AN EMPIRICAL STUDY ON FAMILY DEPENDENCY AND ECONOMIC CONTRIBUTION OF DAIRY FARMING IN DODDABALLAPURA TALUK

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Abstract
This study explores the economic contributions of dairy farming among small and marginal farmers in Doddaballapura, with a focus on family dependency and economic sustainability. Employing a descriptive research method, the study sampled 100 dairy farming households using convenience sampling. Data were collected through structured questionnaires and analyzed using descriptive statistics and ANOVA. Findings indicate significant differences in income from dairy farming and the influence of farming experience on economic outcomes. While access to credit, land holding size, and the number of milch animals show uniformity, targeted financial support and experience-based training programs are recommended to enhance productivity. These insights underscore the critical role of dairy farming in the livelihoods of small farmers and suggest strategies to optimize economic benefits in this sector.
Keywords: Dairy Farming, Economic Contribution, Small and Marginal Farmers, Family dependency, ANOVA Analysis

1. Introduction

Dairy farming has long been a cornerstone of India's agrarian economy, providing livelihood and sustenance to millions of families. As one of the world's largest producers of milk, India's dairy sector plays a critical role in ensuring food security, improving nutritional standards, and driving economic growth. This study seeks to explore the dual dimensions of family dependency and economic contribution within the context of dairy farming. By focusing on family dependency, we aim to understand how households rely on dairy farming for their day-to-day survival, educational expenses, and overall well-being. Furthermore, examining the economic contributions highlights how dairy farming not only supports individual families but also fuels broader economic development through job creation, income generation, and market expansion.

The interdependency between family welfare and dairy farming underscores a unique socio-economic dynamic that warrants empirical investigation. This research will employ a combination of quantitative and qualitative methods to gather data from various dairy farming communities across India. By analyzing this data, we aim to identify key factors that influence the success and sustainability of dairy farming practices. Additionally, the study will consider the challenges faced by these families, including fluctuating market prices, climatic conditions, and access to veterinary

services. Understanding these elements will provide a comprehensive view of how dairy farming contributes to both individual household stability and the wider economic landscape, offering valuable insights for policy makers and stakeholders aiming to bolster this vital sector.

2. Theoretical Background

The theoretical foundation for examining the relationship between family dependency and economic contribution in dairy farming draws on several key frameworks in agricultural economics and rural development. One pertinent theory is the Sustainable Livelihoods Approach (SLA), which emphasizes the diverse assets and strategies households employ to achieve economic security. In the context of dairy farming, this involves understanding how families utilize physical, human, social, and financial capital to enhance their livelihoods. Another relevant framework is the Agricultural Household Model (AHM), which integrates production and consumption decisions within farming households. This model is particularly useful for analyzing how income from dairy farming impacts household welfare, education, and healthcare expenditures, ultimately influencing overall economic stability.

India's dairy sector continues to grow, reinforcing its pivotal role in the national economy. According to the National Dairy Development Board (NDDB), India's milk production reached approximately 209.96 million tonnes in 2021-2022, maintaining its position as the largest milk producer globally. This sector contributes significantly to rural employment, with an estimated 70 million rural households engaged in dairy farming, predominantly small and marginal farmers. The rise in milk production has been accompanied by an increase in per capita milk availability, which stood at around 427 grams per day in 2021-2022. These statistics underscore the vital economic role of dairy farming, not only as a source of income and employment but also as a contributor to national food security and nutrition. The ongoing expansion of the dairy industry highlights the need for a deeper understanding of its socio-economic impacts on family dependency and economic development.

3. Present trends and prospects of Dairy Farming

According to the Press Information Press Information Bureau (Government of India) The Indian Dairy Association (IDA) has played a pivotal role in enhancing the nation's dairy sector, aiming to position India's dairy industry as the strongest globally. The sector currently contributes 4.5 percent to the country's GDP and 24 percent to the agricultural sector, valued at around Rs 10 lakh crore, making it the highest in the world. The dairy industry is a crucial part of India's economy, providing employment to approximately 45 crore people from 9 crore rural households, particularly benefiting marginal farmers and women. Recent initiatives by the Ministry of Cooperation, National Dairy Development Board (NDDB), and the Department of Animal Husbandry aim to establish rural dairies in 2 lakh panchayats, potentially boosting the dairy sector's growth rate to 13.80 percent. India's milk processing capacity, the highest globally at about 126 million liters per day, ensures that 22 percent of total milk production is processed, directly benefiting farmers through increased income. The export of dairy products like milk powder, butter, and ghee holds significant potential, with plans to increase exports fivefold by linking these rural dairies to a Multistate Cooperative Society.

India's dairy sector has seen remarkable growth since 1970 when the country produced about 6 crore liters of milk per day and was considered milk deficient. By 2022, production surged to 58 crore liters per day, outpacing population growth which increased fourfold, while milk production grew tenfold. Per capita milk consumption rose from 107 grams in 1970 to 427 grams, surpassing the world average of 300 grams. The government, under Prime Minister Narendra Modi, is committed to furthering this growth, aiming for India to become the largest milk exporter globally. Efforts are underway to initiate a second White Revolution, enhancing all aspects of the dairy sector, including income, nutrition, livestock care, employment, and women empowerment through a strengthened cooperative model. With the formation of 2 lakh primary milk production societies, India's share in global milk production is projected to increase to 33 percent, with a target of 330 million metric tons of milk production annually by 2033-34. The Amul model has significantly contributed to this progress, and continued collaboration between the government, state authorities, and the cooperative movement is essential to achieving these ambitious goals.

4. Review of Literature

M. Ganesan (2013), A Study On The Economic Contribution Of Dairy Farming In India, It is evaluated that up to 60-65 percent of the income of this group (minor and small-scale farmers) presently originates from dairying. Studies have demonstrated that dairying in rural regions outperformed crop production as far as profit in peripheral, small and medium-sized property. Sarah Yasmin and Yukio Ikemoto(2015), Women's Participation in Small-Scale Dairy Farming for Poverty Reduction in Bangladesh, this study was carried out in two villages in the mymensingh district of Bangladesh. The results revealed that women in V1 placed a higher importance on dairy farming activities and showed greater improvement in their economic well being compared to women in V2. G. Pulina, et.al (2018) "Invited review: Current production trends, farm structures, and economics of the dairy sheep and goat sectors" This review evaluates the status of the dairy sheep and goat sectors in the world, with special focus on the commercially and technically developed industries in France, Greece, Italy, and Spain (FGIS). Selvaraj, et.al, (2015), A Study on Socio-Economic Conditions of Members and their Attitude towards the Performance of airy Co-Operatives in Tamil Nadu, India, The Government should also take necessary steps to reserve adequate acreage of suitable land for raising fodder, in order to arrest the rise in prices. It is suggested that banks should give more loans and subsidies to the people who are involving in dairy activities especially for the purchase of milch animals. YV Revanasiddappa, et.al, (2017), Contribution of dairy income to the total income of farmers: An analytical study conducted in Davanagere district of Karnataka, The dairy industry in India has been witnessing rapid growth since liberalization and ranks first in Milk Production in the world. The country's milk supply comes from millions of small producers, who are dispersed throughout the rural areas. M. B. Rajput, et.al, (2023), Socio-Economic Status And Constraints Faced By Dairy Farmers, The result revealed that majority of dairy farmers were (78.89 per cent) in middle age group, (79.99 per cent) educated up to high school to graduate level, (81.67 per cent) were engaged in dairy farming along with agriculture, (70.00 per cent) had medium level of experience in dairy farming, medium level of knowledge and adoption about recommended animal husbandry practices.

Chandan Kumar Rai, et.al, (2024), Profitability and economic viability of commercial dairy farms in trans-Gangetic plains of India, The study's focus region, the Trans-Gangetic Plains, was found pivotal due to its significant dairy orientation and robust dairy development programs. Dilshad

Ahmad, et.al, (2022), Impact of Formal Credit on Subsistence Farmers Dairy Production in Southern Punjab, Pakistan, The present study attempts to analyze the impact of formal credit on milk production of dairy animals and household income in district Vehari of southern Punjab, Pakistan. Shivagangavva, P. D. (2022) Socio-Economic Profile of the Dairy Farmers: A Study in Rural Urban Interface of Bengaluru, the study reveals that most of the rural people occupation was dairying, younger generation (36- 41 age) was more involved in more than others and their average operational holding (6.40) acre was less in dairy farmers as compare to non-dairy farmers. Bhandari, Gunjan and Reddy, B.V. Chinnappa, (2015), Impact of Out-Migration on Agriculture and Women Work Load: An Economic Analysis of Hilly Regions of Uttarakhand India, The present study has assessed the impact of out-migration on agriculture and workload of women. Primary data were collected from 90 migrant and 60 non-migrant member households in Pithoragarh district, Uttarakhand.Vinod Kumar Bahuguna, (2000), Forests in the Economy of the Rural Poor: An Estimation of the Dependency Level, this paper gives details of one estimation of dependency of people on forests in villages in the Madhya Pradesh, Orissa, and Gujarat states of India. The dependency on forests varies from 37% to 76% in these villages.

 M.N Venkataramana, and et.al, (2020), Economic analysis of dairy production among small and medium scale farmers in Karnataka: A case study of Bengaluru district, The survey showed that dairy production is characterized by low milk production as a result of the use of indigenous/local breeds of dairy cattle managed under pastoral production system. Pinky Barua, (2021), Corona virus Disease (COVID-19) and livelihood: Impact on Dairy Farmers of Kamrup District, Assam, India, The study was conducted in the rural area in order to find out the basic challenges encountered by the dairy farmers during first part of lockdown days due to COVID19. Payal Jaiswal, and et.al, (2018), Contribution of Dairy Farming in employment and household nutrition in India, The present study is an attempt to analyze the nature and extent of contribution of dairying to income, employment and food security of rural farming households. Since, dairying is practiced in a mixed farming rural set up in most parts of the country. Usha Yadav, Pradesh, (2022), A Review on Dairy Farming in India and Its Popularity, Dairy farming is gaining popularity as an alternate choice throughout the world. Milk and milk derivatives have experienced a significant increase in demand in recent years. The article discusses milk farming in India, including how it has existed from the beginning of time, India resolution, dairy farming investment, and dairy farming breed collection.

5. Problem Statement

 The existing body of research highlights the significant economic contribution of dairy farming to small and marginal farmers in India, with up to 60-65% of their income originating from this sector. However, despite the demonstrated profitability and potential for poverty reduction, particularly among women, there remain challenges related to resource allocation, credit accessibility, and knowledge adoption. These issues hinder the full realization of dairy farming's benefits. This study aims to empirically investigate the dependency of families on dairy farming and its economic contribution, seeking to identify and address the underlying factors that influence these dynamics.

6. Objective of the Study:

- To assess the extent to which dairy farming contributes to the economic well-being of small and marginal farmers' families in India

- To identify the key factors that influences their dependency on dairy farming as a primary source of income.

7. Research Methodology:

7.1 Descriptive Research Method: This study employs a descriptive research method to systematically describe the economic contribution of dairy farming to the livelihoods of small and marginal farmers in Doddaballapura Taluk. By using this approach, the research aims to provide a detailed and accurate depiction of the dependency on dairy farming and its impact on household income.

7.2 Area of Sample - Doddaballapura: The sample for this study will be drawn from the Doddaballapura Taluk, which is known for its significant dairy farming activities. Doddaballapura's diverse dairy farming community provides an ideal setting to explore the economic contributions and dependencies of dairy farming.

7.3 Convenient Sampling Method: The convenient sampling method will be used to select respondents for the study. This non-probability sampling technique allows the researcher to gather data from dairy farming owners who are readily accessible and willing to participate, ensuring practical and efficient data collection.

7.4 Tools for the Study:

Descriptive Statistics: Descriptive statistics will be used to summarize and describe the main features of the collected data, providing insights into the central tendency, dispersion, and distribution of economic contributions from dairy farming.

ANOVA (Analysis of Variance) and Homogeneity Test: ANOVA will be employed to compare the means of economic contributions across different groups within the sample, while the homogeneity test will assess the variance consistency between these groups, ensuring the reliability of ANOVA results.

7.5 Source of Data:

Primary Data: Primary data will be collected through a structured questionnaire designed to gather detailed information on the economic contributions of dairy farming and the dependency of farmers on this livelihood.

Secondary Data: Secondary data will be sourced from existing literature, government reports, and previous studies related to dairy farming and its economic impact in India, providing context and background for the study.

7.6 Sampling Size - 100 Respondents: The study will include a sample size of 100 dairy farming owners in Doddaballapura. This sample size is chosen to provide a sufficient representation of the dairy farming community, enabling meaningful analysis and conclusions.

7.7 Hypothesis of the study

Based on the objective of assessing the economic contribution of dairy farming to the well-being of small and marginal farmers' families, the following hypothesis will be tested using ANOVA:

Hypothesis: There is a significant difference in the economic contribution of dairy farming to household income among different groups of small and marginal farmers in Doddaballapura. This hypothesis will be tested to determine whether the economic benefits of dairy farming

8. Data Analysis and Interpretation

The data analysis and interpretation phase is a crucial part of this study as it provides empirical insights into the economic contribution of dairy farming to the livelihoods of small and marginal farmers in Doddaballapura Taluk. By employing statistical tools such as descriptive statistics and ANOVA, this section aims to systematically examine the collected data, highlighting key patterns, relationships, and differences among various demographic and socio-economic groups. Through this detailed analysis, we seek to validate our hypothesis and draw meaningful conclusions that can inform policy recommendations and practical interventions to enhance the economic benefits of dairy farming. The results and their interpretation will shed light on the factors influencing income from dairy farming and the extent of dependency on this vital agricultural activity.

Table – 1   **Descriptive Statistics**

Variables	N	Mean	SD	
	Statistic	Statistic	Std. Error	Statistic
Income from Dairy Farming	100	4.48	0.076	0.759
Land Holding Size	100	4.28	0.068	0.683
Number of Milch Animals	100	4.31	0.079	0.787
Access to Credit	100	4.26	0.081	0.812
Experience in Dairy Farming	100	4.36	0.073	0.732
Education Level	100	4.19	0.075	0.748
Training in Dairy Farming	100	4.41	0.075	0.753
Investment in Dairy Infrastructure	100	4.44	0.074	0.743

Source: Survey data – SPSS Output

The descriptive statistics provide a comprehensive overview of the key variables involved in the study, highlighting the central tendency and variability within the dataset. The mean values of all variables indicate a generally high level of engagement and investment in dairy farming activities among the respondents. For instance, the mean income from dairy farming is 4.48, suggesting a significant contribution of this sector to the farmers' livelihoods. Similarly, the mean values for land holding size (4.28) and the number of milch animals (4.31) reflect substantial resources allocated to dairy farming.

Access to credit, with a mean of 4.26, indicates that many farmers utilize formal credit systems, which could be crucial for sustaining and expanding their dairy operations. The experience in dairy farming shows a mean of 4.36, pointing to a moderately high level of expertise among the farmers, which likely influences their efficiency and productivity. The education level mean of 4.19 suggests that most farmers have attained at least a secondary level of education, which may impact their ability to adopt and implement advanced farming practices.

Training in dairy farming has a mean of 4.41, indicating that a significant portion of the respondents have received formal training, which can enhance their farming techniques and overall productivity. Lastly, the investment in dairy infrastructure shows a mean of 4.44, reflecting substantial financial commitment towards improving dairy farming facilities. The standard deviations are relatively low across all variables, indicating that the responses are clustered closely around the mean, suggesting a consistent trend among the surveyed farmers in Doddaballapura. This detailed statistical analysis underscores the integral role of dairy farming in the economic fabric of the region and highlights the factors that contribute to its success.

Table – 2 Test of Homogeneity of Variances

Variables	Levene Statistic	df1	df2	Sig.
Income from Dairy Farming	6.496	1	98	0.012
Land Holding Size	7.648	1	98	0.007
Number of Milch Animals	0.089	1	98	0.766
Access to Credit	1.880	1	98	0.173
Experience in Dairy Farming	1.170	1	98	0.282
Education Level	0.039	1	98	0.844
Training in Dairy Farming	0.914	1	98	0.341
Investment in Dairy Infrastructure	0.319	1	98	0.573

Source: Survey data – SPSS Output

The Test of Homogeneity of Variances provides insights into the equality of variances across different groups for the key variables under study. A significant Levene's statistic indicates that the assumption of homogeneity of variances has been violated. For the variable "Income from Dairy Farming," the Levene statistic is 6.496 with a significance level (Sig.) of 0.012, suggesting that the variances are not equal across groups. Similarly, for "Land Holding Size," the Levene statistic is 7.648 with a significance level of 0.007, indicating a violation of homogeneity of variances.

Conversely, the variables "Number of Milch Animals," "Access to Credit," "Experience in Dairy Farming," "Education Level," "Training in Dairy Farming," and "Investment in Dairy Infrastructure" have significance levels greater than 0.05, suggesting that the assumption of homogeneity of variances holds true for these variables. Specifically, "Number of Milch Animals" (Sig. = 0.766), "Access to Credit" (Sig. = 0.173), "Experience in Dairy Farming" (Sig. = 0.282), "Education Level" (Sig. = 0.844), "Training in Dairy Farming" (Sig. = 0.341), and "Investment in Dairy Infrastructure" (Sig. = 0.573) all indicate no significant differences in variances across groups.

These findings highlight that while most variables exhibit homogeneity of variances, special attention must be given to "Income from Dairy Farming" and "Land Holding Size" in subsequent analyses, as the inequality of variances could impact the results of statistical tests such as ANOVA. Adjustments or alternative statistical methods may be required to address these variances to ensure robust and reliable conclusions.

Table – 3   **ANOVA**

Variables	Groups	Sum of Squares	df	Mean Square	F	Sig.
Income from Dairy Farming:	Between Groups	4	1	4	7.402	0.008
	Within Groups	52.96	98	0.540		
	Total	56.96	99			
Land Holding Size	Between Groups	1	1	1	2.170	0.144
	Within Groups	45.16	98	0.461		
	Total	46.16	99			
Number of Milch Animals	Between Groups	1.69	1	1.69	2.774	0.099
	Within Groups	59.7	98	0.609		
	Total	61.39	99			
Access to Credit	Between Groups	0.04	1	0.04	0.060	0.807
	Within Groups	65.2	98	0.665		
	Total	65.24	99			
Experience in Dairy Farming	Between Groups	2.56	1	2.56	4.970	0.028
	Within Groups	50.48	98	0.515		
	Total	53.04	99			
Education Level	Between Groups	0.01	1	0.01	0.018	0.894
	Within Groups	55.38	98	0.565		
	Total	55.39	99			
Training in Dairy Farming	Between Groups	0.09	1	0.09	0.157	0.693
	Within Groups	56.1	98	0.572		
	Total	56.19	99			
Investment in Dairy Infrastructure	Between Groups	0.04	1	0.04	0.072	0.789
	Within Groups	54.6	98	0.557		
	Total	54.64	99			

Source: Survey data – SPSS Output

The ANOVA analysis provides insights into the differences in economic contributions of dairy farming across various groups within the sample. For the variable "Income from Dairy Farming," the F-value is 7.402 with a significance level (Sig.) of 0.008, indicating a statistically significant difference between groups. This suggests that income from dairy farming varies significantly across different groups of small and marginal farmers in Doddaballapura, supporting our hypothesis.

For "Land Holding Size," the F-value is 2.170 with a Sig. of 0.144, indicating no significant difference between groups. Similarly, the variable "Number of Milch Animals" shows an F-value of 2.774 with a Sig. of 0.099, also indicating no significant difference. For "Access to Credit," the F-value is 0.060 with a Sig. of 0.807, suggesting no significant difference in access to credit between groups.

The variable "Experience in Dairy Farming" shows an F-value of 4.970 with a Sig. of 0.028, indicating a statistically significant difference between groups, implying that experience in dairy farming impacts the economic contribution. However, for "Education Level," "Training in Dairy Farming," and "Investment in Dairy Infrastructure," the F-values are 0.018 (Sig. = 0.894), 0.157 (Sig. = 0.693), and 0.072 (Sig. = 0.789) respectively, suggesting no significant differences between groups for these variables.

Overall, the ANOVA results highlight that while income from dairy farming and experience in dairy farming show significant differences across groups, other variables such as land holding size, number of milch animals, access to credit, education level, training in dairy farming, and investment in dairy infrastructure do not exhibit significant differences. These findings suggest that specific factors such as income and experience are more critical in influencing the economic contributions of dairy farming among small and marginal farmers in Doddaballapura.

9. Results and Discussions

- The ANOVA results indicate a statistically significant difference in income from dairy farming between different groups of small and marginal farmers (F = 7.402, Sig. = 0.008). This suggests that income levels from dairy farming vary notably among the surveyed farmers.
- The analysis shows no significant difference in land holding size across groups (F = 2.170, Sig. = 0.144), implying that the size of land holdings does not vary considerably among the respondents.
- There is a statistically significant difference in experience in dairy farming between groups (F = 4.970, Sig. = 0.028), indicating that the level of experience impacts economic outcomes in dairy farming.
- The number of milch animals does not show a significant difference between groups (F = 2.774, Sig. = 0.099), suggesting uniformity in the number of dairy animals owned by the farmers.
- Access to credit does not significantly differ between groups (F = 0.060, Sig. = 0.807), indicating that most farmers have similar access to credit facilities.
- Both education level (F = 0.018, Sig. = 0.894) and training in dairy farming (F = 0.157, Sig. = 0.693) do not show significant differences between groups, suggesting these factors are relatively consistent across the sample.
- Given the significant impact of income from dairy farming, it is crucial to improve access to financial resources, including loans and subsidies, specifically targeted at small and marginal farmers to boost their economic returns from dairy farming.
- Since experience in dairy farming significantly impacts economic outcomes, implementing experience-based training programs can help new and less experienced farmers improve their skills and increase their productivity.
- To ensure uniform growth across different groups, standardizing access to credit and other essential resources such as quality feed and veterinary services can help bridge the gap and enhance overall productivity.
- Although the current study shows no significant difference in education levels and training, continued emphasis on educational and training initiatives can further equip farmers with advanced knowledge and practices, potentially leading to better economic outcomes in the long run.

10. Conclusion

Based on the comprehensive analysis of the economic contributions of dairy farming among small and marginal farmers in Doddaballapura, it is evident that dairy farming plays a crucial role in the livelihoods of these farmers. The study reveals significant differences in income levels from dairy farming, underscoring the varying degrees of economic benefits derived from this activity. Notably, experience in dairy farming emerges as a critical factor influencing economic outcomes, highlighting the need for experience-based training programs. While access to credit and the number of milch animals show uniformity across the sample, the findings suggest that enhancing financial resources and standardizing access to essential services can further boost productivity. The uniformity in education levels and training indicates a consistent base of knowledge among the farmers, yet continued emphasis on educational and training initiatives remains crucial. To optimize the economic benefits of dairy farming, it is recommended to improve financial access, focus on experience-based training, and promote standardized resource distribution. These measures can collectively enhance the economic stability and growth of small and marginal farmers in the region, ensuring that dairy farming continues to be a viable and profitable venture.

Bibliography

M. Ganesan (2013), a study on the economic contribution of dairy farming in india, Shanlax International Journal of Economics,Vol. 1 ISSN : 2319-961X, pp:49-58Sarah Yasmin(2015), Women's Participation in Small-Scale Dairy Farming for Poverty Reduction in Bangladesh, American International Journal of Social Science, Vol. 4, ISSN 2325-4149, pp:21-33.G. Pulina, et.al (2018) "Invited review: Current production trends, farm structures, and economics of the dairy sheep and goat sectors", Journal of Dairy Science, Vol: 101, Issue 8, pp-6715-6729.Selvaraj, et.al, (2015), A Study on Socio-Economic Conditions of Members and their Attitude towards the Performance of Dairy Co-Operatives in Tamil Nadu, India, Journal of oJ Bioengineering & Biomedical Science, ISSN:2155-9538, vol 5, pp:1-14.YV Revanasiddappa, et.al, (2017), Contribution of dairy income to the total income of farmers: An analytical study conducted in Davanagere district of Karnataka, International Journal of Applied Research, ISSN: 2394-5869, pp:120-125.M. B. Rajput, et.al, (2023), Socio-Economic Status and Constraints Faced By Dairy Farmers, Guj. J. Ext. Edu. Vol. 36 : Issue 2.Chandan Kumar Rai, et.al, (2024), Profitability and economic viability of commercial dairy farms in trans-Gangetic plains of India, Indian J Dairy Sci, pp:275-281.Dilshad Ahmad, et.al, (2022), Impact of Formal Credit on Subsistence Farmers Dairy Production in Southern Punjab, Pakistan, Sarhad Journal of Agriculture, vol 38, pp:287-294.

1. Shivagangavva, P. D. (2022) *Socio-Economic Profile of the Dairy Farmers: A Study in Rural Urban Interface of Bengaluru,* Asian Journal of Agricultural Extension, Economics & Sociology. pp. 151-161. ISSN 2320-7027.

2. Bhandari, Gunjan and Reddy, B.V. Chinnappa, (2015), Impact of Out-Migration on Agriculture and Women Work Load: An Economic Analysis of Hilly Regions of Uttarakhand India, Indian Journal of Agricultural Economics, Vol 70, pp: 396-404.

3. Vinod Kumar Bahuguna, (2000), Forests in the Economy of the Rural Poor: An Estimation of the Dependency Level, AMBIO; A J. of the Human Environment, PP:126-129.

4. M.N Venkataramana, and et.al, (2020), Economic analysis of dairy production among small and medium scale farmers in Karnataka: A case study of Bengaluru district, The Indian Journal of Animal Sciences 90(5):798-803, pp:798-803.

5. Pinky Barua, (2021), Corona virus Disease (COVID-19) and livelihood: Impact on Dairy Farmers of Kamrup District, Assam, India, The NEHU Journal Vol. XIX, ISSN. 0972 – 8406, pp.65-72.
6. Payal Jaiswal, and et.al, (2018), Contribution of Dairy Farming in employment and household nutrition in India, International Journal of Avian & Wildlife Biology, ISSN: 2574-9862, Vol 3.
7. Usha Yadav, Pradesh, (2022), A Review on Dairy Farming in India and Its Popularity, Ijfans International Journal of Food and Nutritional Sciences, ISSN Print 2319 1775, Vol 11, pp: 2065-2072.