey was conducted among 246 agricultural holdings operating in the main sectors of the agribusiness industry: grain production, livestock farming, horticulture, and vegetable production.

The need to identify the key challenges faced by agribusinesses in accessing capital is driven by farmers' behavior and the necessity of developing effective strategies for sustainable financing. The findings offer both scientific and practical contributions, providing guidance for the improvement of banking products and the management of agricultural enterprises.

The present study was motivated by the analysis conducted within the author's doctoral dissertation. That analysis aimed to identify a discrepancy between the economic importance of the agricultural sector and the limited use of bank financing by agricultural enterprises. Agricultural production processes depend on external capital due to seasonality and risk exposure; however, empirical evidence indicates a prevailing preference for the use of own funds. In addition, the lack of sufficient empirical research on farmers' attitudes and behavior toward bank financing further motivated the implementation of the present survey.

2. Methodology

The present study was conducted through an online survey targeting agricultural holdings in Bulgaria. A quantitative research approach was used to analyze farmers' attitudes and financial behavior. The survey was anonymous, with participants not providing personal data, which helps reduce the risk of biased responses and ensures more reliable analysis. The target group included owners and managers of agricultural holdings operating in the main production sectors: grain production, livestock farming, horticulture, and vegetable production. The farms were contacted through associations, industry organizations, professional networks, agricultural exhibitions, and personal contacts. Participation was voluntary, via an online questionnaire, and all respondents were owners or managers directly responsible for financial decision-making within their farms.

A homogeneous sample was formed to meet the research objectives, consisting of 246 respondents. Very large agricultural producers (288 holdings) and very small farms with less than €2,000 of standard production output (16,783 holdings), according to data from the Ministry of Agriculture, were excluded. This

approach eliminates both very large and micro farms. The survey was conducted during the period March–June 2024, covering the active agricultural season during which farmers typically make decisions related to working-capital financing and investment planning. This timeframe enabled respondents to provide current and accurate assessments of their financing needs and their attitudes toward bank lending.

The criteria for grouping farms were based on annual turnover in relation to the average production output (APO), allowing for cross-analysis according to the scale of operations. Among the respondents, 52% are engaged in grain production, 29% in horticulture, 27% in livestock farming, and 15% in vegetable production. Percentages exceed 100% because some respondents engage in more than one activity and, for analysis purposes, are included in multiple groups. Respondents predominantly have over 10 years of experience (68%), 26% have 3 to 10 years of experience, and only 6% have less than 3 years of experience. Based on their annual turnover for the previous year, the respondents are distributed into three groups as follows: 43% with an annual turnover up to BGN 200 000, 30% with turnover between BGN 200 000 and BGN 1 000 000, and 27% with turnover above BGN 1 000 000.

Table 1

Criteria for farmer groups based on annual turnover and defining characteristics

Group	Annual Turnover (BGN)	Characteristics
Small farms	Up to 200 000 BGN	Small, often family-run farms with limited mechanization and low financial activity. Primarily serving the local market.
Medium farms	From 200 001 to 1 000 000 BGN	Developing farms with stable operations. Partial access to external financing and investment opportunities.
Large farms	Over 1 000 001 BGN	Well-developed farms with access to credit, subsidies, modern technologies, and external markets.

Source: Author's research

The survey was designed using a five-point Likert scale, consisting solely of closed-ended questions with response options scored as follows: "Yes" = 5, "Rather yes" = 4, "Neither yes nor no" = 3, "Rather no" = 2, and "No" = 1. Questions measuring attitudes using the Net Promoter Score (NPS) scale were rated from 0 to 10, where 0 corresponds to "Completely unacceptable" and 10 to "Fully acceptable." For the assessment of time horizons, a six-point scale was used: 1 = Up to 6 months; 2 = 6–12 months; 3 = 1–3 years; 4 = 3–5 years; 5 = Over 5 years; 6 = Permanent loan / revolving

The main thematic sections of the survey include the following types of questions, which form the basis for analysis:

- General farm information – type of activity, years of experience, and turnover.
- Financing – main sources of capital, use of bank loans, leasing, and trade financing, providing insights into preferred sources of funding.
- Financial behavior – debt management and duration of financing, which allow for analysis of farmers' preferences regarding financing terms and the sustainable use of capital.
- Investments and innovations – technological upgrades, ecological practices, and sustainability, which are key elements in company development and provide a basis for analyzing capital needs for expansion and asset renewal.
- Preferences and barriers – criteria for selecting credit products, assessment of financing costs, perceived barriers to capital access, and difficulties faced by farmers when seeking capital, offering key insights into the accessibility of financing for farmers.

The collected data were entered and processed in a tabular format (Excel), allowing for quantitative analysis of frequencies and percentages, cross-tabulations of key variables (farm type versus sources of financing; years of experience versus use of bank loans; turnover versus investment behavior), and calculation of NPS indicators for the perception of bank financing costs. For the Net Promoter Score (NPS) analysis, the respondents were grouped according to how they rated the acceptability of bank financing costs.

For those who gave a score between 0 and 6 were classified as „Detractors “, because they viewed the price of bank credit negatively. Ratings of 7 or 8 were considered „Passives “, representing neutral or mixed attitudes. And those who gave a score from 9 to 10 were identified as „Promoters “, they are clearly positive perception. The NPS score was then calculated using the standard formula (NPS = %Promoters – %Detractors). This produces values ranging from –100 to +100 scale. We use also the Mann–Whitney U test was used to determine whether two independent groups of farms differ significantly in the distribution of their Likert-scale evaluations. This non-parametric test is appropriate for ordinal data and does not require normally distributed variables. It compares the ranks of responses in both groups, and a p-value below 0.05 indicates a statistically significant difference in their assessments.

3. Results and Discussion

The results of the survey indicate that agricultural holdings in Bulgaria are characterized by a clear specialization. Within the sample, approximately 78% of respondents are engaged in a single primary activity, while 22% combine more than one activity. These data align with both European and national trends, which show a long-term decline in mixed farms from 30.1% to 19.3% and an increase in specialization (Eurostat, 2005–2020). The most common form of diversification is the combination of grain production and horticulture, representing 47% of mixed farms. This demonstrates flexibility in the use of available resources and an effort to optimize production processes through the combined use of machinery and infrastructure. FADN data for Bulgaria confirm the dominant share of specialized farm types. Some studies (Galluzzo, 2018) associate specialization with higher technical efficiency, which may be a behavioral motive underlying the observed structure and trends in both Europe and Bulgaria. The distribution of farms across sectors largely corresponds to the structure of Bulgarian agriculture. The largest share of all surveyed farmers is engaged in grain production, followed by livestock farming, horticulture, and vegetable production. Analysis of managerial experience shows that over 68% of respondents have more than 10 years of managerial experience. Only 6% of respondents have less than 3 years of experience, highlighting the relatively high level of stability and accumulated expertise in the sector. These results are consistent with the findings of Herck, Noev, and Swinnen, 2012, who suggest that experience, combined with institutional support, can be a significant factor for growth, although not the only one. Among new farms (less than 3 years of experience), the share of grain production is low (20%), which can be explained by the high initial capital requirements in this sector. These farms more frequently focus on livestock and horticulture, which allow easier entry with limited and accessible resources, as well as lower competition in these sectors.

These findings align with the conclusions of Stoyancheva and Angelova, 2023, who report that the financial resilience of Bulgarian agricultural enterprises is highly differentiated across subsectors. While pig and poultry farming demonstrate high levels of stability, dairy farming is characterized by the highest risk of insolvency. The authors also emphasize the role of digitalization, which remains underdeveloped (accounting for less than 1% of sector assets); however, where it is more significantly implemented, it contributes to improved financial resilience. This confirms the conclusion that managerial experience alone is not sufficient for sustainable development; strategic choices regarding the business model and the level of technological and digital upgrades are also crucial.

4. Study of Attitudes toward the use of bank financing in the management of agricultural processes

4.1. Financing of the purchase of fertilizers, crop protection products, seeds, feed, fuels, and other inputs for working capital needs

Analysis of the survey data shows that equity continues to be the preferred source for financing current and operational expenses in the agricultural sector (Table. 2). Own funds are the dominant source (58.5%), mode = 5. This demonstrates that farm managers primarily rely on personal capital and savings rather than external financing. This trend is particularly pronounced among small farms, where access to bank credit is

mainly limited due to insufficient collateral, low financial literacy, and lower turnover. Among farms with an annual turnover of up to BGN 200 000, the share of those relying on own funds for working capital is even higher, reaching 88%, highlighting the high degree of financial autonomy in this segment. This finding aligns with the view of (Szafraniec-Siluta, Strzelecka, Ardan, & Zawadzka, 2024), who argue that the financial security of agricultural holdings in the EU is largely based on a high level of self-financing, low debt levels, and a significant role of subsidies, with the influence of these factors varying according to farm size and specialization.

Table 2

Sources of financing for working-capital inputs (frequencies and percentages by rows)

Financing of the purchase of fertilizers, crop protection products, seeds, feed, fuels, and other inputs for working capital needs	No		Rather no		Neither yes or no		Rather yes		Yes		Total	
	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
Own funds	9	3,7%	6	2,4%	30	12,2%	57	23,2%	144	58,5%	246	100%
Trade financing	123	50,0%	27	11,0%	12	4,9%	42	17,1%	42	17,1%	246	100%
Forward/Pre-harvest sales	174	70,7%	21	8,5%	15	6,1%	21	8,5%	15	6,1%	246	100%
Friends / private individuals	174	70,7%	18	7,3%	12	4,9%	12	4,9%	30	12,2%	246	100%
Bank loans	93	37,8%	6	2,4%	24	9,8%	48	19,5%	75	30,5%	246	100%
Other financing	207	84,1%	3	1,2%	6	2,4%	3	1,2%	27	11,0%	246	100%

Source: Author's research

Farmers are divided: 37.8% reject bank financing, 50% show positive attitudes. The analysis confirms a direct relationship between managerial experience and the use of bank financing. Surveyed farms with more than 10 years of experience report relying on bank loans 57.7%, indicating a greater propensity to integrate external sources of capital. This may be primarily attributed to accumulated experience and expertise, which contribute to greater stability and resilience of the enterprises, as well as increased trust from financial institutions. Additionally, the analysis shows that 59% of enterprises with an annual turnover exceeding 200 000 BGN use bank loans to cover their working capital needs (around 60%), whereas this share is only 35% among farms with a turnover below 200 000 BGN (Table 3). This confirms that farm size and financial capacity are key determinants of access to bank financing. The tables reporting the sources of financing are based on a multi-response survey question. Each respondent was allowed to select more than one source of funding. This structure reflects the reality where farms typically combine several instruments in the same production cycle. The percentages values do not sum to 100% within a row for each financing source represent the share of farms that use this particular instrument. Instead, each percentage is calculated independently over the total number of respondents in the respective group. This approach is consistent with standard survey methodology for multi-choice financial behavior questions.

Table 3

Cross-tabulation of working-capital financing patterns

Sector	Own funds	Trade credit	Forward sales	Friends / private	Bank loans	Other
Grain production	81.4%	44.2%	20.9%	9.3%	55.8%	2.3%
Livestock farming	77.3%	36.4%	9.1%	18.2%	45.5%	4.5%
Vegetable production	91.7%	16.7%	25.0%	33.3%	41.7%	8.3%

Orchard / perennial crops	83.3%	29.2%	12.5%	25.0%	50.0%	8.3%
Annual turnover	**Own funds**	**Trade credit**	**Forward sales**	**Friends / private**	**Bank loans**	**Other**
Up to 200,000 BGN	88.6%	25.7%	8.6%	28.6%	34.3%	5.7%
200,001 to 1,000,000 BGN	73.3%	37.3%	12.0%	8.0%	60.0%	6.7%
Above 1,000,001 BGN	80.6%	51.6%	33.9%	16.1%	61.3%	3.2%
Management experience	**Own funds**	**Trade credit**	**Forward sales**	**Friends / private**	**Bank loans**	**Other**
More than 10 years	78.9%	44.6%	14.3%	19.6%	58.9%	7.1%
3 to 10 years	85.7%	14.3%	19.0%	9.5%	33.3%	4.8%
Less than 3 years	100.0%	0.0%	0.0%	20.0%	20.0%	0.0%

Source: Author's research

As the third most significant source of financing for working capital needs related to securing the production process, respondents identify trade financing, including advance payments from grain traders, contracts with processors, or suppliers of feed and agrochemicals. This form of financing is reported that 44,6 % farmers with more than 10 years of experience use trade financing, which may be interpreted as a result of long-term trust and well-established partnerships. These relationships facilitate access to external capital for farmers who have been active on the market for many years.

Such mechanisms are often easier to apply and more flexible compared to bank loans, although they increase farms' dependency on their counterparties. According to Taseva-Petkova, 2015, this outcome may be attributed to the growing need for capital arising from financial difficulties and the depletion of firms' debt capacity. This argument, however, should be interpreted with caution, as it applies mainly to specific crisis periods or to farms with poorly structured balance sheets. The present analysis does not support this claim, since agribusiness companies that finance their working capital simultaneously through bank loans and trade financing account for only 9.5% of surveyed farmers. The statement would hold true only for farms with atypical and burdensome commercial contracts, stricter conditions, and a higher cost of capital compared to bank financing. Similar conclusions are confirmed by the reports of (Fi-compass, 2020) and (Fi-compass, 2023), which indicate that own financing and available funds are often considered more accessible alternatives in conditions of high risk or insufficient collateral. In this context, the study by (Lyubenov & Lyubenova, 2023) also highlights that financial markets are a vital source of short-term liquidity for agribusiness. According to the authors, achieving sustainable development in the agribusiness sector requires broader diversification of financial instruments and improved access to long-term investment resources.

The farmers' responses also reveal an ambivalent attitude toward bank loans. On the one hand, banks are perceived as a necessary partner for financing larger investments—such as the purchase of machinery, modernization, and projects under the Rural Development Program (RDP). On the other hand, according to the respondents, bank loans are expensive and associated with complex procedures and administrative burdens. Despite the need for capital, these barriers discourage the active use of bank financing. These obstacles manifest differently across enterprises, but overall the findings align with the conclusions of Kirechev, 2023, who argues that agricultural producers in Bulgaria often remain dependent on subsidies and their own funds due to low trust in bank financing. Conversely, Ivanova & Genchev, 2024, examine this issue and find that excessive debt may limit investment activity, which also explains the reluctance of smaller and newer farms to use bank loans. Small producers, in particular, are unable to meet the strict financial requirements of banks, primarily due to the lack of proper accounting records, and they also do not possess sufficient collateral. Combined with their unwillingness to incur debt to banks and commercial partners, these factors represent key barriers to their development, restricting them to the use of personal capital as their main source of financing. The results indicate a structural pattern of segmentation in which farm size, production sector, and managerial experience significantly influence the choice of financial

instruments for covering working-capital needs, while the reliance on external financing increases with the capacity and maturity of the farm.

4.2. Financing the purchase of machinery, storage facilities and agricultural land

Another important aspect that emerges is the provision of capital for investment processes in agribusiness. In this regard, the analysis also covers financing for investments and the introduction of new technologies and processes. The key components determining access to such capital can be outlined as follows:

- the long-term nature of capital use;
- the substantial volume of required resources;
- the adequacy of the invested funds;
- their sufficiency for the successful implementation of the investment.

The results of the survey (Table 4) indicate that bank lending is the leading instrument for financing investments in the agricultural sector, with 54,9 % of respondents expressing a positive attitude toward its use. Notably, 64 % of farms with more than ten years of managerial experience show a greater inclination to plan investments in modernization and new technologies. The modal response for bank loans, own funds and financial leasing is 5 (‘Yes’), indicating strong positive attitudes toward these sources of financing. In contrast, financing from machinery dealers and the category ‘Other’ have a mode of 1 (‘No’), demonstrating that these options are rarely preferred.

Smaller farms, however, demonstrate more conservative behavior, whereas larger enterprises use loans primarily to finance growth and diversification. These findings are consistent with the conclusions of (Enjolras, Sanfilippo, and Soliwoda, 2021), who report that larger farms in Poland are more likely to use long-term debt due to greater awareness and more favorable financing conditions, while smaller farms rely mainly on internal funds. According to the same authors, more experienced and well-established farms have a higher probability of turning to external credit.

Table 4

Preferred sources of financing for investments in machinery, storage facilities, and agricultural land

How do you prefer to finance the purchase of production machinery, storage facilities, or agricultural land?	No		Rather no		Neither yes or no		Rather yes		Yes		Total	
	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
Bank loan	33	13,40%	3	1,20%	15	6,10%	60	24,40%	135	54,90%	246	100%
Own funds	54	22,00%	18	7,30%	27	11,00%	57	23,20%	90	36,60%	246	100%
Financial leasing	63	25,60%	15	6,10%	12	4,90%	60	24,40%	96	39,00%	246	100%
Financing from machinery dealers	135	54,90%	30	12,20%	12	4,90%	36	14,60%	33	13,40%	246	100%
Other	207	84,10%	3	1,20%	6	2,40%	3	1,20%	27	11,00%	246	100%

Source: Author’s research

In this context, it can be concluded that bank credit is the preferred instrument for investment projects, as it meets all four key factors—long-term maturity, significance, adequacy, and sufficiency of financial resources. In second place, but still with high importance, farmers indicate financial leasing, which, in terms of structure, possesses characteristics comparable to those of investment loans. It is preferred by 63% of respondents. This can be explained by the relatively fast and simplified financing mechanism, used primarily for the acquisition of agricultural machinery and equipment. In terms of farm size, measured by annual turnover, the positive attitude index toward bank financing of investments is high across all groups. The positive attitude index toward bank financing of investments is also high across farm groups differentiated by annual turnover. For farms with a turnover of up to 200,000 BGN, the index reaches 82.9%, followed by

those with a turnover between 200,001 and 1,000,000 BGN is 80.0%. Among the largest farms, with a turnover exceeding 1,000,001 BGN, the share of positive responses is 72.7%. This indicates that, despite the relatively easier access of large farms to bank credit, they also demonstrate a strong inclination to use bank loans for investment purposes, though their positive attitude is approximately 10 percentage points lower compared to smaller farms.

The positive attitude toward bank loans used for investment financing is highest among grain producers, where 88.4% of farmers responded "Rather yes" or "Yes" (Table 5). In vegetable production, the share of positive assessments reaches 83.3%, while in livestock and orchard farming it is 77.3% and 75.0%, respectively. These results indicate that all major production sectors demonstrate a strong inclination to use bank financing for investment purposes, although the index is lowest among vegetable producers and orchard growers.

Table 5

Positive Attitude Rate Toward Bank Financing for Investments by Production Sector

Sector	Number of observations (n)	Positive responses (n)	Positive attitude (%)
Grain production	129	114	88.4%
Vegetable production	36	30	83.3%
Orchards / Perennials	72	54	75.0%
Livestock farming	66	51	77.3%

Source: Author's research

The use of own funds appears significant in the survey results, however, farmers most often reported this option in combination with bank financing and financial leasing. It can therefore be assumed that respondents include in this category the minimum required co-financing and VAT contributions typically demanded by banks and leasing companies. The standalone use of own funds is limited—only 11% of respondents indicated that they rely solely on internal resources. This suggests that such financing is rarely applied and is used mainly for lower-value assets that can be covered by the farm's profit for a single production year. In their study, other authors (Houensou, Goudjo, & Senou, 2021) analyze the productivity of family farmers in Benin, showing that access to credit has a positive effect on the productivity of agricultural producers who have benefited from financing. In this context, the findings of (Guirkinger and Boucher, 2008) similarly demonstrate that the productivity and resilience of farmers who currently lack access to credit would increase by approximately 15% if all credit constraints were removed.

4.3. Preferred loan repayment periods

Building on the results obtained so far, we may conclude that access to borrowed capital is a direct instrument for managing liquidity and maintaining the financial stability of agricultural holdings. Another important factor that warrants examination is the effective structuring of borrowed funds over time, which is crucial for the timely servicing of current liabilities and for ensuring that production processes are supplied with the necessary resources.

The survey results (Table 6) indicate that most farms use working-capital financing with a maturity of 6 to 12 months, which allows for an optimal balance between liquidity and financial sustainability. At the same time, 29% of respondents resort to longer-term forms of financing, a group that consists mainly of farmers with more than 10 years of managerial experience and enterprises with an annual turnover below BGN 1 million. This demonstrates that managerial experience and farm size exert a significant influence on liquidity and debt-management strategies.

Table 6

Preferred loan repayment periods, presented by columns across loan types

Repayment period	Up to 6 months		6–12 months		1–3 years		3–5 years		Over 5 years		Permanent debt		Total	
	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
Working-capital loans	81	32,9%	93	37,8%	15	6,1%	30	12,2%	24	9,8%	3	1,2%	246	100%
Machinery & equipment loans	12	4,9%	12	4,9%	51	20,7%	117	47,6%	48	19,5%	6	2,4%	246	100%
Land & building loans	27	11,0%	12	4,9%	36	14,6%	69	28,0%	93	37,8%	9	3,7%	246	100%

Source: Author's research

An important aspect observed in the sample is that approximately 47.6% of the surveyed farmers report repayment periods from three to five years for loans used to purchase machinery and equipment (mode), which aligns with the standard accounting depreciation period. This corresponds with the findings of (Fi-compass, 2020), where medium-term investment loans (with a duration of around five years) are identified as the most preferred option, accounting for 47% of respondents. However, 19,5 % of farmers prefer repayment periods longer than five years. This may be due to the need to introduce new equipment, as 62% of respondents operate in the fruit-growing and livestock sectors, both of which require substantial capital investment. Another possible explanation is the high level of investment activity driven by the Rural Development Program (RDP) and the insufficient profitability needed to meet credit instalments over shorter periods, particularly during years of weaker farm performance. This clearly indicates a market need for the introduction and significant improvement of existing insurance instruments that can cover both market fluctuations and adverse climatic conditions over the years. A potential solution may also involve state support through the implementation of flexible financial instruments backed by both the European Union and national authorities.

It is noteworthy that short repayment periods up to 12 months for assets such as agricultural land and buildings account for 15.9% of the surveyed farmers. This can be explained by the fragmented structure of agricultural land (i.e., the presence of many small parcels), as well as by the common practice of using short-term loans to purchase land. Nevertheless, the majority of farmers around 37.8 % (mode) prefer repayment periods exceeding five years for land and building loans.

The Mann–Whitney U tests (Table 7) comparing small farms (up to 200,000 BGN) and large farms (above 1,000,001 BGN) show that:

- For working-capital loans, there is no statistically significant difference between the two groups ($p = 0.742$), indicating similar repayment-term preferences.
- For investment loans for machinery and equipment, the results show a highly significant difference ($p < 0.001$), suggesting that larger farms tend to choose longer repayment periods.
- For loans used to finance the purchase of land and buildings, the difference is also statistically significant ($p = 0.009$), again showing that large farms prefer longer-term financing compared to small farms.

Table 7

Mann–Whitney U Test Results for differences in loan maturity preferences between small and large farms

Type of loan maturity	n (small farms)	n (large farms)	U statistic	p-value	Significance
Working-capital loans (fertilizers, chemicals, fuel)	105	66	3564.0	0.742	**No significant difference**

Investment in machinery and equipment	105	66	4702.5	0.001	**Significant difference**
Investment in farmland and buildings	105	66	4266.0	0.009	**Significant difference**

Source: Author's research

Large farms are more likely to use extended repayment periods for machinery, equipment, land and buildings, reflecting mostly from their greater financial capacity and larger-scale investment needs. Small farms prefer shorter maturities. These findings suggest that maturity structure in agricultural lending is strongly influenced by farm size and investment profile.

4.4. Perceived Acceptability of Bank Financing Costs (NPS Analysis)

An important element in strengthening the role of banks is to examine how the price of financing—interest rates and fees—is perceived by agribusinesses. For this purpose, the study applies a Net Promoter Score (NPS) rating to the question "To what extent is the price, in terms of interest and fees on bank financing, acceptable to you?", which yields a strongly negative result of – 61 (Figure 1). This indicates that a substantial share of surveyed farmers perceives bank loans as "too expensive" or "unreasonably burdensome." Only 8% of respondents are "promoters" (willing to recommend bank financing), while 70% are "detractors" (rejecting and negatively disposed). The remaining 22% are neutral ("passives").

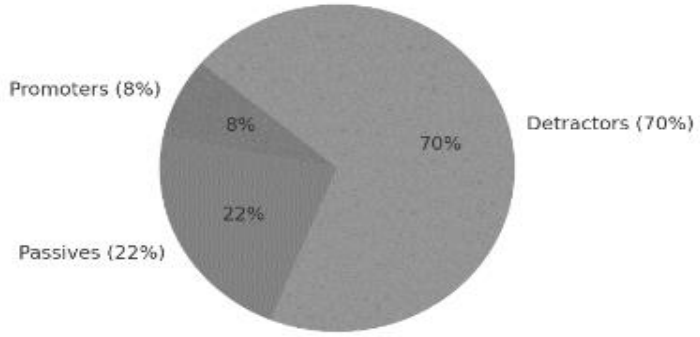


Fig. 1. Acceptability of the Cost of Bank Financing - NPS
Source: Author's research

The NPS statistical analysis results (Table 8) show a dominant frequent rating is 5, chosen by 25.6% of respondents, followed by scores 3 (14.6%), 7 (13.4%), 4 (11.0%) and 6 (9.8%). Only a very small share of farmers perceives the cost of bank financing as fully acceptable: 6.1% of respondents gave a score of 9 and 2.4% a score of 10. At the opposite end of the scale, extremely negative ratings are relatively rare (only 1.2% selected 0), but they are outweighed by the concentration of answers in the "middle–low" segment of the scale (scores 3–6). The modal value of the 0–10 acceptability scale is 5, indicating that this score is the most frequently selected assessment among respondents.

Table 8

NPS of Perceived Acceptability of the Cost of Bank Financing

Score (1–10)	n	%
1	3	1,2%
2	18	7,3%
3	36	14,6%
4	27	11,0%

5	63	25,6%
6	24	9,8%
7	33	13,4%
8	21	8,5%
9	15	6,1%
10	6	2,4%
Total	**246**	**100%**

Source: Author's research

Among the sectors (Table 9), the lowest NPS values are reported in livestock farming (–63.6) and grain production (–60.5). In orchard and vegetable production, the index reaches –45.8 and –50.0, respectively. A similar pattern is observed when farms are grouped by annual turnover: holdings with turnover up to 200,000 BGN and those between 200,001 and 1,000,000 BGN register strongly negative NPS values (–65.7 and –68.0), while the largest farms show a comparatively less negative index (–45.5). Overall, the NPS results indicate widespread dissatisfaction with the price of bank credit across different production groups and farm sizes. The number of responses by sector exceeds the total number of surveyed farms because many respondents are engaged in more than one type of agricultural activity, as a result, a single farm may provide multiple sectoral responses.

Table 9

NPS values presented by sector and annual turnover (row-wise)

Sector	n	Detractors	Passives	Promoters	NPS	Total
Grain production	129	67,40%	25,60%	7,00%	–60.5	100%
Orchard farming	72	58,30%	29,20%	12,50%	–45.8	100%
Livestock farming	66	72,70%	18,20%	9,10%	–63.6	100%
Vegetable production	36	58,30%	33,30%	8,30%	–50.0	100%
Total	303					
Annual turnover	**n**	**Detractors**	**Passives**	**Promoters**	**NPS**	**Total**
Up to 200 000 BGN	105	74,30%	17,10%	8,60%	–65.7	100%
200 001 to 1 000 000 BGN	75	72,00%	24,00%	4,00%	–68.0	100%
Above 1 000 001 BGN	66	59,10%	27,30%	13,60%	–45.5	100%
Total	246					

Source: Author's research

The analysis can be extended by identifying the key factors that contribute to this outcome. Based on the fact that high interest rates and fees are perceived as less advantageous compared to alternatives such as leasing or supplier credit, it can be inferred that there is a lack of transparency and insufficient communication from banks regarding how the pricing for each client is determined. This lack of transparency may be accompanied by complex and unclear conditions, as well as frequent changes. Such circumstances restrict access to financing, particularly in the absence of alternative banking products and a transparent approach toward the agricultural sector. Administrative burdens, including lengthy and complicated banking procedures, may also discourage farmers—especially small, young, and newly established holdings. All of this may lead to delays in technological modernization within agribusiness enterprises, as farms rely primarily on their own funds for financing. This delay directly limits the competitiveness of Bulgarian farmers compared to those in other EU countries and increases their dependence on subsidies and supplier-based financing, which carries additional risks in the event of external shocks or changes in EU policies.

The results are consistent with the observations of (Fi-compass, 2023), which report an increasing financing gap in recent years and a growing share of "discouraged farmers" who refrain from applying for loans due to an anticipated rejection. (Qualtrics XM Institute, 2020) likewise confirms that low NPS scores signal a weakened relationship between the client and the institution, resulting in diminished trust and a

tendency to seek alternative funding sources. In this context, it is essential to improve institutional predictability by strengthening the advisory role of commercial banks, consultancy firms, and public organizations. These actors should collaborate much more closely in order to reduce the information asymmetry between lenders and farmers. This role is also emphasized by (Turlakova and Ivanova, 2012), who argue that in rural areas the development of agribusiness depends not only on access to financial resources, but also on adequate institutional support—including training, advisory services, and adaptive policies tailored to the needs of small and medium-sized farms.

The findings of the present study can also be interpreted alongside earlier contributions to the agricultural economics literature (Ahearn, 2011) points out that young farmers face significant barriers to entering agriculture, primarily due to limited access to capital and land. Our research confirms these conclusions, as the share of farms with fewer than three years of experience that rely on bank financing is exceptionally low (Conversely, Herck, Noev and Swinnen, 2012) highlight managerial experience and institutional support as key factors for farm growth. Our data align with this view: farmers with more than ten years of experience show a higher propensity to use bank financing and exhibit higher turnover levels (Moreover, Kirechev, 2023) notes that Bulgarian farms continue to rely predominantly on their own funds and subsidies, while external financing remains limited. The present study further confirms this finding, with more than 80% of respondents reporting that they cover their working-capital needs with internal resources.

The analysis also reveals a relationship between farmers' experience, farm size, and their financial decisions. Among new farmers (with less than three years of experience), there is a clear tendency to avoid bank loans, which may be explained by insufficient assets for collateral and a higher perceived level of risk. These farms more frequently operate in livestock or fruit production, where initial investment requirements are lower. As experience increases, and as shown in the previous sections of the study, farms with 3 to 10 years of experience exhibit a gradual shift toward greater diversification and increased use of bank financing. This corresponds to the business consolidation stage, during which the need for larger investment arises.

The most experienced farmers (over 10 years) and those with an annual turnover exceeding BGN 1 million demonstrate a significantly higher willingness to use bank financing and financial leverage. Their behavior can be interpreted as a result of accumulated capital, established relationships with financial institutions, and a stronger managerial capacity. In this context, it can be concluded that the size and maturity of the farm are determining factors in financial behavior. While small and newly established farms tend to be cautious and avoid debt, larger and more experienced farmers more actively use external financing, enabling them to undertake larger-scale investments and maintain higher competitiveness.

5. Conclusion, Recommendations and Discussion

Small farms depend almost entirely on self-financing and subsidies, which restricts their investment capacity. Larger and more experienced farms demonstrate a higher propensity to use bank credit; however, the strongly negative NPS across all respondents suggests the presence of substantial barriers. These barriers primarily related to bank interest rates and fees appear to stem largely from a lack of transparency and administrative burdens associated with loan procedures. Low trust encourages the use of alternative, often riskier and more expensive sources of capital, preventing farmers from benefiting from the financial expertise of banks.

Recommendations for banks should focus on active communication through greater transparency and the provision of clear information regarding conditions, fees, risks, and pricing mechanisms, all of which can help strengthen farmers' trust. Another important element is reducing administrative burdens by simplifying documentation procedures, digitizing processes, and introducing digital service tools. Streamlining customer service workflows including the adoption of artificial intelligence would facilitate easier access to bank capital. The development of specialized banking products would broaden access to financing for a wider range of farmers, including those with limited experience or underdeveloped market operations. This can be achieved through flexible credit instruments, alternative interest payment schedules, and longer grace periods. Financial advisory services represent another essential component of an integrated approach by banks toward clients in the agricultural sector. Building long-term, partnership-based relationships requires the provision of financial guidance and the enhancement of sector-specific expertise among bank employees.

To further develop and support access to capital from banking institutions, it is essential to assess the role of public institutions in this process. Due to the systemic importance of banks, it is crucial that they receive support from public organizations in order to facilitate access to credit for specific groups of farmers. Such support should include the expansion of guarantee mechanisms, as well as reducing their administrative burden and cost. Financing for non-standard client groups must be complemented by specialized programmers supported by institutions beyond the banking sector.

The development of financial education programmers is another key element, particularly in building advisory services and preparing project proposals under various RDP funding schemes. Encouraging digitalization both within agribusiness through targeted funding programmers and among key institutions responsible for data exchange between public and private entities is equally important. Achieving these objectives requires policy synchronization among public institutions, as well as coordination between banks, government bodies, and farmer organizations to ensure better alignment with the needs of the agricultural sector.

The results of the study will be incorporated into the author's doctoral dissertation as well as into subsequent scientific analyses focused on assessing access to finance in the agricultural sector. They may be used by commercial banks in adapting their credit policies and financial products, and by public institutions in the design of guarantee schemes and supportive financial mechanisms targeted at agriculture. The findings also have practical relevance for the management of agricultural holdings, as they support the selection of sustainable financing models and an optimal debt structure.

Unlocking the growth and modernization potential of Bulgaria's agricultural sector requires a joint effort between financial institutions and public authorities to rebuild trust. Only through tailored financial products, transparent conditions, and institutional support can a sustainable financial environment be created one that stimulates innovation and enhances the competitiveness of agricultural holdings. Farmers should make greater use of external capital in order to respond effectively to changing climatic conditions and the increasingly competitive environment in which they operate.

Appendix1: Questionnaire

Dear Respondent,

I kindly request you to assist in filling out this questionnaire. The purpose of this survey is to examine the attitudes of agricultural holdings in Bulgaria toward bank financing. The data collected will be used exclusively for academic research.

Thank you for your cooperation.

SECTION A: RESPONDENT DEMOGRAPHIC INFORMATION

INSTRUCTION: Please tick (✓) the appropriate box.

Type of agricultural activity:
☐ Grain production
☐ Livestock
☐ Vegetable production
☐ Orchards
☐ Mixed farming

Years of management experience:
☐ Less than 3 years

☐ 3–10 years
☐ Over 10 years

Annual turnover of your holding:
☐ Up to 200 000 BGN
☐ 200 001 – 1 000 000 BGN
☐ Over 1 000 001 BGN

SECTION B: FINANCING OF WORKING-CAPITAL NEEDS

INSTRUCTION: Please indicate the extent to which you use each source of financing by selecting the appropriate option.
Scale: 1 = No | 2 = Rather no | 3 = Neither yes nor no | 4 = Rather yes | 5 = Yes

SN	Statement	1	2	3	4	5
1	Financing the purchase of fertilizers, crop-protection products, seeds, feed, fuels with own funds	☐	☐	☐	☐	☐
2	Financing with trade credit from suppliers	☐	☐	☐	☐	☐
3	Financing through forward (pre-harvest) sales	☐	☐	☐	☐	☐
4	Financing with loans from friends / private individuals	☐	☐	☐	☐	☐
5	Financing with bank loans	☐	☐	☐	☐	☐
6	Other	☐	☐	☐	☐	☐

SECTION C: FINANCING OF INVESTMENTS

INSTRUCTION: Select how you prefer to finance long-term investment assets.
Scale: 1 = No | 2 = Rather no | 3 = Neither yes nor no | 4 = Rather yes | 5 = Yes

SN	Statement	1	2	3	4	5
7	Financing the purchase of machinery, storage facilities, or land with bank loans	☐	☐	☐	☐	☐
8	Financing such investments with own funds	☐	☐	☐	☐	☐
9	Financing through financial leasing	☐	☐	☐	☐	☐
10	Financing through machinery dealers	☐	☐	☐	☐	☐
11	Other	☐	☐	☐	☐	☐

SECTION D: LOAN REPAYMENT PERIODS

INSTRUCTION: Please select the repayment period you most commonly use for each type of loan.
Scale:
1 = Up to 6 months | 2 = 6–12 months | 3 = 1–3 years | 4 = 3–5 years | 5 = Over 5 years | 6 = Permanent

SN	Type of loan	1	2	3	4	5	6
12	Repayment period for working-capital loans	☐	☐	☐	☐	☐	☐
13	Repayment period for machinery/equipment loans	☐	☐	☐	☐	☐	☐

14	Repayment period for loans for land and buildings	☐	☐	☐	☐	☐	☐

SECTION E: PRICE ACCEPTABILITY (NPS SCALE)

INSTRUCTION: Please rate how acceptable the price (interest and fees) of bank financing is for you.
Scale: **0 = Not acceptable at all … 10 = Fully acceptable**

SN	Statement	0–10
15	Acceptability of the price (interest and fees) of bank financing	☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10

Appendix2: Link to the used dataset:
https://docs.google.com/spreadsheets/d/1SUGRiNZWSuUE7Wpt2vmIMyIcWWGnDETj/edit?usp=sharing&ouid=113245513723797033459&rtpof=true&sd=true

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