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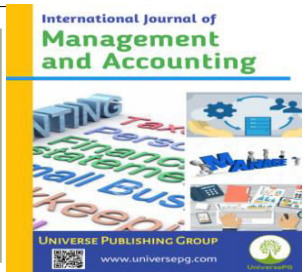

Investigating the Productivity of Traditional Dairy Farms in Suburbs of Aligarh, India

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ABSTRACT

The productivity index is one of the most efficient indices in economic analysis. This index can compare the existing activity of an operating unit with the desired situation and show the amount of quantitative and qualitative changes made in the production unit. Investigating the productivity of traditional dairy farms is essential because they significantly contribute to India's milk production and are effective in improving the welfare of farmers. This study tries to estimate the productivity of traditional dairy farm units by emphasizing the incomes and expenses of conventional dairy farms (between one and seven heads of dairy farms) using appropriate models. It calculates the highest level of productivity according to the user classes. In this study, the productivity index has been calculated for each user class in 2022-2023 and compared with each other. In addition, the productivity of single-heads, double-heads, and seven-heads has also been calculated. The results of the research showed that the increase in the number of cows leads to a decrease in the cost of maintenance and, as a result, an increase in the productivity index. It was also found that the units of single-head have problems in the field of inseminating cows at the right time due to the lack of timely recognition of cow estrus, that this issue has caused the prolongation of the Reproduction Cycle and the increase of the costs of the dry period of cows, so that the productivity index of single head cattle farms is less than one. Thus, economically, the existence of these dairy farms is not profitable; while in cattle farms with seven dairy cows, this index was calculated as 1.7, which indicates better productivity.

Keywords: Productivity, Economic analysis, Dairy farm, Aligarh, Milk production, and Reproduction cycle.

INTRODUCTION:

Economic development in a sector requires an increase in production in that sector. According to the theories of production and supply, production growth is achieved by two methods: In the first method, the increase in production is provided by using more production factors within the framework of the existing technology. In the second method, the increase in production is achieved using more advanced and efficient production methods and influential production factors. According to Clarke and Conte and based on the experiences of different countries of the world, the application of advanced technical knowledge in production sectors is the basis of modern growth and development, so currently, more than half of production growth in advanced economies are provided through increasing productivity (Christensen, L. R. 1975).

In India, dairy farming is a source of livelihood for millions of villagers. In India, most dairy farmers are small-scale family companies, and the income from dairy production provides their daily needs. Most of the milk production in India is done by small farmers who own a few milk animals; the vast majority (more than 80%) of "dairy animals" in

India are kept in farms with 2 to 8 animals (Hemme *et al.,* 2003). These farmers account for about 95% of milk production in India, clearly showing this country's importance of traditional animal husbandry.

In recent years, the importance of productivity in the milk production industry has also been recognized by legislators. Thus, the Indian government has initiated several schemes to support milk production in this country. Some of these schemes are the National Dairy Scheme, which aims to increase milk productivity, and the Dairy Processing and Infrastructure Development Fund, which provides financial assistance for setting up milk processing facilities. (Rao, P. S., & Reddy, B. R. 2014) With continuous, systematic, and intensive efforts through various dairy development programs, India has become the largest milk producer (Khan *et al.,* 2014). According to the report of the Animal Husbandry and Dairy Department of the Ministry of Fisheries, Animal Husbandry and Cattle of the Government of India, milk production during the years 2020-21 and 2021-22 is 209.96 million tons and 221.06 million tons, respectively, which shows an annual growth of 5.29 percent. The per capita availability of milk is about 444 grams per day in 2021-2022. Considering the role of traditional cattle farms in milk production, calculating the productivity of these cattle farms and comparing their implementation can be effective in formulating and organizing the rural livestock farming system and also in organizing non-industrial livestock farms in terms of the appropriate number of livestock, optimal conditions for maintaining and raising cattle and the proper use of production factors. Not knowing the appropriate number of animals is one of the problems of planning in different fields of animal husbandry. Therefore, this study emphasizes the incomes and costs of traditional dairy farms and uses the total income to total cost productivity model (TP). This is calculated. It also compared the productivity index of cattle farms (calculated productivity in units of one head to seven heads of cattle) during a calving cycle of the sampled animals in Aligarh city of the Uttar Pradesh State.

Review of Literature

In 2021, Vaijanatha and Kulkarni conducted a study to analyze a dairy farm company in the Koppal district in Karnataka. In this study, the cost structure and profitability of the dairy company were analyzed in the case of buffalo, crossbred, and native cattle. In this study, two-income factors were milk production and cattle dung. Two indicators of variable cost and fixed cost as dairy farm cost were determined. The variable costs were 82.99%, 77.39%, 77.39%, and the rest was fixed cost. The net return was Rs 17359.88 for crossbred cattle, Rs 1366.98 for buffalo, and Rs 10338.46 for indigenous cattle. The dairy farm studied in this research did not receive much profit on the basis of native cows with a profit of 1.05. However, they were profitable for crossbred and buffalo cows, with a profit-to-cost ratio of 1.42 and 1.31, respectively (Vaijanatha and Kulkarni, 2021; Gammada *et al.,* 2022).

In 2014, a study was conducted by (Sumit Mahajan *et al.,* 2014). This considered economics of milk production in rural dairy farms around Ludhiana in India. This study, conducted was for three months in 2010. From 15 rural dairy farms and 15 dairy farms around the city, it showed that concentrate is the main component in the total cost of milk production. This study showed that the average net profit from milking crossbred cows is higher than native and buffalo cows in suburban and rural dairy farms. In a measure of rural and urban dairy farm productivity, it was determined that suburban dairy farm productivity is higher than that of rural dairy farms. In addition, unlike rural dairy farms run by family members, suburban dairy farms use workers from the suburbs, creating employment (Sumit Mahajan and Chauhan, 2014). Bharadwaj and Dixit, (2007) conducted a study on the economics of buffalo milk production in four villages of Hisar district in Haryana state. In this study, the farms producing buffalo milk were divided into three categories, and the responses of 200 sample households of buffalo breeding farms were examined. The average population of these buffaloes per household was small (1.38), medium (3.18), and large (5.36) units. The average milk production in these dairy farms was calculated as 5.88, 6.07, and 6.20 liters per buffalo, respectively. According to the average milk sales and maintenance cost, the net profit in each of the small, medium, and large dairy farms was 11.50, 7.22, and 8.86, respectively. This study determined that the break-even point of milk production in small farms is 5.00, in medium farms 5.56, and in large farms 5.66 liters per day, and the break-even point was obtained earlier in the size of smaller farms.

Mohapatra *et al.* (2021), in this study entitled Economic Analysis of Milk Production in Karnal District of Haryana State, collected milk production data from 120 milk-producing households in 2019. This study examined indigenous, crossbred, and buffalo cows. It found that the overall net maintenance cost for crossbred cattle was higher than that of indigenous cows and buffaloes. The average total cost for buffaloes (40 rupees per liter), the cost of crossbred cattle (32 rupees per liter), and indigenous cattle (31 rupees per liter) was determined. According to the information obtained in this study, a significant part of the total variable cost includes animal feed. The net yield was positive in all three categories of animals, but cows of crossbred had good productivity due to higher production. The main problems of these farms were the high price of the concentrate and the far location of the artificial insemination center. Also, this study found that the cost of milk production decreases with the increase in herd population, while the net yield per liter of milk increases with the increase in herd population. This is for crossbred cattle (Rs. 3.29), followed by buffaloes (Rs. 3.12) and indigenous cattle (Rs. 1.28). Athare *et al.* (2019) undertook a study titled Economics of Milk Production, efforts in the Pune district located in the state of Maharashtra. It studied a median estimation of the cost and yield of milk production for three categories of cows: indigenous cows, crossbred and buffalo. In this study, the cost of milk production was calculated for each liter of milk from indigenous cows (27 rupees), crossbred cows (19.17 rupees), and buffalo (27.61 rupees). This study found that the share of feed in the total cost varies from 61% to 64%, and the cost of human labor varies from 24% to 30% in the studied categories. The results showed that due to the excessive use of human power in the studied area, the production of indigenous cow milk is of low productivity and has a negative yield.

Perumal, A. (2015) investigated the economics of dairy farming in the agricultural areas of Tamil Nadu in a study entitled Economic Analysis of Dairy Farms. The study showed a direct relationship between herd size and dairy farm profitability in the sample areas. In this study, since the cost of feed accounts for more than 60% of the total cost, the net return calculated for each animal in small herds is 90 rupees, medium herds are 168 rupees, and large herds are 216 rupees. Datta *et al.* (2019), in a study entitled "Analysis of the Dairy Farm Economy in Bangladesh" from an economic perspective, examined the dairy farm sector in Bangladesh using the Cobb-Douglas function and multiple regression models. This study collected primary data through survey questionnaires for small farms. It was found that the studied dairy farms had an average of 0.37 indigenous cows and 2.7 crossbred cows. In this study, the average productivity of indigenous cows in milk production was 1.9 liters, and that of crossbred cows was 6.48 liters. It was also found that the average milk production in small cattle farms is 5.45, in medium cattle farms 32.50, and in enormous cattle farms 59.83 liters per day. A finding of this study showed that crossbred cattle farms are more productive than indigenous cows. Heidi *et al.* (1956), using the quadratic function of the interaction of two variables (fodder and dense materials) In the function of milk production, by extracting coefficients of production elasticity of factors and estimating the final value of production variables, studied 408 buffaloes in more than 15 villages in four periods of 15 days. The Cobb-Douglas function was used in the data analysis, and the results were analyzed in different livestock groups based on livestock size. This research showed that feed (forage and concentrate) was the main factor in the milk production of all groups. The value of the final production of fresh fodder and concentrate is greater than the cost of the inputs, and it shows that all livestock farmers use these two inputs less than the economic optimum (Kayani *et al.,* 2001).

In 1957, Solow investigated the American economy's total productivity of production factors. In addition to calculating the productivity of the total factors of production, he calculated the effect of productivity growth on production growth. Finally, he concluded that about 62.5% of the growth of American production was due to the improvement of the productivity of the total factors of production in this country (Farrell, M. J. 1957). In 1974, Store Mall after studying and examining the productivity of all production factors in different sectors of the Indian economy concluded that the sectors that have been able to use more of the capital factor along with the labor force have also enjoyed high productivity. Shokoohi *et al.* (2011), Fulginiti and Perrin, (1998) studied 18 developing countries during 1961-85. They used two non-parametric (Malm-Quit index) and parametric (Cob production

function-Douglas) methods to measure the productivity of the total factors of production. The results showed that the productivity of agricultural production factors could be higher in most of these countries. Beldman *et al.* (2017) used the ratio of the value of the final return to the price of inputs for a production unit in the economic study of dairy cattle industrial units in Iran. They concluded that in all the units under study, the consumption of concentrated feed fodder and labor are employed more than the optimal level from an economic point of view. Of course, in different herd size groups (the number of cows in each group), the efficiency of the inputs is different, so in the group of 100-head and 50-head units, the value of the final product is obtained at the price of the last unit of input for the herd size multiplier of more than one. This result indicates that the herd size in this group could have been more optimal than other production factors. Sadeghi-Sefidmazgi *et al.* (2012) conducted a research titled 'Investigating the effect of production factors on the productivity index of dairy cows'. The study used systemic analysis to calculate the effect of changes in costs and incomes on the productivity index. The results were compared. This comparison showed that the increase in the price of concentrate fodder and non-food costs reduces the productivity index. The increase in the average life span of the herd, the percentage of valuable births, the increase in the price of milk to the government rate, and the increase in milk production have a positive effect on the productivity index.

Area of Study

Aligarh is a district in Uttar Pradesh, India. It is about 90 miles (140 km) southeast of New Delhi. The city is located in the middle of the Doab, the land between the Ganges and Yamuna rivers, and has an elevation of approximately 178 meters (587 ft). According to the 2011 census, Aligarh has a population of 874,408. The geographical location of Aligarh makes it favorable for agriculture. 85% of irrigation is done by underground water through tube wells and 15% by surface water through rivers and canal network systems. The average annual rainfall of Aligarh district is 800 mm. Monsoon rains start from late June and continue till September. Since 1990, many villages have been urbanized. However, rural economic activities such as agriculture and animal husbandry still exist in urban agriculture and dairying run by local people and migrants from other parts of the region (Sami *et al.,* 2013).

Statistical Population and Sample Size

Traditional dairy farms in the suburbs of Aligarh constitute the statistical population under study. Considering that no statistics were found regarding the number of traditional dairy farms in the Aligarh region, the snowball and targeted sampling methods were used to select dairy farms in the study area. Accordingly, farms were considered based on herd size, access, availability of herd registration, etc. (Temesgen *et al.*). The number of samples based on the population of each class includes became: four units with one head, four units with two heads, eight units with three heads, five units with four heads, six units with five heads, four units with six heads, five units with seven heads, which is equivalent to 36 dairy farm units became traditional. The method used to collect data in this research was direct observation, and the tool used was daily recording during the reproduction cycle of each cow. Data collection period was from November 2022 to April 2023. A team of research data collectors visited each participating farm once a month and collected data based on daily records maintained by the farmer. Sample dairy farms were followed for approximately 18 months. The data source includes 145 indigenous Indian dairy cows found in 36 sample dairy farms on the outskirts of Aligarh city.

METHODOLOGY:

Recording in dairy farm units

Measuring the accuracy and regularity of desired traits to determine productivity in dairy cows is called record collection. The record or report is one of the most essential tools that help the manager evaluate management decision feedback. Records are of two types: temporary and permanent (Hasani Bafrani & Jamshid, 2005). This type of classification is based on the method of collecting and maintaining these reports. When the cowherd is working, and as soon as he observes an event, he writes it down and prepares a temporary report. When these reports are transferred to record offices, related forms, or computers, they are called permanent records. The cases recorded in this research include the following.

- Income from milk produced by each cow. (individual cow records)

- The economic value of the number of calves produced. (individual cow records)
- Income from the sale of dung.
- The cost of animal feed in the lactation period of cows. (individual cow records)
- The cost of animal feed in the dry periods of cows. (individual cow records)
- The cost of keeping livestock includes medicine, Vet, Vaccination, disinfection, and artificial insemination. (individual cow records)
- The cost of labor and energy cost

The most complete way to prepare a report is to collect data on a daily basis. However, in practice, for various reasons, such as high cost and time-consuming, the researcher usually does not use this type of recording. On the other hand, it has been shown that the reports obtained from periodic data collection (weekly, 15 days, etc.) have relatively little difference from data being recorded daily. As a result, periodic recording has become a norm. The following **Table 1** Shows the observed difference between daily and periodic recording types (Hasani Bafrani & Jamshid, 2005).

Table 1: The difference between daily and periodic recording types.

Data collection period	Weekly	15 Days	21 Days	Monthly
Difference in percentage	1.04	1.48	2.08	2.68

Source: Hasani Bafrani & Jamshid, 2005.

Reproduction Cycle

The term "Reproduction Cycle" or "lactation cycle" refers to the period from one birth to the next. Cows need calving to produce milk, and the lactation cycle is precisely the time between 2 calves (Gaines *et al.,*1931). This cycle is divided into four stages from the time the cow gives birth to the next calving: the early lactation period (about 75 days), the middle of the lactation period (about 150 days), the late lactation period (about 75 days) and the dry period (about 65 days). In an ideal world, cows give birth every 12 months, so by calculating the milking period of "300 days" and the dry period of "65 days", the cow's reproduction cycle are optimally 365 days. However, in the real world, this cycle is influenced by various factors, resulting in the length of the Reproduction Cycle due to the increase in the dry period. It exerts essential effects on reducing milk production, increasing the cost of feed and keeping cows, and, as a result, reducing the productivity of the production unit. **Fig. 1** shows the optimal time of the cow calving cycle and the cost chart of cow feeding and milk production with the information obtained in this study.

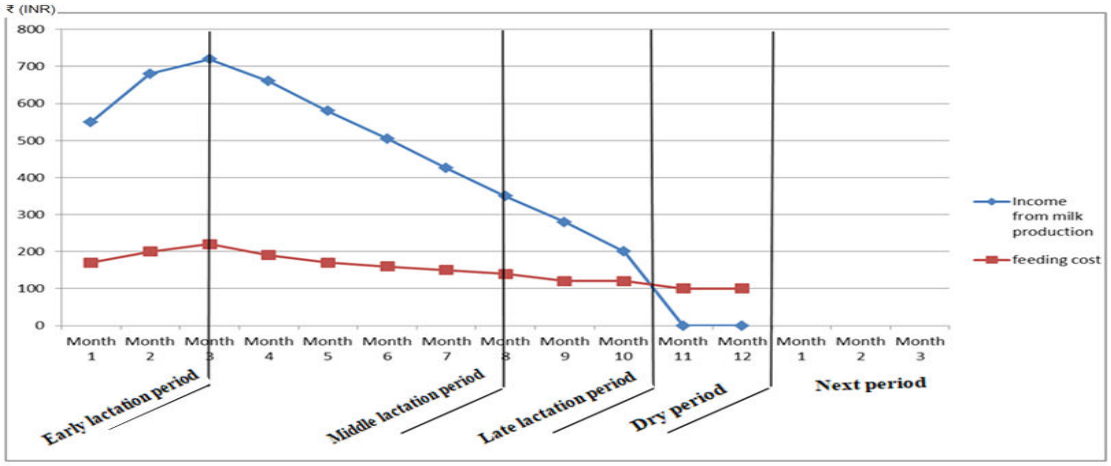

Fig. 1: Optimum time of cow Reproduction cycle. (Source: prepared by the research based on researcher's calculations).

Productivity

Productivity examines the relationship between outputs and inputs of a system. This system can be defined as an individual, organization, animal husbandry unit, or the whole society (Sabaro, 1994). One of the issues that has always been debated among productivity experts and experts is its measurement. Productivity measurement is the preparation and development of information that helps improve the efficiency of facilities and, conse-

quently, the growth of the production of goods and services at different levels (Lieberman, M. B., & Kang, J. 2008). The total productivity index is one of the performance indicators expressing the costs incurred to produce a product or provide a service and the income obtained from the sale of the product or service. With detailed knowledge, decisions such as wage determination, price level, cost reduction, and competition in the market can be made correctly. In this research, the ratio of income to expenses has been used as a criterion for measuring the productivity of each cow during the Reproduction Cycle, and the following formula has been used to determine the total productivity index in this study:

$$TP = \frac{R}{C} = \frac{M_r + F_{rc} + R_m}{M_l + M_d + D}$$

where TP is the total productivity, R is the income of the cattle unit during a period of Reproduction Cycle (includes F_{rc}, M_r, R_m which are respectively the income from milk sales, the income from the number of calves produced by each cattle unit during a period, and the income from the sale of fertilizer) and C is the costs of the dairy farm unit during the reproduction cycle of all cows. These costs include M_l، M_d and D, respectively, the cost of feeding the cow during the lactation period, the cost of feeding the cow during the dry period, and the cost of maintenance during the period, including the cost of medicine, veterinarian, vaccination, disinfection, artificial insemination, energy and labor cost. The cost of animal feeding is divided into two parts: the lactation period and the dry period. The cost of food for each period is calculated as the price of each food ingredient used in the daily ration of the animal multiplied by the number of days the animal uses that ration. If in the following days there are changes in the animal's ration due to the decrease or increase in milk production, the calculation of the feeding cost for that period will be done again (Carillo, F., & Abeni, F. 2020). If the calculated $\frac{R}{C}$ efficiency index is equal to one, it means that the input and output of the system are equal and if it is less than one the system is unproductive or having negative productivity (Sabaro, 1994). Where TP is the total productivity, R is the income of the cattle unit during a period of the Reproduction Cycle (includes F_{rc}, M_r, R_m which are respectively the income from milk sales, the income from the number of calves produced by each cattle unit during a period, and the income from the sale of dung). C is the cost of the dairy farm unit during the reproduction cycle of all cows. These costs include M_l، M_d, and D, which refers to the cost of feeding the cow during the lactation period, the cost of feeding the cow during the dry period, and the cost of maintenance during the period, including the cost of medicine, veterinarian, vaccination, disinfection, artificial insemination, energy, and labor cost respectively. The cost of animal feeding is divided into two parts: the lactation period and the dry period. To calculate the cost of food for each period, the price of each food item used in the animal's daily ration is calculated and multiplied by the number of days the animal uses that ration. If in the following days there are changes in the livestock ration due to a decrease or increase in milk production, the calculation of the cost of feeding for that period is done again (Sadeghi-Sefidmazgi *et al.,* 2012). If the calculated efficiency index is equal to one, it means that the input and output of the system are equal, and if it is less than one, the system is unproductive or has negative productivity (Sabaro, 1994).

Data Analysis

In the dairy cattle breeding industry, removal and insemination are two critical and effective management decisions that affect the herd's profitability. In this process, cows are removed from the herd after 3 to 4 unsuccessful inseminations because their dry period will increase after the end of the lactation period (Coleman *et al.,* 1985). From the financial point of view, the income returned from the place of cattle removal, compared to the continued efforts for cattle fertility (due to the increase in the dry period and the increase in cattle costs) is often a reason as to why farmers remove cattle. However, in India, the removal of cows from a dairy farm is equal to the loss of the farmer's capital; as such, more efforts are made for animal fertility so that the milking cycle starts again. Therefore, these efforts lead to an increase in the term of the reproduction cycle and higher costs by increasing the dry period of livestock. Often, in data analysis to check productivity, a financial year is considered, but due to the above issue, for a correct understanding of the calculation of income and expenses in dairy farms in India, the productivity analysis of dairy farms in this study is based on the data obtained during the reproduction

cycle of each cow. These calculations are done as follows:

- To perform calculations during the calving cycle from the time of cow calving to the next calving time, each cow's expenses and income were recorded separately. The calving cycle of cattle in this study varied from 13 months to 18 months.
- To calculate the productivity index in each class (one Head to seven Heads), the productivity for each farmer was first calculated, and then the average of each class was calculated. As explained earlier, formula number (1) was used to obtain productivity.
- To calculate the income from the sale of milk of a dairy cow (M_r), the amount of milk produced by each cow during a reproduction period was multiplied by the average price of milk (60 rupees).
- To calculate the economic value of the born calf (F_{rc}),$\frac{1}{4}$ the value of the mother cow was calculated for the female calf, and $\frac{1}{6}$ the value of the mother cow was calculated for the male calf.
- To calculate the income from the sale of dung in one period (R_m), the amount of dung produced was calculated at the price of dung (1000 rupees per ton).
- To calculate the cost of food for the dry period (M_d) and lactation period (M_l) according to the amount of feed for each animal based on the price of food items, the cost of food for one day was calculated. If there were changes in the food ration of the animal during the reproduction period, it was done by the dairy farm owner based on the new feeding table, and the calculations were repeated for that period (**Table 2**).
- The annual cost of maintenance, including the cost of medicine, veterinarian, vaccination, disinfection, artificial insemination, etc., was calculated based on the farmer's report during the period. Labor costs were collected from farmers during personal interviews. The cost of labor includes both family labor and hired labor. The labor cost was calculated according to the type of work assigned and the wages paid.

Table 2: The price of cattle feed items.

Kind	Dry Fodder	Grin Fodder	Concentrate	Mineral Mixture
Price (kg) Rs	7	2.5	30	60

Source: prepared by the researcher based on researcher's calculations

RESULTS AND DISCUSSION:

As **Table 3** shows, the share of lactation period food cost increases with the increase in the number of dairy cows, and annual maintenance costs decrease. As annual maintenance costs have a downward trend, and with the increase in the number of existing dairy cows, annual maintenance costs decrease. This cost covers about 30% of the total costs in single-head cattle farms, while in seven-head cattle farms; this number reaches about 10%. In fact, with the increase in the number of dairy cows from one to seven heads, the maintenance cost is reduced to one-third (**Table 3**). The cost of dry-period food needs to be taken into account. **Table 3** shows that the share of dry-period food cost is 10% higher in single-headed dairy farms than in other dairy farms. In these units, the farmer has a problem with accurate and timely diagnosis of the cow's estrus time, and the lack of successful insemination has led to an increase in the dry time of the cattle and has increased its costs. It should be noted that identifying the appropriate insemination time is deter-mined by the cow's behavior in dealing with other cows (Roelofs *et al.,* 2005) (**Table 3**).

Table 3: The percentage of each of the costs in the production of cow's milk in each of the classes.

Number of animals	One	Two	Three	Four	Five	Six	Seven
Total costs	100	100	100	100	100	100	100
lactation period food cost	41.84	59.43	65.37	69.46	71.46	71.63	72.53
Dry period food cost	27.17	16.44	16.02	14.71	15.39	16.73	16.61
Annual maintenance costs	30.97	24.11	18.60	15.81	13.13	11.63	10.85

Source: researcher's calculations

As shown in **Table 4**, among the seven classes of cattle farms examined, income from the sale of milk is the highest. After that, the primary income of cattle farms is related to the economic value of calf production (**Table 4**).

Table 4: The percentage of each of the incomes in the production of cow's milk in each of the classes.

Number of animals	One	Two	Three	Four	Five	Six	Seven
Total income	100	100	100	100	100	100	100
Milk income	92.28	91.33	91.77	91.38	91.5	90.74	91.11
Economic value of the calf	5.73	6.68	6.23	6.52	6.43	6.42	6.14
Dung income	1.98	1.98	1.98	2.08	2.05	2.82	2.73

Source: researcher's calculations

As shown in **Table 5** the productivity index increases with the number of cows. But in dairy farms with one head, the productivity index is lower than one; in these cattle farms, the amount of expenses is higher than the income. In cattle farms with two, three, and four dairy cows, the productivity rate has increased and is more than one. This means that the income has exceeded the expense, and the existence of these dairy farm ranches is economical. Based on the results obtained in table number (5), the productivity index is on the upward trend in cattle farms with five, six, and seven dairy cows.

Table 5: Average productivity in different classes.

Number of animals	One	Two	Three	Four	Five	Six	Seven
Average productivity	0.99	1.33	1.49	1.5	1.6	1.65	1.7

Source: researcher's calculations

CONCLUSION:

The research results showed that the maintenance cost decreases with increase in the number of cows, thus increasing the productivity index. Due to higher maintenance costs and longer dry periods than other units, dairy farms that have one head of cattle have a lower productivity index than one. So, creating this type of dairy farm is not cost-effective. The productivity index for units with seven heads of cattle is close to 2, which indicates high productivity.

According to the obtained results, it was determined that the minimum number of dairy cows that are economically viable is more than one head. Therefore, should and thus justify increasing the number of dairy cattle to more than two dairy cows. It is also suggested that due to low financial capacity of the traditional cattle farmers of the region and here is a need to increase the number of livestock. The relevant officials should consider the necessary policies to provide the required financial resources, such as low-interest loans in order to increase the number of dairy cattle. Further because of the need of more data, this information should be shared with the users. Because of paucity in information related to milk production in the traditional cattle farms of Aligarh, located in the state of Uttar Pradesh, it is further suggested that the data related to traditional cattle farms to be collected yearly for more effective measures to be taken in future.

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CONFLICTS OF INTEREST:

There is no conflict of interest to the publication of this manuscript.

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