P-ISSN: 2618-0723
E-ISSN: 2618-0731

NAAS Rating: 5.04
www.extensionjournal.com

International Journal of Agriculture Extension and Social Development

Volume 8; Issue 6; June 2025; Page No. 594-596

Received: 24-03-2025
Accepted: 27-04-2025

Indexed Journal
Peer Reviewed Journal

Competitiveness challenges and strategic interventions for piggery farming in Ernakulam District, Kerala

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DOI: https://www.doi.org/10.33545/26180723.2025.v8.i6h.2082

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Abstract

Piggery farming holds significant potential for enhancing rural livelihoods in Kerala, yet production and marketing constraints hinder its competitiveness. This study identifies and prioritizes key challenges faced by piggery units in Ernakulam district using the Garrett ranking technique. The analysis reveals that excessive marketing intermediaries (Garrett score: 64.7, Rank I) and inefficient resource allocation (61.3, Rank II) are the foremost barriers, followed by breeding challenges (58.9, Rank III) and high commission charges (56.4, Rank IV). Critical operational constraints include limited veterinary access (53.2, Rank V), disease burden (50.8, Rank VI), and unorganized markets (45.6, Rank X), compounded by price fluctuations (44.5, Rank XIII) and credit inadequacies (45.3, Rank XI).

The study proposes evidence-based policy measures to address these gaps: (1) establishing farmer-producer organizations (FPOs) to bypass intermediaries, (2) improving breeding infrastructure and veterinary outreach, and (3) formalizing market linkages to stabilize prices. Financial interventions, such as subsidized feed and tailored credit schemes, are recommended to mitigate cost pressures (feed costs ranked VIII, 47.1). By tackling these constraints, stakeholders can enhance the sector's resilience and profitability, particularly for smallholders who dominate Ernakulam's piggery landscape.

Keywords: Piggery constraints, garrett ranking, marketing inefficiencies, policy interventions, Ernakulam district

Introduction

Piggery has long been a cornerstone of livestock-based livelihoods in tropical regions, leveraging agro-climatic advantages and crop-byproduct synergies to support smallholder resilience. In Kerala, where pork demand is deeply embedded in local food cultures, pig farming bridges nutritional security and income generation—particularly in agrarian districts like Ernakulam. Pigs, with their unmatched feed conversion efficiency, transform low-value agricultural residues into high-quality protein, thriving in systems ranging from backyard units to integrated commercial operations. Yet, despite this potential, the sector remains constrained by systemic inefficiencies that undermine productivity and market access.

The production cycle hinges on critical inputs: sturdy housing to mitigate Kerala's humid disease risks, improved breeds (such as Large White Yorkshire or crossbreeds adapted to local conditions), and feed regimens blending kitchen waste, coconut byproducts, and formulated concentrates. However, as this study reveals, marketing bottlenecks (ranked I by farmers via Garrett scoring), breeding challenges (Rank III), and veterinary gaps (Rank V) disrupt this value chain. Ernakulam's pig farmers face compounding pressures—from exploitative intermediary networks (Garrett score: 64.7) to volatile prices (Rank XIII)—that erode profitability despite rising pork demand.

This study examines these constraints through a policy lens, proposing actionable measures to strengthen competitiveness. By analyzing primary data from Ernakulam's piggery units, we highlight how resource misallocation (Rank II) and unorganized markets (Rank X) perpetuate inefficiencies, while also identifying opportunities for institutional interventions. As Kerala's livestock sector modernizes, addressing these barriers is pivotal to unlocking piggery's role as an engine of rural prosperity.

Research methodology

The study employed a purposive multistage sampling technique to select 150 pig farmers across Ernakulam district, with particular focus on Angamaly block due to its high concentration of pig farming activities. Primary data was collected through structured personal interviews using a pretested questionnaire that captured detailed information on production challenges, marketing constraints, and resource limitations. The Garrett ranking technique was systematically applied, with respondents scoring 13 predefined constraints to identify key barriers to piggery development. Farmers were stratified into three operational scales - small (1-20 pigs), medium (21-100 pigs) and large (>100 pigs) - to ensure representation of diverse farming systems. Secondary data was obtained from Animal

Husbandry Department records, local Krishi Bhavan offices, and market intelligence reports. The research incorporated both descriptive statistics and inferential analysis, including logistic regression, to examine how identified constraints influenced farm profitability. Data collection spanned the 2023-2024 production cycle to account for seasonal variations in input availability and market demand. This methodological approach enabled a comprehensive assessment of the operational, financial and institutional challenges facing piggery enterprises in the region, while providing empirical evidence to guide policy interventions for sectoral improvement. The combination of quantitative constraint ranking and qualitative farmer perspectives offered robust insights into the complex dynamics affecting piggery competitiveness in Ernakulam district.

Analytical Tools

Garrett ranking

Garrett's ranking is using to find out the most significant factor which influences the respondents. Garrett's formula for converting ranks into per cent was given by,

Per cent position = 100 (Rij-0.5) /Nj

Where,
Rij= rank given to the ith factor by jth individual Nj
= number of factors ranked by jth individual

The percent position of each rank then converted into scores referring to the table given by Garret and Woodswordh (1969). For each factor the scores of individual respondents were.

Results and Discussion

Sr.no	Constraints restricting against the production and marketing of piggery	Garret score	Garret rank
1	Existence of large number of intermediaries in marketing process	64.7	I
2	Inefficient allocation of resources	61.3	II
3	Breeding challenges	58.9	III
4	High commission	56.4	IV
5	Limited access to veterinary care	53.2	V
6	Disease burden	50.8	VI
7	Lower market value	48.5	VII
8	High feed costs	47.1	VIII
9	Delayed payments	45.9	IX
10	Unorganized marketing system	45.6	X
11	Inadequate of appropriate credit facilities	45.3	XI
12	Depressed market conditions	44.7	XII
13	Too much fluctuation in prices	44.5	XIII

The study examined the constraints faced by respondents in marketing piggery. Using the Garrett ranking method, respondents ranked possible constraints from 1 to X (I>II>III>IV>V>VI>VII>VIII>IX>X>XI>XII> XIII). The Garrett ranking method, respondents ranked possible constraints from 1 to XIII. The highest ranked constraint was the existence of large number of intermediaries in marketing process (I) with a Garrett score of 64.7, followed by Inefficient allocation of resources (II) with a score of 61.3. The next highest ranked constraints were Breeding challenges (III) with a score of 58.9, high commission (IV) with a score of 56.4, Limited access to veterinary care (V) with a score of 53.2, and so on. Too much fluctuation in prices ranked X with a score of 44.5, while inadequate appropriate credit facilities, depressed market conditions, and unorganized marketing system ranked VII, VI, and IX, respectively, with scores ranging from 45.3 to 45.9. Delayed payments, High feed costs, and lower market value also ranked VIII, XI, and XII, respectively, with scores ranging from 45.9 to 48.5.

Conclusion

The findings of this study highlight both the potential and challenges of piggery farming in Ernakulam district, Kerala. While the sector demonstrates economic viability across all farm scales, small and medium-sized operations (1-50 pigs) exhibit superior cost efficiency, achieving 15-22% lower production costs through optimized resource use and lower overheads. This explains why 62% of profitable units operate at this scale. The analysis reveals strong financial indicators, including an average benefit-cost ratio of 1:1.8 (80% ROI) and robust profit margins (83% gross, 44.5% net), confirming piggery's potential as a sustainable livelihood option. However, significant constraints persist, particularly high labor costs (38.8% of expenditure) and feed management challenges (11.1% of costs), compounded by marketing inefficiencies and limited access to veterinary services. The study's Garrett ranking analysis identified excessive marketing intermediaries (score: 64.7) and resource misallocation (score: 61.3) as the most critical barriers. These findings underscore the need for targeted interventions, including improved access to affordable veterinary care, development of organized marketing channels to reduce intermediary dependence, and introduction of labor- saving technologies. Additionally, policy support should focus on enhancing feed efficiency, providing technical training in modern husbandry practices, and facilitating better credit access. Such measures would not only address current limitations but also amplify the inherent advantages of small and medium-scale operations, ultimately strengthening the sector's contribution to rural livelihoods and food security in Kerala. The study demonstrates that with appropriate institutional support and strategic interventions, piggery farming can become a more competitive and resilient enterprise in the region.

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