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Financial access and constraints in contract poultry farming: The role of firm size and experience

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Abstract
This analysis investigates how the attributes of firms, particularly their experience and size, influence financial access and barriers in the realm of contract poultry farming. Through descriptive and ANOVA analyses of data from 228 contract poultry farmers, we analysed the effects of firm size and experience on access to finance. Results reveal that firms with longer experience and higher scales of operation encounter less financial constraints, thus suggesting a relationship between organisational stability and access to financial markets.
The results highlight the necessity of customised financial assistance approaches to support smaller, emerging poultry businesses. By tackling financial obstacles linked to firm characteristics, policymakers and financial institutions can create a more inclusive environment that promotes the sustainable development of contract poultry farming. This analysis offers actionable insights for increasing access to finance within the contract farming industry, facilitating inclusive firm growth.

Keywords: Contract poultry farming, financial access, financial barriers, firm experience, firm size

1. Introduction
Poultry farming has become a crucial component of India's agricultural economy, supporting millions of rural livelihoods and significantly contributing to rural income generation. In 2023, the estimated value of India's poultry market reached USD 28 billion, reflecting steady growth driven by rising domestic demand for affordable protein and the ongoing trend of urbanization (Mishra & Gupta, 2024) [14]. Historically, poultry farming in India had a localized, household profile with backyard produce for local consumption. Contract farming has emerged as an important model in recent years, especially in the poultry sector, allowing small and marginal farmers to connect with assured markets through organized supply chains (Rural Voice, 2023) [26].
Poultry farming in India is undergoing significant changes due to contract farming, characterized by an agreement between farmers and buyers, where the buyer provides inputs, technical support, and often a guaranteed market for the farmers' products (PRS Legislative Research, 2018) [20]. With this model farmers can concentrate on production, avoiding types of uncertainty related to marketing and finance which traditional farming methods were always exposing them to. Karnataka is one of the highest producers of poultry meat in India because of the expansive growth of contract poultry farming. It occupies fifth position in the Indian poultry industry with an annual production of 530 million eggs (E-Krishi UASB, 2023) [6]. Correspondingly, the Bangalore Rural District in Karnataka is noted to have the most competitive infrastructure, nearby cities, and lucrative demand for poultry goods, establishing itself as a center for contract poultry farming. The combined strategic advantages of this region with its strong infrastructure including transport and cold storage facilities contribute immensely to the lowering of logistics costs as well as the regional access to urban markets (NABARD, 2021) [16].
Access to finance is essential for the sustainability and growth of contract poultry farming, as small-scale farmers frequently require capital for production, operational management, and the implementation of enhanced farming practices (Reddy & Singh, 2023) [25]. In contract farming, although certain financial assistance is provided through contractual agreements, numerous farmers continue to encounter significant obstacles in obtaining independent credit.

The obstacles presented, such as insufficient credit history, elevated interest rates, and stringent loan requirements, pose significant difficulties, particularly for emerging and small-scale farmers who might not possess the required collateral (Patel *et al*., 2022) [18]. Insufficient financial access can impede farmers' capacity to sustain and expand their operations, restricting their ability to fully capitalise on contract farming agreements. Studies indicate that financial obstacles, especially for smaller and newly established farmers, diminish the economic efficiency and potential advantages of contract farming arrangements (Kumar & Singh, 2023) [11].

Contract farming has been extensively analyzed regarding its effects on market access, price stabilization, and income security for farmers (Sivaramane, 2018) [29]. Bijman *et al*. (2017) [3] illustrate that contract farming provides a dependable market and stable income, especially in markets marked by price fluctuations. However, the financial aspects of contract farming have received very little attention. The industry of contract poultry farming is growing rapidly and the demand for capital is increasing; but still, less attention is paid to its financial issues in the context of India (NABARD, 2021) [16]. Though financial accessibility along with constraints of crop cultivation has been widely discussed (Kumar & Tadas 2020) [10], there is still a dearth of studies focusing on the demands of contracted poultry production namely differentiated costs on feedstuffs, infrastructure and biosecurity (Das & Das 2019) [5]. Poultry farming requires a cash flow for operating expenses — further highlighting the importance of financial access. There has been few studies focused on these costs concerning contract poultry farming (Mishra & Gupta, 2024) [14].

The absence of data regarding the influence of farmer characteristics, such as expertise and firm size, on financial access and the challenges faced in obtaining financial services represents another significant gap. A significant number of investigations into financial constraints have overlooked the variations in access and obstacles faced by small, medium, and large farms (Shah & Patel, 2021) [27]. Veteran farmers often possess better credit histories, enhancing their competitiveness in securing financial services. Ali & Rahman (2022) [1] discovered minimal empirical evidence regarding this in contract poultry. This study aims to identify and analyse the existing gaps in the literature concerning financial access and barriers within the contract poultry farming sector in India. This study aims to investigate how elements like the experience of farmers and the size of their operations affect their access to financial resources and the challenges they encounter in securing funding.

2. Review of Literature

Financial Access in Contract Poultry Farming

Poultry farming establishment requires a high initial investment on the infrastructure, feed and animals raised especially in broiler production. The need for this capital investment represents a serious challenge for many small-scale farmers who do not have sufficient savings or credit access (Ramukhithi *et al*., 2023) [21]. Past studies indicate that farmers who face credit constraints tend to participate more in contract farming. They often provide vital inputs (e.g. chicks and feed) on credit, allowing farmers to enter production without needing to invest large sums of money upfront (Kozhaya, 2020) [9]. Contract farming is one of the strategic arrangements to mitigate the risks associated with uncertainties in input and output markets. When farmers have a guaranteed market and price, their exposure to price volatility is lifted, making it easier for them to justify put money into their operations (Arouna *et al*., 2021) [2].

In fact, the inequalities in access to finance among poultry farmers are stark when accounting for farm size and experience. As noted by Patel and Sharma (2023) [19], large farms are preferred as they are less risky in the eyes of the lenders which translates into better terms of credit. On the contrary, smallholder farmers face the greatest hurdles in getting their loans approved, showcasing how access to capital is unequal based on farm size. According to Ramesh and Reddy (2021) [22] small and marginal farmers often face limited financial alternatives that fall short of effectively fulfilling their operational needs. They advocate for policy changes to develop financial products specifically tailored to small contract producers, who may help address access disparities and help grow historically undercapitalized farms.

Recent findings by Singh *et al*. (2023) [11] support these observations, indicating that small-scale farmers frequently lack collateral, which further limits their capacity to obtain loans. The restricted access to credit hampers their ability to invest in essential production inputs, intensifying the difficulties encountered in contract poultry farming. In a similar vein, Kaur *et al*. (2022) [8] emphasise that numerous smallholders struggle to fulfil the rigorous criteria set by formal financial institutions, which encompass elevated interest rates and comprehensive documentation.

Furthermore, Das and Nair (2022) [4] examined how farmer experience influences financial access, suggesting that individuals with well-established connections to lenders are more likely to obtain loans. This indicates that experience is essential for effectively navigating the financial aspects of poultry farming. Gupta and Mehta (2021) [7] emphasise that financial literacy programs can play a crucial role in providing small-scale farmers with the essential knowledge to enhance their creditworthiness and gain access to financial resources.

Financial barriers in contract poultry farming

The financial landscape of contract poultry farming presents considerable obstacles that impede the operational effectiveness of small-scale farmers. MacDonald (2014) highlights that numerous poultry farmers depend on long-term loans to support vital housing and infrastructure. Nedunchizhien and Karthikeyan (2018) [17] emphasise the financial challenges faced by contract poultry farmers in Western Tamil Nadu, pointing out that cash flow disruptions and delayed payments from contractors have a considerable impact on the financial stability of these farmers. It is indicated that although contract farming offers certain market access and mitigates risks, dependence on integrators for operational inputs and inflexible contract conditions constrains the financial independence of small-scale farmers, impeding their development and adaptability. This perception is in agreement with similar recent findings that credit access remains a major challenge for small-scale poultry producers primarily due to declining support from agricultural banks and strict commercial lending practices (Kaur *et al*., 2022) [8]. However, the fact that these farmers often lack assets prevents them from accessing loans, limiting their capacity to meet operational costs and grow their businesses.

Rao *et al*. (2023) [23] analyse the dynamics of credit access, highlighting that although contract farming can offer financial assistance via input provisions, dependence on loans may result in considerable indebtedness, especially

during production challenges such as disease outbreaks. Gupta and Mehta (2021) [7] clarify that contracts frequently entail high-interest repayment structures, exacerbating the financial burden on already vulnerable farmers. This finding aligns with the research of Rao and Bhatt (2022) [24], who contend that strict loan conditions, such as the requirement for collateral, restrict small-scale farmers' access to credit, thus compromising the claimed financial inclusivity of contract farming arrangements. Singh *et al*. (2023) [11] investigated financial barriers in contract poultry farming, highlighting that smaller and newly established farms face greater collateral requirements than larger, more established operations. This inequity reflects a systemic bias in lending practices that disproportionately impacts smaller producers, restricting their access to essential funding.

Kumar *et al*. (2023) [11] identify elevated interest rates and restricted loan access as significant financial barriers in contract poultry farming, particularly impacting smaller operations due to their increased collateral demands. Inequities hinder the development of smallholder farmers and intensify financial disparities in the agricultural sector. The research conducted by Patel and Sharma (2023) [19] supports this idea, indicating that lenders generally prefer larger farms, which are regarded as lower-risk and receive more favourable credit terms. Small-scale farmers encounter significant obstacles in obtaining loan approval, highlighting a systemic bias that favours larger agricultural enterprises over smaller ones.

Research questions

- How do contract poultry producers' financial accesses vary according to their business sizes and levels of experience?
- What are the primary financial challenges faced by Bangalore Rural poultry producers engaged in contract farming?
- How do contract poultry farmers perceive financial barriers in relation to business size and experience?

3. Research Methodology

Research design

This research utilised a cross-sectional survey design to examine the financial access and barriers faced by poultry farmers involved in contract farming in the Bangalore Rural District, Karnataka, India.

Sample Size and Sampling Technique

The study group comprised a total of 228 poultry farmers. A digital survey was not practicable due to the limited technology infrastructure available to respondents especially and thereby, a paper-and-pencil survey was conducted. This guaranteed that farmers were met in person for their responses which further enhanced the response rate and garnered more valid responses. During the survey process, convenience sampling was implemented to choose respondents who were easily accessible and willing to respond. This method is often used in agricultural research where it's not possible to use randomised sampling because of access or logistics problems.

Data Collection Procedure

Data collection was conducted using structured questionnaires administered to the selected farmers via face-to-face interviews. The questionnaire comprised Likert-scale statements aimed at evaluating financial access and perceived barriers in the realm of contract poultry farming. The analysis was conducted using SPSS software.

4. Data analysis and Discussion

Details of farmers: The demographic profile of the 228 poultry farmers in Bangalore Rural District shows variation in age, educational background, and farming experience. A significant proportion of farmers are within the 31-40 years age group (33.2%), while the 41-50 years age group accounts for 28.6%, indicating a mid-career demographic. A significant proportion of farmers have attained secondary education (38.7%), whereas 25.3% hold graduation or higher qualifications, reflecting a moderate level of formal education within this demographic. In terms of landholding size, 40.8% of farmers operate large farms (greater than 5 acres), 33.33% manage medium-sized farms (2-5 acres), and 25.9% own small farms (up to 2 acres). This distribution demonstrates a notable prevalence of large-scale operations in the sample. A considerable percentage of farmers have minimal experience in poultry farming, with 53.51% indicating 1-5 years of experience, 29.82% reporting 6-10 years, and only 16.67% possessing more than 10 years of experience. The duration of contracts shows variability: 38.6% are for 3-6 years, 35.6% for less than 3 years, and 25.8% for over 6 years, reflecting differing levels of commitment in contract farming.

Table 1: Demographic details of the respondents (N=228)

Characteristic	Category	Frequency (N)	Percentage (%)
Age	Up to 30 years	49	21.6
	31-40 years	76	33.2
	41-50 years	65	28.6
	Above 50 years	38	16.5
Education Level	No Formal Education	27	12
	Primary	55	24
	Secondary	88	38.7
	Graduate & Above	58	25.3
Landholding Size	Small (Up to 2 acres)	59	25.9
	Medium (2-5 acres)	76	33.3
	Large (Above 5 acres)	93	40.8
Farming Experience	1-5 years	122	53.5
	6-10 years	68	29.8
	Above 10 years	38	16.7
Contract Duration	Less than 3 years	81	35.6
	3-6 years	88	38.6
	More than 6 years	59	25.8
Income from Poultry (%)	Up to 50%	51	22.4
	51-75%	98	43.2
	More than 75%	78	34.4

Source: Primary survey

Descriptives and reliability

Table 2 presents descriptive statistics that indicate the average perceptions of financial access and financial barriers among contract poultry farmers. The financial access construct exhibited mean scores between 3.53 and 3.79, reflecting a moderate level of ease in accessing financial resources. The financial barriers construct exhibited mean scores ranging from 2.98 to 3.44, indicating moderate to high perceived obstacles in securing financing. The Cronbach's alpha of 0.867 for financial access and 0.803 for financial barriers indicates a high level of internal consistency, thereby affirming the scale's reliability

Table 2: Descriptive statistics

		Mean	Standard deviation	Cronbach's alpha
Financial access	Securing loans for the expansion of my poultry business is a straightforward process.	3.79	.825	0.867
	Financial institutions are eager to offer credit assistance for my agricultural activities.	3.71	.951	
	The interest rates on agricultural loans align well with the financial requirements of my business.	3.53	.878	
	The procedure for securing financial support for poultry farming is uncomplicated.	3.65	.952	
Financial Barriers	High-interest rates make it difficult to access necessary funds for expansion.	2.98	1.180	0.803
	The paperwork required for obtaining financial support is complex and time-consuming.	3.44	1.033	
	The absence of collateral restricts my capacity to obtain financing for my agricultural operations.	3.33	1.239	

Source: Primary survey

Influence of Firm Experience on Financial Access

Table 3 presents a descriptive analysis that underscores variations in financial access contingent upon firm experience. Firms with 1-5 years of experience exhibited a mean financial access score of M=3.4426 (SD=0.7189). This score increased for firms with 6-10 years of experience (M=3.7061, SD=0.8291) and further increased for firms with over 10 years of experience (M=3.8333, SD=0.6380). This pattern indicates that firms with extended operational histories are more likely to perceive greater financial access.

ANOVA results (Table 4) indicate statistically significant differences, with an F-value of 6.235 and a p-value of 0.002 ($F(2, 225)=6.235$, $p<0.05$), demonstrating a positive association between experience and financial access. These findings are consistent with previous research by Das and Nair (2022) [18], which indicated that established firms with longer operational histories gain enhanced credibility and enduring relationships with financial institutions, thereby facilitating increased financial access. Ramesh and Reddy (2021) [22] observed that established firms typically possess a stronger financial track record, which allows them to obtain funding more efficiently than newly formed enterprises.

Influence of firm size on financial access

Table 3 indicates notable differences in financial access according to firm size. Small firms exhibited a mean financial access score of M=3.2873 (SD=0.7027), medium-sized firms showed a mean score of M=3.4322 (SD=0.6935), and large firms achieved the highest mean score at M=3.9695 (SD=0.7331). The findings indicate that larger firms typically have improved access to financial resources, likely attributable to their greater ability to obtain credit and exhibit financial stability.

The ANOVA results support this observation, demonstrating a statistically significant F-value of 21.435 and a p-value of 0.000 ($F(2, 225)=21.435$, $p<0.05$). Prior research substantiates the correlation between firm size and access to finance. Patel and Sharma (2023) [19] identified that larger firms are viewed as lower-risk borrowers, attributed to their resources and economies of scale, thereby increasing their attractiveness to financial institutions. Rao and Bhatt (2022) [24] noted that larger firms possess more established financial networks and credit histories, which enhance their financial access relative to smaller firms.

Table 3: Descriptive analysis of firm size, experience and financial access

Characteristics		Number	Financial access mean	Standard Deviations
Experience	1-5 years	122	3.4426	0.7189
	6-10 years	68	3.7061	0.8291
	Above 10 years	38	3.8333	0.6380
Size of firm	Small	59	3.2873	0.7026
	Medium	76	3.4322	0.6935
	Large	93	3.9695	0.7330

Source: Primary survey

Table 4: ANOVA analysis (Financial access)

Dependent variable	Independent variables		Sum of Squares	DF	Mean Square	F	Sig.
Financial access	Experience	Between Groups	7.150	2	3.575	6.235	0.002
		Within Groups	129.011	225	.573		
		Total	136.161	227			
	Size of firm	Between Groups	21.791	2	10.895	21.435	0.000
		Within Groups	114.370	225	.508		
		Total	136.161	227			

Source: Primary survey

Influence of firm experience on financial barriers

Table 5 presents a descriptive analysis of the differences in financial barriers faced by firms based on their years of experience. Firms with 1-5 years of experience report a mean financial barrier score of 3.4180 (SD=0.9136), indicating relatively higher perceived barriers. In contrast, firms with 6-10 years of experience have a lower mean score of 3.0833 (SD=0.9914), while those with more than 10 years of experience report the lowest mean score at 3.0175 (SD=1.0737). This trend suggests that as firms gain more experience, they perceive fewer financial barriers.

The ANOVA results in Table 6 confirm that the variations in financial barriers based on firm experience are statistically significant, with an F-value of 3.966 and a p-value of 0.020 (F (2, 225)=3.966, p<0.05). These results support findings by Das and Nair (2022) [18] and Ramesh and Reddy (2021) [22], who observed that firms with longer operational histories often develop stronger financial relationships and a stable credit history, enabling them to overcome financial barriers more effectively than newer firms.

Influence of Firm Size on Financial Barriers

Table 5 also reveals significant differences in financial barriers according to firm size. Small firms report the highest mean financial barrier score of 3.8757 (SD=0.7703), indicating that they face the greatest obstacles in accessing financial resources. Medium-sized firms have a mean score of 3.5088 (SD=0.6312), while large firms report the lowest mean score at 2.6452 (SD=0.9912). This result suggests that larger firms encounter fewer financial barriers, likely due to their greater financial stability and access to credit.

The ANOVA results validate these observations, with a highly significant F-value of 45.238 and a p-value of 0.000 (F (2, 225)=45.238, p<0.05). Prior research supports this association; Patel and Sharma (2023) [19] found that large firms are often seen as lower-risk borrowers due to their substantial assets and economies of scale, which enhances their financial appeal. Additionally, Rao and Bhatt (2022) noted that larger firms benefit from more extensive financial networks and credit histories, giving them an advantage in securing financial resources compared to smaller firms.

Table 5: Descriptive analysis of firm size, experience and financial barriers

Characteristics		Number	Financial barriers	Standard Deviations
Experience	1-5 years	122	3.4180	0.9136
	6-10 years	68	3.0833	0.9914
	Above 10 years	38	3.0175	1.0737
Size of firm	Small	59	3.8757	0.7703
	Medium	76	3.5088	0.6312
	Large	93	2.6452	0.9912

Source: Primary survey

Table 6: ANOVA analysis (Financial barriers)

Dependent variable	Independent variables		Sum of Squares	DF	Mean Square	F	Sig.
Financial barriers	Experience	Between Groups	7.386	2	3.693	3.966	0.020
		Within Groups	209.530	225	.931		
		Total	216.916	227			
	Size of firm	Between Groups	62.210	2	31.105	45.238	0.000
		Within Groups	154.706	225	.688		
		Total	216.916	227			

Source: Primary survey

5. Conclusion

This paper highlights the significant role of firm characteristics, particularly experience and size, on the financial risks that contract poultry producers endure. We find that financial access is affected positively by increase in both firm size and years of work experience showing that larger and more experienced firms face lower obstacles in attaining financial access. Consistent with previous research, the results show that operational size and age improve financial connection, which in turn is associated with stronger ties with financial institutions. These study findings point to a potential role for targeted initiatives to support small, novice poultry farmers, ensuring that contract farming systems offer equitable access to financing. When policymakers and financial institutions acknowledge the structural obstacles that new and small firms face, they can create programs to fill these gaps, leading to sustainable development in the poultry industry.

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