SKILL-BASED HIGHER EDUCATION AND MODERN DAIRY FARMING: A MODEL FOR SUSTAINABLE RURAL ENTREPRENEURSHIP IN INDIA

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Abstract
India's rural economy largely depends on agriculture and allied sectors, among which dairy farming has emerged as one of the most reliable livelihood sources. With India being the largest milk producer globally, the dairy sector plays a vital role in employment generation, rural development, and entrepreneurship. However, the lack of modern technical skills, managerial knowledge, and entrepreneurship training among rural youth limits the potential of dairy farming as a sustainable enterprise. This study examines the role of skill-based higher education in promoting modern dairy farming practices and developing rural entrepreneurship in India. Both primary and secondary data were used in the research. Primary data were collected from 100 respondents including dairy farmers and students enrolled in agricultural or management programs related to dairy entrepreneurship. Secondary data were collected from journals, books, government reports, and online sources. The study reveals that skill-based higher education significantly enhances knowledge of scientific dairy practices, improves farm productivity, and encourages entrepreneurial ventures in rural areas. Training in dairy management, value addition, and marketing has the potential to transform traditional dairy farming into a sustainable rural enterprise model. The research concludes that integrating skill-oriented education with practical dairy training can strengthen rural livelihoods, increase farmers' income, and promote sustainable rural entrepreneurship in India.

Keywords: Skill-based education, dairy farming, rural entrepreneurship, sustainable development, livestock sector.

Introduction

Higher education in India is increasingly shifting from theoretical learning toward skill-based education to address employment challenges and rural development. Agriculture and allied sectors such as dairy farming provide vast opportunities for entrepreneurship among rural youth. Dairy farming is one of the most important components of the Indian agricultural economy, contributing significantly to income generation and food security. India is the largest milk producer in the world, and the dairy sector has become a key driver of rural livelihoods and socio-economic development. The livestock sector has recorded significant growth and contributes substantially to agricultural GDP.

In states such as Maharashtra, milk production has increased substantially over the last decade, highlighting the growing importance of dairy farming in rural economies. Despite this growth, traditional dairy practices often lack scientific management, marketing strategies, and value addition. Skill-based higher education can bridge this gap by equipping farmers and rural youth with technical knowledge, entrepreneurship skills, and modern dairy management practices. This study focuses on how skill-based higher education can promote modern dairy farming practices and contribute to sustainable rural entrepreneurship.

Objectives of the Study

1. To examine the importance of skill-based higher education in rural development.
2. To analyze the role of modern dairy farming practices in rural entrepreneurship.
3. To evaluate the impact of skill training on productivity and income of dairy farmers.
4. To propose a model integrating higher education and dairy entrepreneurship for sustainable rural development.

Review of Literature

Singh and Sharma (2018) examined the role of the dairy sector in rural economic development in India. The study highlighted that dairy farming provides regular income and employment opportunities to small and marginal farmers. The authors emphasized that scientific dairy management practices such as balanced feeding, disease control, and improved breeding techniques significantly enhance milk productivity. Their findings suggested that training and education programs play an important role in promoting modern dairy farming practices and improving farmers' socio-economic conditions.

Kumar (2019) analyzed the impact of modern dairy technologies on farm productivity and sustainability. The study found that farmers who adopted modern practices such as mechanized milking, artificial insemination, and proper herd management achieved higher productivity and profitability compared to those following traditional methods. The author concluded that education and skill development programs are necessary to encourage farmers to adopt modern technologies in dairy farming.

Patel and Patel (2020) studied the entrepreneurial potential of dairy farming among rural youth. Their research revealed that dairy farming has the potential to become a profitable entrepreneurial activity when supported by technical training and financial assistance. The study emphasized that higher education institutions can play an important role in developing entrepreneurial skills among rural youth through specialized courses in livestock management and agribusiness.

Deshmukh (2021) explored the relationship between agricultural education and rural entrepreneurship development. The study concluded that skill-based education enhances the capacity of farmers and rural youth to manage agricultural enterprises effectively. According to the author, practical training programs, internships, and field-based learning experiences improve farmers' understanding of scientific dairy practices and strengthen their entrepreneurial mindset.

Verma and Gupta (2021) analyzed the role of extension education in improving dairy farming practices. The authors found that extension programs conducted by universities and government agencies significantly improved farmers' awareness about animal health management, feed efficiency, and milk processing techniques. The study concluded that continuous knowledge dissemination and training are essential for sustainable dairy development.

Rathod and Pawar (2022) examined the adoption of improved dairy farming practices among farmers in Maharashtra. Their findings revealed that farmers with higher levels of education were more likely to adopt scientific dairy practices and modern farm management techniques. The study emphasized that education plays a crucial role in increasing farmers' willingness to innovate and adopt modern agricultural technologies.

Sharma and Singh (2022) investigated the role of dairy cooperatives in promoting rural entrepreneurship. The authors observed that cooperative institutions such as milk unions provide farmers with access to markets, credit facilities, and technical support. These institutional mechanisms help farmers transform dairy farming from a subsistence activity into a profitable enterprise.

Meena and Joshi (2023) studied the impact of training programs on dairy farmers' productivity and income levels. The study found that farmers who participated in training programs demonstrated improved knowledge about animal nutrition, disease management, and hygienic milk production. The authors concluded that capacity-building programs significantly contribute to increasing farmers' income and improving rural livelihoods.

Chaudhary and Yadav (2023) examined the role of skill development initiatives in agricultural entrepreneurship. Their research indicated that skill-based training programs help rural youth acquire practical knowledge in livestock management, dairy processing, and marketing strategies. The study highlighted that entrepreneurship training combined with technical education encourages youth to establish dairy-based enterprises.

Karthik and Devi (2024) analysed factors influencing youth participation in dairy entrepreneurship. The authors identified education, access to credit, and technical knowledge as the key determinants influencing entrepreneurial behaviour among dairy farmers. The study emphasized that higher education institutions should integrate dairy entrepreneurship courses to prepare students for self-employment opportunities in rural areas.

Research Methodology

Research Design

Descriptive and analytical research design.

Sources of Data

Two types of data were used:

Primary Data

Collected through a structured questionnaire.

Secondary Data

Collected from:

- Research journals
- Government reports
- Books
- Websites and online publications

Sample Size

100 respondents

Sampling Area

Rural area of Ahmednagar Region.

Statistical Tools Used

- Percentage analysis
- Mean score analysis
- Descriptive statistics

Data Analysis and Interpretation:

Table No-1-Awareness of Modern Dairy Farming Practices

Response	Frequency	Percentage
Highly Aware	32	32%
Aware	41	41%
Moderately Aware	18	18%
Low Awareness	9	9%
Total	100	100%

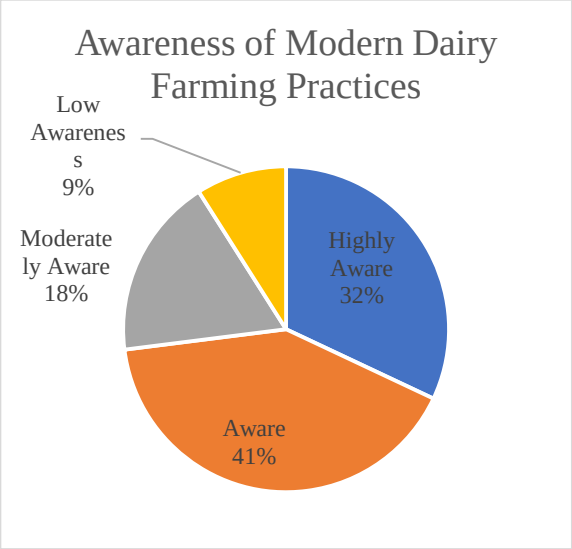


Chart No-1

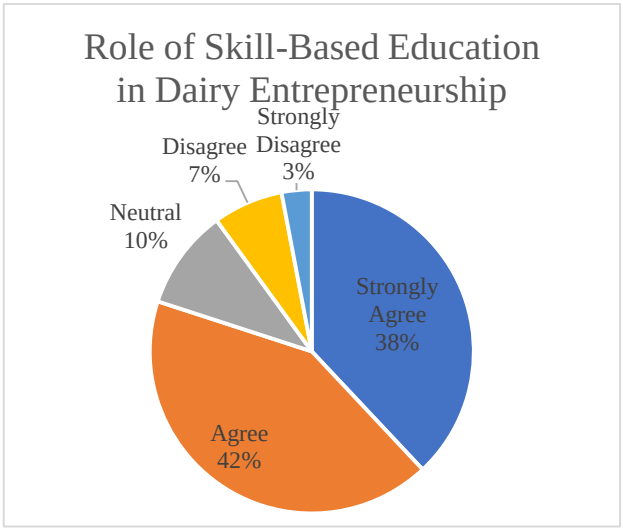
Interpretation :

The table indicates that 73% of respondents are aware or highly aware of modern dairy farming practices. This suggests that educational exposure and training programs have improved knowledge about scientific dairy farming.

Table No-2Role of Skill-Based Education in Dairy Entrepreneurship

Response	Frequency	Percentage
Strongly Agree	38	38%
Agree	42	42%
Neutral	10	10%
Disagree	7	7%
Strongly Disagree	3	3%
Total	100	100%

Chart No-2



Analysis and Interpretation:

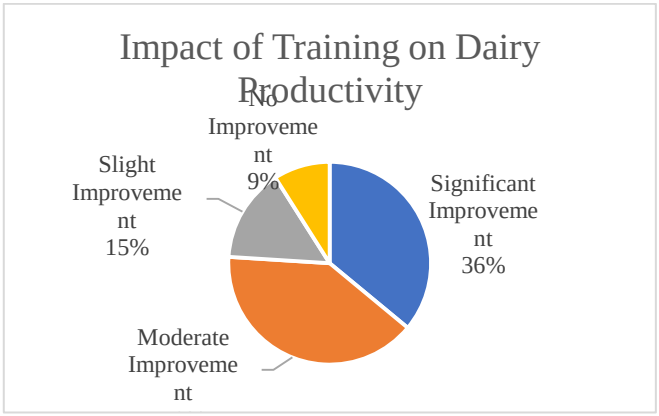
The table illustrates respondents' opinions regarding the role of skill-based higher education in promoting dairy entrepreneurship. It is observed that 42 percent of respondents agree, while 38 percent strongly agree that skill-based education contributes significantly to the development of dairy entrepreneurship. On the other hand, 10 percent respondents remain neutral, whereas 7 percent disagree and 3 percent strongly disagree with the statement.

Table 3

Impact of Training on Dairy Productivity

Response	Frequency	Percentage
Significant Improvement	36	36%
Moderate Improvement	40	40%
Slight Improvement	15	15%
No Improvement	9	9%
Total	100	100%

Chart No-3



Analysis and Interpretation :

The above table presents respondents' perceptions regarding the impact of training programs on dairy productivity. The data indicates that 40 percent of

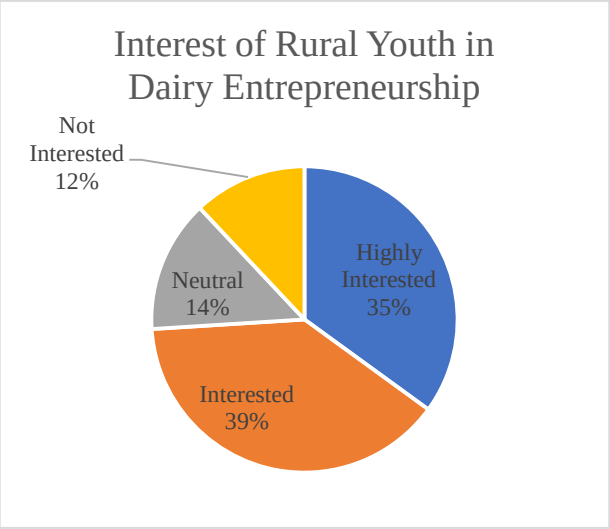
respondents experienced moderate improvement, while 36 percent observed significant improvement in productivity after receiving training in dairy farming practices. Meanwhile, 15 percent reported slight improvement, and only 9 percent indicated no improvement.

Table 4

Interest of Rural Youth in Dairy Entrepreneurship

Response	Frequency	Percentage
Highly Interested	35	35%
Interested	39	39%
Neutral	14	14%
Not Interested	12	12%
Total 100		100%

Chart No-4



Analysis and Interpretation:

The table reflects the level of interest among rural youth in dairy entrepreneurship. It is evident that 39 percent of respondents are interested, while 35 percent are highly interested in pursuing dairy farming as an entrepreneurial activity. Approximately 14 percent of respondents remain neutral, whereas 12 percent are not interested in dairy entrepreneurship.

Findings of the Study :

The study examined the relationship between skill-based higher education and the development of modern dairy farming as a sustainable rural entrepreneurial activity. Based on the analysis of both primary and secondary data, several important findings have emerged. The study reveals that a majority of respondents possess a good level of awareness regarding modern dairy farming practices. A significant proportion of respondents are either aware or highly aware of scientific dairy management techniques such as improved feeding methods, artificial insemination, hygienic milk production, and animal health management. This indicates that educational initiatives, agricultural extension services, and training programs have contributed to increasing knowledge among farmers and rural youth. The findings indicate that skill-based higher education plays a significant role in promoting dairy entrepreneurship. Most respondents agreed that practical education, technical training, and exposure to modern agricultural practices enhance their ability to manage dairy enterprises effectively. Skill-oriented education helps individuals acquire knowledge related to farm management, milk processing, marketing strategies, and financial planning, which are essential for successful entrepreneurship.The study further shows that training programs significantly improve dairy farm productivity. A large proportion of respondents reported moderate to significant improvements in milk production and overall farm efficiency after receiving training related to dairy management practices. Training helps farmers understand proper animal nutrition, disease control, and efficient breeding techniques, which ultimately contribute to higher productivity and profitability.

Another important finding of the study is that rural youth demonstrate considerable interest in dairy entrepreneurship. A majority of respondents expressed willingness to engage in dairy farming as a business opportunity, provided they receive adequate training, financial support, and institutional guidance. This indicates that dairy farming has the potential to become a sustainable livelihood option for rural youth.

The study also reveals that modern dairy farming practices contribute to improving the economic condition of farmers. Farmers who adopt scientific dairy practices and modern technologies tend to achieve higher income levels compared to those who rely on traditional methods. This improvement in income contributes to better living standards, improved education opportunities for family members, and enhanced social status in rural communities.

Conclusion of the Study

The present study examined the role of skill-based higher education in promoting modern dairy farming as a model for sustainable rural entrepreneurship in India. The findings of the study clearly indicate that dairy farming has emerged as one of the most reliable and sustainable livelihood options for rural communities. The integration of modern dairy farming practices with skill-oriented higher education significantly enhances farmers' knowledge, productivity, and entrepreneurial capabilities. The study reveals that awareness regarding scientific dairy management practices

among respondents is relatively high due to exposure to training programs, agricultural education, and extension services. Skill-based education equips farmers and rural youth with practical knowledge related to animal nutrition, breeding techniques, disease management, and milk processing. This technical knowledge enables them to adopt modern dairy technologies and improve farm efficiency. The study indicates that training and capacity-building programs contribute to increased milk production, better quality of dairy products, and improved farm management practices. Respondents who received training reported improvements in productivity and income generation. This demonstrates that skill development initiatives play a crucial role in transforming traditional dairy farming into a profitable and sustainable enterprise.

The research also highlights the growing interest among rural youth in dairy entrepreneurship. With appropriate technical training, financial support, and institutional guidance, dairy farming can become an attractive entrepreneurial opportunity. Higher education institutions can play a pivotal role in this transformation by integrating practical agricultural training and entrepreneurship development programs into their academic curriculum.

Overall, the study concludes that skill-based higher education and modern dairy farming together form a strong framework for sustainable rural entrepreneurship. This integration not only improves the economic condition of farmers but also contributes to rural development, employment generation, and long-term agricultural sustainability in India.

Suggestions of the Study

Based on the findings and conclusions of the study, several suggestions are proposed to strengthen the role of skill-based higher education in promoting modern dairy farming and rural entrepreneurship.

Higher education institutions should introduce specialized courses and training programs related to dairy entrepreneurship, livestock management, and dairy technology. Such programs should focus on practical learning and hands-on training to enhance students' technical skills and entrepreneurial abilities.

Universities and agricultural colleges should collaborate with dairy cooperatives, government agencies, and research institutions to organize training workshops and extension programs for farmers. These initiatives will help disseminate modern dairy farming techniques and improve farmers' knowledge about scientific farm management.

Government policies should encourage rural youth to establish dairy enterprises by providing financial assistance, subsidies, and easy access to credit facilities. Support through dairy cooperatives, microfinance institutions, and self-help groups can further strengthen rural entrepreneurship.

Training programs should emphasize value addition in dairy products such as milk processing, packaging, and marketing. By developing skills in dairy product diversification, farmers can enhance profitability and create new employment opportunities in rural areas.

Educational institutions should also establish dairy incubation centers and demonstration farms where students and farmers can learn modern dairy technologies through practical exposure. Such initiatives will promote innovation and technology adoption in the dairy sector.

Finally, greater emphasis should be placed on strengthening extension services and knowledge dissemination systems so that farmers can continuously access updated information on modern dairy practices, animal health management, and sustainable farming techniques.

Implementing these suggestions can significantly enhance the effectiveness of skill-based higher education in transforming dairy farming into a sustainable and profitable rural entrepreneurial activity in India.

References

1. Agarwal, A., & Gupta, R. (2021). Role of agricultural education in promoting rural entrepreneurship in India. *Journal of Rural Development*, 40(3), 415–428.
2. Chaudhary, S., & Yadav, R. (2023). Skill development initiatives and agricultural entrepreneurship among rural youth. *International Journal of Agricultural Sciences*, 15(2), 198–206.
3. Deshmukh, S. (2021). Agricultural education and rural entrepreneurship development in India. *Indian Journal of Extension Education*, 57(4), 92–97.
4. Food and Agriculture Organization. (2022). *Dairy development in India: Challenges and opportunities*. FAO Publications.
5. Government of India. (2023). *Economic Survey of India 2022–23*. Ministry of Finance.
6. Karthik, D., & Devi, M. (2024). Factors influencing youth participation in dairy entrepreneurship. *The Pharma Innovation Journal*, 13(2), 1450–1455.
7. Kumar, V. (2019). Modern dairy farming technologies and their impact on farm productivity. *Journal of Dairy Research and Technology*, 8(1), 21–27.

8. Meena, B., & Joshi, P. (2023). Impact of dairy training programs on farmers' productivity and income levels. *Journal of Extension Education*, 35(1), 56–63.
9. Patel, H., & Patel, R. (2020). Entrepreneurial opportunities in dairy farming for rural youth. *International Journal of Agricultural Economics*, 5(4), 112–118.
10. Rathod, P., & Pawar, B. (2022). Adoption of improved dairy farming practices among farmers in Maharashtra. *Indian Journal of Agricultural Economics*, 77(2), 287–295.
11. Sharma, S., & Singh, R. (2022). Role of dairy cooperatives in promoting rural entrepreneurship in India. *Journal of Cooperative Studies*, 55(1), 65–74.
12. Singh, P., & Sharma, A. (2018). Dairy farming and rural economic development in India. *Asian Journal of Agricultural Development*, 15(2), 75–88.
13. National Dairy Development Board. (2023). *Annual report on dairy sector growth in India*. NDDB.
14. World Bank. (2022). *Transforming agriculture through skill development and entrepreneurship*. World Bank Publications.